

APRIL  
2003

# architectural lighting

# architectural

## Star Quality

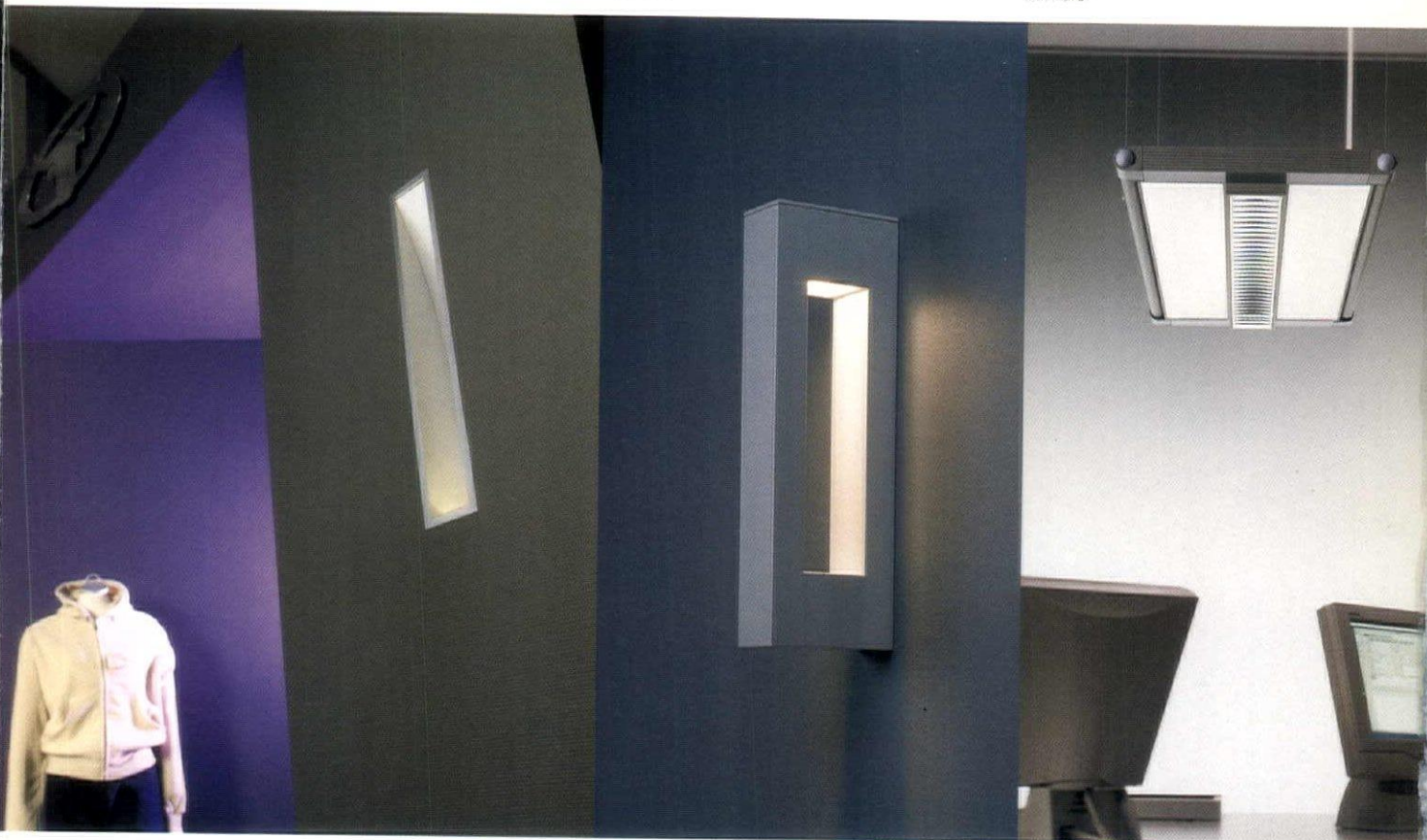
Seeing Stars?—Lighting the Great Outdoors  
Lighting: A Return on Investment  
How playing with Architects



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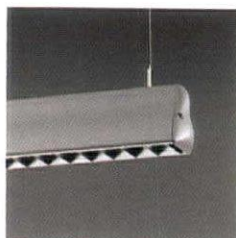
**MULTILINE** | BELGIUM

**TROLL** | SPAIN

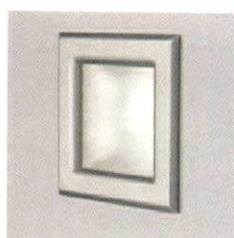
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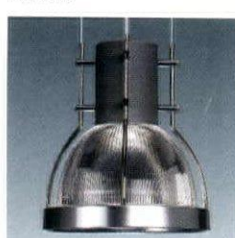
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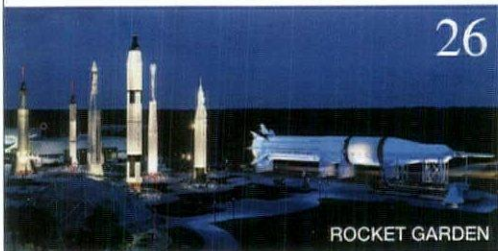
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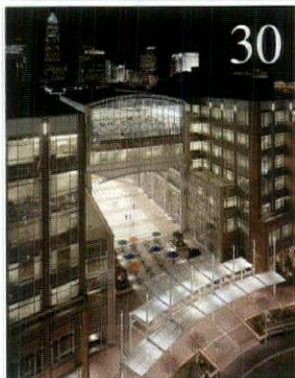
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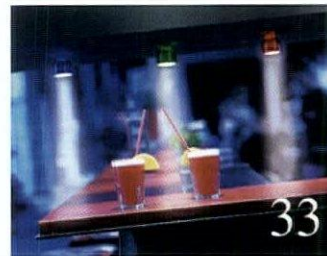
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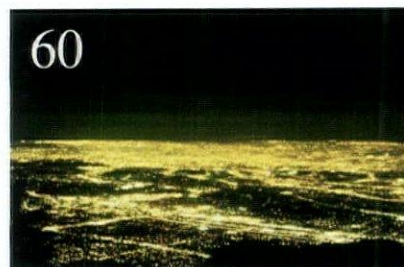
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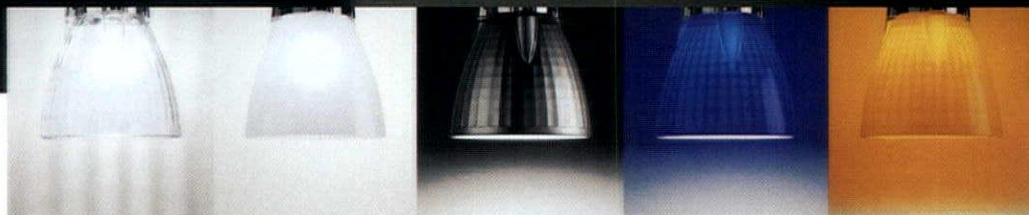
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# architectural lighting

APRIL 2003

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# editor's note

I was in Home Depot recently. Sometimes I go there intent on buying a necessary item. Other times, I go there for inspiration to do some work and renovation on my 19th-century house. This particular trip, I went to purchase lamps—yes, I actually *buy* them as I don't have a lifetime supply sitting in a box in the basement as most of my friends seem to think I would, considering my "connections," as they call them. I stood there, perusing and picking the appropriate sources for both the interior and exterior of my home, confident in what I was choosing as I, by now (hopefully), understand proper lamp selection. But I realized quickly that my knowledge of such, well, mundane things as watts, sources, lumens and rated life, is a benefit of my experiences in my professional life. What we, in this industry, see as easy and obvious, just isn't as evident to the larger population.

Just ask the two guys standing in front of me, studying the shelves, shrugging their shoulders, and quite frankly, looking a bit confused in their quest for "light bulbs." As I reached out to grasp a specific lamp, I observed first the shaking of a head, followed by, "Why do they make lighting *so* difficult?" Then, "I don't get it." More frustration, "All I know is I want the light to feel good, to look good." They stood there a few minutes more, hands in their pockets, and with an exasperated grunt, one of the guys said, "Whatever," as he grabbed "just anything." What struck me about this brief dialogue was twofold: While the terms and technicalities were lost on them, what certainly wasn't was lighting's effect on their environment. Moreover, they were actually *aware* of it.

Yes, consumers and clients are more savvy than ever before about the benefits and value of lighting, even if they can't explain that value in tangible or quantifiable terms. Perception. Emotion. Experience. Effect. These are very human factors and certainly, very subjective. And it remains the mission of the lighting community to educate and translate those "feelings" into reality, which may not always be an easy task. But it is an important one. As the authors of both of our In Focus columns propose in their articles—related, but independent in content—"...designers prove objectively what many realize intuitively"; "...lighting must enhance and support the things that we personally value"; "the perception of good lighting has become much more acute"; "people want to feel good and look good" (sound familiar?); and "they want to be entertained, awed and wowed, and they know when they're not. They even want to be educated."

See you soon in *Architectural Lighting's* hometown of New York City for Lightfair. Stop by **booth 2037** to say hi!

Cover Photo: Courtesy Zumtobel Staff



Christina Trauthwein,  
Editor-in-Chief



architectural cove lighting

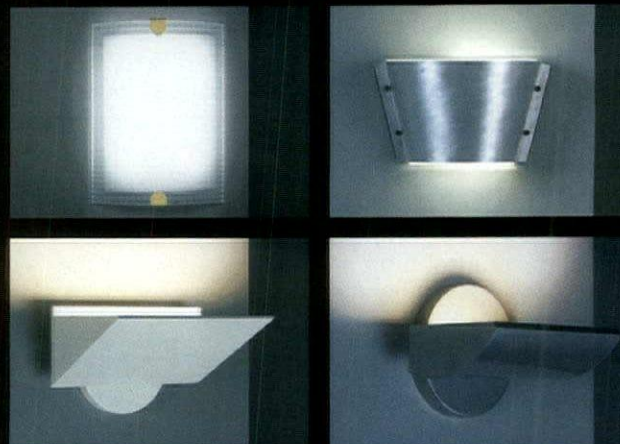


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In association with Architectural Lighting Magazine, Énergie offers you the chance to own your own Picasso.

**ARTIST** | PABLO PICASSO    **TITLE** | BUSTE DE FEMME

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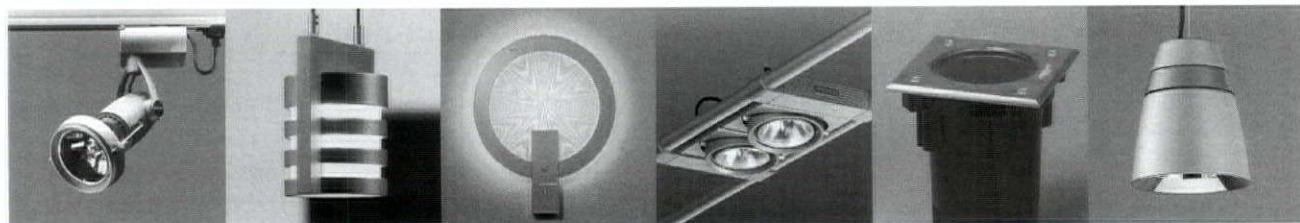
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- Then use your professional skill to decide which luminaire from the Énergie collection of top European lighting fixtures would be appropriate to light a Picasso.
- Enter your information online and this original Picasso lithograph could soon adorn your wall!
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- Winner will be drawn at random. For full terms and conditions please check the website.
- Entry to the drawing is online only at:

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





## AMERLUX & W.A.C. FORM ALLIANCE

Amerlux Lighting and W.A.C. Lighting have announced the formation of a strategic alliance that covers marketing, product development, manufacturing and sourcing for the commercial and retail markets. The announcement was made by Chuck Campagna, president and CEO of Amerlux Lighting Systems, and Richard Kurtz, the newly appointed president and COO of W.A.C. Lighting. As part of this alliance, both companies plan to launch several co-developed product lines to their respective markets later this year.

## LEDALITE RECEIVES ENERGY AWARD

Ledalite Architectural Products has been recognized with Natural Resources Canada's Energy Efficiency Award for its office lighting technology, Ergolight. Cited for its "solid contribution to Canada's efforts to reduce greenhouse gas emissions, [which] contribute to climate change," Ergolight incorporates integrated occupancy sensors, daylight sensors and computer-based dimming controls. The award was presented to Ledalite at a ceremony in Ottawa on March 17. For more information on Ergolight, visit [www.ledalite.com](http://www.ledalite.com).

## LRC ANNOUNCES INSTITUTE & LAUNCHES SYMPOSIUM

The Lighting Research Center (LRC) at Rensselaer Polytechnic Institute in Troy, NY will offer the Landscape Lighting Institute in May. Lighting for Landscapes—Part 1, which will be held May 9-11, is targeted at novices who want to learn about landscape lighting and Lighting for Landscapes—Part 2, open to experienced professionals, will be held May 11-14. LRC senior lighting designer Janet Lennox Moyer, IES, IALD will lead both sessions, which are each limited to 25 participants and will include classroom instruction in design and technique installations, hands-on demonstrations and installations of working landscape designs. Landscape lighting manufacturers have provided more than \$100,000 worth of equipment to be used in the courses. For more information or to register, visit [www.lrc.rpi.edu/landscape/](http://www.lrc.rpi.edu/landscape/) or contact Dan Frering, manager of education at phone (518) 687-7149, fax (518) 687-7120, email [frerid@rpi.edu](mailto:frerid@rpi.edu).

The LRC has also announced the debut of "Bridges in Light—the Inaugural Symposium," which will take place October 22-23 in Saratoga Springs, NY. For more information, contact Patricia Rizzo at (518) 687-7194 or email [rizzop@rpi.edu](mailto:rizzop@rpi.edu).

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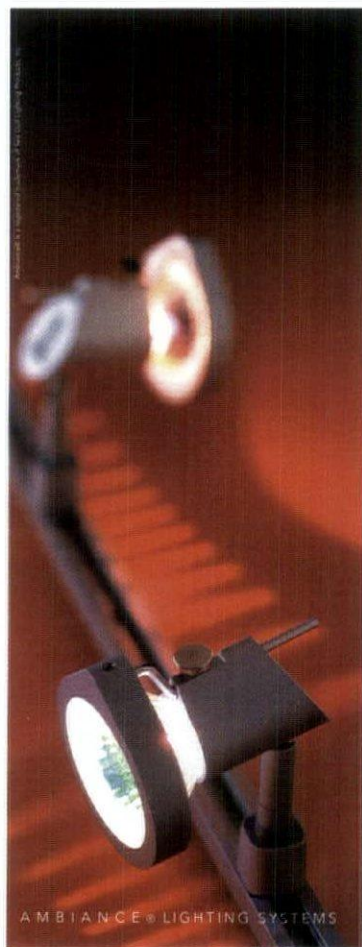


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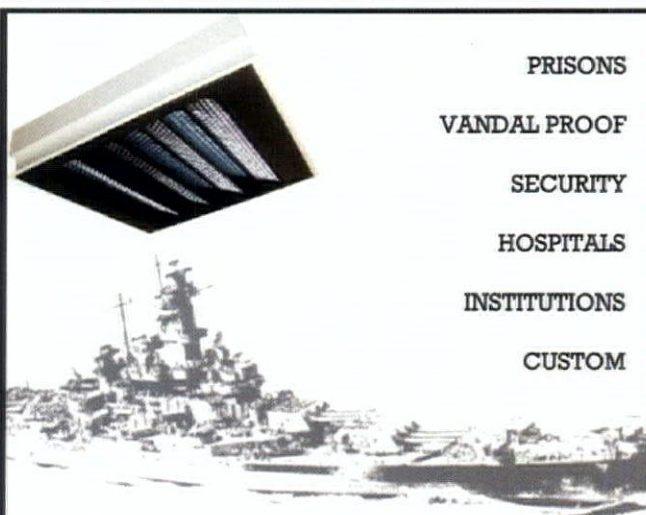
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"Giant Sequoia"  
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Photographer: Khaled AlKotob

# DREAM BIG

The lighting industry is about to change in a BIG way... Find out what dreams are really made of in our booth, #1929, at Lightfair 2003.



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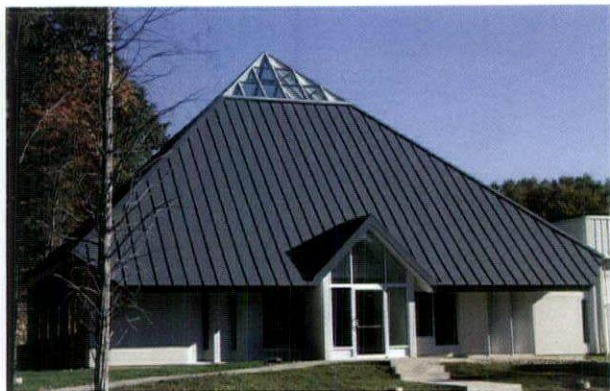
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## COMPANIES MERGE, LAUNCH & EXPAND

**Selux Corp.** (below) has expanded its manufacturing and office facilities in Hudson Valley, NY. According to the company, the new facilities are designed to be environmentally friendly and emphasize open space and daylight. For more information, contact Hansi by phone at (800) 735-8927 or email [hansim@selux.com](mailto:hansim@selux.com).

**Jonathan Speirs and Associates** and **Speirs and Major** have merged to form **Speirs and Major Associates**. The new firm will

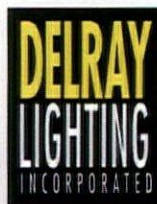
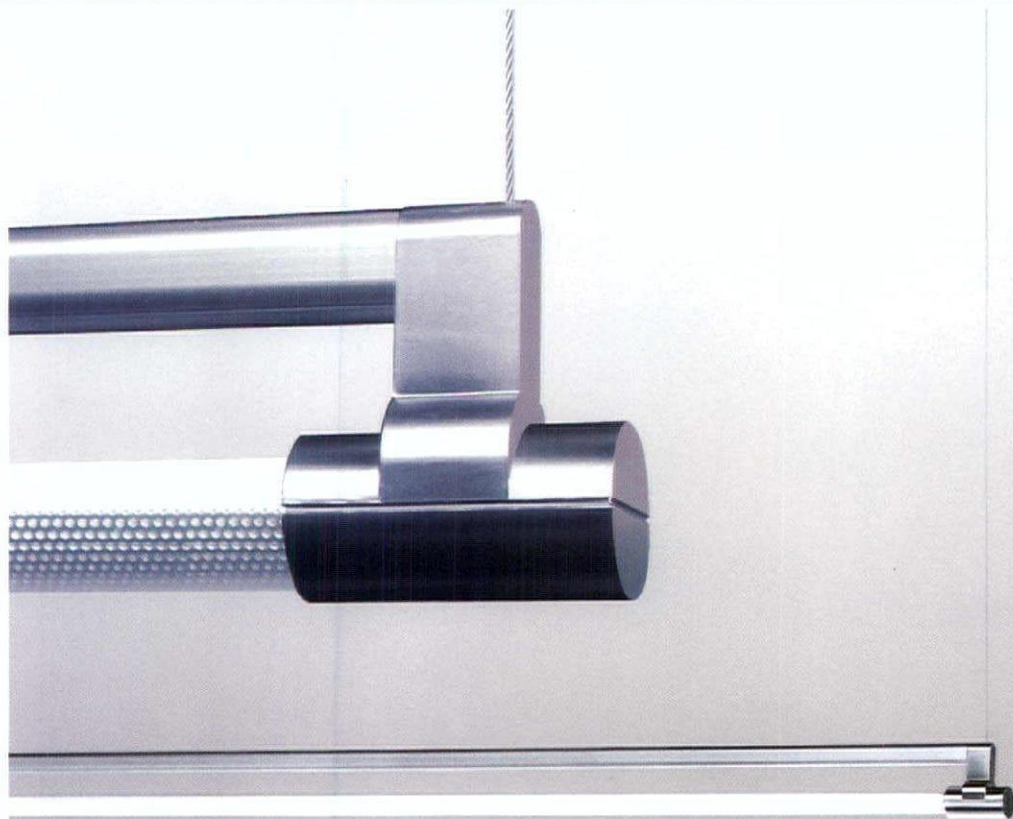


continue to operate from current studios in London and Edinburgh.

Emmy award-winning developer Rick Hutton has launched **InLight Gobos** in Dallas. The company manufactures glass gobos using a technology licensed from Beacon AB in Sweden that utilizes a photolithographic process on ultra-thin zero expansion glass. InLight Gobos is located at 2348 Irving Boulevard, Dallas, TX 75207; phone (877) 589-GOBO, (469) 916-2910, fax (469) 916-2911, email [info@InLightGobos.com](mailto:info@InLightGobos.com), [www.InLightGobos.com](http://www.InLightGobos.com).

**HNTB Corp.** has created the National Buildings Division, which is dedicated to providing architecture, engineering and planning services to building clients on a national basis. The division is headed by Terry K. Miller, AIA, NCARB, who was named division president. For more information, visit [www.hntb.com](http://www.hntb.com).

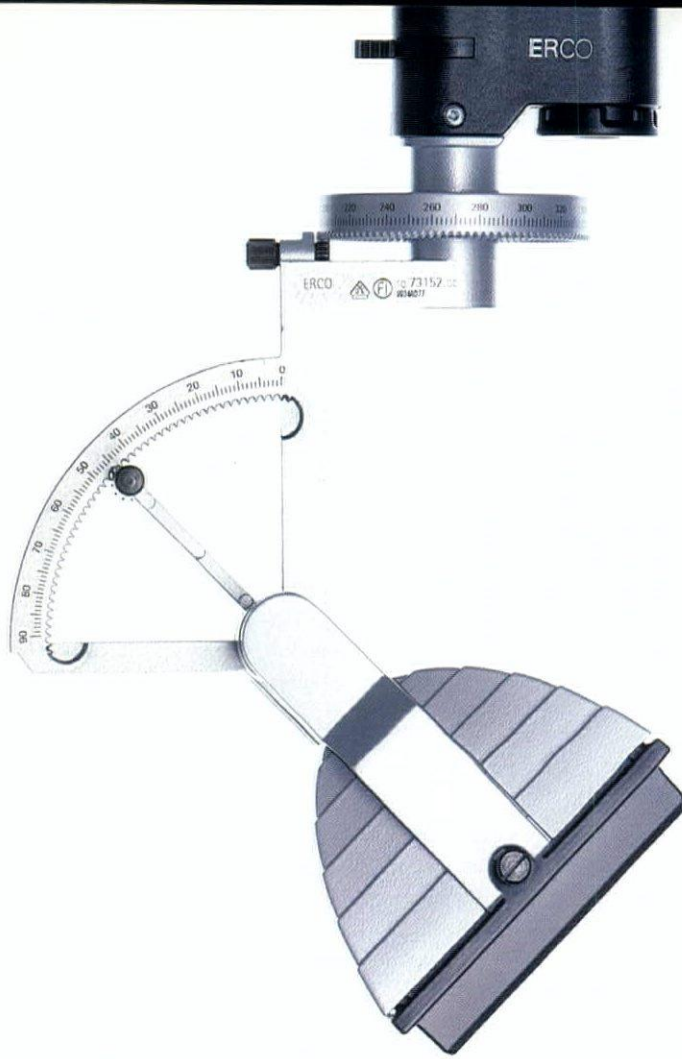
**Earth Protection Services, Inc. (EPSI)**, a recycler of lighting and electronic equipment, has opened a regional recycling operation in Williamston, SC. Headquartered in Phoenix, AZ, the company's new facilities are located on U.S. Highway 20 North in Anderson County, SC and will assist EPSI in serving its customers in the Atlantic and southeastern states. For more information on EPSI and services provided, visit [www.earthpro.com](http://www.earthpro.com) or phone (864) 847-7700, (800) 588-7190.



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**LURALINE ANNOUNCES WINNER**

Luraline Products Co. has announced the winner of its second annual "It's Your Light" student design competition. Poormehr Honarmand, a student at the Columbus College of Art and Design in Columbus, OH, took top honors with his entry, "Lucent," an interior fixture for corridor or room lighting in hospitality applications. The design was chosen from more than 100 submissions. Honarmand was awarded a \$1,500 cash prize. For more details on this competition, phone (800) 940-6588 or visit [www.luraline.com](http://www.luraline.com).

**ON THE MOVE**

**Eclipse Lighting** has relocated to Schiller Park, IL, a suburb adjacent to O'Hare Airport. The company can be contacted at 9245 West Ivanhoe Street, Schiller Park, IL 60176; phone (847) 260-0333, fax (847) 260-0344, email [quotes@eclipse-lightinginc.com](mailto:quotes@eclipse-lightinginc.com).

The New Jersey office of **Mancini•Duffy** has relocated to 115 Route 46, F1000 Mountain Lakes, NJ 07046; phone (973) 984-2700, fax (973) 984-6594.

The Regional East Coast office of **Louis Poulsen Lighting** has moved to 46 Portsmouth Avenue, Staten Island, NY 10301; phone (718) 876-2675, fax (718) 876-9867, email: [pci@louis-poulsen.com](mailto:pci@louis-poulsen.com).

**ON THE WEB**

**Ultrawatt Energy Systems, Inc.** has launched a new website at [www.ultrawatt.com](http://www.ultrawatt.com). The site provides information about the company's flagship product, the PowerGate Intelligent Lighting Management System, and features auditing software and a literature download center.

**Tsao Designs, LLC** has unveiled a newly enhanced website at [www.tsaolighting.com](http://www.tsaolighting.com). In addition to offering an overview of

lighting solutions and general company information, the site allows users to search for products via product or application type, including portable lamps, bolt-thru lamps, ADA wall sconces or hospitality, institutional or retail. Also provided is the company mission statement, safety certifications, product warranty and custom capabilities.

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## the inbox

### ENERGIE ADDS SWISS PARTNER

Énergie has added its fifth European manufacturing partner, Regent, of Basel Switzerland. Founded in 1908, Regent is a highly regarded lighting manufacturer known for its commitment to visual comfort in its luminaire designs. Énergie currently offers products by Wever & Ducré, Multiline, Troll Lighting and Trilux. For more information, phone (720) 963-8044, fax (720) 963-8044 or visit the company's website at [www.energielighting.com](http://www.energielighting.com).

### PEOPLE

**Gedra Mereckis** has been promoted to VP-brand manager for Alkco Lighting.

Osram Sylvania has named **Pam Horner** environmental marketing manager.

**Chas Bernstein** has been appointed VP of sales & marketing at W.A.C. Lighting.

Candela, Architectural Lighting Consultants, has promoted **Mary Claire Frazier, IALD, LC** to firm principal.

Holophane has appointed **Herb Seidell** VP of the industrial, retail and education product group.

Patrick B. Quigley & Associates has promoted **Erin Erdman, IALD** to principal.

**Jacqueline N. Brignola** has been appointed eastern regional sales manager for Lam Lighting

Horton Lees Brogden Lighting has named **Lee Hanel, LC, Guy Smith, LC, AIA** and **Ann Little** associate. **Eleni Savvidou, Justin Horvath, Jame Mandle, LC** and **Jay Wratten** have joined the firm's New York, Los Angeles and San Francisco offices.

**Timothy B. Shaffer** has been named national sales manager for ALLscape.

The Syska Hennessy Group has named **Richard A. Fincher, Brittany Dianat** and **Michael Rozenblum, PE** senior VPs. Also in the news, **John V. Magliano, PE**, vice chairman and chief technical officer for the firm, has been named chairman of the board of directors of the New York chapter of the ACE Mentor Program, which introduces high-school students to career opportunities in the design and construction industry.

LEDtronics has named **Jeffrey Mizel** district sales manager for upstate NY, New York City, northern NJ, FL and Puerto Rico.

**Carl W. Ordemann, AIA** joins Perkins Eastman as principal.



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Max no. of zones per system	248	48
Max no. of zones controlled from one zone controller	248	6
Max. no. of control points/system	100	24
Scheduled scene changes	64	0
Astronomical clock	Built in, no cost	Accessory-additional charge

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programming information in plain English on its bright 2-line, 32-character display. What's more, on-screen wizards guide you step-by-step through set-up functions. Whether commercial or the most demanding residential application, the D3208 brings lighting control to a new age of power, convenience and capability. ■ To learn more, visit [www.Leviton.com/d3200](http://www.Leviton.com/d3200).

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LIGHTING CONTROL DIVISION





## 2003 SCHEDULED EVENTS

**April 16** DLF of New York Seminar: "Photovoltaics: What's New Under the Sun," New York. Contact: (212) 613-1599, [www.dlfny.com](http://www.dlfny.com).

**April 26-29** Lightstyle 2003, International Trade Fair for Domestic Lighting,

Frankfurt Fair and Exhibition Centre, Frankfurt am Main, Germany. Contact: [www.lightstyle.messefrankfurt.com](http://www.lightstyle.messefrankfurt.com).

**May 1-3** HD 2003 Expo & Conference, Sands Exposition & Convention Center, Las Vegas, NV. Contact: Carrie Cavis,

attende marketing manager at (703) 488-2771, email [cchavis@vnuexpo.com](mailto:cchavis@vnuexpo.com), [www.hdexpo.com](http://www.hdexpo.com).

**May 6-8** Lightfair International 2003, Jacob Javits Convention Center, New York City. Contact: (404) 220-2205, email [tiffanyw@lightfair.com](mailto:tiffanyw@lightfair.com), [www.lightfair.com](http://www.lightfair.com).

**May 7** DLF of New York Seminar: "Your Guide to Lightfair," New York. Contact: (212) 613-1599, [www.dlfny.com](http://www.dlfny.com).

**May 8** IESNY Seminar: "Masters of Light," New York. Contact: [admin@iesny.org](mailto:admin@iesny.org), [www.iesny.org](http://www.iesny.org).

**May 8-10** AIA 2003 National Convention and Expo, San Diego Convention Center, San Diego, CA. Contact: (888) 242-1824, [www.aia.org](http://www.aia.org).

**May 9-14** Landscape Lighting Institute, Lighting Research Center, Troy, NY. Contact: Dan Frering, manager of education at (581) 687-7149, fax (518) 687-7120, email [frerid@rpi.edu](mailto:frerid@rpi.edu), [www.lrc.rpi.edu/landscape/](http://www.lrc.rpi.edu/landscape/).

**June 11** DLF of New York Seminar: "Watt are You Doing to My Home," New York. Contact: (212) 613-1599, [www.dlfny.com](http://www.dlfny.com).

**June 11-13** T.V. Lighting Design Seminar, New York City. Contact: (212) 769-2751, fax (212) 769-4983, email [ggmhoney1@aol.com](mailto:ggmhoney1@aol.com).

**June 11-14** The 8th Guangzhou International Illumination Exhibition, Chinese Export Commodities Fairground, Guangzhou, China. Contact: (0086) 20-82578498, fax (0086) 20-82578955, [www.illuminationchina.com](http://www.illuminationchina.com).

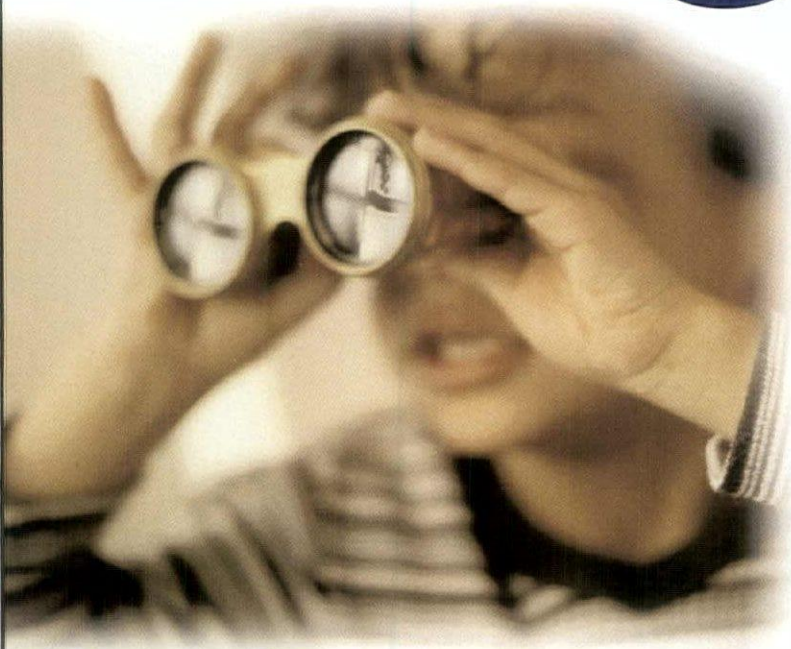
**June 14** IESNA Lumen West Awards Banquet, Los Angeles. Contact: Lisa Passamonte Green at (818) 786-3500, email [lisapg@visualterrain.net](mailto:lisapg@visualterrain.net), [www.iesla.org](http://www.iesla.org).

**June 16-18** NeoCon World's Trade Fair, The Merchandise Mart, Chicago. Contact: [www.merchandisemart.com](http://www.merchandisemart.com).

*(Continued on page 20)*

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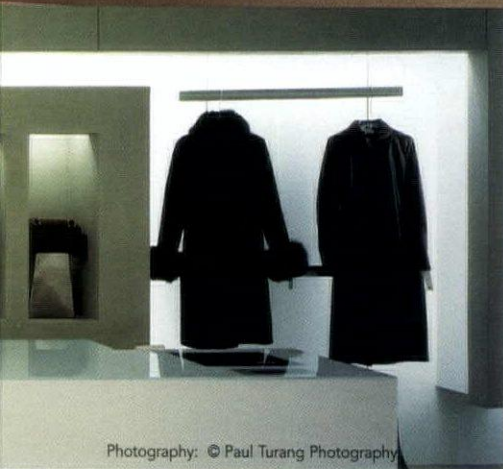
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(Continued from page 18)

**June 18** Lumen Awards Banquet, New York.  
Contact: admin@iesny.org, www.iesny.org.

**August 3-6** IESNA 2003 Annual Conference, Chicago. Contact: Valerie Landers (212) 248-5000, ext. 117, www.iesny.org.

**September 24-25** LightShow/West, Concourse Exhibition Center, San Francisco Design Center, San Francisco. Contact: Chris Gibbs, VP at (770) 953-4445, email chris@lightshowwest.com, www.lightshowwest.com.

**November 19-21** ISH Light+Building Asia, Singapore Expo, Singapore, Singapore. Contact: 0065 6737-1704, fax 0065 6732-9296, email info@singapore.messefrankfurt.com, www.light-building.messefrankfurt.com.

## EDUCATIONAL FACILITIES

### Cooper Lighting—Source

Peachtree City, GA  
Jere Greiner (770) 486-4680  
www.cooperlighting.com/education

- Lighting Fundamentals/Lighting Basics: May 14-16; July 9-11; September 24-26; October 15-17; December 10-12.
- Landscape Lighting Workshop: October 22-24.
- Lighting Design & Application for Interior Spaces: June 23-25; October 8-10.
- Lighting Design & Application for Interior Spaces Workshop 1, 2 & 3: November 10, 11, 12.
- Lighting Design & Application for Exterior Spaces: November 17-18.
- Lighting Design & Application with E-Tools: August 18-19.
- IESNA ED150 "Intermediate Level Lighting Education": August 5, 12, 19, 26; September 2, 9, 16, 23, 30; October 7, 14, 21.

**GE Lighting—GE Lighting Institute**  
Cleveland, OH  
(800) 255-1200  
www.gelighting.com/na/institute

- Fundamentals of Commercial and Industrial Lighting: June 16-20.
- Lighting Educators: June 25-27.

### Juno Lighting IdeaLab

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(313) 259-6400

### Lighting Design Lab

Seattle, WA  
(206) 325-9711  
www.lightingdesign.lab

### Lightolier—The Tech Center

Fall River, MA  
(508) 646-3103

### Lithonia Lighting Center

Conyers, GA  
(770) 992-9000

### Lutron Lighting Control Institute

Allentown, PA  
www.lutron.com/lutron/lci/lci.asp

### Osram Sylvania—LightPoint Institute

Danvers, MA  
(978) 750-2464  
www.sylvania.com/business/educate/lp.htm

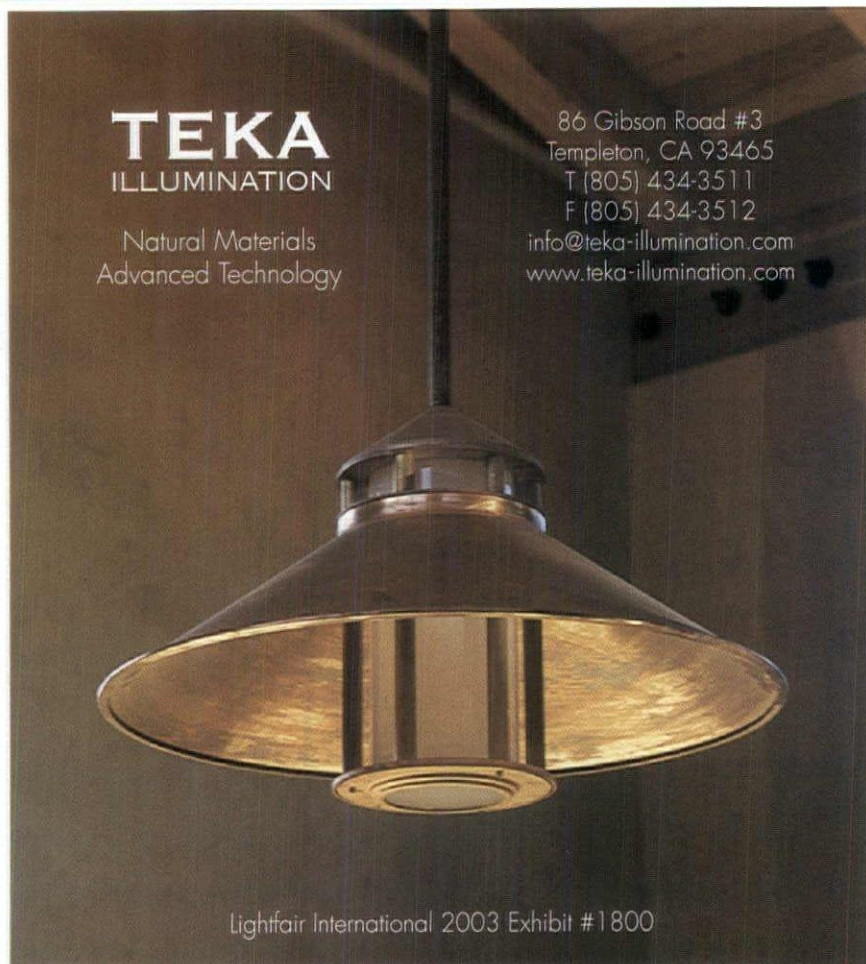
- Lighting Essentials: May 12-14; August 11-13; November 10-12; December 8-10.
- Lighting Efficiency: July 14-15.
- Lighting Design & Applications: October 6-8.

### The Philips Lighting Technology Center

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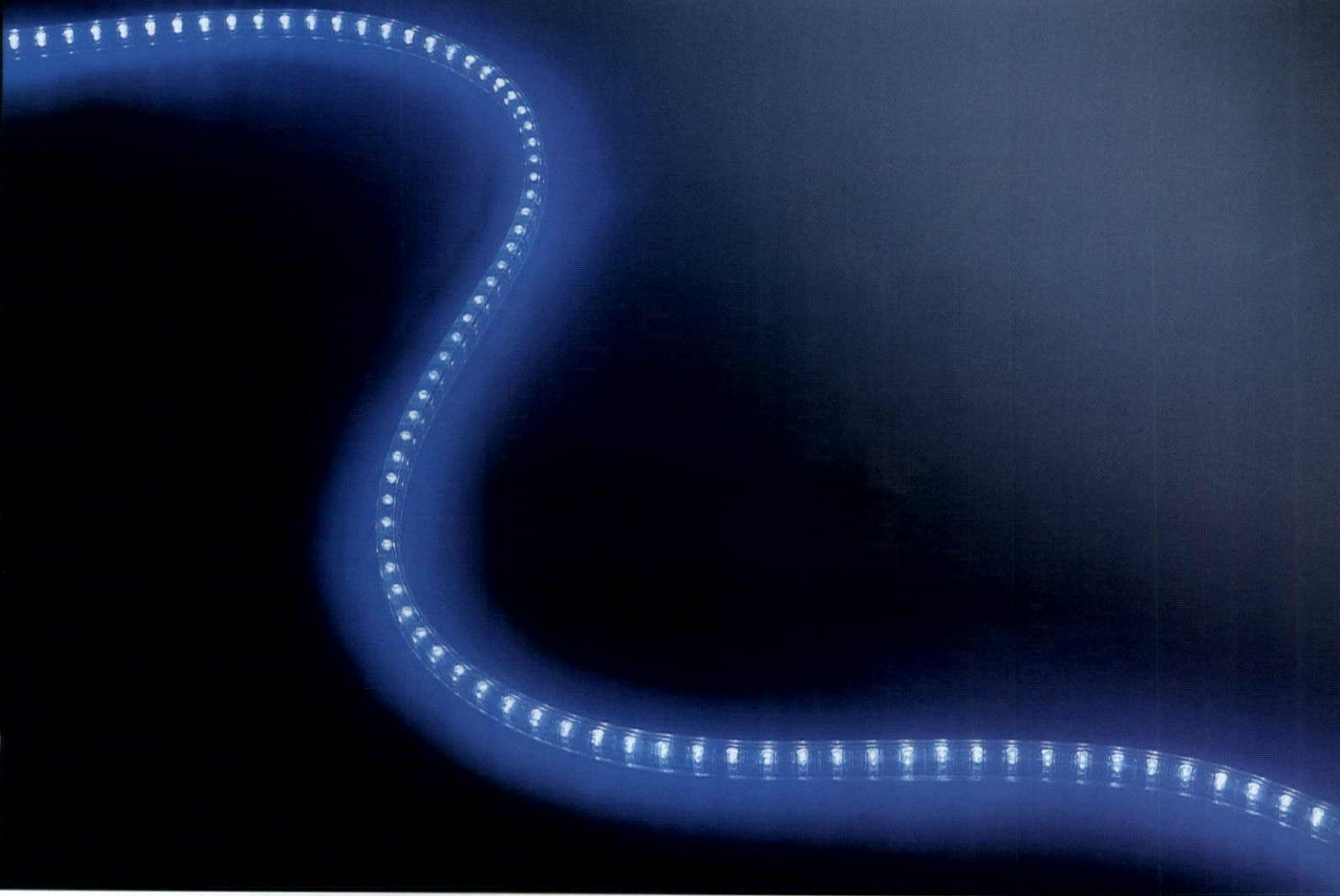
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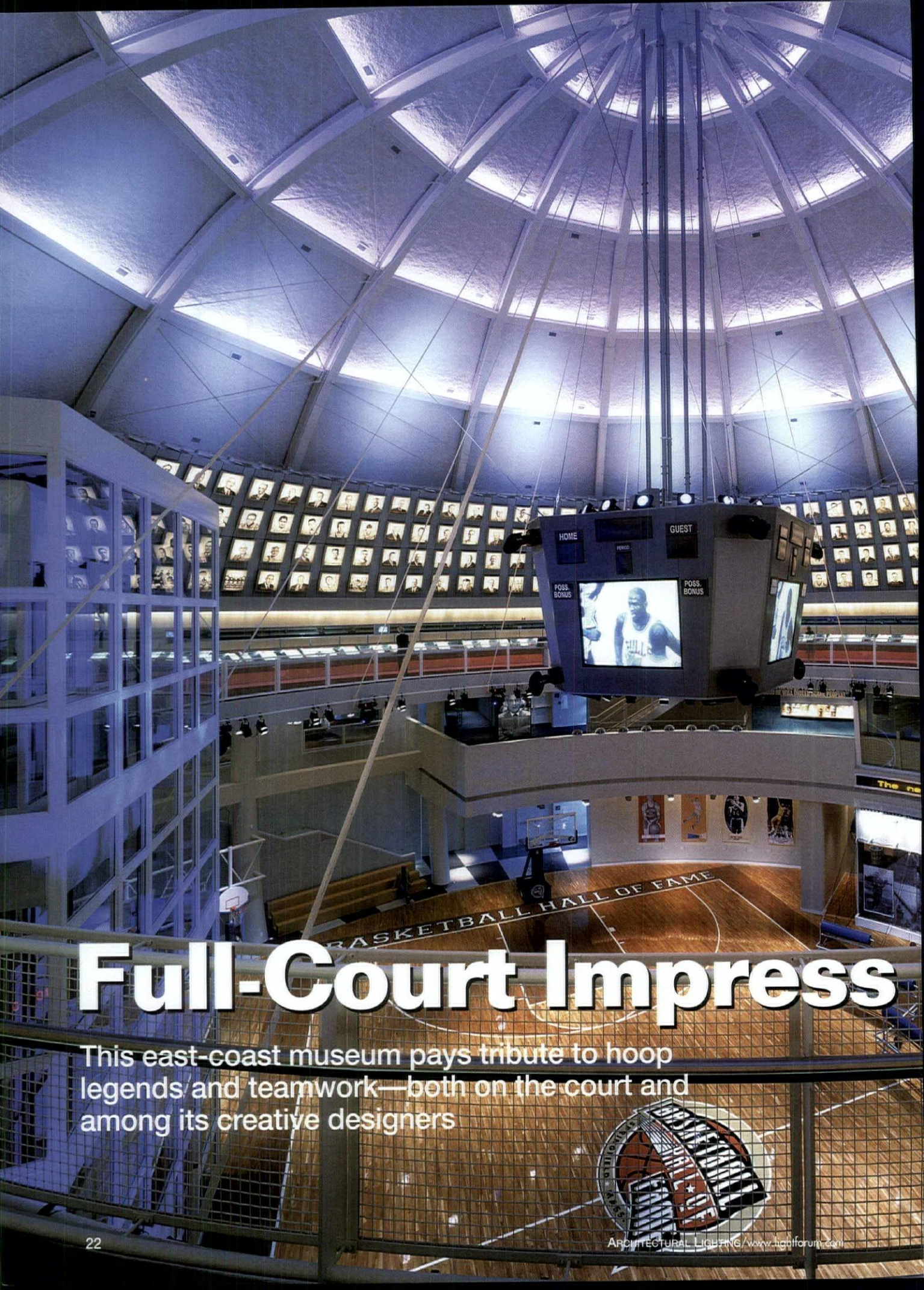
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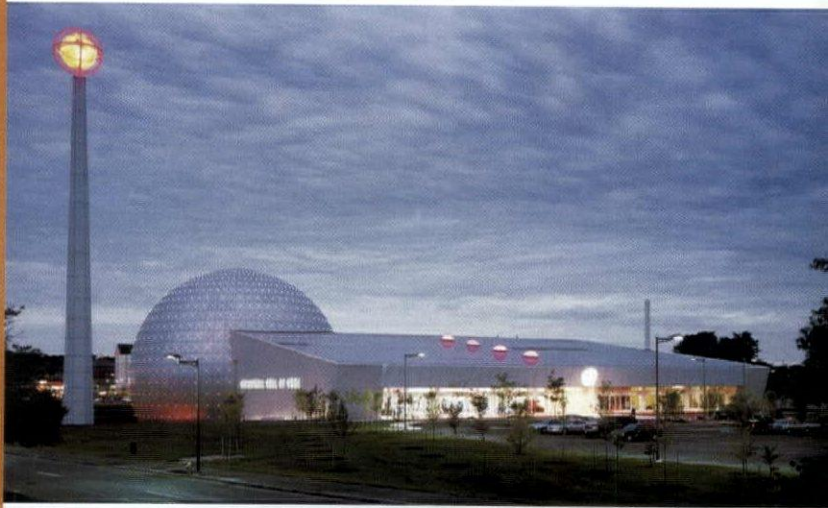
This east-coast museum pays tribute to hoop legends and teamwork—both on the court and among its creative designers







Photos: © Esto/Scott Frances



BY MARK A. NEWMAN, CONTRIBUTING EDITOR

**M**ore than just a dusty hall with busts of famous athletes awash in glaring spotlights, the Naismith Memorial Basketball Hall of Fame in Springfield, MA, is one-part museum, one-part TV studio, one-part sports arena, one-part shopping mall and one-part theater. The sum: One of the most groundbreaking museums in the country. And it's a lot of fun too!

With such an array of lighting design scenarios under one roof (and some outside, too), a unique partnership was formed between Anita Jorgensen Lighting Design and Ted Mather Lighting Design, both in New York City. Both principals brought their own unique talents to the table: Jorgensen is a museum and exhibit lighting maven, working on projects as diverse as the International National Building Museum in Washington, D.C. and the National Museum of the American Indian in New York City, while Mather adds his showier theatrical style to the mix, having been the associate lighting designer on such mega-musicals as *Les Misérables* and *Miss Saigon*.

### DOMES IS WHERE THE ART IS

The first sight greeting visitors to the Hall of Fame is its stunning exterior, which creates maximum impact; the eye-catching design is visible from all directions—even a bird's eye view. "The owners wanted an instantly identifiable image," Jorgensen said. "In my opinion, it is almost highway art because it has to be recognized in five seconds when people zoom by." And noticing the Basketball Hall of Fame should be no problem because it definitely stands out along the edge of the Connecticut River, where it was part of Springfield's urban renewal of its riverfront. The most striking element is the huge ball-like dome that dominates not only the building, but the surrounding landscape as well. The dome is accompanied by a 200-ft. spire topped by a 12-ft. glowing ball. Robert Siegel, principal of Gwathmey Siegel & Associates Architects, the design architects for

Above: With its LED-studded dome and a 200-ft. spire capped by a glowing ball, the Naismith Memorial Basketball Hall of Fame can be easily recognized from afar.

Left: Center Court features a 60-second lighting "moment" in which a lively, multi-media display celebrates the sport of basketball. In the ceiling, color-changing linear LED uplights match the exterior lighting.





Above: From the interactive Center Court, where induction ceremonies are held, visitors can access the upper level displays via a softly lighted staircase or an elevator bathed in colored light.

the Hall of Fame, compared the forms of the glowing dome and the internally lighted sphere to the Earth and Moon, with an ethereal glow that welcomes travelers from afar.

While the lighting team was brainstorming exterior lighting ideas, it occurred to them that they needed the exterior to be constantly changing and that the lighting scheme could not be external to the architectural skin, but integral to the weave of the architecture itself. The solution was so beyond the confines of the project's budget that the designers had to approach Gwathmey Siegel for approval to proceed. The architects, in turn, had to approach the Springfield City Council—it was a public project, after all—and ask for more money. The Council agreed, and the designers set to work carefully placing 814 independently controlled LEDs into the dome's skin within architectural fixtures. A ground row of uplights contrasts the vivid LEDs by casting a subtle and distinguished warm glow at the base of the dome.

The landscape lighting was also integral to the lighting scene. Soft, blue landscape lighting from in-ground uplights equipped with blue glass, and HID streetlights with custom blue LED signal lights rings the lawn, and their subtle glow leads visitors to the main entrance. Once inside, visitors are welcomed by round skylights in the entry corridor. The skylights, uplighted by "basketball-orange" cold cathode, become glowing orange disks at night, creating a striking and identifiable appearance from both outside and inside the building.

## GOT GAME?

The lighting design is driven from the sport itself, according to Jorgensen. "Basketball games are very dynamic and colorful," she said. "If you have ever been to a game, you can feel the excitement in the air. We wanted that same kind of feeling for the Hall of Fame. The best way to achieve that is with light and motion." However, the space also had to serve as a museum and supply accurate archival information on the sport. "We managed

to achieve both by providing exhibit spaces adjacent to the Center Court that adhered to museum conservation standards, while at the same time, we gave them textured and colored lighting that would appeal to the typical Hall of Fame visitor," she said.

The Center Court is easily the Hall of Fame's centerpiece. It is, as its name implies, a basketball court where induction ceremonies are performed, but also where visitors, both young and old, can actually play a pick-up game. Because Center Court is where Hall of Famers are inducted once a year, Jorgensen felt it demanded a flashy, showbiz atmosphere for those occasions, but the lighting also needed to be integrated with the interior architecture.

Individually programmable linear and point-source LEDs comprise the solution for the inner dome, providing an exciting show for spectators, such as when a legend visits the premises. The placement of the fixtures resembles that of a Broadway theater, with automated light fixtures and color-mixing spotlights and medium- and wide-beam theatrical washlights mounted on rails in clear view of the patrons. "When the inner court goes into motion, you see the fixtures move, the lights move, the colors change," Jorgensen said. "All of the plaques of the honorees (on the upper level) start to flash. It becomes extremely animated."

Every half-hour there is a scheduled "time out" called The Moment in the Center Court that features a full-size scoreboard backed with theatrical fixtures, automated fixtures and spotlights. The Moment lasts only 60 seconds but the lighting gets moving and a video presentation is displayed that highlights a certain aspect of the game. The LEDs start their playful and colorful sequence and the hall is alive with sound, light and color. Once The Moment ends, the Center Court goes back to white light.

## LEVELS OF PLAY

The Hall of Fame's retail corridor features a mural of basketball's history and is illuminated via energy-efficient wallwashers. The actual retail lighting is from the vendors



themselves. On the main lobby where visitors buy tickets, the space is crowned by a pop-up ceiling. This architectural feature allowed the designers the opportunity to run additional LEDs in the ceiling's soffit. The LEDs echo the lighting from the exterior display.

There is also a series of honoree plaques in the lobby that are punched up with very narrow AR111 track fixtures. The ticket booth features an elliptical structure and the designers used 3000K cold cathode to wash the base and header of the booth. Jorgensen remarks that the lobby area keeps the "razzle dazzle" to a minimum, but visitors do get a glimpse of it with the programmable LEDs in the soffit.

From the lobby, visitors step into a glass elevator (awash in warm light) that provides a sweeping view of the Center Court.

The top level is the Honoree Level and is ringed with portraits of the game's greatest stars. All of the portraits are included on a timeline and if a visitor wants more information, he simply pushes a button and that player's plaque lights up courtesy of custom lighting fixtures. At the top edge of the Honoree Level is a soft, orange neon glow. The ring of neon is nestled out of the visitor's sight line so that all they see is the illumination rather than the fixture.

After leaving the Honoree Level, visitors can venture down to the Mezzanine Level, which is loaded with a variety of interactive exhibits and leads to the galleries where the artifacts are located. With exhibits depicting the beginning of basketball, the ever-evolving uniforms, the entry of women into the sport and more, low-level lighting was required to light the period artifacts. In response, a separate "light attic," containing dimmable MR16s and fluorescent sources, illuminates the displays with illuminance levels of 5 to 15 fc. The glass cases feature a UV filter and are climate- and light-controlled to meet current museum conservation standards.

In various areas, the designers used flashy splashes of shapes and color so the visitors know where they are. The Coaches Gallery area is decorated like a locker-room where theatrical spotlights project shapes of windows onto the floor. In the gallery that highlights the players, the same fixtures cast star and basketball shapes on the walls. The spotlights are mounted on track integrated into a perforated ceiling panel. The track can handle typical track lighting as well as the theatrical fixtures. The controls are broken up at 8-ft. intervals, which Jorgensen admits is large but very much needed.

With so many separate fixtures to program and control, the designers opted for DMX consoles to operate both exterior and interior lighting. This control system is the same type used in many Broadway shows, but the complexity of the Hall of Fame's animated fixtures warranted its use. At one point, memory was running low, so Mather contacted the top programmer on



Left: A transition to the more dramatic interior spaces, the retail concourse is lit with energy-efficient wallwashers.

Broadway, who had just finished *Hairspray*, for some tips.

## DISPLAY'S THE THING

"This is the most fun I have ever had on a project," Jorgensen said. "The chemistry of the team was perfect. We could present things that were way out in left field and put it on the table and it eventually became incorporated into the fabric of the architecture and gave the building animated lighting for a very animated sport."

Fun and games aside, Jorgensen's experience as a museum and exhibit lighting designer was vital to the success of the Hall of Fame. When she worked on the National Museum of the American Indian, the artifacts were minimal so it

was up to her lighting design to establish the tone and atmosphere. At the International Spy Museum—another collaboration by Mather Jorgensen Lighting Design, Inc.—the lighting team was called on to illuminate artifacts that were not "the real McCoy," so they had to give it context and atmosphere. Jorgensen adds that when one works with authentic pieces of art, the lighting is about discreetly revealing the works themselves to help the visitor better focus on each piece. At least, that's Jorgensen's hope.

Jorgensen is preparing to light an exhibit at the Cooper-Hewitt Museum in New York that is featuring the work of lighting designer Jennifer Tipton. "I want my light to be very 'go away,'" she said. "If people remember my lighting once they leave, I've failed. I want them to remember Jennifer Tipton and the other artists on display."

Mather Jorgensen Lighting Design can rest assured that the visitors to the Basketball Hall of Fame will definitely remember the lighting. "We were all willing to do whatever it took to make it fabulous," Jorgensen said. "We applied a theatrical mentality to it: When the curtain goes up, we get 'WOW!'" ■

### DETAILS

**PROJECT** Naismith Memorial Basketball Hall of Fame  
**LOCATION** Springfield, MA **ARCHITECT** Gwathmey Siegel Associates Architects **LIGHTING DESIGNERS** Mather Jorgensen Lighting Design—Anita Jorgensen, Ted Mather, Eric Chenault, Russ Burns, Michele Disco, Timothy Glascoff **PHOTOGRAPHER** Esto/Scott Frances **LIGHTING MANUFACTURERS** Color Kinetics; Extérieur Vert; B-K Lighting; Lighting Services Inc; Altman; Videssence; Edison Price; Belfer; Louis Poulsen; ETC; High End Systems; Alkco; Nulux; Light-Project; Lite Maker; HessAmerica; Flos; C.W. Cole





This & opposite page: Historical artifacts owned by the Smithsonian, these vintage rockets at Cape Canaveral are individually lit with two rings of fixtures located around their bases. The first is comprised of well-lights equipped with 575W quartz halogen lamps and custom reflectors. A second circle consists of 250W quartz halogen spotlights. Capsules are lit from spotlights located on towers and a building parapet.

All photos (unless otherwise noted): © Martin Peck





# To the Stars

A spirited lighting solution resuscitates the glory and monumentality of a vintage rocket collection

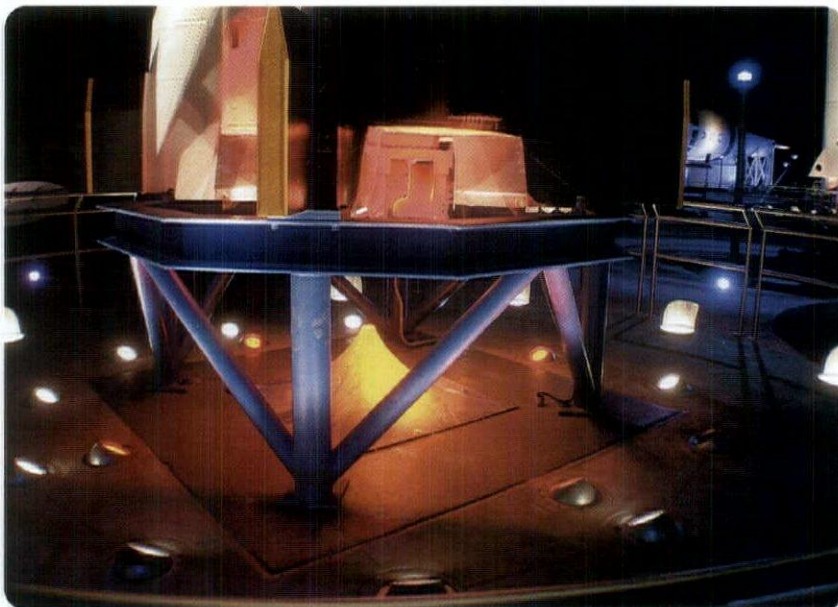
BY ALICE LIAO, MANAGING EDITOR

Perhaps it was written in the stars that lighting designer Martin Peck would illuminate the updated Rocket Garden at Kennedy Space Center Visitor Complex in Florida. Approached at a theming convention by a retired NASA engineer who had heard him speak, Peck, principal of Creative Lighting Design & Engineering, was initially "swept away with lighting ideas to make these vintage rockets come to life," but then disappointed to hear that someone else was being considered first. Ideas and passion won out and weeks later, he and his team were touring the site and the entire Kennedy facility with the goal of writing an appropriate scope for the lighting of the garden. "All of the design had been done on the Rocket Garden but the lighting," said Peck. "And the lighting was potentially the most important

part." As a result of Peck's efforts, when night falls, the Gemini Titan, Mercury Atlas, Atlas-Agena, Mercury Redstone, Juno 1 and 2, Delta and Saturn 1B are summoned to startling luminous life and visitors enter a world palpable with the wonder and excitement of astronomical travel.

That the rockets are owned by the Smithsonian and represent remarkable chapters in the history of space exploration imposed restrictions on what the lighting designers could do. Most critically, the rockets had to remain intact. "We could not attach anything to the historic artifacts or drill holes into them," Peck said. Secondly, as a matter of good lighting practice, the solution could not create glare for nighttime visitors wanting to admire the rockets from up close, yet needed to provide sufficient ambient light to ensure pedestrian safety in the dark. Then, of course,





Left: Recessed around the base and mounted on support hardware, fixtures with color filters create the illusion of rockets ready to launch. Inside the nozzle, additional fixtures equipped with red filters cast a pool of fiery light for added realism.

## GOING TO THE SOURCE

To respond to the client's request that the rocketry not only be individually illuminated but also that each could be showcased at different moments, Peck determined that the rocket lighting would need to be dimmable and theatrically controlled. Although sports lighting often employs metal halides with "instant on/off" capability, a metal halide solution in this case would have been "prohibitively expensive." "It became apparent that we had to uplight the rocket bodies

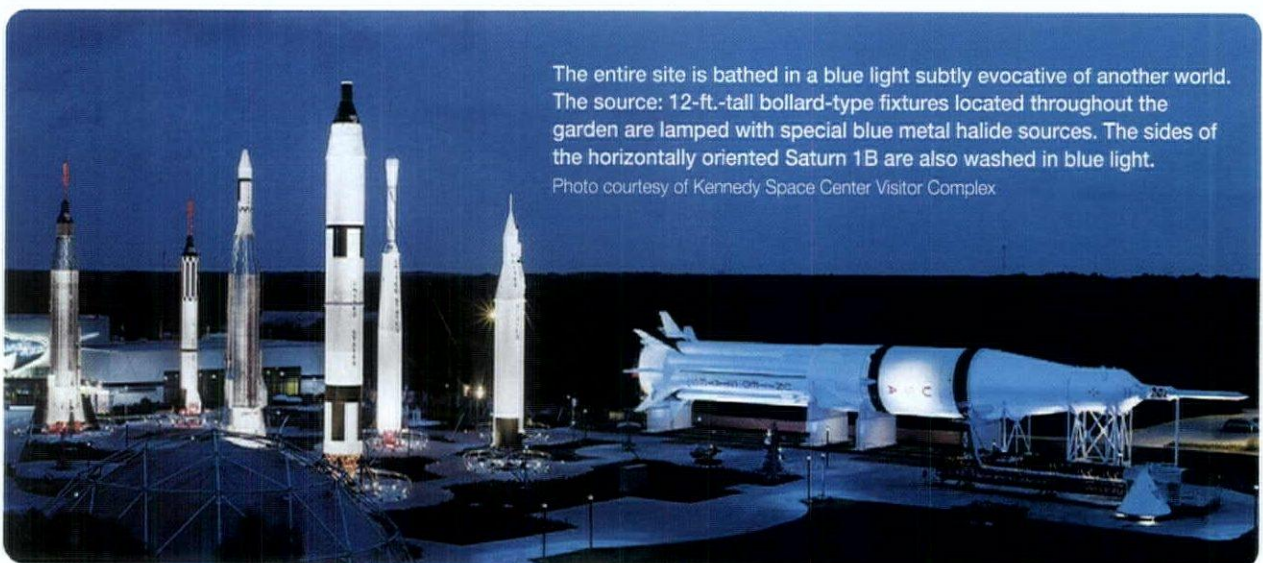
there were the turtles. "The Turtle Law is an environmental law down in Florida that restricts any kind of light that is visible horizontally, because it will attract turtles," said Peck. "It's like an environmental trespass law for turtles." The design team concluded that minimizing glare to pedestrians would also resolve the concern for turtles.

Having agreed to a "90-percent design completion in about five weeks," the design team relied on computer rendering software to test different solutions and ensure that the final lighting design, when presented to the client, was accurate and fully realized. Associate designer Andrew Wegwert researched the dimensions and shapes of each of the rockets and created three-dimensional models. The models were then transferred to a second program, in which photometrics for actual fixtures were added to simulate a variety of lighting options. Fine-tuning the solution and pinpointing fixture locations and aiming angles demanded several weeks. Although the effort paid off, Peck confessed to being nervous the night of the presentation. "Here we were showing these pretty pictures and I was wondering, 'Is the real thing going to look anything like it?'" His fears proved needless, as a partial mockup of the Gemini Titan at the end of the presentation showed the renderings to be "dead on."

with very narrow spot well-lights that use dimmable incandescent sources," said Peck. "However, to make that work would require a 1000W PAR64 very narrow spot, which from an energy perspective, is too costly. And there was no in-grade fixture that would have been able to handle that much heat."

From his theatrical background, Peck mined the 575W quartz halogen lamp, a staple of stagelighting, that when outfitted with the proper reflector, produces the same peak and characteristics of a 1000W PAR64. In collaboration with a manufacturer, he developed a modified well-light with the 575W lamp and a customized reflector to produce the 8-degree spot beam that could be placed close to the base of the vertical rockets to brilliantly uplight the fuselage. For the larger Gemini Titan and Mercury Atlas, a 34-ft.-diameter ring of 16 well-lights is centered around the base to wash the top two-thirds of the rockets, while the smaller rockets are uplighted with 12 well-lights in a 24-ft.-diameter circle.

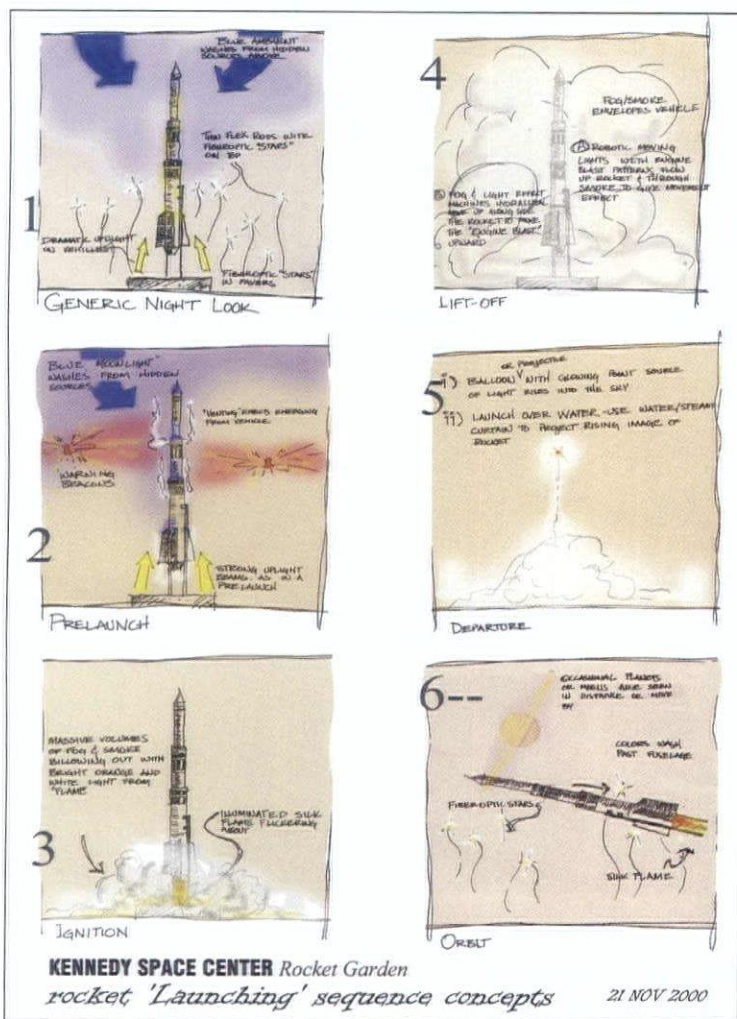
The bottom third of the fuselage is lighted with a second ring of 250W quartz halogen spotlights located closer to the base of each rocket but within the confines of a steel railing. The railing, according to Peck, had already been designed prior to his



The entire site is bathed in a blue light subtly evocative of another world. The source: 12-ft.-tall bollard-type fixtures located throughout the garden are lamped with special blue metal halide sources. The sides of the horizontally oriented Saturn 1B are also washed in blue light.

Photo courtesy of Kennedy Space Center Visitor Complex.





Above: Beyond individually showcasing each rocket, the design team wanted to include a host of dramatic effects and sequences. In the final solution, separate circuiting and a theatrical lighting system enable the lighting to be turned on and off in layers to simulate blastoff or for special programs. Phase 2, which has yet to be implemented, features animated light shows.

involvement and consequently served as a delimiting factor for fixture placement. The large rockets are "filled out" with 16 of these smaller spotlights arranged in a 22-ft.-diameter ring and the smaller models with 12 fixtures in a 16-ft.-diameter circle.

In both circles, all of the uplights are alternately aimed to achieve a uniformity of roughly 1.2:1 and to allow the rockets to be dimmed up or down in layers for dramatic effect. Said Peck, "By lighting the different parts in sequence, we could make the rockets appear to 'grow' or launch." Enhancing the illusion, well-lights recessed around the base of each rocket and floodlights mounted on support hardware and aimed downward at the motors and ground bathe the engines in fiery light. Both well-lights and floodlights are equipped with color filters in red and orange-red. For an added touch of realism, fixtures with red color filters are affixed to rubber plugs inside the nozzle to cast a pool of intense red light directly under the bottom of each rocket. The plugs enabled the design team to conceal fixtures inside the nozzle without directly attaching them to the rockets themselves.

Impossible to uplight from locations within the steel railing, the capsules of the standing rockets are illuminated with 575W quartz halogen spotlights situated on a building parapet and five 15-ft.-tall

towers placed at strategic distances from each rocket. The Gemini is capped with white light projected from three pairs of spotlights on towers located roughly 75 ft. away, while groupings of one to five fixtures light the others—except the uniquely shaped Delta—from positions on the towers and atop a building.

## BLUE LIGHT SPECIAL

The sole rocket on-site to be displayed horizontally, the Saturn 1B is sculpted with a wash of blue on its sides and pools of white light on its underside. The juxtaposition of metal halide floodlighting against quartz halogen spot lighting adds texture and, noted Peck, "turned out to be the right solution, because the rocket looks like it's traveling through space and catching some reflection from Earth." Special blue metal halide lamps are also used to infuse the entire garden with an atmosphere of mystery and otherworldliness. Exhibiting a "space appeal" in keeping with the astronautical theme, 12-ft.-tall bollard-type fixtures scattered throughout the site are lamped with metal halide sources and radiate the mood-setting blue in a 360-degree circle. Supplementing and defining the edges of this "other world," floodlights bathe an entrance sign and a building facade in blue light.

All of the fixtures that light the different segments of the rockets are separately circuiting and controlled via a theatrical lighting system. A remote control is provided for added flexibility and lighting sequences are programmed into the system for special events or educational tours. One routine fades on and off each rocket in chronological order and then ends with all eight aglow.

As visitors explore the garden and admire the display, they are guided by drive-over fixtures recessed in the launch pads. Customized to emit light from one side and equipped with two 20W MR11s and linear spreadlenses, the fixtures create a fan of blue light that grazes the ground and reflects off the stainless-steel railing.

Resulting illuminance levels range from an average 0.5 fc for pathways to 1 fc for steps or grade changes.

Although additional capabilities and effects are planned for the Rocket Garden, the response to its current lighted state has been overwhelmingly positive. Likening the original site to a "parking lot of disused hardware," Peck remarked that the "lighting really brings the rockets to life," and although unintentional, the combination of red, white and blue lends the Garden a patriotic flair. He added, "It really demonstrates the power of lighting to bring facilities to life and showcase them." ■

## DETAILS

**PROJECT** Rocket Garden, Kennedy Space Center Visitor Complex **LOCATION** Cape Canaveral, FL **CLIENT** Delaware North Parks/NASA **ARCHITECT** BRPH Architects, Engineers, Melbourne **LIGHTING DESIGNER** Creative Lighting Design & Engineering—Martin Peck, principal, Andrew Wegwert, associate **PHOTOGRAPHER** Martin Peck; Kennedy Space Center Visitor Complex **LIGHTING MANUFACTURERS** Venture; Hydrel; Gardco; B-K; Altman; Kim; Phoenix; ETC; GE





# Civic Pride

A glowing Promenade adds core value & simple pleasure to this “complex” situation

BY CHRISTINA TRAUTHWEIN, EDITOR-IN-CHIEF

**P**aris, London, New York, Rome—Charlotte? Just *what*, you ask, does this relatively small, southern city possibly have in common with the others, world-renowned for their metropolitan status and cosmopolitan appeal? “A sense of great civic space,” according to architect Turan Duda, such as those found in the aforementioned cities. “When visiting such remarkable destinations, you may not recall the details of each building, but you’ll never forget the public spaces, the piazzas and the courts,” he explained. And surely downtown Charlotte, with the addition of the Gateway Village Technology Center, puts North Carolina on the memory map.

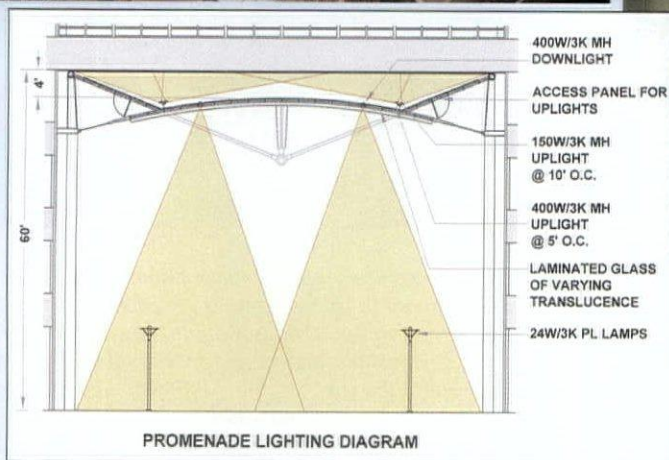
Duda and partner Jeffrey Paine of Duda/Paine Architects, felt that the goal of a project this size should be to have a strong civic purpose. The 1.6-million-sq.-ft. building complex, consisting of three office buildings—a call center that operates 24/7—a covered “promenade” and public gardens, is integrated into an urban-residential community. The architectural components shape the civic spaces and define the complex. “Typically, due to its enormous scale, this type of facility is located in a suburb in a huge, open field,” said Duda. “In this case, however, the client elected to bring its technology center within city

limits to revitalize what had become a blighted neighborhood. This move provides a real nucleus of opportunity for growth.”

While one can’t dismiss the fact that Gateway is a work facility projecting a corporate image, the site transcends the typical business environment, appealing to employees and residents alike. And not just during the daytime, but at night as well, as the entire complex is transformed by light. Designed by Francesca Bettridge of NY-based Cline Bettridge Bernstein Lighting Design, Inc., the lighting responds to the architecture and the setting and is designed for the pedestrian. Warmth and safety are expressed through the lighting design, drawing visitors well past daylight hours to experience the outdoor spaces in the hospitable climate of the South.

“The surrounding community embraces this project,” said Duda. And, in fact, has proudly adopted it as its own. “When people discover spaces like this, it’s always interesting to note how they decide to use them. And sometimes, it’s in ways we never imagined,” Duda chuckled. Able to hold upwards of 5,000 people, Gateway currently hosts happy hour, jazz festivals—you name it. “It has truly become a multipurpose space for the whole community,” said Duda. “Because the ground plane is so open, it provides a forum for public participation.”





The Gateway Village Technology Center (opposite) provides public spaces and gardens within a large office campus. The lighting of this corporate/community project humanizes the monumental architecture, creating a welcoming new civic center for everyone to enjoy. Although massive in scale, the lighting works with the architecture to create exterior rooms for the occupants of the complex and the neighborhood to enjoy and appreciate.

Designed as a continuation of the outside space and inspired by Milan's Galleria, the Promenade (seen above) is the focal point of the center and major gathering place. Moreover, the Promenade forms a point of connection, unifying the built environment with the natural, creating a new center, or space, for activity. "Most of the buildings in town address the street, but this facility straddles two," explained Duda. "So rather than creating buildings with fronts and backs, we decided to have them open up to an outdoor space, the Promenade."

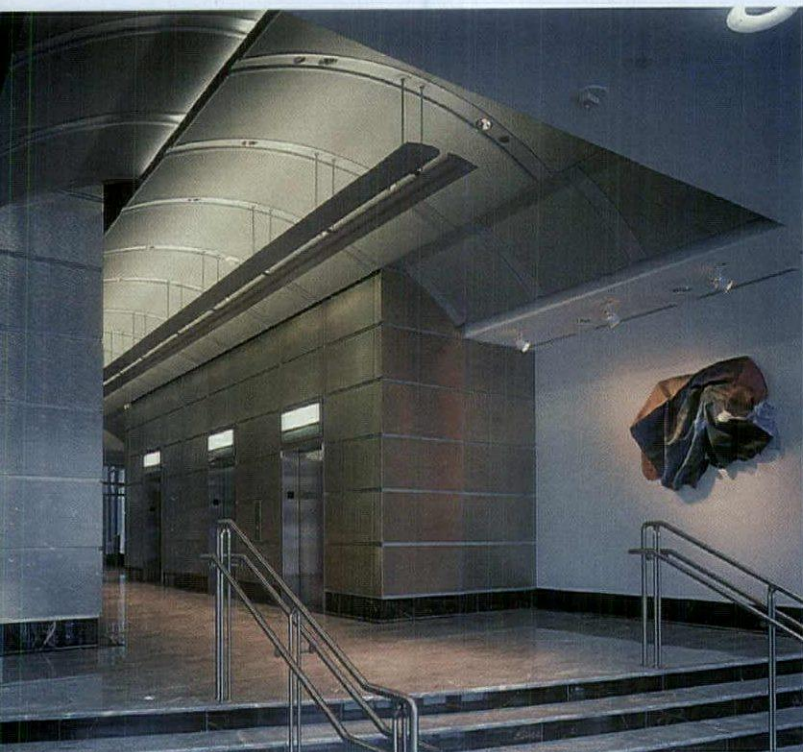
But unlike the Galleria, the Promenade could not be illuminated solely with daylight because two floors of offices are located above the vaulted art-glass ceiling, forming a link between the two buildings. "While creating this 'bridge' of office space met the client's directive for 100,000 sq. ft. of contiguous office space, it presented us with a challenge," said Duda. "If you create a bridge, you also create a very dark underpass," which is quite contrary to the notion of achieving an open-air pavilion. "So

we came up with an idea, borrowed from successful projects, and applied it here: a luminous glass ceiling," said Duda. "When you visit a great museum like New York City's Metropolitan Museum of Art, you gaze at the ceiling and think, 'what a wonderful skylight.' Then you look more closely and realize, there is no sky above—it's created with light."

Enter lighting designer Francesca Bettridge, who has collaborated on many projects with Duda, including Charlotte's prominent NationsBank Building (now Bank of America), which looms in the background (see photo, opposite). The towering structure, designed while at Cesar Pelli & Associates, lends touches of its award-winning design to the Gateway Village Technology Center, creating an architectural companion in the cityscape. Though Gateway was designed years after the "parent" building, it certainly remains second to none: The project has secured numerous architectural design awards in addition to a 2002 Lumen Citation, awarded to Bettridge by the IESNA.

"Since there is a direct relationship between these buildings—in fact, they're right on axis with each other—we strove to create a visual connection as well," said Bettridge. "The NationsBank corporate center, which truly transformed downtown Charlotte, includes Founders Hall, which is a large, glassed-enclosed atrium. The Promenade, though Galleria-inspired, relates in spirit to this space."





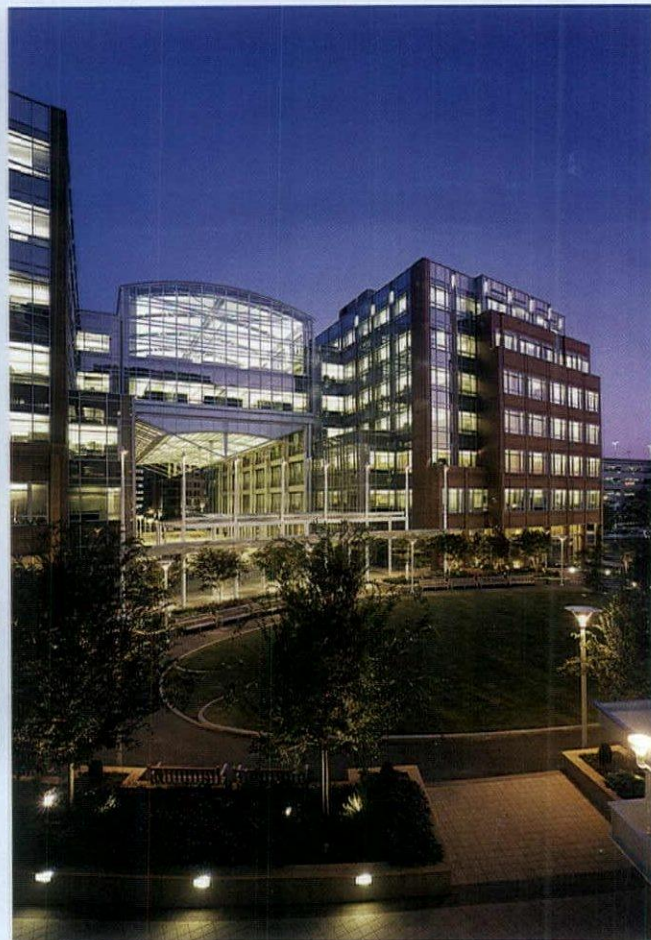
Now, while the "skylight" concept addressed the challenge of the "dark underpass," it, in turn, presented its own challenges to the lighting designer. Specific criteria had to be considered, primarily: lighting the expansive glass ceiling evenly despite the shallow plenum depth (4 ft.) and glass with a variety of translucencies; designing a lighting system that could be maintained without removing any glass; organizing the light into two rows for easy accessibility; and meeting a power budget of only 2 W/sq. ft.

Bettridge responded by devising a lighting plan that blends 3000K 400W metal halide downlights—aimed towards the edges and overlapping in the center—which illuminate the ground, with a combination of 3000K 150W and 400W metal halide uplights that create a subtle glow on the surface of the glass ceiling (see drawing, page 31). "A lot of studying had to be done to make sure we were evenly covering that space and that we were getting enough light that would bounce back down through the glass," said Bettridge. "We worked with the architects to integrate access panels—made from opaque glass—into the design," said Bettridge. "This enables ease of maintenance." Responding to the need for variable light levels, a switching system was created for the metal halide uplights above the glass ceiling.

Lampposts fitted with fluorescent sources give scale to the voluminous space and place ambient light at a human level.

Along the pathways, lampposts, steplights and uplighted trees ring the oval-shaped lawn and central public garden. "Entrance" canopies—massive fritted-glass structures—are illuminated by metal halide accentlights mounted atop the columns, or masts, and aimed at the translucent glass panels below to create an ambient glow (see left photo, page 31, foreground). Below the glass, smaller accents integrated into the framework illuminate the ground at the entrance.

Wrapping around the complex (see photo, above right), a continuous pedestrian arcade glows with light in between and behind each pier from wet-location, indirect, perforated pendants and metal halide downlights, which deliver punch to the floor. The effect is complemented by the use of linear fluorescent lights that create a crown atop each building, which according to



Bettridge, once again references the NationsBank Building. "The arcade is meant to be the sidewalk for people, facilitating travel between and around the buildings," said Bettridge. "The architects wanted this area to be a bright and warm continuation of the inside to the out."

To underscore the "flow between exterior and interior spaces," according to Bettridge, the office lobbies connecting to the Promenade echo its vaulted ceiling and are illuminated with continuous linear uplights positioned in the center of the arched metal ceiling (above left). Monopoints with incandescent PAR38 lamps accent the changing art program on the walls.

Recessed MR16 downlights integrated into the metal panel ceiling, highlight the floor while a pattern of fluorescent downlights with perforated metal decorative trims add sparkle near the entrance doors. The double arched ceiling adjacent to the elevator banks has a glow on the edge from cold cathode. ■

#### DETAILS

**PROJECT** Gateway Village Technology Center **LOCATION** Charlotte, NC **CLIENT** Bank of America and Cousins Properties Incorporated **ARCHITECT** Duda/Paine Architects, LLP—design architect; Little + Associates and HKS, Inc.—architects of record **LIGHTING DESIGNER** Cline Bettridge Bernstein Lighting Design, Inc.—Francesca Bettridge **PHOTOGRAPHER** James West **LIGHTING MANUFACTURERS** Elliptipar; Kurt versen; Bega; Edison Price; Wila; National Cathode Corp.; Metalumen; Legion Lighting; Selux; Eclatec; Sterner; Hydrel



## design focus report

### Hospitality Lighting

**W**hat do you look for when you choose a hotel? Location? Comfort? Safety? How about energy-efficient lighting? Well, maybe not that, but let's confess, as lighting professionals, we do look under the lampshades to see if there is a compact fluorescent lamp (CFL) in the fixture. Over the past several years, CFLs have taken the hospitality industry by storm in response to hotels looking to reduce operating costs. The hospitality industry's desire to reduce energy costs is evident by the more than 8,000 individual hotels partnering with the U.S. EPA's Energy Star program, including Hilton, Hyatt, Marriott and Starwood properties. However, not all CFLs are created equal or properly applied. As lighting professionals, we can help hotels minimize operating costs and select the proper lighting to meet their aesthetic demands.

#### MULTIPLE NEEDS

In no other industry will you find as many space types—from "residential" guestrooms to restaurants, meeting spaces and more. The lighting needs vary as much as the space types and energy-efficient designs cannot be universally applied.

Lighting also helps create the hotel's signature look. The lighting needs to integrate with the architecture and decor to create the proper atmosphere desired by the specific hotel. The lighting also should welcome guests and provide a sense of comfort and safety. In the guestrooms, the lighting needs to be functional and aesthetically pleasing and provide the comfortable, warm atmosphere that guests expect for a living space. With all these requirements, it is not easy to design lighting for hotels. The importance of a high-quality, energy-efficient lighting design cannot be underestimated. This brief article covers some of the common hotel spaces, but look for high-quality, energy-efficient lighting opportunities in other spaces inside and out of the hotel.

#### TECHNOLOGIES

Compact and linear fluorescent lighting is the most common energy-efficient light source for hotels. Today, CFLs are available in a variety of sizes and shapes for practically every application. Furthermore, the quality of CFLs has dramatically improved, but some low-quality products still exist. To make certain that fluorescent products are high-quality, specify CFLs

and compact fluorescent fixtures that have earned the Energy Star label. These products meet EPA and DOE's strict efficacy and performance requirements such as instant-on, excellent color and no flicker or hum.

For spot- and floodlighting applications where a point source is required, at least use halogen. Infrared halogen sources, which are more efficient than standard halogen, are also available. MR16s or MR11s are excellent for dramatic spotlighting effects in lobbies, restaurants, lounges and other areas. A good accent-lighting design technique is to specify more light sources at lower wattages to provide flexibility and minimize energy consumption. If a wide-beam floodlight is needed, consider compact fluorescent flood-type fixtures. Also consider the use of color LEDs instead of color neon for architectural and decorative lighting.

#### APPLICATIONS

**Guestrooms.** Guestrooms offer the greatest energy-savings opportunities and also have the biggest impression on the guest. For these reasons, high-quality, energy-efficient lighting for the guestroom is a necessity.

Fluorescent can be used in almost any guestroom application. Manufacturers specializing in energy-efficient light sources, such as MaxLite, have developed Energy Star-qualified screw-based CFLs to fit most medium-base socket applications. However, if dimming is required, make sure to specify dimmable CFLs.

Also consider specifying Energy Star fixtures. Portable and hardwired lines are available in a variety of styles. These fixtures have an integral ballast and use pin-base CFLs, which are easier and less costly to replace. In addition, many Energy Star portable fixtures are dimmable or come with three-way switching for adjustable light levels.

Compact fluorescent ceiling flush-mount fixtures, bath-bars, wall sconces, reading lamps, table lamps and floor lamps are available for all guestroom applications from the entrance corridor to the bedside table. Vanity lighting can and should use linear fluorescent sources either in a cove over the mirror or in linear fixtures mounted to the side of the mirror. Because fluorescent color properties can vary, make sure to specify lamps with a minimum 80 CRI and a 2700K to 3000K color temperature to match the warmth of incandescent.

**Lobbies, hallways and registration.** Many decorative compact fluorescent fixtures are available for hallways and lobbies,

In hospitality, the lighting needs vary as much as the space types, if not more, and energy-efficient designs cannot be universally applied.



# design focus repo

such as surface- and pendant-mounts as well as wall sconces. Furthermore, CFLs are available for candelabra-based chandeliers such as MaxLite's Minicandle CFL. However, CFLs are not applicable for all chandeliers, especially when "sparkle" is desired; in this case, consider using halogen or low-wattage incandescent lamps. Due to the long operating hours in these hard-to-reach areas, long-life energy-efficient sources are desired. However, carefully specify the correct lamp and fixture to maintain the aesthetic requirements.

The registration area requires higher light levels and needs to attract guests' attention. This plays well for the high lumen packages of T5 linear and some compact fluorescent downlights. Whether using cove lighting along the wall behind the registration desk, downlights or pendant fixtures above the registration counter, there are many applications for compact and linear fluorescent. T8 and T5 linear fluorescents are especially good for cove lighting. If a little color is desired, consider using colored LEDs.



**Restaurants and bars.** While restaurant and bar lighting deserves an entire article itself, following is a brief mention of a few high-quality, energy-efficient design options.

In some cases, the lamp or luminaire itself can become a major architectural element. The new Westinghouse Ultra-Compact Fluorescent Lamp is designed to be a decorative architectural element. This low-wattage CFL is available in five colors and eight different styles to create a variety of desired effects. Cathy Lester, director of marketing at Westinghouse Lighting Corporation, stated, "These new products are perfect for restaurant and hospitality applications. Not only do they provide a variety of atmosphere options through the multi-colored assortment offering, but additionally, because of their polycarbonate shell, they

are both safe and waterproof, making them suitable for high-traffic, variable climate conditions."

MR16s and MR11s are also excellent for restaurant lighting when spotlighting is needed. A key technique for a relaxing atmosphere is to illuminate the surroundings and not the people. MR16 and MR11 sources can effectively accent artwork and other surrounds. In addition, cove lighting with T8 lamps can be used to wash walls or coffered ceilings, but be careful of excessive brightness.

**Meeting rooms.** Meeting rooms are a little easier to design because they primarily require functional lighting. Three-lamp T8 or T5 fixtures are common, but if three lamps are used per fixture, consider separately switching one of the lamps for variable light levels. Dimmable halogen or compact fluorescent downlights can be used for added flexibility. Also consider separate switching of the first row of fixtures in the front of the room where a presentation screen would be used.



**Backhouse spaces.** Due to the utilitarian nature of most backhouse spaces from kitchen to storage to office space, linear fluorescent lighting is most common. However, remember not to over illuminate or create glare problems. Sometimes, so much effort is put into the public areas that the lighting design for the backhouse is forgotten. T5 or T8 lamps should be used with proper fixtures to control glare while providing even distribution. In addition, occupancy sensors should be used for storage areas and office spaces.

## ADDED VALUE

In addition to energy and maintenance savings, high-quality, energy-efficient lighting adds shareholder value. Energy Star states that "every dollar in energy savings is the equivalent of increasing [hotel] operating margins by \$2 to \$3." Energy and maintenance cost savings, shareholder value, long life, excellent performance—why would anyone not want a high-quality, energy-efficient lighting system for their hotel? ■

*Paul Vrabel, LC is a Project Manager with ICF Consulting, supporting a number of energy-efficiency programs including the U.S. EPA Energy Star programs, and has visited way too many hotels during his energy efficiency journeys. The author is always open to discussions on high quality, energy-efficient lighting and can be reached at [pvrabel@icfconsulting.com](mailto:pvrabel@icfconsulting.com).*



## Side Show

By all accounts, the neighborhood that Hamburg's recently opened Side Hotel calls home is a mix of upscale posh and age-worn dreariness. In fact, the block on which it is located has been described as "unprepossessing," and its small, triangular-shaped lot situated in the center of the city, in the hands of lesser talents, is no architect's friend. However, driven by the ambition of a passionate client and conceived and executed by a triumvirate of world-class architects and designers, this thoroughly modern, 12-story hipster delivers style, ambiance and comfort worthy of each and every one of its five-star rating. And its lighting, seamlessly married with the architecture, imparts a subtle drama to the overall atmosphere of cosmopolitan swank.

Having won the Side commission in a competition hosted by the client, Seaside Hotels, architectural firm Alsop & Störmer designed a building whose ground plan is irregular and whose exterior facades, a composite of glass and green stone, convey a feeling of dynamic urbanity. The hotel offers 178 rooms—including a series of suites—a restaurant, terrace and lounge, which are distributed between an eight-story corner structure and a rear section that juts an additional four stories higher. In the basement, a conference center and a colorful, full-service spa round out the list of luxury features.



Designed by Milan-based Studio

Matteo Thun, the interiors are no less "now" with their blend of sleek minimalism and playful joie-de-vivre. According to Michael Catoir, an architect in Thun's firm, the lighting of the hotel interiors supports the pared-down aesthetics by relying on fixtures that are largely concealed or indirect. Throughout the public areas, light coves and slots upright ceilings, supply general illumination, highlight architectural elements and contribute visual appeal. For added flair, vertical surfaces and ceilings are enlivened with streaks of light and luminous patterns. Contributing whimsy, light objects, well-chosen and well-placed, complement the custom furnishings and provide extra punch.

All of the lighting is placed on a computerized control system and programmed to address day- and nighttime usage, special occasions and energy concerns. The system also includes a 24-hour program to operate the lighting of the atrium, which was designed

by theatrical legend Robert Wilson and lighting designer Uwe Belzner. Serving as a focal point for new arrivals and "dressing up" an otherwise Spartan space, the installation extends across multiple levels to the ceiling of the atrium and consists of frosted glass facades backlit by blue and white light. According to Belzner, the triangular-shaped atrium, whose sides range from 3 to 8 m in length and whose height soars at 36 m, was difficult to light. "It's very small in area, but very deep in height," he said. "There is also no direct daylight, because the hallways leading to the guestrooms are located behind the glass. The idea was to have glass facades in the interior space that would resemble the tall buildings that one sees, for example, in New York and which are often placed very close together."

The glass expanses are illuminated with pairs of fluorescent lamps concealed between the edge of each floor and the glass wall. Each pair comprises one lamp in a cool color temperature that is accentuated with a blue filter and a second lamp chosen for its warmer light. To help distribute the light more evenly onto the glass, the design team incorporated a specially developed mirror system, and the lamps are separately switched to allow for greater flexibility and variety in the overall lighting of the atrium.

"We designed a 24-hour program with different themes, which depend in part on the amount of daylight outside," said Belzner. "We tried to bring an intimation of daylight indoors by moving the warm and cool light up and down across the floors—it's a very slow, gentle movement. The experience is similar to lying on one's back and looking up at the passage of the clouds in the sky." The fluorescents gradually fade in brightness over the course of the day, ceding their presence to the stripes of blue light, which by midnight, are all that is visible.

Although the stripes appear to traverse the glass walls as single lines, they are in fact made up of separate aluminum tubes carefully measured to fit within each facade panel. The tubes are equipped with blue LEDs, capped with polycarbonate and programmed to dim in concert with the fluorescent strips.

A single tube of LEDs punctuates the entire atrium by dangling loosely from the ceiling. The 25-m-long tube is formed of sandblasted polycarbonate and because of its great length, was manufactured in three pieces, which were then assembled on site. The resulting effect is an indirect reference to the suggestion of an ever-changing sky. Added Belzner, "It's like a ray of sunlight." ■

—Alice Liao



### DETAILS

**PROJECT** Side Hotel **LOCATION** Hamburg, Germany **CLIENT/OWNER** Seaside Hotels, Hamburg **ARCHITECT** Alsop & Störmer **INTERIOR/LIGHTING DESIGNER** Studio Thun **LIGHTING DESIGNER** Robert Wilson; Uwe Belzner **PHOTOGRAPHER** courtesy of Zumtobel Staff **LIGHTING MANUFACTURER** Zumtobel Staff



## Roadside Attraction

As one of the fastest developing cities in the Gulf area and a growing hub for international trade, Dubai has no shortage of places for traveling businessmen to stay, not to mention some 27 five-star hotels. Consequently, when the new Fairmont Hotel opened its doors last year, it did so to some stiff competition. At 394 rooms and 35 stories, the hotel, though boasting its share of luxury services, was not the largest and needed to make a splash to announce its arrival. Enter London-based lighting design firm, DHA Design Services, which, employing a palette of elegant colors and dynamic effects, illuminates the hotel to its full star potential, making it a visually alluring destination for the weary traveler.

"The original brief for the exterior lighting was to create a presence on the nighttime view of Sheik Zayed Road," said David Robertson, director of DHA, which also illuminated the interiors. "The decision to use color was a combination of trying to make the building stand out and to provide a flexible solution to the client." The need for a "stand-out" solution was even more critical as the hotel is located on Sheikh Zayed Road, a modern conduit in the Gulf area that is populated with more than 40 high-rise buildings. Compounding the designers' challenge, noted Robertson, the Fairmont is also "one of the shortest on that stretch of road."

What the hotel lacked in physical stature, DHA decided, could be made up with a dose of nighttime drama. "The architectural concept behind the Fairmont was that of a traditional castle with four towers anchoring its corners," said Robertson. "Because each tower is topped by a glass pyramid, there was an excellent opportunity to blend the turret lighting with the facade lighting, creating interesting color combinations whilst retaining the shape of the building." To accomplish this, the lighting designers researched various products and finally chose an exterior color-changing Fresnel washlight for its optics and consistent performance. That the manufacturer has solid representation in the Middle East also informed their decision. "We felt this was necessary as no color-changing system is foolproof and if sequences or luminaires became faulty, the situation could be easily remedied," said Robertson. "With 132 color-changing luminaires on the project changing together, any fitting out of sync would be obtrusive."

Outfitted with narrow 18-degree lenses and arranged into groups of eight or ten, the color-changing washlights are located on the 32nd and 9th floors and bathe the facades—which consist of alternating columns of glass and granite—in smooth washes of light from above and below. "We tried different offsets to achieve a compromise between creating the best visual effect and avoiding lightspill into the guestrooms," remarked Robertson. "Where the fittings are located directly below the 10th-floor windows, the luminaires are mounted on custom brackets and locked off to exactly the right angle." The brackets and fixtures are both finished in powdered aluminum to blend with the pink granite and mirrored glass. Said Robertson, "The client was happy with the result, particularly the way the fittings could be finished to be unobtrusive on the facade, which was important, as the 9th-floor location is the exterior poolside area where people would be circulating." So pleased was the client that the same effect was applied to all four facades, although Robertson added that "some are more prominent than others."

The colored light changes every five minutes in gradual fades that take place over a few seconds. For festivals and special occasions, DHA's solution includes different lighting sequences with more complex shifts occurring at a faster pace. "We had the opportunity through the control system and individual control to chase columns of light around the building or have it strobing but felt that this would overpower what is a subtle building," said Robertson. "This is a high-class hotel and we felt that turning it into a flashy spectacle was inappropriate. We agreed that a gentle color shift was more effective than a light show just for the sake of it." Fiber optics and recessed downlights enrich the dynamic display by articulating architectural details.

All of the lighting sequences are controlled via a DMX512 lighting console located on the 9th floor. The console also operates the lighting of four glass turrets, which reach upward from the top of the hotel and are situated at each corner of the building. At night, the turrets emanate hued light and are illuminated from inside with additional color-changing washlights equipped with wide-angle lenses and positioned on the roof. Located near the base of these turrets are narrow-beam, stadium-style spotlights, which pick out the external corners of the building. "DHA specified the washlights within the turrets, but requested that the glass pyramids be frosted so that the lighting effects are more visible," said Robertson. "Weather permitting, the turrets can be seen from a plane flying into Dubai." ■

—Alice Liao



### DETAILS

**PROJECT** Fairmont Hotel **LOCATION** Dubai, United Arab Emirates **OWNER/CLIENT** His Highness Sheikh Sultan Bin Kalifah Al Nahyan **ARCHITECT** Khatib and Alami **LIGHTING DESIGNER** DHA Design Services—David Robertson, Desmond O'Donovan **PHOTOGRAPHY** Courtesy of Martin Middle East **LIGHTING MANUFACTURERS** Martin; Disano; Meyer; We-ef Lighting; Crescent



# design focus report

## Sea Fare

In the center of bustling Times Square, with its garish neon-colored signage, fast-food restaurants and Broadway theaters, is an oasis for fine dining in a setting that reflects the finest of modern design. The Blue Fin restaurant at the W Hotel projects an elegant sea theme enhanced by a subtle and integrated lighting design. "Times Square has become a thematic playground, but we designed the W hotel there and believe that it is about modern design," explained Glenn Pushelberg, managing partner of Toronto-based Yabu Pushelberg, the firm that designed the interiors and lighting for Blue Fin. "We also held the belief that in addition to tourists, who would dine at the restaurant on their way to seeing a Broadway play, the media and financial people who work and live in the area would enjoy going to a more sophisticated venue for dinner."

The 8,200-sq.-ft. restaurant seats approximately 375 and operates on two levels that are different but complementary in character. The open, high-energy ground level accommodates faster turnaround and is ideal for the lunch/brunch crowd. The more subdued second floor is tailored in style for quiet dinners and includes rooms that can be sectioned off for private parties.

"Overall, Blue Fin is not intimate—it's a machine, designed to project 'class for the masses,'" said Pushelberg. "The trick with two stories is creating a harmony between them." The sea theme and the lighting elements that enhance it are key to the visual connection of the two levels. The guest is invited to explore the depths of the dark sea at the entryway. "The light level in the storefront is relatively low," said Pushelberg. "With brightly lighted ads in Times Square all around it, there would be no signage large enough or bright enough to compete." Instead, Yabu Pushelberg created ceiling-to-floor glass frontage to allow the interior-lit rectangular resin pedestal tables near the bar at the entrance to glow like beacons and attract the attention of passersby. The tables house 55W compact fluorescents surface-mounted to the floor inside the bases.

The high-ceilinged ground level eating area is distinguished by a monumental wall adorned with sand-colored waves made of sculpted plaster. Their three-dimensionality is emphasized by grazing from adjustable 50W MR 16 downlights.

Banquettes along the opposite wall are made more intimate by the lowered ceiling above them. Like dapples of light rays glinting just beneath the water's surface as they hit the flora on a shallow bottom, custom-designed white acrylic pendants are illuminated brightly with 50W A19s and doubled in impact via their suspension next to a mirrored wall. The wall has its own glow from linear T5 fluorescents concealed behind narrow acrylic strips that are set vertically between panels of what is actually highly reflective stainless-steel laminate. The laminate also extends the sea theme by reflecting the wave wall across from it.

The glass-paneled grand staircase connecting the two levels allows guests to see and be seen. Guests are welcomed at the stop of the staircase by a mobile abstractly representing a school of fish, designed by Japanese artist, Hirotoishi Sawada.

The darker and moodier second level includes custom-designed decorative incandescent pendants made of intertwined strands of hemp on antique mirror frames shaped to resemble fishing traps. Dark leather banquettes on the second level are enveloped in amber walls adorned with horizontal metal striping. Wallwashers fitted with 100W PAR38s are surface-mounted into ceiling coves for additional subtle illumination.

On both levels, general illumination also comes from 50W MR16 adjustable downlights and 50W AR11 units. Additional furniture and ceiling elements use surface-mounted 28W T5 fluorescents.

Just as the sea's powerful mystery involves both what it reveals and conceals, so the ocean theme of Blue Fin is reinforced by a seamless blending of visible decorative lighting elements with recessed features that unobtrusively project light.

—Wanda Jankowski



### DETAILS

**PROJECT** Blue Fin Restaurant **OWNER** BR Guest—Stephan Hanson **LOCATION** New York, NY **INTERIOR DESIGN** Yabu Pushelberg—George Yabu, designer, Glenn Pushelberg, Marcia MacDonald, Mary Mark, Reg Andrade, Sunny Leung, Marc Gaudet, Eduardo Figueredo, Kevin Storey **PERMIT ARCHITECT** Brennan Beer Gorman Architects—Mario LaGuardia and Kevin Brown **CONTRACTOR** JT Magen & Co. Inc.; Pancor Industries Ltd.; Martin Thomas Contracting Inc. **STRUCTURAL ENGINEER** Desimone Consulting Engineers **MECHANICAL/ELECTRICAL ENGINEERS** Lehr Associates, Consulting Engineers **PHOTOGRAPHERS** Evan Dion; Eric Laignel **LIGHTING MANUFACTURERS** TPL Marketing, Inc.; Lucifer; Litelab; Bartco; LSI; Belfer; Leviton; Unit Five Mfg. Co.



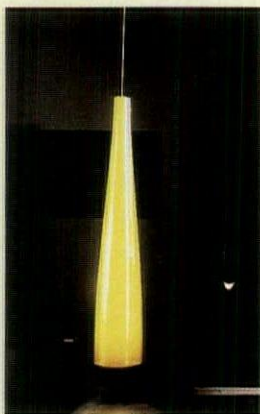
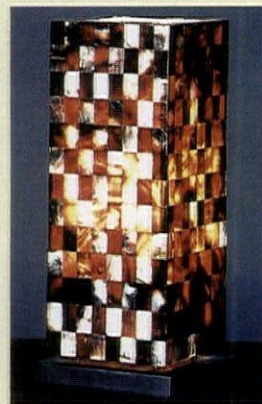
# design focus report

*Check into these before you check out...*

Suggestive of a sheet of windblown translucent paper, Claire from **Leucos** is a wall sconce featuring a thermoformed white ceramic glass diffuser with a satin finish. Hardware is polished chrome and illumination is provided by two twin-tube 36W 2G11 fluorescent lamps with electronic ballast. Claire measures 19.88 in. long, 10 in. high and projects 4 in. **Circle No. 100**

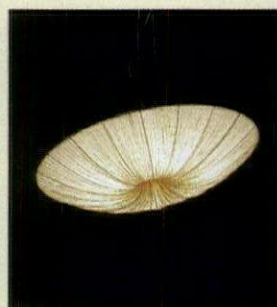


Designed by Angel Bellini, **Warisan's** collection of mother-of-pearl and mussel-shell mosaic fixtures includes the Lusi Krang table lamp (shown), which features a rectangular mother-of-pearl and mussel checkerboard mosaic shade. The square base is formed of polished teak and supported by four metal legs. Lusi Krang measures 7.28 x 6 x 7 in. and uses 60W A17 or A19 incandescent lamps. The Amadis sconce also sports a mother-of-pearl and mussel shell mosaic shade, measures 12 x 7.28 x 17.5 in. and uses 40W A17 or A19 incandescent lamps. The shades are finished with a polyurethane resin coating that is UV-stable and water- and heat-resistant. **Circle No. 101**

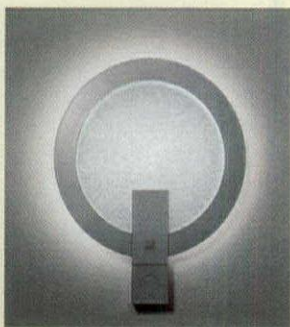


From **North American Lighting Spectrum (NALS)**, Foscarini's Tite is a family of molded fiberglass and Kevlar carbon-thread direct/indirect pendant fixtures. Awarded Italy's Compasso d'Oro for design excellence, Tite pendants are offered in 45<sup>1</sup>/<sub>4</sub>- (Tite 1), 21<sup>3</sup>/<sub>4</sub>- (Tite 2), 11-in. (Tite 3) diffuser lengths and suspend from the ceiling via a 1/4-in.-diameter, brushed stainless-steel rod, which can be adjusted up to 78<sup>3</sup>/<sub>4</sub> in.

to accommodate high-ceiling spaces. A black power cord runs alongside the support stem. Tite 1 and 2 accept one 150W incandescent or 23W triple-tube compact fluorescent lamp. Tite 3 uses a 100W incandescent or 9W U-shaped compact fluorescent lamp. **Circle No. 102**



From **Aqua Gallery**, Stand By and Stand By Me are pendants featuring laser-cut metal structures covered with silk. Stand By measures 61 in. in diameter and Stand By Me measures 35 in. in diameter. Illumination is provided by compact fluorescent lamps. **Circle No. 103**



Developed by Swiss manufacturer Regent and offered exclusively in the U.S. by **Énergie**, Opus features an acrylic diffuser with optical silk-screened rings and is available as an ADA-compliant wall sconce (shown) or a single-, double- or triple-version pendant. The wall sconce measures roughly 12 in. in diameter. Illumination is provided by one T5 circline fluorescent source.

Options include red, blue or green diffusers. **Circle No. 104**



Inspired by the Art Deco era, the Classic Collection from **Baldinger Architectural Lighting** is comprised of La Baguette and Piccolo sconces and Le Hautbois pendant. La Baguette sports a graduated base and cloth shade and is offered in single- or double-arm models; Piccolo (shown) features a support bracket and reeded finial; and Le Hautbois combines a gently shaped diffuser with detailed finials.

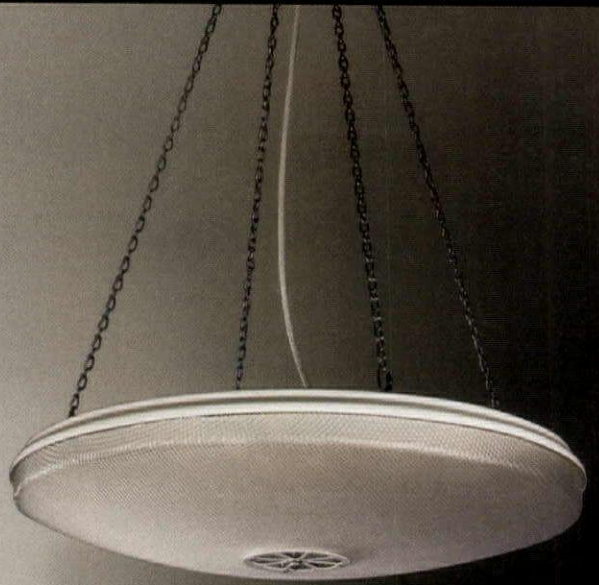
The collection is available in a variety of finishes, diffusers and lamping options and may also be custom-designed. **Circle No. 105**

*(Continued on page 40)*



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40

# design focus report

(Continued from page 38)



**W.A.C. Lighting** has unveiled a new line of mouthblown Italian Glass Pendants, which feature a cone design in multi-colorations, including blue/green, millefiore and yellow/red. The pendants include metal cords sets offered in chrome, platinum or satin-brass finishes and accommodate xenon or halogen lamps in 12V/24V with a maximum of 50W. Designed to be used with the QuickConnect Series of ceiling canopies, components and accessories, the pendants can function as monopoints and multipoints and attach to W.A.C.'s new Monorail System as well as all four of the company's track lighting systems. **Circle No. 106**

From **Trellagé-Ferrill**, an architecture and design studio producing custom sculpture and specialty elements, the "Fishy-Fishy" light sculpture measures 7 ft. long and 3 ft. in diameter and was created for a Minneapolis seafood restaurant. It is formed of cast glass, steel and copper. The sculpture uses a combination of low-voltage and incandescent light sources. **Circle No. 107**



From **Flux, Inc.**, Fixture Four is a glass ceiling pendant with a blue or opaline diffuser and a crown in chartreuse or tangerine. The inside of the diffuser is white. Measuring 4<sup>3</sup>/<sub>4</sub> in. high and 6<sup>3</sup>/<sub>4</sub> in. in diameter, Fixture Four includes a ceiling canopy and lamp body finished in brushed nickel and a 6-in. black cord set. The fixture uses one 40W 120V candelabra-base incandescent lamp. **Circle No. 108**

Available through Vivendum, **Album's** Rondine in Orbita is made of glass that is crafted via a thermal process and silk-screened with a variety of light-diffusing patterns. Rondine uses halogen sources. The Orbita system includes additional pendant models for a range of applications. **Circle No. 109**







# 1% Dimming for Compact Fluorescents

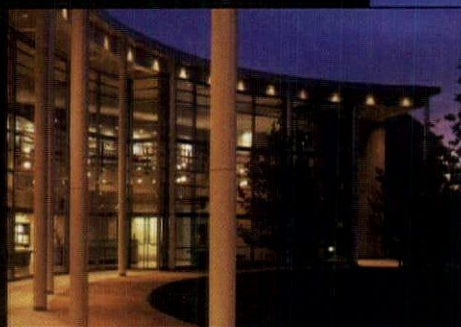
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COPIA: The American Center for Wine, Food & the Arts (Photo: Richard Barnes)

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AV Presentation Room  
Englewood, CO

United Nations  
Assembly Hall  
New York, NY

United States Air Force  
Museum, Wright-Patterson  
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opinions  
are more  
powerful  
than  
others.

And we all know  
opinions can change.

After last year's  
successful debut,  
*Architectural Lighting's*  
ACE.al Awards have  
become a mark of  
distinction and dependability.

Now in its 2nd year, it's  
that time again to voice  
your opinion and honor  
those manufacturers  
who have demonstrated  
exceptional value,  
durability, service  
and design.

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ARCHITECT'S CHOICE  
FOR EXCELLENCE

CHOSEN BY  
LIGHTING DESIGNERS & ARCHITECTS

AWARDED BY  
*ARCHITECTURAL LIGHTING*

Recognizing:  
durability,  
customer service,  
value,  
design.

## HOW THE PROGRAM WORKS

1. Take a few minutes to review the list of lighting manufacturers appearing in the ballot section following this page.
2. To vote for those manufacturers that best meet the criteria detailed on this page, locate their assigned number and circle it on the ballot card at the end of the section.
3. Then simply fax your ballot to 646-654-5816. Your response must be received by July 1, 2003 in order to have your vote counted. Only official ballots published by the magazine will be accepted.

## VOTING CRITERIA

Select the manufacturers who have provided you and your projects with the best:

1. Value
2. Durability
3. Customer Service
4. Design

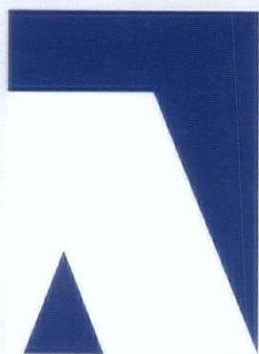
Winners will be announced in the  
December 2003 issue of *Architectural Lighting*.

**Cast your opinion in *Architectural Lighting* and let the industry know who you trust and depend on.**



- |    |  |     |                                      |     |                             |     |   |
|----|--|-----|--------------------------------------|-----|-----------------------------|-----|---|
| 1  | 3M Light Fiber                         | 53  | ETC                                  | 105 | Lightech                    | 158 | RSA                                     |
| 2  | Adaptations                            | 54  | Eureka                               | 106 | LightIdeas                  | 159 | Ruud                                    |
| 3  | Advance                                | 55  | ExceLine                             | 107 | Lighting Services Inc       | 160 | Schonbek Worldwide Lighting Inc.        |
| 4  | Alanod                                 | 56  | F.A.D Lighting                       | 108 | Lightolier                  | 161 | Schott-Fostec LLC                       |
| 5  | Alera Lighting                         | 57  | FC Lighting                          | 109 | Lightolier Controls         | 162 | Se'lux U.S.                             |
| 6  | Alkco                                  | 58  | Fiberstars                           | 110 | Light-Project International | 163 | Sea Gull Lighting                       |
| 7  | ALS - Architectural Lighting Systems   | 59  | FLOS                                 | 111 | Linear Lighting             | 164 | Selecon                                 |
| 8  | Altman Lighting                        | 60  | Focal Point                          | 112 | Litecontrol                 | 165 | Sentry Electric Corporation             |
| 9  | Ambiance Lighting Systems              | 61  | Foscarini                            | 113 | Litemakers                  | 166 | Sirmos                                  |
| 10 | American Glass Light                   | 62  | Gardco Lighting                      | 114 | Lithonia                    | 167 | Solara Lighting                         |
| 11 | ANP Lighting                           | 63  | GE Lighting Systems                  | 115 | Louis Poulsen               | 168 | Solatube International Inc.             |
| 12 | Architectural Area Lighting            | 64  | Gotham Architectural<br>Downlighting | 116 | LUCEPLAN USA, Inc.          | 169 | Special FX Lighting Inc.                |
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| 14 | Ardee                                  | 66  | H.E. Williams                        | 118 | Lumec-Schreder              | 171 | Spero Lighting                          |
| 15 | Aromat Corp.                           | 67  | Hadco                                | 119 | Lumiere                     | 172 | SPI Lighting                            |
| 16 | Arroyo Craftsman                       | 68  | Halo                                 | 120 | Luminis                     | 173 | Spring City Electrical<br>Manufacturing |
| 17 | Artemide                               | 69  | Hampstead Lighting                   | 121 | Luraline Products Co.       | 174 | Starfield                               |
| 18 | Artistic Tile                          | 70  | Hatch Transformers                   | 122 | Lutrex                      | 175 | Sternberg                               |
| 19 | Bartco Lighting                        | 71  | Hemera, Inc.                         | 123 | Lutron                      | 176 | Stingray Lighting                       |
| 20 | Beacon Products, Inc.                  | 72  | Hessamerica                          | 124 | Luxo Corp.                  | 177 | Studio Due s.r.l                        |
| 21 | Bega Lighting                          | 73  | Hex Architectural Lighting           | 125 | Luxo Italiana               | 178 | Super Vision International              |
| 22 | Beghelli                               | 74  | High End                             | 126 | Lyric Lighting (Seagull)    | 179 | Sure-lites                              |
| 23 | Beta-Calco                             | 75  | Holophane                            | 127 | Manning Lighting            | 180 | Targetti                                |
| 24 | Birchwood Lighting                     | 76  | Hubbell                              | 128 | Martin Professional         | 181 | Tech Lighting LLC                       |
| 25 | B-K Lighting                           | 77  | HUNT Dimming                         | 129 | MaxLite                     | 182 | Teka Illumination Inc.                  |
| 26 | Boca Flasher                           | 78  | Hydrel                               | 130 | McGraw Edison               | 183 | Terzani                                 |
| 27 | Boyd Lighting                          | 79  | Icon International                   | 131 | Mercury                     | 184 | The Original Cast Lighting              |
| 28 | Bruck Lighting Systems                 | 80  | IL America Inc.                      | 132 | Metalumen                   | 185 | The Watt Stopper                        |
| 29 | C.W. Cole & Co.                        | 81  | ILEX                                 | 133 | Metalux                     | 186 | THHC Lighting                           |
| 30 | Charles Loomis                         | 82  | Illuminating Experiences             | 134 | Neoray                      | 187 | Thomas Daybrite                         |
| 31 | Color Kinetics                         | 83  | Illumination Lighting                | 135 | Nessen                      | 188 | Times Square Lighting                   |
| 32 | Columbia Lighting                      | 84  | Induction Lighting                   | 136 | New Metal Crafts            | 189 | Tracoman                                |
| 33 | Con.daz Lighting                       | 85  | Industry + Design Light              | 137 | New Star Lighting           | 190 | Translite Sonoma                        |
| 34 | Con-Tech Lighting                      | 86  | Indy Lighting                        | 138 | Nora Lighting               | 191 | Trend Lighting Co., Inc.                |
| 35 | Cooper Lighting                        | 87  | Insight Lighting                     | 139 | Nordic Aluminium            | 192 | Tridonic Inc.                           |
| 36 | Cyclone Lighting Inc.                  | 88  | Intertech                            | 140 | NoUVIR Research             | 193 | Troy-CSL Lighting                       |
| 37 | D'ac                                   | 89  | IRIS                                 | 141 | O Luce                      | 194 | Unilight Ltd.                           |
| 38 | Davis/Muller Lighting                  | 90  | JJI Lighting Group                   | 142 | Orbit North America         | 195 | Universal Lighting Technologies         |
| 39 | Delray                                 | 91  | Juno Lighting                        | 143 | Original Cast Lighting      | 196 | Ushio America                           |
| 40 | Derek Marshall Lighting                | 92  | Kenall                               | 144 | Osram Sylvania              | 197 | Valmont Industries, Inc.                |
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| 42 | Dreamscape Lighting Mfg.               | 94  | Kurt Versen                          | 146 | PCI                         | 199 | Varon Lighting                          |
| 43 | Eclipse Lighting Inc.                  | 95  | Lam Lighting                         | 147 | Peerless                    | 200 | Visa Lighting                           |
| 44 | Edison Price                           | 96  | Lamar                                | 148 | Pennsylvania Globe          | 201 | Vistawall                               |
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|    |  |     |                                      | 157 | Rosco Laboratories, Inc.    |     |   |





# The 2nd Annual ACE.al Awards

## Lighting Specifier's Choice for Excellence

Recognizing Excellence in Lighting Products + Manufacturers

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
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101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
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161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	

**I would like to vote for the following suppliers who were not listed**

1. \_\_\_\_\_ 3. \_\_\_\_\_

2. \_\_\_\_\_ 4. \_\_\_\_\_

Name \_\_\_\_\_ Phone \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**Please fax ballot to 646-654-5816 or download ballot at [www.lightforum.com](http://www.lightforum.com).**



# West Side Story

The industry's main event—Lightfair—to be held at Manhattan's Javits Center

**L**ightfair International 2003 is shaping up to be one of the largest shows in years with an expected attendance of more than 19,000 architectural, engineering, design and end-user professionals. Running May 6-8 at the Jacob Javits Convention Center in New York City, this year's event has drawn over 550 domestic and international exhibitors, who will showcase the latest in lighting product and technology in more than 1,460 booths, occupying 146,000+ sq. ft. in three exhibit halls. To catch up on current trends, issues and practices in lighting, check out the conference program, which consists of 27 seminars in four tracks: management, design, technology and commerce. These seminars offer ASID, IIDA and IESNA accreditation as well as NCQLP LEU credits and IFMA certification maintenance points.

In addition to the pre-conference workshops on May 5, this year's event will debut the Lightfair Institute on May 4, a one-day program providing intensive training on topics ranging from lighting fundamentals and perception to presentation techniques for lighting professionals. Courses are organized into three levels of difficulty—basic, intermediate and masters—and will take place at the Sheraton New York Hotel & Towers. For more information on this new educational program, as well as any of the following special events to be held at Lightfair, visit [www.lightfair.com](http://www.lightfair.com).

And don't forget to stop by and visit *Architectural Lighting*—and *Architecture*—at booths 2035 and 2037!

## Special Events

### May 6

Kick off Lightfair 2003 at 8:30-10:00 am by attending the multimedia **New Product Showcase & Awards Presentation**, which is sponsored by *Architectural Lighting* and [lightsearch.com](http://lightsearch.com). This much-anticipated presentation will provide an exciting preview of the hottest products and coolest technologies to hit the show floor this year. Find out which manufacturer submits the Best New Product of the Year and which products will be recognized for technical innovation, energy management and savings and design excellence. Judges for 2003 were Renee Cooley, IESNA; Mary Peyton, IALD; Christopher Ripman, IALD; Bruce S. Palmer, IESNA; and Scott Watson, IALD.

**The Nuckolls Fund for Lighting Education Luncheon/Seminar:** "Lighting Education: What Do We Need?" will be held at the Jacob Javits Convention Center from 12:15-1:45 pm. Jeffrey Milham, president of the Nuckolls Fund for Lighting Education, intends to announce the recipients of the two annual \$20,000 grants, one of which will fund the expansion of an existing lighting program. The second will support an introductory lighting program at a college or university currently with little or no lighting design offerings. Milham will also announce the winner of the \$10,000 Edison Price Fellowship, which is awarded to a lighting educator to further develop his or her teaching skills in lighting, and talk about the status of the fund's endowment and plans for the future.

The luncheon will include a presentation by Chip Israel on lighting education from a practitioner's point of view and an interactive discussion on hiring, which should be of interest to students, teachers of lighting as well as lighting designers.

### May 7

Start the day with some exercise by joining the Belfer Group from 7:00-8:30 in the **City Walk in Memory of Craig A. Roeder**, which benefits the Nuckolls Fund for Lighting Education. Bring your running shoes, walking boots, rollerblades or bicycles and see the city stir to life with an early morning stroll through historic Central Park. The walk begins at the Sheraton New York Hotel & Towers. For more information, visit the Belfer website at [www.belfergroup.com](http://www.belfergroup.com).

Come help the industry celebrate outstanding achievements in lighting design at **The IALD 20th Annual Awards Dinner**, which will be held at the Alfred Lerner Hall at Columbia University from 6:30-12:00 midnight. In addition to honoring this year's winners, the gala event will benefit the IALD Education Trust fund. A portion of all ticket fees will be deductible as a charitable gift. Please contact the IALD at (312) 527-3677 for information.

### May 8

The **IALD/LIRC** (Lighting Industry Resource Council) **Semi-Annual Meeting** will be held at the Jacob Javits Convention Center at 12:15-1:45 pm. The meeting will provide an update on the organization's activities. Non-members are welcome.



# Conference Program

## Tuesday, May 6, 2003

### 8:30-10:00 am

- New Product Showcase & Awards Presentation; presenters: Susan Brady, Gary Dulanski, Barbara Cianci Horton, Lee Waldron

### 2:00-3:30 pm

- "Daylighting: All You Can Use and It's Free"; speaker: Joel Loveland
- "Lighting the Past into the Future"; speaker: David Malman, IALD, IESNA, LC
- "Weaving Light with Architecture"; speakers: Edwin Rambusch, IESNA, DLFNY; Viggio Bech Rambusch, IESNA, APT, ASID

### 4:00-5:30 pm

- "One Fish, Two Fish, Red Fish, Blue Fish...Lighting Habitats"; speaker: Patrick Gallegos, IALD, IESNA
- "Do Good Things Come In Small Packages? The Advantages and Disadvantages of Packaging"; speakers: David A. Mintz, FIALD, FIES, LC; Robert Prouse, IALD, LC, FIES; Willard L. Warren, IEEE, FIES
- "Current Public Lighting Strategies, Home and Abroad"; speaker: Leni Schwendinger, IALD, WTS, SEG D
- "The Lighting Detectives"; speaker: Kaoru Mende, IALD, IESNA

## Wednesday, May 7, 2003

### 8:30-10:00 am

- "Working the Shadows"; speaker: Naomi Miller, IALD, FIES, CIE, IDA
- "Futurist Predictions: Where We Are Going?"; speaker: Julie Allen
- "Staying in Bounds...Outdoor Lighting Issues"; speakers: Randy Burkett, FIALD, IESNA, CIE; Nancy Clanton, IALD, IESNA, IDA, NSPE

### 10:30 am-12:00 pm

- "What Can Be Done Today To Prepare For Tomorrow...The Principles of Sustainability"; speaker: Denise Fong, IALD, LC, LEED
- "A History of Light and Lighting (1909-1969)"; speaker: David DiLaura, IALD, FIES
- "Doers or Thinkers—What is the Future of Lighting Design Education?"; moderator: Susan S. Szenasy; panel members: Shashi Caan, Chip Israel, David Lewis, JoAnne Lindsley

### 2:00-3:30 pm

- "Spectral Effects of Lighting"; speaker: Mark Rea, Ph.D, FIES, FSLL, LC; Jean Paul Freyssinier, IESNA; John Bullough, IESNA, SAE, TRB
- "The Chromaticity Complex as Applied to Dichroic Filters"; speaker: Geza Keller, SPIE, OSA, AVS
- "Lamp & Ballast Update"; speakers: Jim Anderson, Roy Sierleja, Paula Ziegenbein
- "They're Small, They're Cute, But Can They Do Tricks?...LED Technology Overview"; speakers: Dr. Nadarajah Narendran, Ph.D; Robert Steele

### 4:00-5:30 pm

- "Do Standards Measure Up?"; speakers: Sam Berman, Ph.D; Brian Liebel, PE, LC, IESNA

- "It's All About Relationships: Selling to the Specifier"; speaker: Cynthia Turner, PRSM
- "Does Size Really Matter? An Objective Performance Evaluation of T8, T5 and T5/HO Systems"; speaker: Peter Ngai, FIES, CIE
- "Taking the Byte out of Bits: Lighting Design, Installation and Operation in the Digital Age"; speakers: Richard Miller, PE, LC, IESNA, IEEE, IAEI, NSPE, USITT; Wayne Morrow, IESNA

## Thursday, May 8, 2003

### 8:30-10:00 am

- "DALI Installation: A Case Study"; speakers: Daryl Dalling; Mike Botz, AEE; Pete Horton; Richard Miller, PE, LC, IESNA, IEEE, IAEI, NSPE, USITT; Steve Worthington, AIA
- "Who Done It?...How to Prevent Things from Falling Through the Cracks"; speaker: Andrea Hartranft, IESNA, IALD
- "Light Cents...Establishing the Cost of Lighting"; speaker: Joseph Good, III, LC, IESNA

### 10:30 am-12:00 pm

- "“\*#%&?...Does your Client Understand You?”"; speaker: Randy Burkett, FIALD, IESNA, CIE
- "The E Factor...Creating Emotional Response Through Lighting"; speaker: Cindy Limauro, IALD, USITT
- "Lighting for Dummies...Lighting Basics and Terms"; speaker: Laura Prestwood, IESNA, IDEC, IIDA

## May 3-4, 2003 Lightfair Institute:

- "Basic Lighting"—Craig Bernecker
- "Intermediate Lighting: Beyond the Fundamentals"—David DiLaura
- "Modern Daylighting"—Andrew Bierman, IESNA; Joel Loveland
- "Light, Perception & Culture—Linnaea Tillett, Mark Sussman, G.Z. "Charley" Brown
- "Presentation Techniques for Lighting Professionals"—Nathalie Rozot; Matthew Richter
- "AutoCad 101"—Michael K. Larsen

## Monday, May 5, 2003 Workshops

- "Retail Tour of Lighting"—Megan Carroll, IESNA, DLFNY, ISP, AMA; Lee Waldron, FIALD, LC, IESNA
- "Energy and Environmental Codes and Issues Part One: Codes Update"—James Benya, PE, FIES, IALD, LC
- "Energy and Environmental Codes and Issues Part Two: Designing to Meet Code...How To Do It and Get Good Results"—James Benya, PE, FIES, IALD, LC
- "Designing with LEDs: Technology, Applications and Installation"—Ted Ferreira, TEA, USITT
- "Lighting Software Today"—Rob Guglielmetti
- "Win, Lose or Draw...Developing Lighting Details"—Edward Kaye, LC, USITT, ASTC, IESNA, LC, TEA, IAAPA
- "LEED (Leadership in Energy and Environmental Design)"—Richard Miller, PE, LC, IESNA, IEEE, IAEI, NSPE, USITT; Bill Odell, AIA
- "Lighting Certification: An LC Review Workshop"—William F. Daiber, LC, IESNA; Fred Oberkircher, LC, IESNA; Thomas C. Scott, LC, IESNA
- "Sweet Dreams and Rude Awakenings...Lighting for Kitchens and Baths"—Randall Whitehead, IALD



# Making the Case for Lighting

BY OWEN HOWLETT AND JULLE OKSANEN

In the fall of 2002, the relighting of the tree-lined banks and bridges of the river Aura in the Finnish town of Turku was completed. It was hoped that the regeneration would encourage more visitors to the already lively town, which boasts a rich medieval history, and is home to the mildly unsettling 'Moomins'—cult European cartoon characters who resemble tiny walking manatees (check out [www.muumimaailma.fi](http://www.muumimaailma.fi)).

A few weeks later, members of the town council were visiting a kindergarten and admiring the children's paintings; they noticed that the children had painted the tree-lined riverbanks not as they appeared during the day, but as they appeared at night, illuminated by specially commissioned lighting columns.

The residents of Turku are persuaded of the value of urban lighting to their community, and their story is not unique; but the value of good lighting remains stubbornly hard to convey except in anecdotal form and almost totally resistant to numerical proof.

This article will set out some of the instances where we know for sure that lighting is and has been valuable. It will also give academic and numerical references wherever possible, in the hope that these will be useful to architects and designers in proving objectively what many realize intuitively: Lighting, often overlooked, can yield a rich return on investments of time and capital.

To become valuable, lighting must enhance and support the things that we personally value: our health, our safety, our sense of belonging, our sense of beauty and ideally, it should lower our insurance costs. But the lighting industry has been a one-trick pony for two decades, banging its hooves on the drum of energy efficiency to the exclusion of all other concepts and causes. Energy efficiency is a noble and important cause, but not one that inspires much passion or personal commitment among the majority of our clients or the general public.

"The public doesn't really care about lighting and probably never will" was the premise set out by Mark Rea, director of the Lighting Research Center (LRC), in a speech at Lightfair International in 2000. "We seem only to talk about watts, illuminance and cost—issues of little or no importance to the public... We need to talk to people outside the lighting industry about those things they care about, namely, seeing and health."

These two fields, seeing and health, have quietly been the subjects of ongoing technological, clinical and design research that has continued almost unnoticed amid the energy efficiency headlines of Kyoto, Nokyoto and Title 24.

## SEEING OTHERS' INTENTIONS

University campuses nationwide have recently been sprouting highly illuminating lampposts in pedestrian areas, and a brief trawl of the Internet for "pedestrian safety"



Civic lighting at Whitehaven, UK

yields dozens of links to programs intended to banish fear of the dark and encourage (especially female) students to use key pedestrian routes outside daylight hours.

The debate has long raged over whether good urban lighting simply reduces the public's perception of danger or whether criminals are actually deterred by it. A key contribution was Philips Lighting's 1980 "Engineering Report 43." Citing previous anthropological work and incorporating new research, this beautifully produced report showed that in a typical urban environment, people closer than 10m (33 ft.) begin to be perceived as a potential threat. When they approach to within 3m (10 ft.), it would be impossible for us to take evasive or defensive action in response to a threat; 3m is the "mandatory recognition zone," within which we must be able to recognize the facial expression and therefore, the intentions of a stranger.

Unfortunately, the Philips report seems to lapse into photometric obscurity by making recommendations for semi-cylindrical illuminance—a measure of incident light so insignificant that, to my knowledge, no commercially available device exists for measuring it. But without any real loss of accuracy, it's possible to paraphrase the recommendations as follows: Facial recognition at 4m (just outside the mandatory zone) requires 0.8 lux measured on a vertical plane at eye height; recognition at 10m requires 2.7 lux.

Another key contribution was made last year by researchers Painter and Farrington at the University of Cambridge, England.<sup>1</sup> They monitored crime levels in two pairs of very similar urban areas; in each pair, one area was relighted with higher-quality street lighting, while the other acted as a control. They found that crime decreased by up to 45 percent in the relighted areas, while in the control areas, it did not change by a statistically significant amount.

Using British Home Office figures for the financial cost of crime, Painter and Farrington calculated that the capital cost of the improved lighting was offset by crime reductions in as little as five weeks. They calculated

(Continued on page 50)



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(Continued from page 48)

cost:benefit ratios between 1:2.4 and 1:10 in the first year alone, with benefits continuing to accrue over the life of the installation. The researchers chose their sites deliberately to maximize the difference between "before" and "after": areas with high crime rates and comprehensively obsolete tungsten streetlights. They succeeded in demonstrating the principle, but as with any groundbreaking research, questions remain; lively discussions continue in journals and online. (For a particularly skeptical discussion, visit [www.asv.org.au/odlighting/node1.html/](http://www.asv.org.au/odlighting/node1.html/).)

Common sense is often proved wrong by research findings, but one benefit of the latest white (metal halide) streetlighting lamps is clear: Their ability to render color faithfully means that any criminal continuing to conduct his or her business will suffer the indignity of having their hair color, their clothing and their car described to police in Technicolor vividness by any witnesses. Toronto police have already noted this benefit.

## SEEING OUT THE CORNER OF YOUR EYE

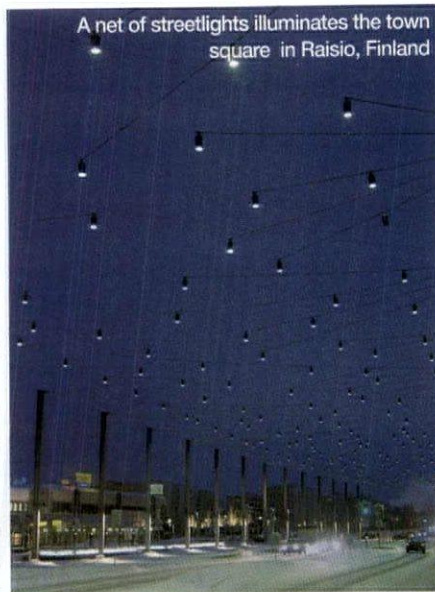
We all value the safety of ourselves and our families on the road. Accidents often occur because road users don't see each other in time, whether they be drivers, cyclists, pedestrians or hapless critters. The human eye has stunningly fast and efficient mechanisms for spotting off-center (peripheral) objects, especially if they're moving, but most modern streetlighting creates visual conditions unsuited to these mechanisms.

Researchers at the LRC took a stretch of road and replaced the existing HPS lamps with newly-developed 250W metal halide lamps, which emit shorter-wavelength (bluer) light. Short-wavelength light is more easily detected by the retinal rod cells that form our attention mechanism. The researchers found that drivers' reaction times were 60 milliseconds quicker under the new lamps<sup>2</sup>; that translates to a 4-ft. reduction in stopping distance at 40 mph. They also found, anecdotally, that drivers sometimes completely failed to spot objects under the HPS lamps, but did so less often under the MH lamps. The safety implications of this are clear and compelling. The lamps used in the study are now widely available and can be directly retrofitted into HPS streetlights without having to change the lampholder or the ballast.

## SEEING STARS

Every so often, a small group of people who share an intense passion can change the way we see the world. In the case of the International Dark-Sky Association, they've changed the way we see other worlds too. Formed in 1988 by a group of urban astronomers frustrated with nighttime "sky glow" from cities, the Association now wields enough clout to initiate lighting legislation at state level throughout the country. So far, legislation to reduce wasted upward light has been adopted in 10 states and is proposed in another eight. Local municipal regulations exist in various communities in 31 states.

Many members of the Association are not astronomers, but regular citizens whose only interaction with the nighttime sky is to occasionally look up and wonder about the vastness of it all, who they really are and why they spend so much time at the office. The absence of real darkness not only prevents them communing with the cosmos but prompts their resentment at the encroachment of the city. Their passion



A net of streetlights illuminates the town square in Raisio, Finland

shows how powerfully lighting, with its connotations of urbanity and nighttime activity, can influence our sense of place.

The website of the International Dark-Sky Association ([www.darksky.org](http://www.darksky.org)) gives advice about legislation and lighting design, and links to the websites of manufacturers who produce fixtures friendly to darkness.

## SEEING WHAT WE MEAN

Back in Finland, Vesa Honkonen and Julle Oksanen were also at work last year in the small town of Raisio. Detractors might call Raisio "provincial" despite the fact that it hosts the semi-final of the national tango championships. The stolid folk aren't easily impressed, but their civic pride is burning brightly in their recently relighted town square (left). The centerpiece of the installation is a net of streetlights stretched taut over the main street, on which lamps are

dispersed at irregular intervals to lend a distinct character to the area.

The engineering involved in the net was impressive; the poles required 80-ft.-deep piles to brace the tension in the crosswires, but the townspeople were most affected by the unique appearance of the lights themselves. They have "taken the lights to their hearts" and given them pet names which translate (approximately) from the Finnish as "bats," "falling tears" and "singing birds"; the last is most appropriate since the architect's vision for Raisio was inspired by Act 3 Scene 5 of Shakespeare's *Romeo and Juliet*, in which the lovers wonder whether it's the nightingale of the night or the lark of the approaching morning that they hear through the window of Juliet's chamber.

The use of lighting features to lend character to otherwise nondescript town centers or even to define centers where none obviously exist is prevalent throughout Europe. The regeneration of the English town of Whitehaven (see photo on page 48) included an energetic blue neon "wave" traveling the length of the marina wall to emphasize the town's nautically-themed activities and provide sufficient light for nighttime strollers.

Whitehaven's civic lighting is overtly symbolic, but light doesn't always convey meaning so explicitly. Suspended indirect office lighting is often specified by companies who want to create a sense of community among their employees and project a sympathetic and supportive image to their staff. Indirect lighting creates less glare and softer shadows than direct fixtures.

Meaning can equally be conveyed by the absence of light: Grand Central Station's fin-de-siecle charm is preserved under only 15 lux, and Alvar Aalto famously requested that his buildings be unlighted at night, so they could sleep.

## LIGHT, HEALTH, DAYLIGHT & PRODUCTIVITY

Everyone feels better and works better in a bright room with many windows, but sometimes it takes a lot of science to prove the glaringly obvious; the science of circadian photobiology, barely 10 years old, is slowly unwrapping the gift of daylight, laying out the retinal and neural mechanisms by which light governs our sleep, digestion, immune response and procreative urges. Within the next five years, it may become commonplace to specify not only electric light levels for task performance (typically 300-500 lux), but also

(Continued on page 52)



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(Continued from page 50)

natural or electrical "circadian" light levels (along with timings and durations of exposure) using an entirely new system of circadian photometry.<sup>3</sup>

The LRC is applying for grants from the National Institutes of Health and other bodies to significantly expand its work in this field. So far, benefits (via blue light therapy) have been realized by sufferers of seasonal affective disorder (SAD) and Alzheimer's disease, but these could soon be extended to shift workers, long-haul travelers, sleepy teenagers and regular

office workers via conventional lighting systems. Recent developments and research results are available online at [www.lrc.rpi.edu/lightHealth](http://www.lrc.rpi.edu/lightHealth).

Nevertheless, daylight remains a force of nature as well as a medicine. A research study of 108 retail stores by the Heschong Mahone Group found that daylighting improves sales figures by 31 to 49 percent (go to [www.pge.com/003\\_save\\_energy/003c\\_edu\\_train/pec/daylight/daylight.shtml](http://www.pge.com/003_save_energy/003c_edu_train/pec/daylight/daylight.shtml)). It's hard to see how customers' circadian systems would benefit from being in the

daylighted stores; they just prefer being under natural light, and research is probably the wrong tool to tell us why.

Electric light, properly used, can also improve well-being and productivity. A document published by the English engineering organization CIBSE summarizes research into the beneficial effects of uplighting, suitable illuminance and uniformity levels and lighting controls (findings showed that "control over environment" improved productivity by between 2.8 and 12.9 percent, increased illuminance 2.8 to 20 percent, and uplighting—for a VDT task—3 percent).<sup>4</sup>

One day, it may even be possible for light to repair the damage caused by a big night out; "Red light rescues retinas from methanol poisoning" (Nature, March 3rd 2003, [www.nature.com/nsu/030303/030303-1.html](http://www.nature.com/nsu/030303/030303-1.html)). ■

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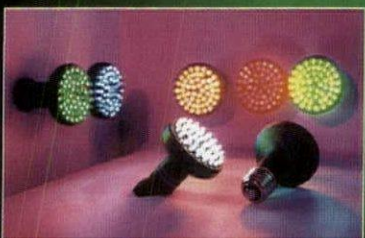
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### NOTES

1. Painter, Farrington, "The Financial Benefits of Improved Street Lighting, Based on Crime Reduction," *Lighting Res. Technol.* 34,3 (2002) pp. 3-12.
2. Akashi, Rea, "Peripheral Detection While Driving Under a Mesopic Light Level," *Journal of the Illuminating Engineering Society of North America*, Winter 2002.
3. Rea, Figueiro, Bullough, "Circadian Photobiology: an Emerging Framework for Lighting Practice and Research," *Lighting Res. Technol.* 34,3 (2002) pp. 177-190.
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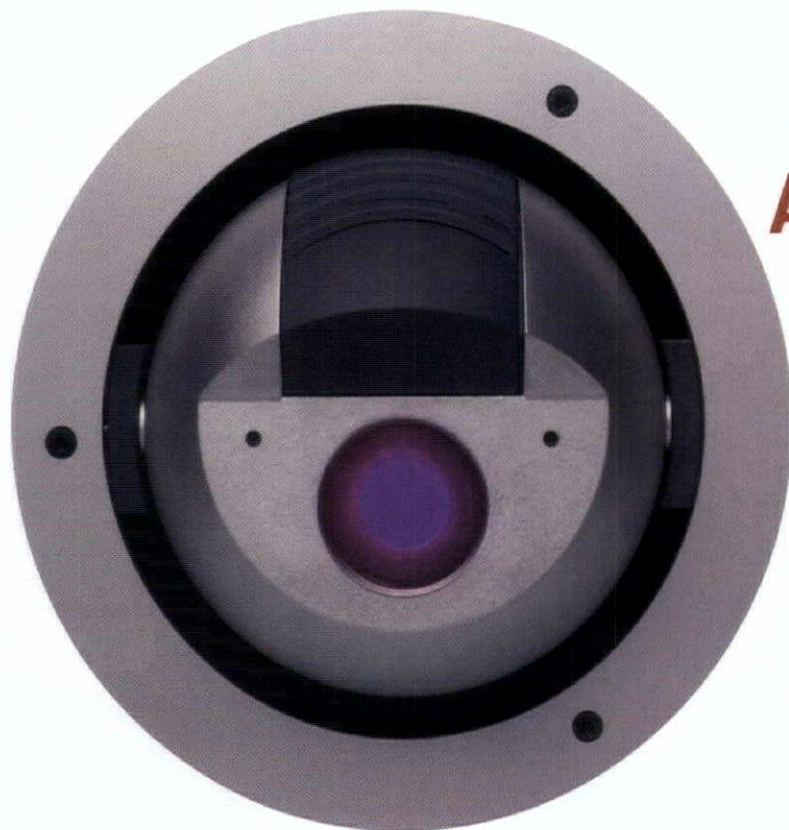
- The Lighting Research Center, [www.lrc.rpi.edu](http://www.lrc.rpi.edu)
- Lawrence Berkeley Labs, [www.lbl.gov](http://www.lbl.gov)
- Summaries of research useful to designers, [www.InformDesign.com](http://www.InformDesign.com)
- National Research Council of Canada, [www.nrc.ca](http://www.nrc.ca)

Owen Howlett is a visiting scholar at the LRC, Troy, NY. He is engaged in projects which include human factors research, daylighting, market transformations and lighting design tools.

Julle Oksanen is also a visiting scholar at the LRC. He is responsible for teaching lighting design to MS students. He has previously practiced as an independent lighting designer and is currently developing a lighting design and consulting practice within the LRC.



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# The Lighting Designer's New Role

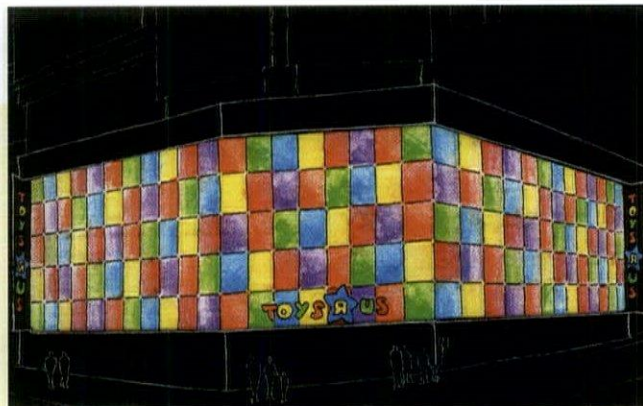
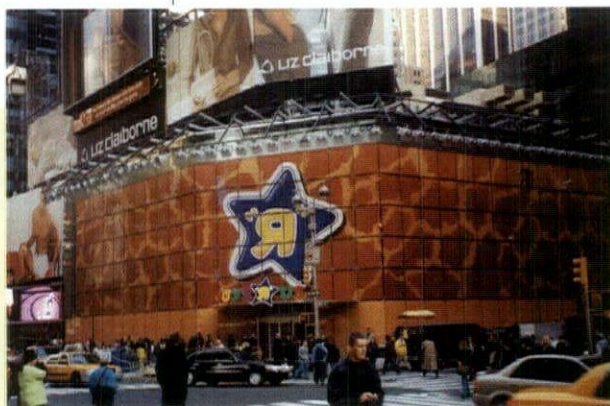
BY PAUL GREGORY

Over the past 10 years, architectural lighting has made a fundamental shift in how it is designed and perceived. From the redevelopment of Times Square in New York City to significant buildings such as the Millennium Dome in London and other spaces around the world, lighting has become a key player in the world of architecture.

With ever-increasing focus on the use of lighting and technology in architecture and design, new standards are set at an astounding pace. Whether the project is large and attention-grabbing like the George Washington Bridge in New York City or smaller and more subtle like Manhattan's Town Restaurant, lighting has become, more than ever, an important part of these projects.

The success of these kinds of projects is based on the extraordinary collaboration between architect and lighting designer. They have not only raised the expectations of the design community but have also captured the attention of everyone. Owners and developers have learned the value of award-winning design and how much lighting plays an important part in that effort. The general public, too, has higher expectations. They have been to London, Paris, Las Vegas and Disney World. Their perception of good design—and good lighting—has become much more acute. What was interesting five years ago is outdated today. People want to feel good and look good, they want to be entertained, awed and wowed, and they know when they're not. They even want to be educated.

*(Continued on page 58)*



## CASES IN POINT

At our firm, we continually keep this process of defining the views with the architect in mind as we move through the various phases of a project. Two projects where we applied this philosophy successfully are the Toys 'R' Us flagship store in New York's Times Square and Morimoto Restaurant in Philadelphia.

The Toys 'R' Us flagship store (above) is a perfect example of the lighting designer and architect working closely together to create a series of well-crafted views. The first view is experienced as customers approach the store along Broadway amid the cacophony of lights and signs. We analyzed the area through a light study to understand what would capture the attention of a person on the street. Gensler had designed a big glass box on the corner of 44th Street. We thought it would be exciting to wrap the entire building with images and, every now and then, expose the interior. We proposed a series of 6-x-6-ft. scrollers lining the entire facade. These programmable scrollers were designed to allow six completely different images to appear on the facade. As the facade transforms from one image to the next, it creates a colorful

collage of abstract moving patterns and, every so often, scrolls to a clear panel to reveal the store's 40-ft.-tall Ferris wheel inside.

The interior of the store is designed as a sequence of views that the patron is able to walk through and experience. From the front door, the Ferris wheel is the main focus with the brightly lit orange and amber ceiling overhead acting as the background. As patrons move up the escalator, a backlit wall creates a colorful and graphic backdrop. The view from each level looking out onto Broadway, beyond the gigantic Ferris wheel, reveals the massive glowing signage of the outside of the store. The scale and graphics make one feel as if on the inside of a comic book. As the patron moves toward the back of the store and enters the World's Fair area, they are met with another picture-like view. The large stretched area of orange canvas provides a frame for the products that hang beneath and the big blue ceiling serves as a wrapper and background for the space. As customers move through the store's distinct sales areas, they experience views carefully and colorfully designed through lighting.

*(Continued on page 56)*



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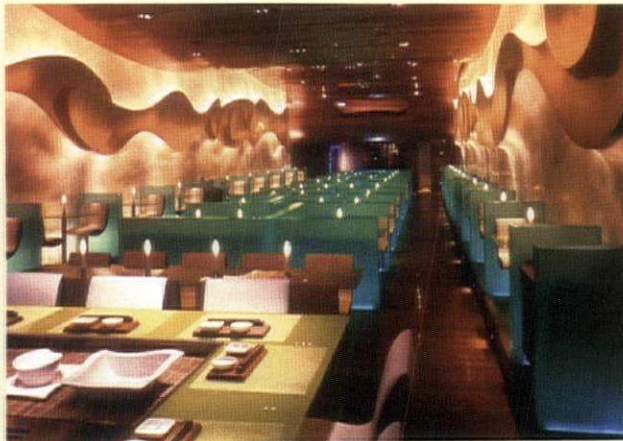
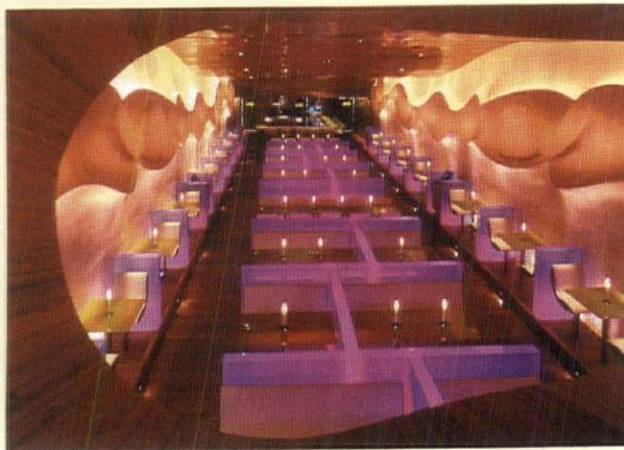
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We took the same approach when designing the lighting for Morimoto Restaurant in Philadelphia (above). Working with architect Karim Rashid, we wanted the overall view to be a picture of strength and structure in the center of a soft and warm space. The juxtaposition of crisp, hard lines of glass partitions against soft, free-form side walls creates an exciting visual contrast, heightened by a careful and considered relationship between architecture and lighting. Overhead, the undulating wood ceiling leads the eye back to the focal point, a sushi bar at the far end of the space.

The architect had conceived the project with a single blade of transparent glass separating each dining table. After analyzing the design, we saw the potential of the glass booth dividers and wanted it to stand out and become a defining element in the space. We grew the idea into a 5-in.-thick hollow, frosted glass wall with internal lighting to make it a dynamic part of the space. The single blade of transparent

glass moved to the top of the hierarchy of surfaces as we added dynamic color-changing elements.

The sculptural plaster walls were designed to serve as the background and wrapper to the space. These lustrous walls presented another key surface that we felt should be carefully considered. They needed to serve as a glowing backdrop in contrast to the slow color-changing rectilinear walls in the center. We designed these walls to appear as if glowing from within.

Projects such as Toys 'R' Us and Morimoto continue to expand the boundaries of lighting design and help define the new role of the lighting designer. We believe it is the lighting designer's obligation to the architect, owner and patrons to help organize the hierarchy of views and to keep the focus on making those views successful. The lighting designer's role will continue to evolve and, as it does, great opportunities for creative collaboration with the architect will arise.

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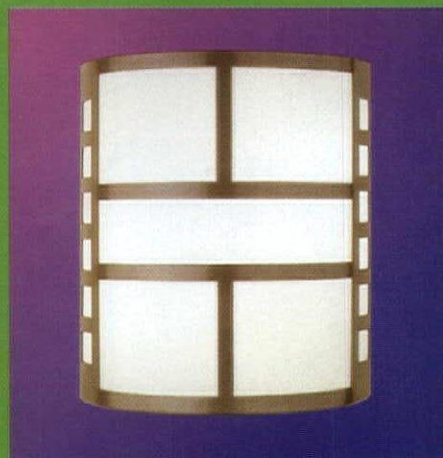
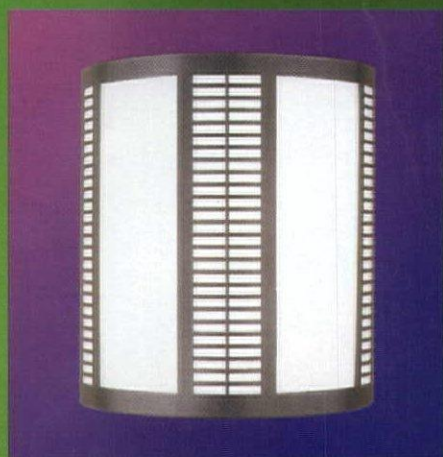
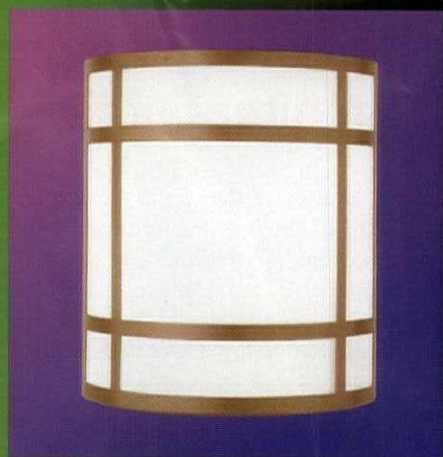
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## The lighting designer's new role is to help the architect organize the project into a series of views.

Because of the rapidly changing world of design, our increased expectations to be amazed and the competitive marketplace today, the lighting designer's role in the design process has been fundamentally altered.

The lighting designer's new role is to help the architect organize the project into a series of views. I like to think of these views as paintings. Just as a collection of paintings is organized into a carefully crafted sequence in a

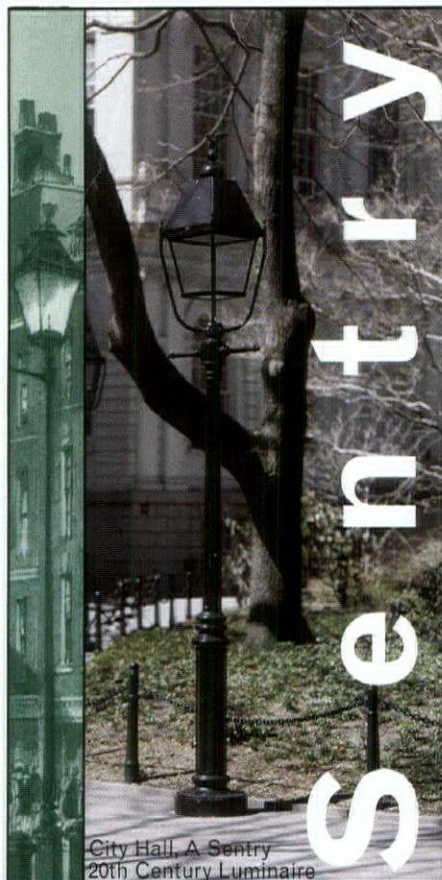
museum, so are the views in any architectural project. The lighting designer and architect need to work closely together to philosophically organize the spaces and the experiences one has in those spaces.

The hierarchy of the surfaces seen in those views also needs to be established. The lighting designer needs to analyze every surface and every material and then, just as in a painting, create a foreground, a background, a frame and a focus. Today, with so many new materials and finishes introduced at an astounding rate, this is a much more complex problem than it was even five years ago. However, if the lighting designer has carefully considered all of these issues, there is a greater likelihood that something remarkable will be achieved as one enters a space and experiences the first view.

During the design process, the architect leads an intricate network of consultants and experts. Curtain-wall and vertical transportation consultants, merchandisers and marketers are among the myriad of experts required on today's projects. The architect's role in leading this growing team often takes time away from keeping track of the big picture. Because of this enormous task and the time required to do it well, the architect needs to be able to rely on the lighting designer to assist in identifying, analyzing and organizing the views of the project.

It is critical that the lighting designer analyze each surface and material's reflectivity, texture, contrast and color and be able to communicate that information clearly to the architect through renderings and mockups. It is through these tools that the lighting designer is able to describe to the architect what will be seen and how. By these methods, the lighting designer can continually update the architect as the design develops and changes and, eventually, is completed. ■

*Paul Gregory is the principal designer at Focus Lighting, based in New York City.*



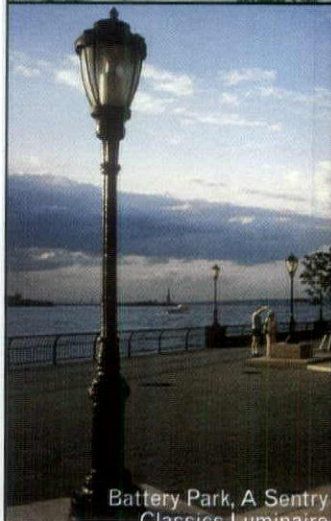
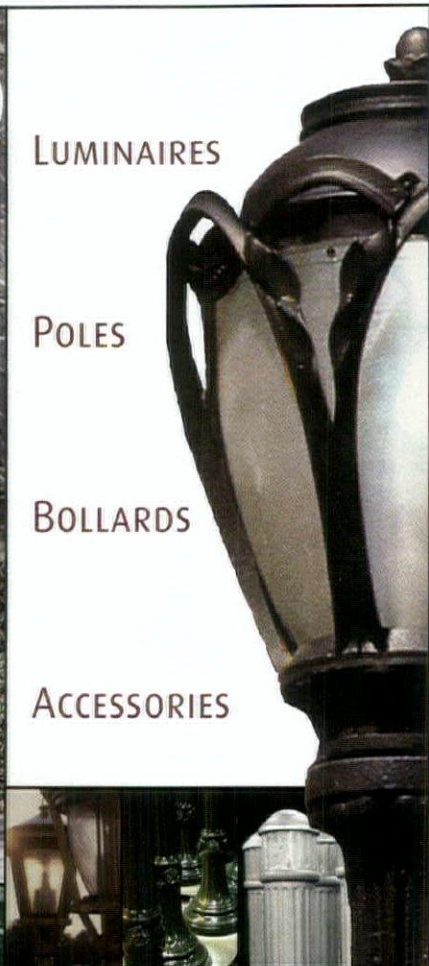
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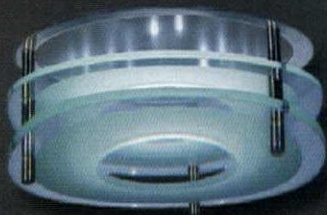
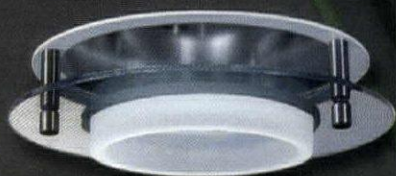
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# STARLESS, STARLESS NIGHT

BY JAMES BENYA

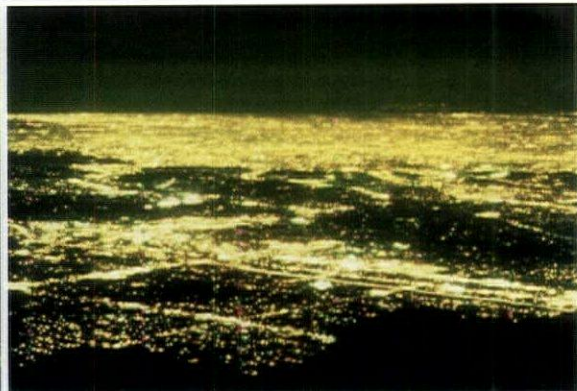
*Good morning, architectural lighting industry. This is your wake-up call. We won't call again, so you had better wake up now. You don't want to be late for your date with the Dark Sky Movement. Think of it more like a court date—the next call you get will not be nearly as pleasant.*

Sometime in the mid-1980s, astronomers at observatories in the southwest and southern California decided that something had to be done about the rapidly increasing amount of night sky glow. Coining the phrase “light pollution,” they convinced cities and counties to adopt anti-light pollution laws. Among their most successful

airborne dirt, dust, moisture and clouds. Sky glow prevents astronomy and stargazing. More than two-thirds of the population of first-world countries (especially the U.S., Canada, Western Europe and Japan) can't see the Milky Way from their own homes any more.

- *Light trespass*, in which unwanted light is emitted onto a property. Light trespass is a nuisance and can have deleterious effects on people, plants and animals.

- *Glare*, in which light intended for a useful purpose (such as roadway lighting) produces disability or discomfort glare due to poor aiming, imprecise optics or other application errors.



Los Angeles in 1908 and 1988. Images provided courtesy of the International Dark-Sky Association, [www.darksky.org](http://www.darksky.org)

accomplishments were the strict outdoor lighting laws in San Diego, San Jose, Tucson, Flagstaff and more recently, Hawaii and Albuquerque.

Most of the early anti-light pollution laws favor low-pressure sodium (LPS) lighting based on the belief that astronomers could filter out the monochromatic yellow light and observe the balance of the spectrum. LPS lighting systems can be found throughout many of the locales listed above, all mandated by local law. Other benefits of LPS include long lamp life and high efficacy, making the lighting systems appealing to roadway lighting engineers as well.

But ultimately, LPS isn't really the right solution. While it is still preferred near observatories and some wildlife refuges, the lack of color rendering and eerie cast of LPS make it unpopular for most human uses. For example, in a parking lot, all cars appear to have about the same color. And while LPS may be good for professional astronomy, it can still cause light pollution that prevents stargazing and amateur astronomy. In order to create better solutions, we need to understand the problem.

## WHAT IS “LIGHT POLLUTION”?

There are three principal types of light pollution:

- *Sky glow*, in which light is emitted or reflected upward into the sky, illuminating small particles of

Dark sky advocates are not all astronomers, and a surprising number of them are actually more concerned with light trespass and glare than sky glow. Many have become frustrated with their inability to prevent really egregious lighting problems usually caused by sloppy floodlighting practices. And there are a few extremists who would turn off every electric light.

Dark sky advocates aren't the only people concerned with the topic. As part of its overall sustainability agenda, the U.S. Green Buildings Council provides a point in the LEED system for dark sky-friendly design. Many buildings have gained this LEED point with simple improvements to the exterior lighting design.

## ELIMINATING SKY GLOW

Sky glow is caused by both directly radiated and reflected light. A separate means is used to control each. Directly radiated light can be controlled by using cutoff lighting equipment or other equipment used in a manner to prevent upward radiation. It is especially important to try to employ “full cutoff” lighting whenever possible, because luminaires classified as “cutoff” or “semi-cutoff” can radiate some light upward.

Obviously, this will have a dramatic effect on the use of traditional and ornamental luminaires. Most globe lights such as “acorns” and “lollipop” should be avoided, even

*(Continued on page 64; sidebar on page 62)*



## STARRY NIGHTS: MAINTAINING CONTROL

The International Dark-Sky Association is now developing a future generation of model lighting codes and standards. These new codes will contain some combination of the following outdoor lighting control concepts:

- Most future outdoor lighting design recommendations, and therefore future codes, should be based on the four lighting "environmental" zones contained in IESNA RP-33-99 and related CIE documents. The zones include E1, natural; E2, rural; E3, suburban/urban; and E4, urban and special. The zone choices are based on ambient light and to a certain extent, population and related planning issues.

- A simple code for small communities should also be created, assuming a town or district having almost exclusively E2 and limited E3 ambient lighting situations.

- The allowable amount of gross light on the site should be limited. Some anti-light pollution codes have a site limit based on lumens per acre; California's Title 24 energy code, beginning in 2005, will have power density (W/sq. ft.) limits for exterior lighting similar to those for interior lighting. The net effect is the same, although watts may be easier to enforce than lumens. These limits should vary by zone.

- The allowable amount of unshielded or partially shielded light should be limited by zone. It is stupid, frankly, to be worried about a small amount of upward light from landscape lighting or an ornamental light in a downtown district or theme park, but the same light would be inappropriate in a national park.

- The maximum luminaire wattage should be limited by zone. This will help prevent really bad lighting choices, such as using a

1000W floodlight to illuminate a convenience store parking lot. Good lighting designers tend to choose more appropriate lamps already, but the average lighting application designed by a contractor is too often affected by a "more is better" philosophy.

- The maximum pole height should be limited by zone and application. Taller poles should be permitted where higher light levels are needed and where they make sense, such as parking lots. However, in a pristine setting, a tall pole is unappealing day and night and often, the area requiring lighting is comparatively small. Likewise, tall poles are not really appropriate for homes, landscapes and parks.

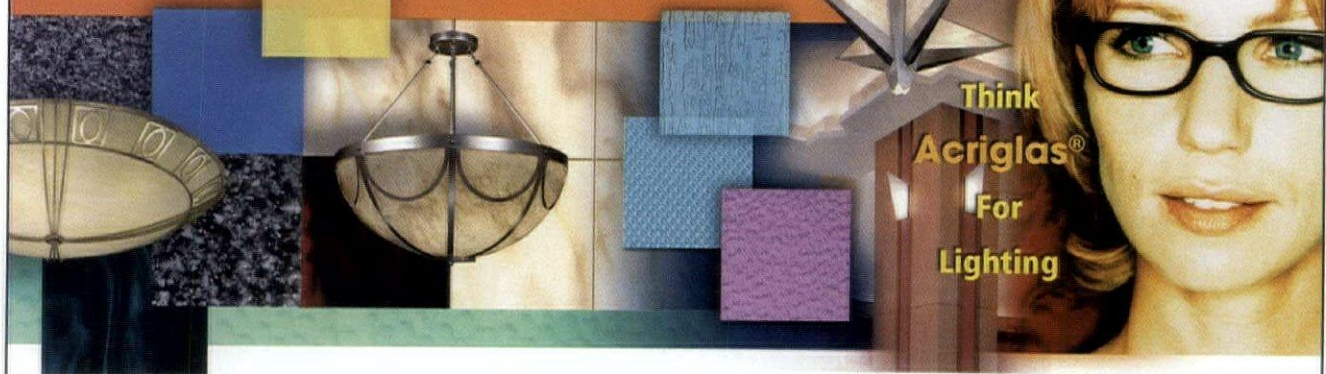
- The lighting of signs and building facades should also be limited by zone. Overly bright illuminated objects not only create light pollution, but they can affect the adaptation of onlookers, potentially causing night blindness and resulting accidents or other problems.

- Allowances should be made to permit limited amounts of fun and playful lighting, such as landscape lighting and traditional ornamental and festival lighting, while preventing "over the top" lighting designs involving lasers, high-intensity strobe lights and powerful searchlights, except in specific applications such as theme parks and cities with a high percentage of demanding outdoor lighting needs like Las Vegas.

- New codes should have some sort of sunset provision on existing lighting that does not meet the new code.

- There should be a means to measure light trespass and a way for a homeowner to get some relief from bad lighting by neighbors.

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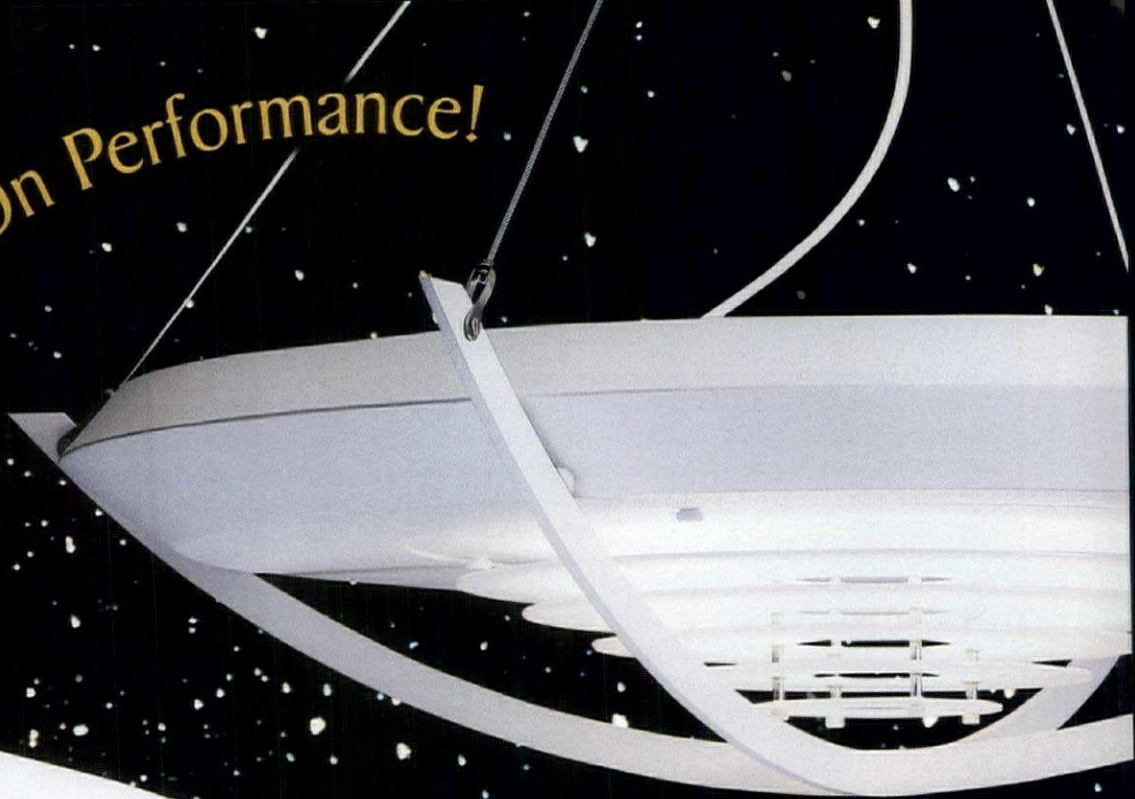
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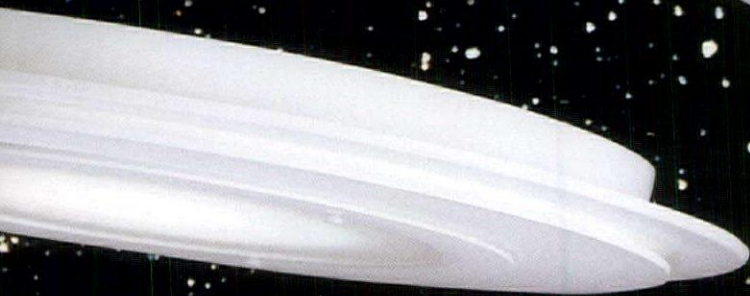
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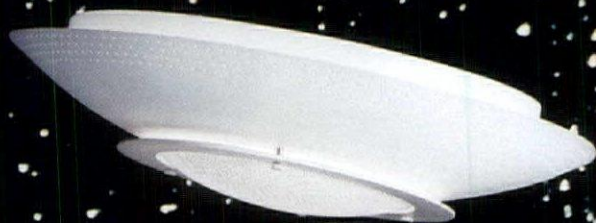
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(Continued from page 60)



Above: Inside a traditional-style luminaire, shielding eliminates uplight and increases efficiency at desirable angles. Modern optical designs can result in dark sky-friendly, high-performance luminaires of classic appearance. Photos courtesy of Holophane.

if the manufacturer claims to have internal shielding or refractors. Instead, use full cutoff "shoebox" luminaires or modern versions of traditional luminaires that employ a modern, full cutoff "head" on a

body of more traditional shape. Most outdoor lighting manufacturers have new products designed specifically for the dark sky marketplace. In highly ornamental situations, such as downtown streetscapes, use a modern luminaire with a false chimney or even a few low-wattage incandescent sparkle lamps; however, in sensitive low-ambient light situations, it is best to stick with a full cutoff luminaire in order to realize a more appropriate lighting design.

In order to reduce reflected sky glow, the best overall solution is to reduce lighting to the lowest recommended levels published by IESNA for the application. In order to determine these values, read the *IESNA Lighting Handbook, Ninth Edition* and applicable IESNA Recommended Practices, especially RP-33-99, the Recommended Practice for Outdoor Environmental Lighting. Street and roadway designers should try to use the more advanced luminance and STV methods of roadway illumination contained in RP-8-00, which are reported to produce lower energy levels and therefore less reflected light. They should also read IESNATM-10-00, "Obtrusive Light—Urban Sky Glow and Light Trespass in Conjunction with Roadway Lighting."



Above: Fixtures offering full cutoff such as this wall-mount from Kim Lighting's Site Wallforms series eliminate light trespass.

## ELIMINATING LIGHT TRESPASS

Most modern lighting practices ignore light trespass entirely, spilling light onto adjacent properties with no concern for whether some of the light illuminates adjacent buildings or sites, or worse, creates glare to people on adjacent properties. This problem is so severe that many anti-light pollution laws are principally concerned about limiting light trespass.

Light trespass isn't as easy to address. As a society, we have been routinely careless about light trespass since the electric lamp was invented (and even before, I guess). Some of the most popular and efficient luminaires used for outdoor lighting readily cause light trespass (and often sky glow) due to widespread, unshielded distribution. For example, the ubiquitous "dusk to dawn" security light is just as likely to illuminate your neighbor's bedroom window as any part of the yard in which it is installed. Other flagrant luminaires include the standard cobrahead streetlight, the classic floodlight and the standard wallpack.

Starting out with a cutoff version of the conventional lighting solution often solves the problem. Use a flat lens cobrahead streetlight, a forward-throw full cutoff shoebox floodlight or one of several new cutoff wallpacks, for instance. If the design is done carefully, most of the time the added cost is minor and there is no significant change in energy efficiency.

(Continued on page 66)

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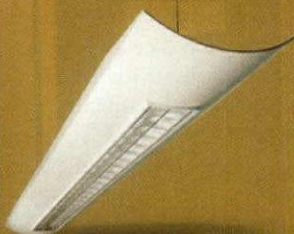
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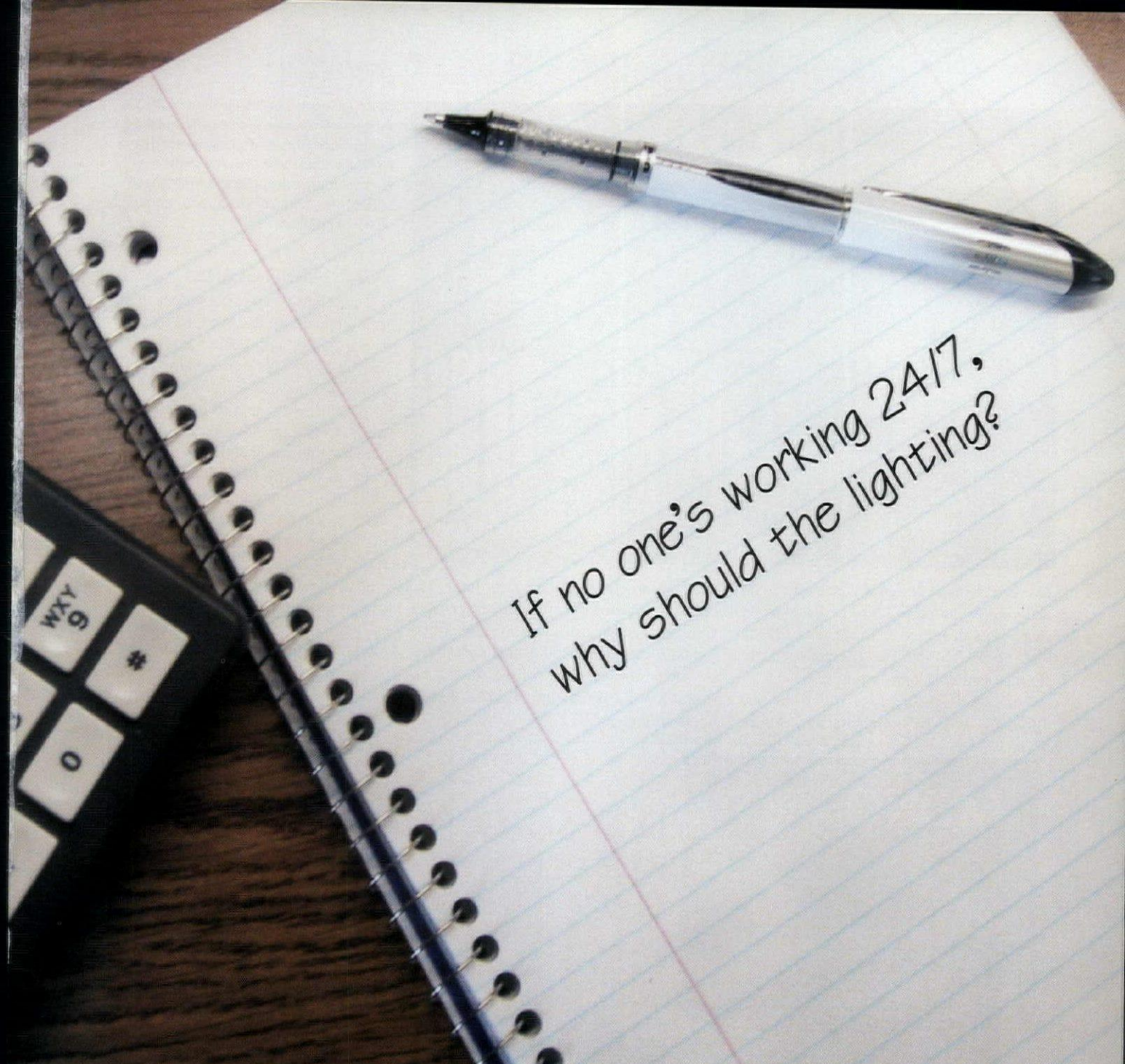
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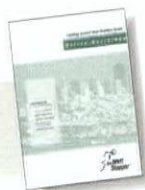
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(Continued from page 64)



Although glare-free illumination is often mistakenly equated with insufficient light, a comparison of these traditional acorn and refractor acorn-style fixtures with Architectural Area Lighting's Promenade series reveals that glare, in fact, compromises visual perception.

## ELIMINATING GLARE

The offensive glare of outdoor lighting is so commonplace that we tend to think that a glare-free installation does not have enough light! This is especially true among police and security experts whose interest in lighting is limited to its utility in their work. Unfortunately, because so much of outdoor lighting practice is driven by the threat of liability, the dominant reasons for outdoor lighting emphasize quantity over quality. And those who measure "quantity" in this case are often poorly equipped to do it correctly.

However, lighting design will be harder to do and will require professional design skills in more cases than before. Try reading IESNA TM-11-01 "Light Trespass: Research, Results and Recommendations."

For some light trespass situations, the solutions will be much harder. As an

example, to illuminate a sports field, one can now use internally and externally shielded versions of conventional sports lights. Granted, the luminaires cost more, but today the acceptance of the community may depend on whether the better luminaires are used.

Worse yet, light trespass and its related glare are often seen as advertising, particularly for outdoor retail businesses such as gas stations and car lots. Associations of service station companies as well as car dealers' groups maintain that high light levels are needed for "security," but with some healthy skepticism, it is easy to understand how these businesses clearly relate very bright lighting, including glare, with corporate identity, wayfinding and as an attraction. When it comes to drawing attention to a business at night, a lot of bright light is often more effective and cheaper than signs. However, the IESNA has dealt with this in RP-2-01 by making the amount of light in these applications very dependent on the ambient light and setting. According to the IESNA, there is a need for higher light levels for inner city locations than in suburban and rural locations.

Glare is usually a byproduct of light pollution and light trespass, so developing lighting designs that eliminate these problems will generally take care of glare, too. To ensure that glare is minimized, consider in designs such elements as shields, louvers and other attachments to directional lights, and carefully examine where all light from each luminaire actually goes. Be especially careful of candlepower radiated in the zone between roughly 45 and 90 degrees relative to nadir, as this is most likely to cause glare to those on the ground. Also think about people who might have an aerial view of the design, such as from an adjacent building, and provide shielding where appropriate.

(Continued on page 68)

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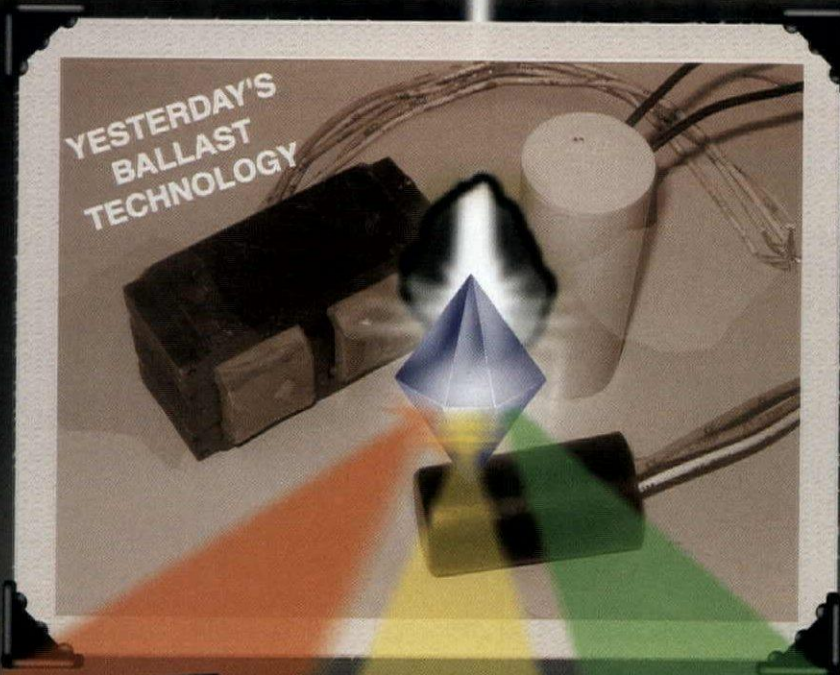
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## There is no doubt that the Dark Sky Movement will change the way we do outdoor lighting forever.

### SENSIBLE LAWS ARE COMING

Most of the existing anti-light pollution laws are full of technical problems, making them hard to enforce (I once read a lighting law that restricted "candle-feet per sq. ft."). Also, a large percentage of them have been written by concerned citizens lacking sufficient lighting knowledge to implement

the basics correctly, resulting in laws that are counter-productive. For example, many "home-grown" lighting laws have restrictions on pole height that prevent good lighting practice in commercial parking lots, largely because they were concerned that their neighbors might put up 30-ft.-tall lights for their tennis court.

It is very important that lighting designers, urban planners, landscape architects and other design professionals who develop lighting programs for streetscapes and exteriors understand the significance of this basic philosophical change and the related codes and standards (see sidebar on page 62). In the long run, the IESNA has undertaken to develop new means of assessing outdoor visibility called "ETAL" (Evaluation of Task Adaptation Luminance) that are expected to result in future lighting standards in which lighting levels can be lower if glare is reduced. Also, the IESNA has recently agreed to develop future recommendations with the understanding that recommendations of when lighting is not needed are as important as recommendations of where and how much.

There is no doubt that the Dark Sky Movement will change the way we do outdoor lighting forever. The architectural lighting industry has a wonderful opportunity to be a part of it, developing new products and employing them in new and creative ways. But those of us who choose to sleep through this wake-up call will soon find ourselves battling communities that are increasingly determined to impose rules on our work. ■

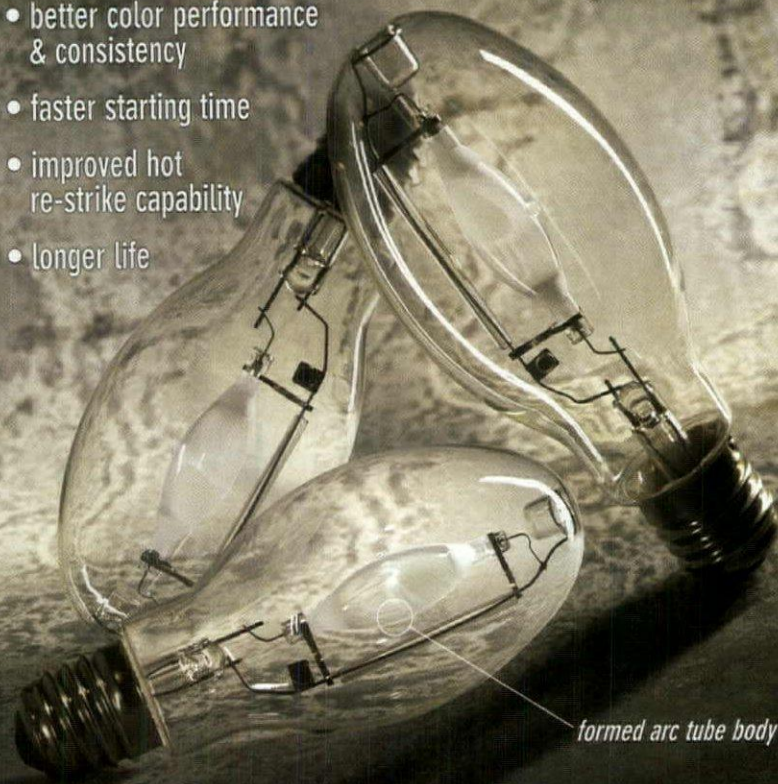
*James Benya is a professional lighting designer and principal of Benya Lighting Design, West Linn, OR. For more information, visit [www.benyalighting.com](http://www.benyalighting.com).*

**Author's Note:** *I have had a very eye-opening experience over the last two years. I joined the International Dark-Sky Association, one of the fastest growing environmental associations in the world. The IDA already has more members than the IESNA. Its members include astronomers, environmentalists, homeowners, lighting designers, street lighting engineers and a wide scattering of the general public. The IDA is driven by a single purpose: to eliminate light pollution. This should matter to design professionals worldwide because the IDA and other dark sky advocates have already succeeded in passing more than 1,000 lighting ordinances and laws controlling outdoor lighting since 1990. IDA plans on developing model lighting codes and standards that have the same effect on lighting as the National Electrical Code—widespread, internationally recognized and enforced. Log onto [www.darksky.org](http://www.darksky.org) for more information.*

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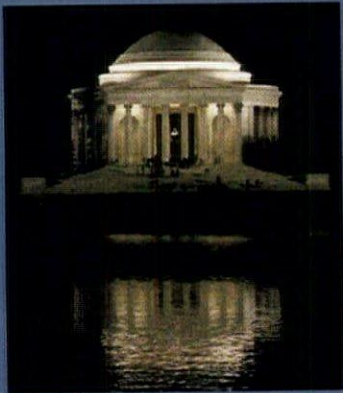
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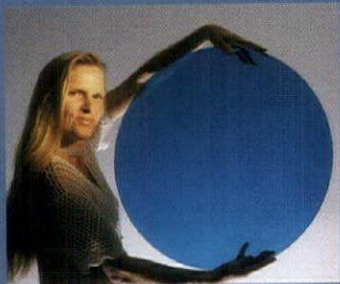
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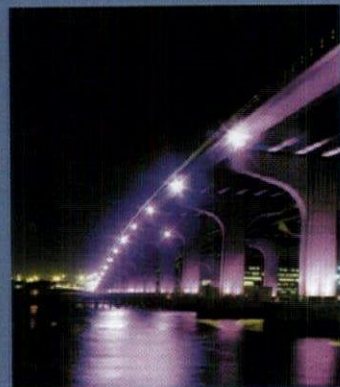
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- >Architects >Contractors >Engineers >Specification Writers
- >Interior Designers >Developers >Building Inspectors
- >Lighting Designers

##### Educational Facility Decision-Makers

- >Educators >School District Leaders
- >Facility Directors/Managers >Campus Architects
- >Purchasing Managers >Funding Agencies

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##### \$295 (per event) Early Bird Registration

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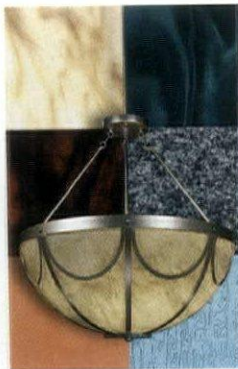
##### \$395 (per event) Regular Registration

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- For sponsorship opportunities call Publisher, Suzanne Tron Haber at 646.654.5756



## Acrilex, Inc.

Acriglas custom acrylic sheets for lighting in faux finishes are designed to emulate the colors and textures of natural stone, patterned and frosted glass, mother of pearl and metal. Easy to fabricate and thermo-form, this material is also specially formulated to withstand exterior conditions, UV exposure and impact.



Circle No. 130

## Aromat Corp.

Approximately 50-percent smaller than the industry standard case! Aromat Corp. introduces another innovative breakthrough in electronic HID ballast design, the Mini-Square and Mini Slim Electronic Metal Halide Ballasts. These ballasts offer the same superior characteristics Aromat's ballasts are known for but now are enclosed in a much smaller casing. Ballasts are available for 20W & 39W lamps. For more information, please call (888) 4-AROMAT or visit [www.aromat.com](http://www.aromat.com).



Circle No. 133

## Alanod



Alanod introduces MIRO-Silver, the most reflective surface in the industry. America's leading supplier of enhanced reflective surfaces will soon make available MIRO-Silver with an unparalleled 98-percent total reflectivity. Manufactured especially for light pipes, solar tubes and HID reflectors, MIRO-Silver is the most effective way for lighting

engineers to save energy and reduce lighting costs. See our full-page ad on page 7 or visit [www.alanod.com](http://www.alanod.com).

Circle No. 131

## B-K Lighting

The compact Yosemite Series features exclusive "interchangeable optics modules" to create dynamic lighting effects with spot, flood or wall-wash reflectors. The Yosemite is available in a wide variety of T6 ceramic metal halide lamps in 35W and 70W. The Series also incorporates a patented ACV System to resist internal condensation corrosion plus a patented 360HD Mounting System with exclusive "aim-and-lock" technology. The Yosemite Series is among the smallest in the industry (8 1/2 in. x 4 in. in diameter) and is a product of B-K Lighting, Inc.



Circle No. 134

## Architectural Area Lighting

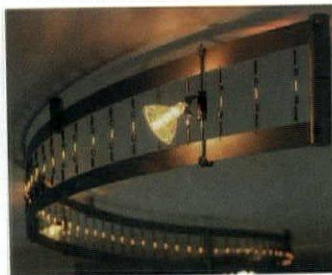
Design with light on your next project using the Pivot from Architectural Area Lighting. Wash a wall, highlight signage or indirectly illuminate a space.

The Pivot uses energy-efficient fluorescent lamps and electronic ballasts in a small compact luminaire design. The Pivot is available in four individual lengths or can be used in continuous rows. The Pivot is engineered for mounting in any orientation for indoor or outdoor applications.



Circle No. 132

## Bruck Lighting



The Flight system is composed of two aluminum profiles attached by sprung festoon lamps. The track is flexible and can be hand-bent for larger curves or factory-bent for smaller radii. The

extremely long life of festoon lamps (over 20,000 hours) allows for minimal maintenance. Furnished in matte chrome or gold.

Circle No. 135



## Cooper Lighting



The Halo L5300 MiniLUME is the first ceramic metal halide track fixture that utilizes the T4.5 (20W or 39W) lamp. The MiniLUME is extremely compact in size and has amazing continuous adjustable optics from spot to flood. Ideal for accent and display applications, it also provides good color rendering, long life and high efficiency, resulting in reduced operating costs while maintaining effective visual merchandising. For additional information, visit [www.cooperlighting.com](http://www.cooperlighting.com), phone (770) 486-4800, fax (770) 486-4801, email [talktous@cooperlighting.com](mailto:talktous@cooperlighting.com).

Circle No. 136

## Electrix, Inc.

Electrix MX series of flexible, field-curveable cove-lighting. Electrix, Inc. builds a wide range of flexible, field-curveable and linear fluorescent cove-lighting for architectural applications. Additionally, Electrix manufactures a complete line of specification-grade wall sconces, custom and indirect light fixtures using energy-efficient fluorescent, metal halide, halogen and incandescent lamps.



Circle No. 139

## CSL—Creative Systems Lighting

The 2800 Adjustable Wallwash/Downlight trim is perfect for illuminating art, wall hangings and sculpture. It is adjustable 130 degrees and is available in white, black and brushed nickel.



Circle No. 137

## Elliptipar

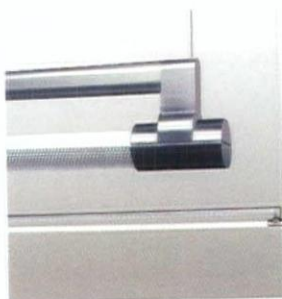
This integrally ballasted T5 fluorescent offers unequalled performance from elliptipar's asymmetric reflector. For wall-washing, the precise optical control projects peak candlepower to the bottom of the wall. For uplighting, Ovalinear creates a broad luminous plane of light for diffuse, glare-free illumination. Available in two styles, the F105 Fluted and the F106 Smooth, Ovalinear is ideal for lighting conference rooms, art walls, marker boards, retail perimeters and much more.



Circle No. 140

## Delray Lighting

Spina is captivating in its clarity and concentration on the essential. It is available as a pendant or surface-mount luminaire with all T5 lamps and can be used alone or with a full complement of diffusers, reflectors and wallwashers. Standard options are dimming and emergency battery packs. Spina works particularly well in open ceiling, deconstructionist interiors.



Circle No. 138

## Énergie

Astron, a direct/indirect luminaire perfect for feature spaces. Astron's extruded acrylic wings are precisely designed for low brightness and high efficiency. Available in either a symmetric or asymmetric version, Astron features T5 or T5/HO lamping. Fully code-compliant and readily available. One of several Trilux products offered by Énergie. For more information, please visit [www.energielighting.com](http://www.energielighting.com).

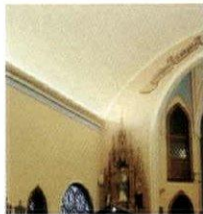


Circle No. 141



## Engineered Lighting Products

CLC Series—Cornice Cove Light. Engineered Lighting Products' wall-mounted, cove system combines a continuous decorative cast GRG cove (glass-fiber reinforced gypsum) with a high-performance cove-lighting system. The asymmetric reflector distributes uniform light into the space without noticeable socket shadowing. Lamp options are biax, T5 or T8 fluorescent. The cove casting is offered in three standard styles (custom designs also available) and is provided in 8-ft. sections. 90-degree corners are also available. Visit our website at [www.elplighting.com](http://www.elplighting.com) or call (626) 579-0943 for more information.



Circle No. 142

## HessAmerica



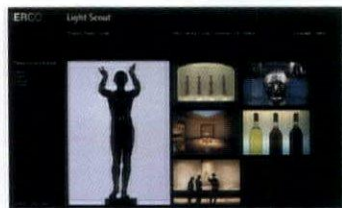
Farino, by HessAmerica, is a sleek, high-performance floodlight for architectural lighting applications where style and controlled distributions are desired. The finned, cast-aluminum housing features six different optical systems designed around ceramic metal halide sources for precise optical control. Multiple shielding, control and color filter accessories complement this new offering.

Multiple shielding, control and color filter accessories complement this new offering.

Circle No. 145

## Erco Lighting

Exploring the spheres of architectural lighting at [www.erco.com](http://www.erco.com). "Light Scout" is the name and program of the new Internet presence of ERCO Leuchten GmbH: [www.erco.com](http://www.erco.com) provides access to the unprecedented wealth of information of more than 100,000 pages on the issue of light in a clearly structured, easy-to-navigate form. Functionally designed like a toolbox, Light Scout above all provides



every region in the world with extensive documentation on all ERCO products in their corresponding versions for different languages and technical standards.

Circle No. 143

## Illuminating Experiences

Ita—clean, crisp and modern, this striking wall fixture series comes in a frosted glass lens version for excellent diffusion of top and bottom lighting. Ita can also be ordered with extra-clear, transparent crystal plate glass. Both glass types are available in contemporary white or brushed metal frames.



Ita is 12 in. high and 3 in. deep and comes in 29-, 22-, 14- and 9-in. lengths. Light source is fluorescent with electronic ballast or halogen. Meets ADA requirements. Suitable for commercial and residential applications.

Circle No. 146

## Hadco

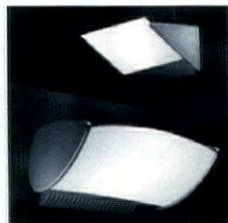
Hadco Introduces Integral Transformer Arm for Accent Fixtures. Hadco's new slim design arm includes a 75W potted, electronic 12V transformer, retrofitting low-voltage accent fixtures in 120V applications. With an integral transformer, halogen lamps can be placed almost anywhere, with no voltage drop. The BT5016 (shown) is a 50W MR16 accent fixture with a rotatable shroud and double. All material is die-cast, marine-grade aluminum with thermoset powdercoat finish.



Circle No. 144

## Insight Lighting

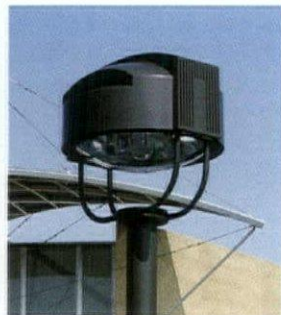
Rarely has a product invention married the importance of lighting performance with architectural style. Enhanced by variations of etched, patterned and colored glass fascia, Vas is the essence of high-performance indirect lighting paired with elegant, direct components. Versatile in lamp choices, the lighting professional may select from a repertoire of illuminated fascias in glass, colored glass and aluminum. Vas can even accommodate custom glass-patterned designs to address your most specific application requirements. Vas, the rarest of new lighting solutions from Insight.



Circle No. 147



## Kim Lighting



Design, engineering and performance. The AC Series is the new standard for architectural outdoor luminaires. The AC Series offers die-cast construction, 150W to 1000W in two sizes, vertical or horizontal lamp optics, post-top or side-arm mounting, and convex or flat glass lenses.

For information on the AC Series or more about Kim Lighting, visit our website at [www.kimlighting.com](http://www.kimlighting.com). AC Series was formerly named ARC.

**Circle No. 148**

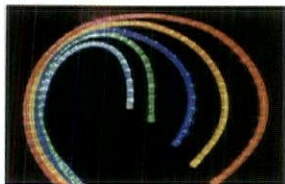
## Lighting Controls Association

[www.aboutlightingcontrols.org](http://www.aboutlightingcontrols.org)

The Lighting Controls Association's website provides lighting specifiers with education, products, technologies, applications and tools regarding the full range of advanced lighting control strategies, from dimming to automatic switching to integrated lighting system control.

## LEDtronics

RopeLED by LEDtronics features LED lighting substrates housed within flexible, clear tubing. RopeLED provides lighting professionals with an energy-efficient, rugged

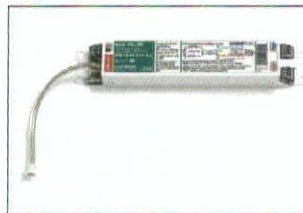


solution for indoor and outdoor accent lighting applications. RopeLED is available in rectangular and round forms. With a 120V AC to 12V DC power transformer, RopeLED produces almost no heat. Choose from red, blue, green, yellow and white daylight-visible LED colors. You can also mix and match different color RopeLED tubing together for a more dramatic color effect.

**Circle No. 149**

## Lutron Electronics

Lutron Electronics enhances personal fluorescent control with the ECO-10-IR dimming ballast with integrated IR receiver. Increase comfort and productivity and reduce operating costs by allowing employees to control their own lighting environment to match the visual task at hand.



**Circle No. 151**

## Leviton Mfg.

Leviton's D3200 Lighting Control System: The Simply Brilliant Way to Make the Scene. The D3200 provides a simplified, cost-effective setup for residential and commercial applications while reducing the number of components needed



for a scene control network. With on-screen wizards and a unique one-touch control for scene changes, the D3200 can be enhanced at any time with a Decora 4-Scene Wall Controller, Handheld IR Remote Controller and Decora-style SmartJack for interface with a PC network.

**Circle No. 150**

## Martin Professional

Cyclo 03 and 04 offer full color-mixing using RGB technology to generate virtually all colors and shades of white light of any color temperature. Technically, this is achieved by combining dimmable T5 fluorescent lamps in the primary colors (RGB) plus white in the 04 model. As a surface-mounted fixture, Cyclo is designed for use in cove-lighting, perimeter lighting, light walls or behind semi-transparent materials and in spaces where room is restricted.

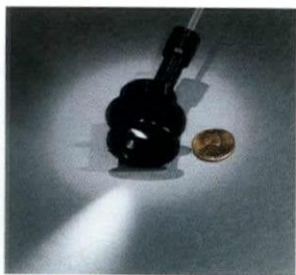


**Circle No. 152**



## NoUVIR Research

Flush-mount fiber-optic eyeball luminaire. 30-degree off-axis aim. Beam adjusts from 15 degrees to 50 degrees with no spill, no scatter, no aberration and no glare. Single project power 32 eyeballs (or other luminaires). Pure-white, stone-cold fiber-optic lighting with no UV and no IR...NoUVIR! Call (302) 628-9933 for catalog.



Circle No. 153

## Prima Lighting

Opus by Prima Lighting. Exciting and unique, the "Flame" spotlight is a real statement. It is meant to be seen and appreciated. Flame can be used in low-voltage monorail, cable and mono-point/multi-point canopy systems. Options of Polished Chrome and Matte Silver finish, MR16 max 50W. For more information, call toll-free (866) 885-4915 or visit [www.primalighting.com](http://www.primalighting.com).



Circle No. 156

## Osram Sylvania

Osram Sylvania, the industry's innovation leader, introduces the new Octron XP Supersaver Curvalume Ecologic lamps to work in tandem with the company's Quicktronic Programmed Start PSX ballast. Together, these lamps and ballasts form the Octron XP Curvalume Supersaver PSX System. The newly enhanced system provides 60-percent longer life while using 27-percent less energy than comparable lighting solutions. Please visit [www.sylvania.com](http://www.sylvania.com) for more product and innovation news from Sylvania.



Circle No. 154

## Prisma Architectural Lighting

Prisma is expanding its product line by introducing the Opta series, designed by Robert Fiorato. Prismatic pressed-glass pendant and ceiling mount are available in five dramatic standard finishes: cobalt blue, amber yellow, matte frosted white, transparent and metallic gray. Designed to accept a variety of light sources such as 75W incandescent, 26W CFH, 42W CFH, 57W CFH and 70W HID. The Opta series is available in three sizes and will complement a variety of applications.



Circle No. 157

## Pathway the Lighting Source

Preview Pathway the Lighting Source's newest products in their Coventry Architectural line. New suspended cobalt glass shades join their Pendalume family of decorative pendants. Also appearing, is an expanded family of decorative recessed fixtures. Visit Lightfair booth 2255 or contact Jill Coan at [jillc@pathwaylighting.com](mailto:jillc@pathwaylighting.com) for more information.



Circle No. 155

## Selux Corp.



Selux MTR systems provide an intriguing marriage of classic contemporary forms with the patented MTR refractor technology. MTR is a true prismatic refractor system with glare-free illumination, distributed precisely where it is needed. This product family includes bollard, wall-mounted, column forms and pole-mounted luminaires of die-cast and extruded aluminum.

Circle No. 158



### Sentry Electric Corp.

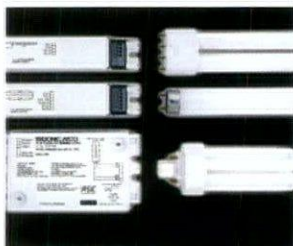
Sentry Centre Street Lantern. This extraordinary early American-style lantern incorporates beveled glass panels and is topped with a brass eagle on a pyramid-perch finial. The luminaire features an internal luminous ceiling that hides the light source and provides greater visual comfort, ideal for many elegant exterior applications. This unique luminaire is built to New York City's vandal-resistance specifications with high-strength aluminum structure.



Circle No. 159

### Tridonic

Tridonic is a global full-line ballast supplier of superior, digital, linear, compact and biax digital ballasts, all DALI-compatible. Our DALI/DSI digital interface creates sophisticated lighting control along with increased flexibility and reduction in energy and installation costs. For more information, call us at (866) TRIDONIC or contact us by email at sales\_usa@tridonic.com.



Circle No. 162

### Special FX Lighting

Special FX Lighting announces a new generation of high-performance color lighting products and color coating services. New EZ•COLOR•HT is a super-tough, weatherproof, color-fusing/coating process invented and perfected by Special FX. This new process creates permanent high-transmission, high-temperature coatings in all colors for all types of glass and glassware. Special FX manufactures the most cost-effective permanent color and filter solution for every lighting application.



Circle No. 160

### W.A.C. Lighting

W.A.C. Lighting's new Low Voltage Monorail System features a bold, eye-catching look, cutting-edge technology and accommodates 150 contemporary pendants and fixtures. Easy to assemble, it bends in the field to create graceful curves and negotiate corners on ceilings and walls. The firm also offers five state-of-the-art track systems; pendants; recessed housings/trims; metal halide trackheads; compact fluorescent wallwashers; miniature, flexible fixtures; button lights; display lights; track extensions/suspensions, accessories. Phone (800)526-2588, fax(800)526-2585, email sales@wacighting.com, website: www.wacighting.com.



Circle No. 163

### Teka Illumination

The Teka Large-Scale (27-in. diameter) Beacon Pole Mount luminaire is manufactured from all natural materials, pure copper, bronze, brass and stainless steel requiring no finish. As such, it gradually conforms to its environment, acquiring a natural patina. Available in HID, compact fluorescent or incandescent light sources. A Dark Sky-conforming version is available. A variety of complimentary poles can also be supplied.



Circle No. 161

### The Watt Stopper



The Watt Stopper's new 360-degree dual-technology occupancy sensor uses both passive infrared (PIR) and ultrasonic sensing to control lighting. Offering a low-profile appearance, the ceiling mount DT-300 provides energy savings for applications such as classrooms and open offices. The sensor features contractor-friendly, terminal-style wiring and SmartSet technology, which automatically selects the optimal time delay and sensitivity settings for each space.

Circle No. 164



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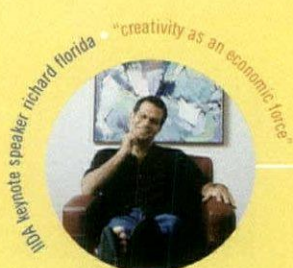
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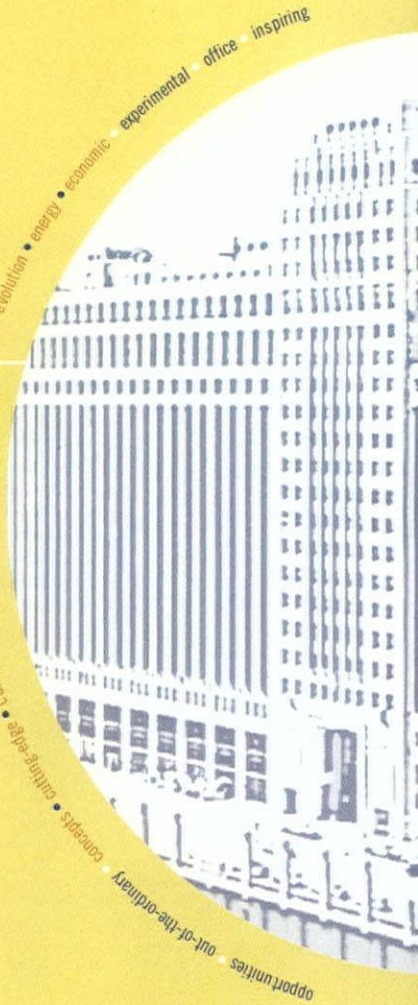
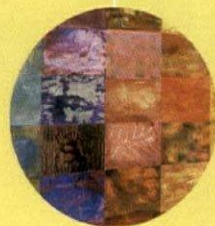
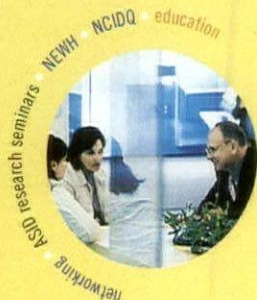


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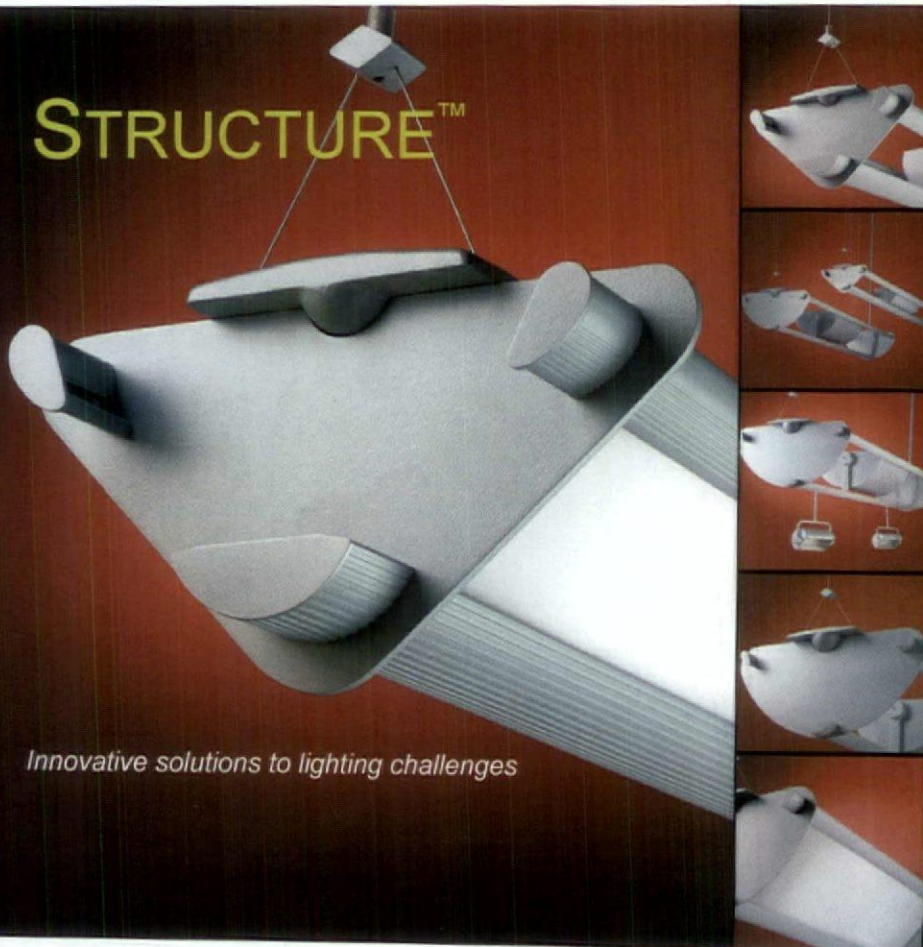


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