

# AL

architectural | lighting

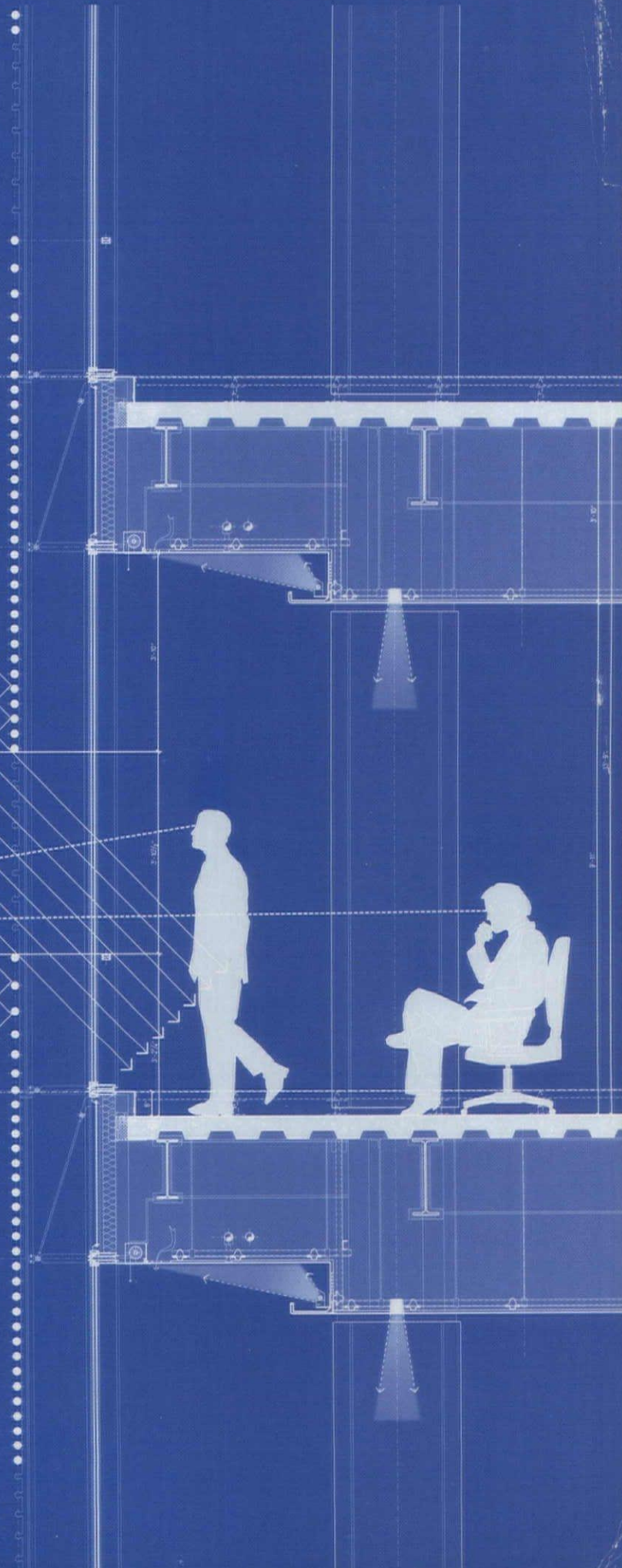


## BLUEPRINT FOR DAYLIGHTING

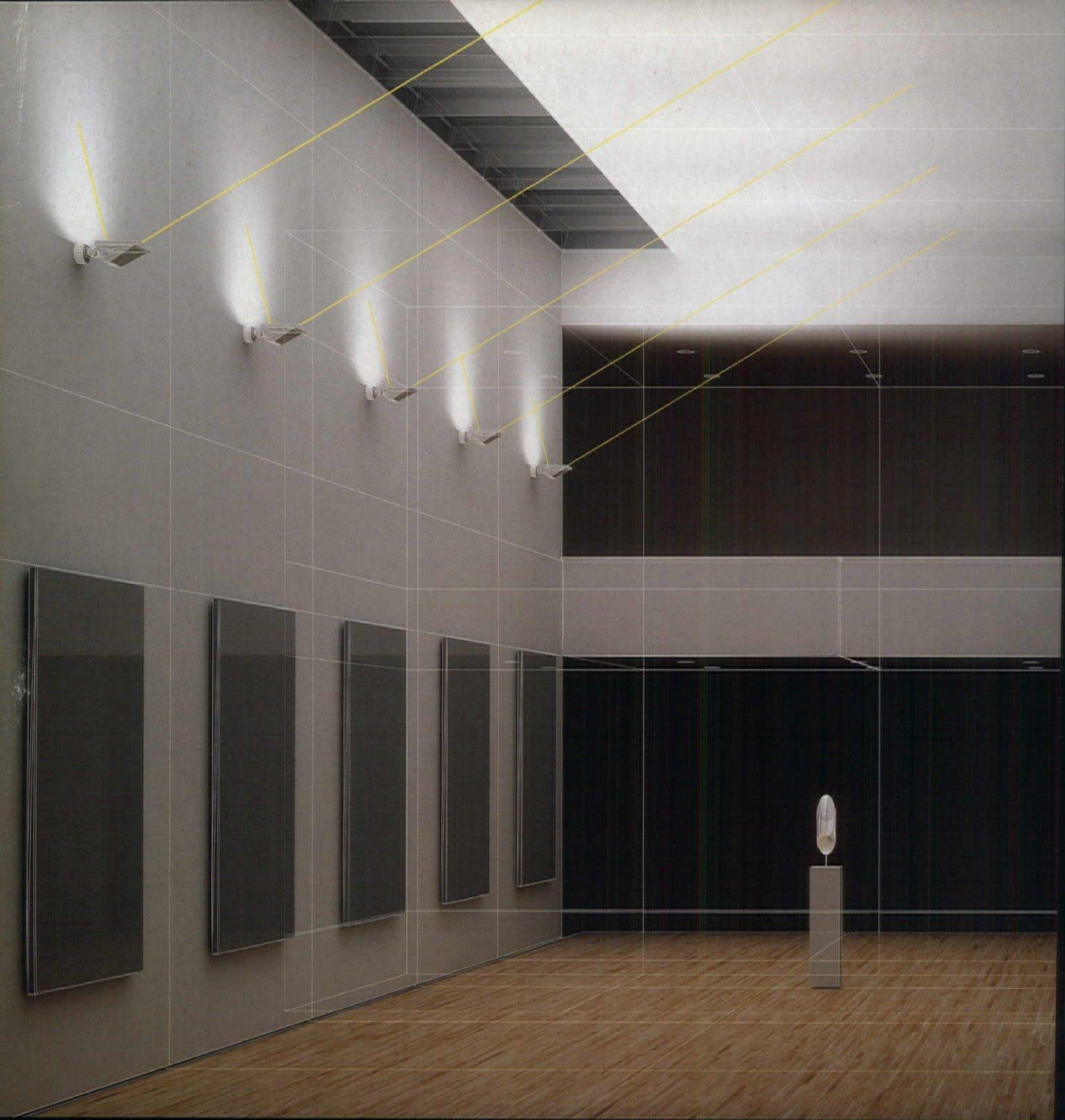
AT THE NEW YORK TIMES

### SPECIAL ISSUE

PROMISING PEOPLE,  
PRODUCTS, PROJECTS +  
TECHNOLOGY

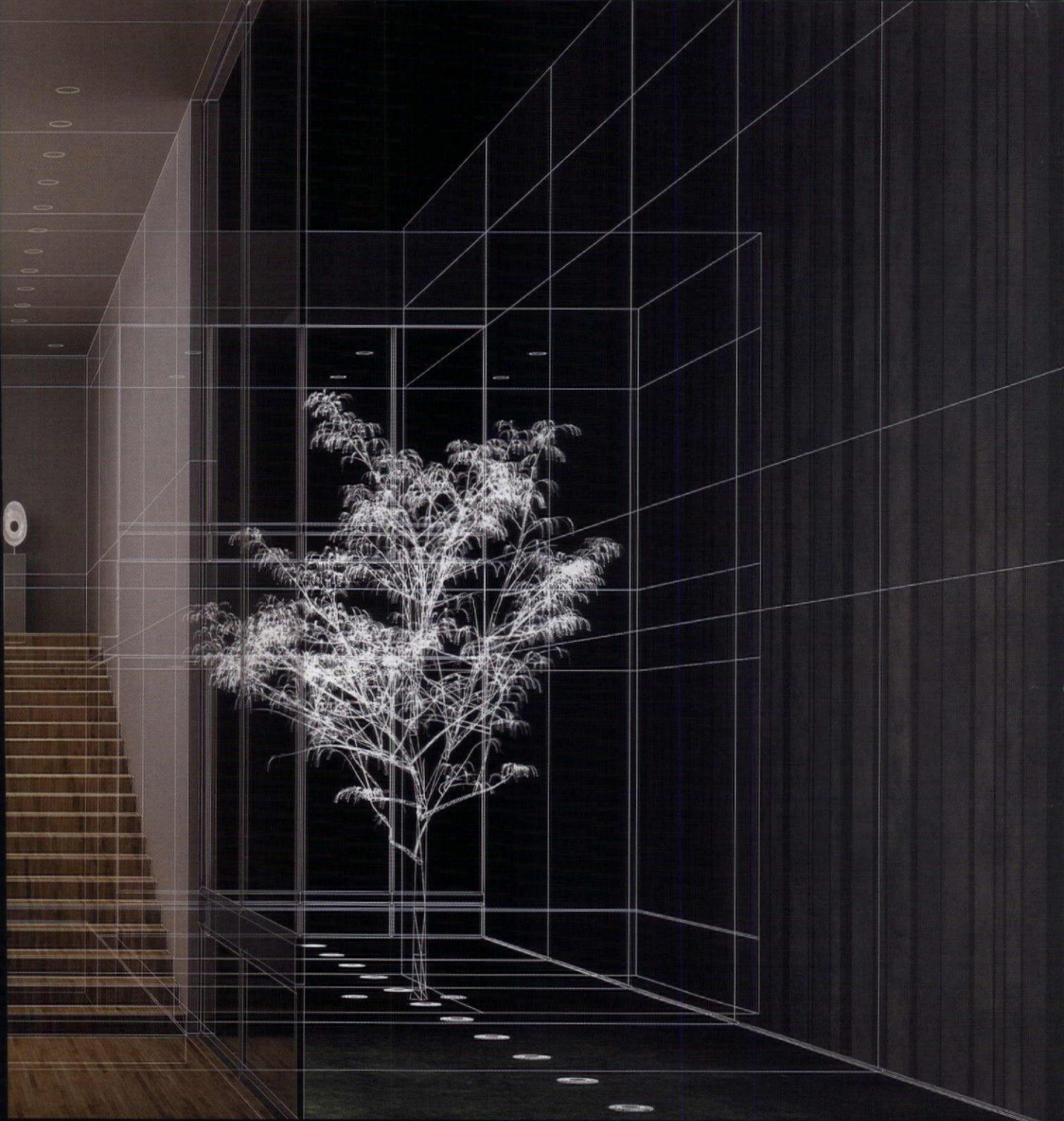






The Lighting Preview





Architecture begins in the mind. The transition from thought to reality takes time and requires lengthy discussion. The implementation of architecture is the ultimate challenge in communication. And since space is perceived visually, computer-generated visualizations of architecture have won a permanent place in the

planning process. Yet virtual architecture, just as real architecture, comes to life only through light. For this reason, each ERCO luminaire has its own virtual "twin" in the form of a set of digital illumination data that can be downloaded directly from our website for your light simulation and visualization software:

For physically accurate and photographically realistic studies, visualizations and analyses. So one can see in advance how light bestows architecture an additional creative dimension.

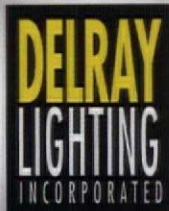
Light is the fourth dimension of architecture: [www.erco.com](http://www.erco.com)

**ERCO**





compact fluorescent  
metal halide  
PLH



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

Circle No. 40 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)

# AL

architectural lighting

JUNE | 04  
VOL 18 | NO 4

## EDITORIAL STAFF

### EDITOR-IN-CHIEF

EMILIE W. SOMMERHOFF  
[esommerhoff@archlighting.com](mailto:esommerhoff@archlighting.com)  
(646) 654-5775

### ART DIRECTOR

JONATHAN MARSLAND  
[jmarsland@vnubuspubs.com](mailto:jmarsland@vnubuspubs.com)  
(646) 654-4472

### MANAGING EDITOR

ELIZABETH DONOFF  
[edonoff@archlighting.com](mailto:edonoff@archlighting.com)  
(646) 654-4482

### CONTRIBUTING EDITORS

JAMES CROWELL, AURELIA DUPLOUICH, MATT FRANKS, ANNA HOLTZMAN, WANDA JANKOWSKI, NAOMI MILLER

### EDITORIAL ADVISERS

JAMES BENYA, HOWARD BRANDSTON, RENEE COOLEY, CRAIG DILOUIE, KENNETH A. DOUGLAS, GARY STEFFY

### SUPPORT

#### PRODUCTION

VINCE HABICK  
fax (646) 654-7317  
(646) 654-7238

#### CIRCULATION MANAGER

ELIZABETH CESARANO  
[ecesarano@vnubuspubs.com](mailto:ecesarano@vnubuspubs.com)

#### LIST RENTAL MANAGER

JOHN LOGIUDICE  
(800) 223-2194

#### REPRINTS - HARD COPIES

HEATHER OSBORNE  
Pars International, Inc.  
[heather@parsintl.com](mailto:heather@parsintl.com)  
(212) 221-9595 Ext. 333

#### ELECTRONIC REPRINTS

MICHELE HEGLAND  
RSi Copyright  
[msh@rsicopyright.com](mailto:msh@rsicopyright.com)  
(651) 582-6007

770 Broadway, New York, NY 10003

#### REAL ESTATE AND DESIGN GROUP

Richard O'Connor, President  
Adam Marder, VP, Operations

**Real Estate and Design Group Publications:** Architectural Lighting, Architecture, Commercial Property News, Contract, Hospitality Design, Kitchen & Bath Business, Multi-Housing News **Other VNU Business Publications Groups:** General and Specialty Retailing; Retail and Food Media; Retail Design; Travel, Performance and Healthcare

#### VNU business publications

President & CEO: Michael Marchesano; Chief Operating Officer: Howard Lander; Group Presidents: Robert Dowling (Film & Performing Arts); Mark Holdreith (Retail); John Kilcullen (Music & Literary); Richard O'Connor (Travel, Performance, Food Service & Real Estate/Design); Michael Parker (Marketing/Media & Arts); Vice Presidents: Joanne Wheatley (Information Marketing); Karen Palmieri (Manufacturing and Distribution)

#### VNU business media

President & CEO: Michael Marchesano; Chief Operating Officer: Howard Lander; Chief Financial Officer: Joe Furey; President - VNU Expositions: Greg Farrar; President - eMedia and Information Marketing: Toni Nevitt; Senior Vice President/Human Resources: Sharon Sheer; Vice President/Business Management: Joellen Sommer; Vice President/ Communications: Deborah Patton; Vice President/Licensing and Events: Howard Appelbaum

AJL architectural lighting (Vol. 18, No. 4 USPS 000-846, ISSN 0894-0436) is published seven times per year (bimonthly, except monthly in March and June) by VNU Business Media, Inc., 770 Broadway, New York, NY 10003-9595 and is distributed free of charge to individuals or firms engaged in the specification of lighting products in the US and territories. Per year, all other subscriptions in the US and territories: \$48; Canada, payable in US dollars, \$60; and foreign: \$96. Canada Post Publications Mail Agreement No. 40031729. Return undeliverable Canadian addresses to: Deutsche Post Global Mail, 496D-2 Walker Road, Windsor, ON N9A 6J3; Periodicals Postage Paid at New York, NY and additional mailing offices. Printed in the USA. For address changes, single-copy sales (\$7 in the US, \$7 + postage outside the US, payable in advance) and subscription inquiries, write to Architectural Lighting, PO Box 1061, Skokie, IL 60076-8061 or call Customer Service at (847) 647-7987 outside the US. POSTMASTER: Send changes of address to Architectural Lighting, PO Box 1061, Skokie, IL 60076-8061.

AJL architectural lighting is a trademark owned exclusively by VNU Business Media, Inc. Copyright 2004 VNU Business Media, Inc. All rights reserved. Reproduction of this magazine, in whole or in part, is prohibited unless authorized by the publisher. Editorial and advertising offices: 770 Broadway, New York, NY 10003. Phone (646) 654-4500.



Copyright © 2004 by VNU Business Media, Inc. All rights reserved.



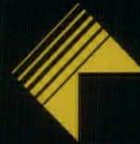
# Traditional Path Lighting

EL180 Traditional Series

3 Stem Heights

3 Hood Styles

12 Volt / 120 Volt



**KIM LIGHTING**

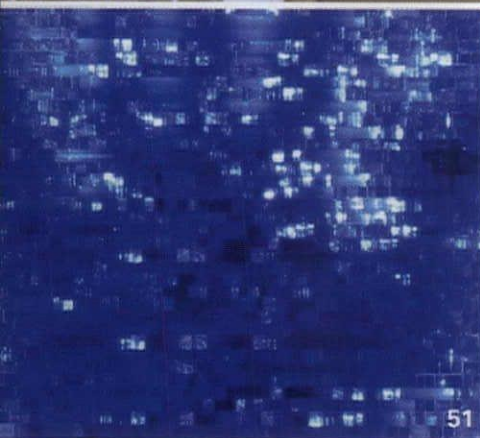
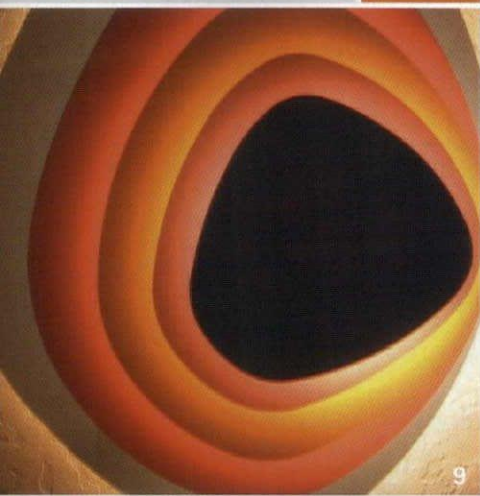
16555 East Gale Avenue  
City of Industry, CA 91745  
626/968-5666

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

Made in America







## industry

- 07** **comments**
- 09** **briefs** / ICFF recap; a season for competitions; and more
- 14** **letters** / Daylighting—LEED Has Made All the Difference
- 17** **report** / Lighting the Way: LEDs for the Developing World
- 19** **report** / Light and Dark: The New Drugs
- 25** **profiles** / Ingo Maurer, Paul Cocksedge, Ann Reo, Sean O'Connor
- 56** **exchange** / How will energy codes affect lighting design?

## projects

- 30** **highlight** / The New York Times Building, New York City
- 32** **office tower** / Daylight! Daylight! Read All about It
- 36** **multi-use** / Hands-on Design
  
- 39** **RESIDENTIAL LIGHTING FOCUS**
- 40** **project** / 50 Murray, New York City; Bridgefront, Brooklyn
- 42** **project** / The Vos Pad, London
- 43** **products** / Products Sweet Products

## details

- 48** **method** / Smile for the Camera: Student Solutions
- 51** **technology** / Mixing Ingredients for a New Flavor
- 53** **technology** / The Virtual Thing: Lighting Software Options
- 55** **ad index**

**Cover:** New York Times Building curtain wall section detail (page 32). DRAWING COURTESY: RENZO PIANO BUILDING WORKSHOP/FOX & FOWLE ARCHITECTS

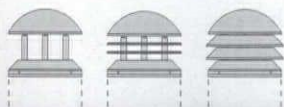
**This page:** Organic1 by blankblank; New York Times Building, model photography by Jock Pottle, Esto; OpTrix passive light system by Abhinand Lath; dForm's Scale punch pattern lighting.

A sustainable design article

Additional information at [www.archlighting.com](http://www.archlighting.com)



# [INDEX]



Index bollard and Index wall bracket composed of durable die cast non-corroding aluminum with a choice of three distinctly designed fixture heads. Choose from black anodised, metallic grey and rust brown finish. Wattages range from Inc, Halo, CFL, HID.  
**WWW.PRISMALIGHTING.COM**



DESIGNER ROBERTO TONATO

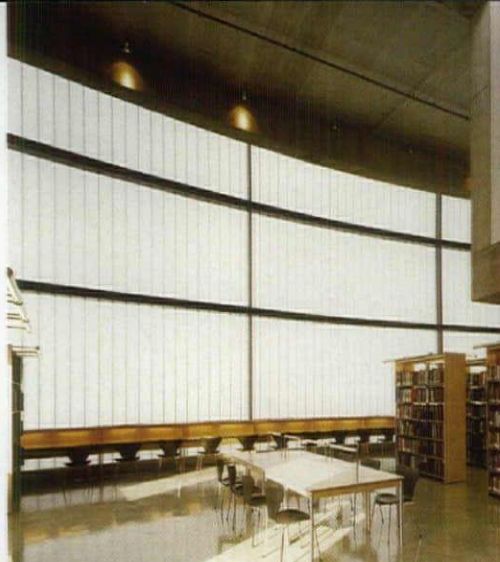
PRISMA NORTH AMERICA [usa\_cdn] +1 770 822 2115  
PRISMA [i] +39 045 61 59 211  
PRISMA ECLAIRAGE [f] +33 1 30 90 53 60  
PRISMA LIGHTING [de] +44 116 2700 548  
PRISMA LICHT [d] +49 (0) 22 8 - 96 39 74 85

**PRISMA®**  
ARCHITECTURAL LIGHTING



# tailor-made.

ONE MORE **ADVANTAGE** OF USING BARTCO LIGHTING.

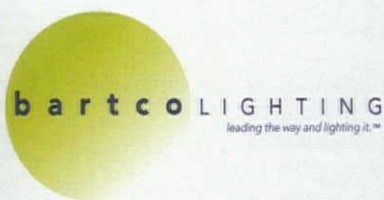


architect: Steven Holl Architects    photography: ©Paul Warchol  
lighting design: L'Observatoire International

**Custom** aluminum  
extrusion developed  
for uplight.

**Modified** display fixture  
used for bookstack  
illumination.

Display fixture **adapted**  
for task lighting.



YOUR VISION. YOUR PROJECT. YOUR **LIGHTING SOLUTION.**

Circle No. 49 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)

manufacturers of quality lighting products

tel 714.848.0892 fax 714.848.6843

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





## Coming into View

**SOME OF YOU MAY HAVE BEEN EXPECTING THE HALL OF FAME ISSUE,** which the magazine has published since 2001, featuring in that time a few of the industry's most revered personalities like Howard Brandston, Jules Horton and the recently deceased Leslie Wheel. These people, and

many not yet profiled, are irreplaceable characters in our industry.

But this year, given the shadows of general political, cultural and economic upheaval we find the world in, Elizabeth Donoff and I felt it was important to look to the future instead of the past, to trust in and support the energies of people with a heartening vision and drive, and to document trends we recognize today as likely to produce a better tomorrow.

Our cover story, the New York Times Headquarters Building, is confronting head on the exciting challenge of how to daylight an office tower effectively—a topic that has come into its own this year with the Lightfair Daylighting Institute. A second feature story, "Hands-on Design," speaks to the idea of connecting users to their architectural environment through unique lighting treatments. The Residential Design Focus examines new trends in lighting for our private lives, and presents a few beautiful products from firms discovered by A|L at recent shows like Lightfair, Light + Building and ICFF.

Industry leader Naomi Miller reports on the research currently being done on lighting's connection to human health and how that is likely to affect the future design of buildings. A notable movement to bring light to the developing world is described in "Lighting the Way."

Lighting designer James Crowell interviews Ingo Maurer, an established personality in the lighting world who is still exploring the medium and inspiring with his original designs. Also featured are Ann Reo, Sean O'Connor and Paul Cocksedge—three promising, early-stage designers with unquestionable vision.

Today's students are the industry's tomorrow, and their innovative winning responses to a contemporary problem—how to light a video conferencing environment—are showcased in Details/Methods. Lighting designer Matt Franks clarifies the state of lighting software, which will increasingly become part of the designer's toolbox, and three promising products, including light-emitting concrete, are presented in "Mixing Ingredients for a New Flavor."

Finally, if you haven't thought about what the new lighting energy codes will mean to the future of lighting design, Industry Exchange presents several people who have.

Fresh blood, new ideas, exciting technologies—as these pages demonstrate, the future is bright.

EMILIE W. SOMMERHOFF  
EDITOR-IN-CHIEF

Let our software  
take the mystery  
out of daylight  
analysis...



Calculate  
illuminance and  
daylight factor,  
visualize, and  
create studies  
using one tool,  
AGI32.



lighting software

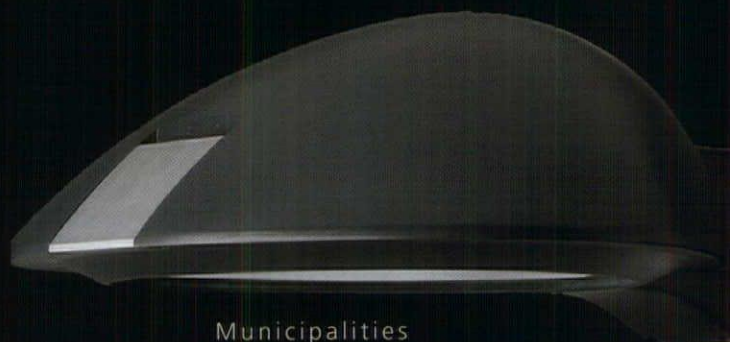
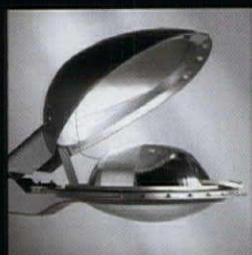
[www.agi32.com](http://www.agi32.com)



# PECHINA™

## Features

- Distinctive, European style
- Full cutoff, cutoff, and semi-cutoff optics
- Flat glass and sag glass options
- Universal mounting-arm or tenon
- Tool-less entry
- IP66 rating



Municipalities  
Commercial offices  
Commercial retail  
Schools  
College and universities  
Port authorities  
Mass transit  
Arenas and sport complexes



inspired by nature

  
**HOLOPHANE®**  
LEADER IN LIGHTING SOLUTIONS

An **Acuity** Brands Company

For more information, contact your local  
Holophane factory sales representative, call  
(740) 345-9631 or write to Holophane, 214  
Oakwood Ave, Newark, Ohio 43055.  
[www.holophane.com](http://www.holophane.com).

**H**Scapes™

HOLOPHANE outdoor lighting



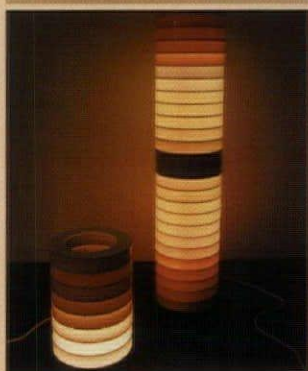
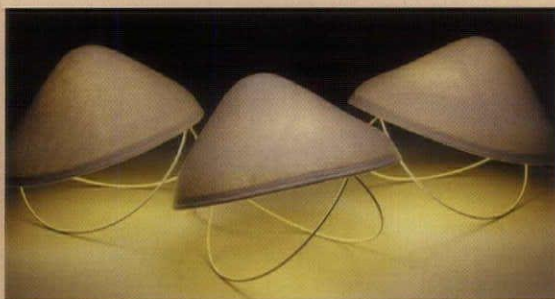
Circle No. 43 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)



## ICFF RECAP

Now in its 16th year, the International Contemporary Furniture Fair (ICFF) has grown from a sleepy little start-up to a major event on the trade show circuit. While ICFF has always been viewed as one of the premier outlets for new and emerging talents to showcase their work, many established companies now see it as a way to reach architects and designers directly. But if one is looking for the latest and greatest in lighting from a technical standpoint, this is not the show. While there is a lot of beautiful lighting, most of it uses incandescent sources. The number of luminaires that used an LED source could be counted on one hand.

Not surprisingly, some of the more inventive uses of light were shown by students from Pratt and Parsons. Among the design investigations at ICFF's exhibit, *RAW: the Next Generation*, two dealt with lighting—OpTrix and Lume (see "Mixing Ingredients for a New Flavor," page 51). Nonetheless, the venue is important for design evolution; it has an international draw and is open to the public. And while perhaps not the technical edge of lighting, the three bags of product literature that I collected is proof of lighting's presence at the show. **ELIZABETH DONOFF**



A sampling from the lighting exhibitors at ICFF 2004: McEwen Lighting Studio's Barrel table lamp (top left); Mio's Shroom light (top right); BlankBlank's Tubes (bottom left); IQLight by Holger Strom celebrating its 30th anniversary (bottom middle); and Designframe Products' Paperclip lamp (bottom right). All images courtesy of the manufacturers.

## SPACE, FORM, SOURCE

Ivalo Lighting, founded in 2000 by Susan Hakkarainen, is based on the premise of design research. The company's mission is to make beautiful objects that are also quality pieces of lighting equipment. It made sense for Ivalo to exhibit at ICFF, a show that Hakkarainen feels, "cuts across sectors for modern products and is accessible to the public." Her goal is to grow the market by creating products that appeal to a broader audience. "Attendees at ICFF are interested in product design and there is a large international contingency," she explains.

Ivalo takes a different approach to luminaire design: it creates fixtures that respond to the architectural needs of a space, and have a residential feel but commercial qualities. This method has allowed Hakkarainen to tap into a pool of established and emerging architectural talent. Four new fixture families—including designs by William Pedersen and Winka Dubbeldam—will be released in the next 16 months.

ICFF 2004 was the debut of Ivalo's second fixture, Rotare, designed by New York City-based architectural firm Lewis.Tsurumaki.Lewis, who shares Hakkarainen's design research sensibility. Both believe in marrying playfulness with academic rigor.



Rotare addresses the home office, a paradoxical space in Hakkarainen's opinion, since the architectural needs of an environment like this are difficult to pin down. Rotare's design pushes the boundaries of metal stamping techniques, using CATIA analysis (the program employed by Frank Gehry to design his famously complicated buildings) to create the pair of steel forms that change from vertical to horizontal as the luminaire's arch shape is made. The two T5HO lamps and ballast are accessible from the top, and the UL-listed patented I-cables suspend the fixture from the canopy. Both a direct and indirect source, the fixture sends light downward through the frosted lens as well as reflects it off the canopy above. Ivalo's fixtures feature the same paint used for luxury car finishes, providing a smooth appearance.

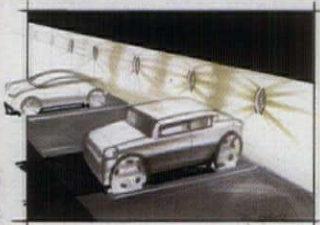
Ivalo has created an interesting design and business model in its creation of lighting, paying attention to what Hakkarainen calls "technosthetics"—that is, technology in service to aesthetics. Although the approach starts with the space then the form then the source, the end result is still excellent lighting that has an emotional interaction with people. **ED**



## THREE COMPETITIONS ENCOURAGE FIXTURE DESIGN

**CITY LIGHTS** Three finalists have been selected from a group of 201 anonymous submissions to move to stage two of the Departments of Transportation and Design and Construction City Lights competition for a Manhattan street light (Jan/Feb 2004, page 11). The finalists are Atelier Imbrey Culbert of New York City; the Chicago office of Skidmore Owings & Merrill; and Thomas Phifer and Partners also of New York City. Three alternates have also been announced: Staubach + Kuckertz Architekten, Berlin; and Christoff: Finio Architecture, and Leni Schwendinger Light Projects, both of New York City. The finalists will submit designs by September 17 and a selection will be announced in October 2004.

**IT'S YOUR LIGHT** Bryan Johnson, an industrial design student at the Cleveland Institute of Art, won Luraline's third annual "It's Your Light" competition. His entry "CenterLine" was selected from more than 100 submissions. This year, students were asked to design an outdoor parking lot or garage luminaire. Johnson's solution pays special attention to public safety, as he explains in the award announcement. "The inspiration for CenterLine stems from the idea of added security and safety for poorly lit parking lots and public



garages. The design is styled so the internal fluorescent bulbs cast light between individually parked automobiles from the ground or wall." Johnson received a \$1,500 cash prize.

**LIGHTING FOR TOMORROW** To encourage development of high-design energy-efficient residential lighting fixtures, the American Lighting Association, the Consortium for Energy Efficiency and the U.S. Department of Energy created the Lighting for Tomorrow competition. Winners of the two-year, two-stage submission and selection process were announced on May 17 at the American Lighting Association's annual conference in Tucson, Arizona. The \$10,000 grand prize was awarded to Salem, a chandelier by Stephen Blackman, director of design and product development for Illinois-based American Fluorescent Corporation. Three fixtures tied for second place: Soli by Lightolier, Torch by Forecast, and BetweenN2ShapeS by Soren Momsen and Royal Scandinavia. The winner of the Technical Innovation Award was PowerLux by PowerLux Corporation. Over 100 designs were submitted for the first judging cycle in 2003, and from that pool, 18 entrants were asked to submit prototype and production fixtures. New and existing fixture designs in seven categories were eligible. It is open to professional lighting designers and manufacturers, and to students in partnership with a manufacturer or lighting designer. The organizers are considering if the competition should be an annual event. **ED**

# Your in-grade lighting projects never flood... Right?

We all know that in-grade luminaires have developed a notorious reputation when it comes to water.

They leak. They flood. They fail.

Tenaya® answers the call with a patent-pending system that allows it to operate continuously -- even when submerged in up to three feet of water.

The industry agrees, judging Tenaya® Best of Category at last year's Lightfair in New York.

**TENAYA**  
In-Grade Lighting

Specify Tenaya®  
and it won't  
matter if they do!







**Small.**

**Efficient.**

**Powerful.**

**Comfortable.**

Only from **LIGHTOLIER**



## LRC Graduate Program Expanded

The Lighting Research Center (LRC) recently announced that it will expand its graduate education programs with the 2004-05 academic year. In addition to its two-year Master of Science in lighting, the organization will offer a one-year master's degree, as well as a doctoral degree in architectural sciences with a concentration in lighting. The LRC feels the former will make a lighting degree available to more people, who otherwise would not have time for a two-year program. The PhD program is a response to increased interest in even higher academic credentials than the LRC's masters degree in lighting.

## LIGHTSTYLE POSTPONED

Citing "difficult situations in the market" and a "less than optimistic mood in the trade," Lightstyle—the International Trade Fair for Home Interior Lighting, held biennially at Messe Frankfurt—will not be held in April 2005 as scheduled, and is being postponed until 2007. According to the press announcement, Lightstyle will continue to exist as a brand and serve as venue appropriate to suppliers and manufacturers' needs.

## CELEBRATION OF LIFE

Manufacturer Lighting Services Inc recently threw its founder Marvin Gelman a "Celebration of Life" party at New York City's Hudson Theater, where Gelman got his start as a lighting director for the Tonight Show with Steve Allen. A host of lighting personalities were there in person or in a special video presentation to share stories and memories from Gelman's 60 years in the industry, from his work as a lighting director with NBC to his decades at the helm of Lighting Services Inc, which he founded in 1958. Despite turning the role of president over to his son in 2000, Gelman has hardly retreated from the industry. Indeed, more literally than most, Gelman seems to have taken to heart poet Dylan Thomas' appeal to "rage, rage against the dying of the light."

## IN THE NEXT ISSUE

- WINNERS OF THE A|L LIGHT + ARCHITECTURE AWARDS
- Hospitality Design Focus, featuring projects and products
- Methods for sustainable lighting design
- What's happening at Lawrence Berkeley and the LRC

Innovative lighting solutions.

*If you can envision it, we'll help create it.*



Performance Cove Lighting



AX



EX



GX



MX

electrix  
ILLUMINATION

Circle No. 18 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)

[www.electrix.com](http://www.electrix.com) 203.776.5577 [info@electrix.com](mailto:info@electrix.com)

Performance Architectural Light



## Daylighting—LEED Has Made All the Difference

Someone brought me a copy of A|L recently, and the article, "One Word: Daylight" (Jan/Feb 2004, page 17), made me smile. Evidently I had just returned from that daylighting conference back in 1986 when I wrote the editorial for the January 1987 issue (Vol. 1, No. 1).

I wrote: "A trip to the International Daylighting Conference introduced the magazine to an exceptional group of individuals who have accomplished a wealth of advanced research in an area that it seems will ultimately—though not until a second-generation's energy crisis forces us to relearn the bitter lessons of the 1970s—change the way every architectural designer considers lighting and energy issues when beginning the design process. Until then, these lonely voices in the wilderness may be assured that there is a place where their ideas can receive the attention they deserve—here in the pages of Architectural Lighting." (I can't believe my copyeditor didn't do something with that run-on sentence.)

Sure enough, the great research presented at the conference in 1986 never did catch on. We've gone 20 years without the energy crisis I predicted, and until LEED came along, people just weren't interested. In all those years, I don't think A|L ever sold a single ad for a product related to daylighting. There might have been 15 years in there when no architecture magazine thoroughly analyzed an individual building strictly on the basis of its daylighting performance, because after I left A|L, nobody did it.

The cover story in that first issue was about a daylit retail store called Salzer Video in Ventura, California. It wasn't a complicated building, but I imagine if it were being designed today, there's not much that could be done better except for the addition of automatic blinds and compact fluorescent lamps. The design methodology really hasn't changed much—LEED has made all the difference.

I do have one question: If A|L's Vol. 1, No. 1 was in 1987, how is it possible that Vol. 19, No. 1 is being published in 2004?

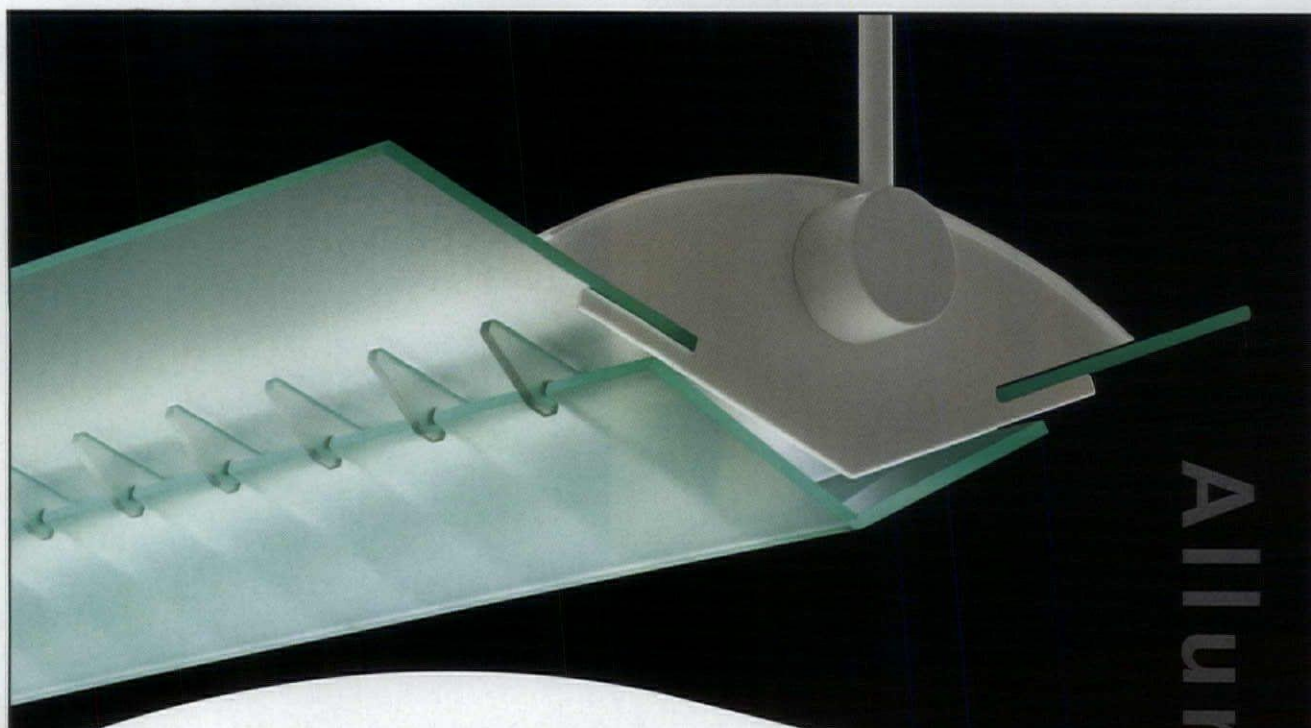
### Charles Linn

Managing Senior Editor, *Architectural Record*  
May 2004

*Editor's Note:* Thank you, Charles, for catching a mistake that has lasted almost six years. The goof happened in January 1999. We have corrected the volume number, which is now 18. We figure it's better to find out you are a year younger than a year older.

---

**AIL wants to hear from you.** Please submit letters to [esommerhoff@archlighting.com](mailto:esommerhoff@archlighting.com), with a daytime phone number.



**METALUMEN**  
Distinguished Design ↔ Engineered Excellence  
[www.metalumen.com](http://www.metalumen.com)  
1-800-621-6785 t 519-822-4381 f 519-822-4589

AILlure

ADD3200404



# See for yourself.



Actual Size

Introducing the first product family designed exclusively around the T4 CMH lamps. These new luminaires deliver superior optical performance and unsurpassed mechanical precision while maintaining an unobtrusive ceiling presence. But don't take our word for it, see for yourself.

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

**LIGHTOLIER**  
*100 years*

The first 100 Years

© 2004 Lightolier, a division of Genlyte Thomas Group LLC. All rights reserved

Circle No. 35 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)



# Lighting the Way: LEDs for the Developing World

ELIZABETH DONOFF

**IN THE LAST SEVERAL YEARS, THE PRACTICE OF SOCIALLY** responsible architecture has received mainstream attention. Architects and designers are using their talent and skill to create affordable and sustainable designs for communities in need. The work of the late Samuel Mockbee and his Rural Studio led the way. Bryan Bell's Design Corps carries on this tradition, while Cameron Sinclair's Architecture for Humanity brings the design world and the relief world together on a global scale. But where do lighting and energy issues fit into a movement that has focused primarily on the physical building? The work of the Light Up the World Foundation ([www.lutw.org](http://www.lutw.org)), founded by Dave Irvine-Halliday, is addressing this question.

## INSPIRATION IN NEPAL

In 1997, during a sabbatical year in Nepal, Irvine-Halliday, a specialist in photonics at the University of Calgary, was helping the University of Tribhuvan in Kathmandu set up its electrical engineering program. The visit also enabled this world-class climber to fulfill his desire to trek the Himalayas' Annapurna Circuit. Passing through a small Nepalese village, a sign invited foreigners to stop and teach local school children. When Irvine-Halliday entered the schoolroom, he was startled by the extreme darkness of the interior. Upon his return to Calgary, he embarked on finding a solution.

According to Light Up the World (LUTW), of Nepal's 3.4 million households, only 200,000 have a reliable power supply, and the average household income is only about \$200 a year. Given the energy and cost restraints in the region, Irvine-Halliday realized it was not necessary to light an entire home; providing light for certain areas would suffice, and this would still be more light than these communities were used to.

Back in the lab, with the assistance of his technician John Shelly, Irvine-Halliday spent the next year creating a solid-state lighting system with a white LED that could be installed on a "pico" (the Latin prefix for trillionth) budget. Browsing the Internet one day, he discovered that the Japanese company Nichia had already developed a white LED. "When we flipped the switch on in the darkened lab and saw how much light this 0.1W LED provided, it was our eureka moment," says Irvine-Halliday. With the 0.1W LED, he created a multi-diode lamp that

could light a home using a simple generator as a power supply.

In 1999, he returned to demonstrate and install the system in several Nepalese villages. Since 2001, 700 homes, schools, and community facilities in remote villages throughout Nepal, India and Sri Lanka have been lit with the rechargeable, battery-powered white LED lamp systems.

## GETTING IT DONE

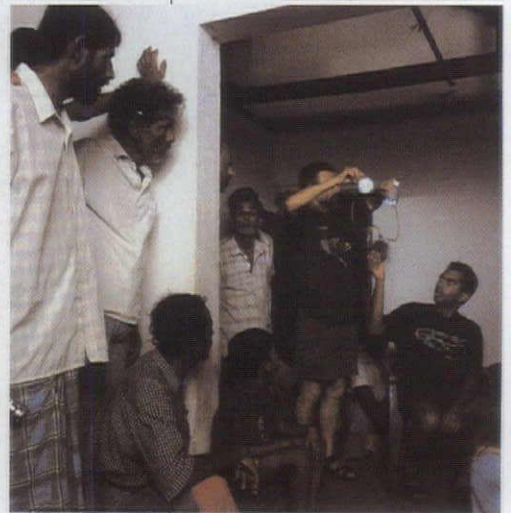
To date the organization has a large contingent of volunteers who help organize and coordinate lamping projects, as well as broker industrial partnerships around the world. "We operate as a social enterprise, using business elements combined with a social mission," explains executive director Ken Robertson.

To that end, LUTW works with both manufacturers and communities. An agreement with Lumileds allows LUTW to purchase white LEDs inexpensively. The approximate cost of a residential unit is between \$40 and \$60, although there are many variables that contribute to this pricing. "Of course you get some strange looks when you tell someone you are charging the poor," says Robertson. "But there has to be a fee—it's a principal development point. Two billion people are affected. It is not possible to replicate that in any large-scale number on a donation basis, plus it creates perverse economics where technology is available only on a subsidy basis."

An equally important aspect of LUTW's mission is that the solid-state lighting system offers an affordable, safe and environmentally friendly alternative to fuel-based lighting. "Kerosene is the gold standard for close to 2 billion people. It provides an unhealthy, inefficient, expensive form of light," says Robertson.

LUTW is about more than just providing light. It is about creating healthier and safer environments, establishing local economic infrastructures, and allowing opportunities for advancement and literacy. Ultimately it is about the generosity and vision of an individual and a testament to the power of a single idea. ■

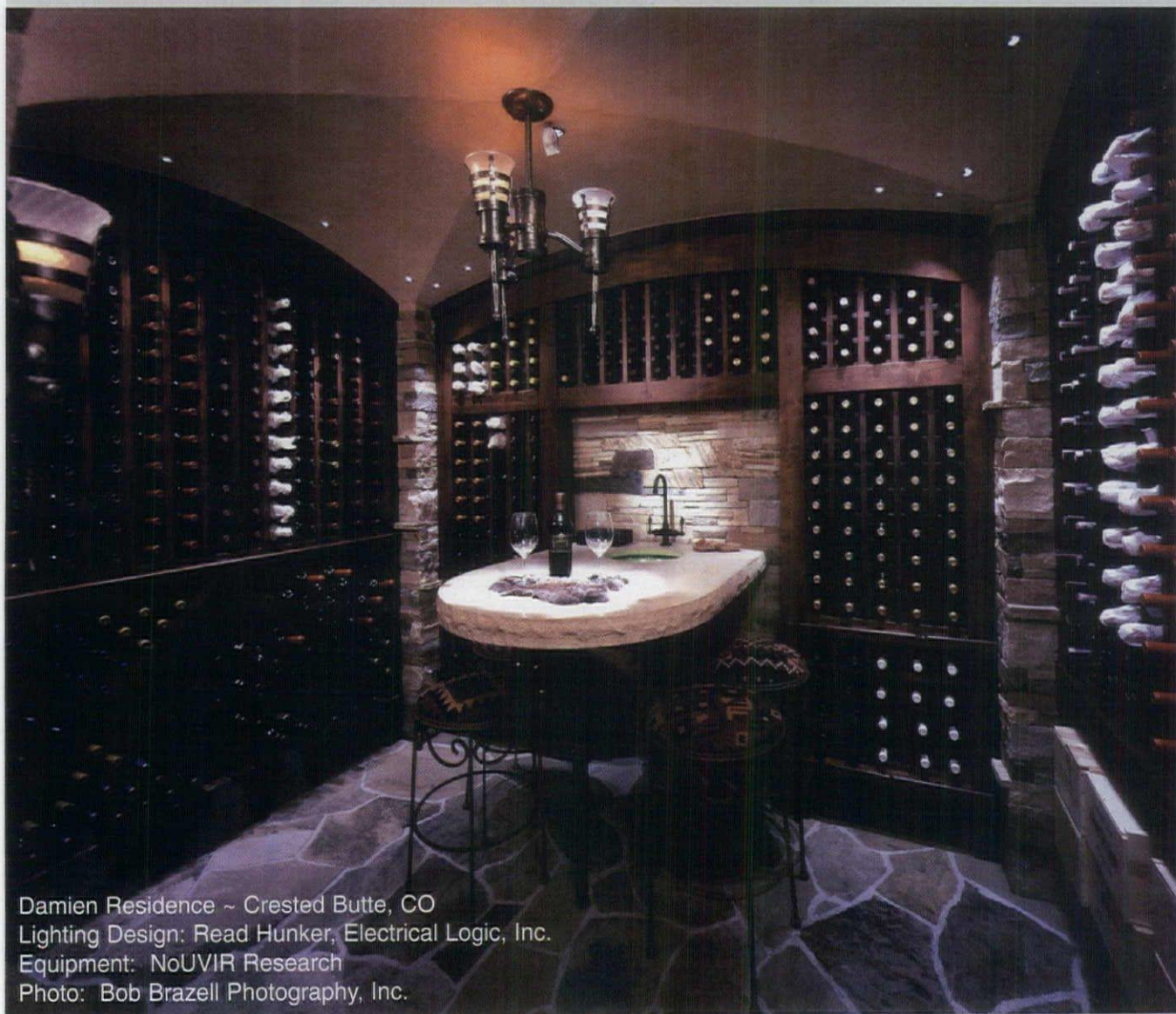
**Today's high-brilliance, white LED lamps can light a Nepalese village of 60 households, consuming the same amount of energy as a single 100W light bulb in a North American home.**





This isn't cooking wine...  
and neither is the lighting!

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



Damien Residence ~ Crested Butte, CO  
Lighting Design: Read Hunker, Electrical Logic, Inc.  
Equipment: NoUVIR Research  
Photo: Bob Brazell Photography, Inc.

Perfect color, perfect control, no heat.  
32 luminaires from only one lightbulb.  
The hottest new lighting isn't hot at all!

Light not heat... only from NoUVIR Research.

Call 302-628-9933 for 130-pages of great ideas and spectacular products.



# Light and Dark: The New Drugs

NAOMI MILLER

**LIGHTING IS COMPLEX. DESIGNERS WORRY ABOUT TASK** visibility and visual comfort, color rendering and flicker, and how lighting products and lighting patterns support the mood, safety, function, and appearance of spaces. Now there is a new consideration: Researchers are learning that the natural cycles of light and dark are important for maintaining human health. It is important for us to be exposed to bright light during the day, and equally important to experience darkness at night. There is growing evidence that exposure to white or bluish light at night negatively affects daily biological rhythms, sleep quality and the immune system.<sup>1</sup> This is likely to impact how we light interior and exterior spaces in the future.

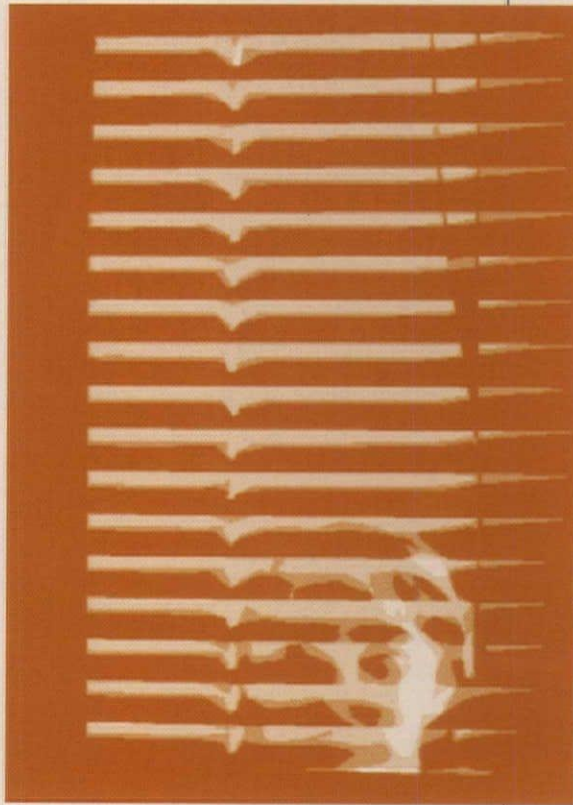
## RESEARCH SAYS

Light's effect on our circadian rhythms has been recognized for years, but only recently has it been better understood. In addition to rods and cones in the retina, the human eye has a set of retinal ganglion cells that receive and convert light signals into electrical signals, and then transmit them to the suprachiasmatic nucleus (SCN) in the central brain. The SCN is the body's timekeeper, and it in turn sends signals to hormone centers including the pineal, pituitary, and adrenal glands. These control the secretion and suppression of hormones, such as melatonin, serotonin and cortisol, and a host of neurotransmitters, such as acetylcholine, dopamine, and norepinephrine.<sup>2</sup> Bored, yet? What if I told you that without these essential chemicals circulating at precise cycles, you wouldn't be able to regulate wake time, hunger, and body temperature as consistently; you wouldn't sleep as well; you might be more susceptible to depression; damaged cells wouldn't get repaired properly; and your immune system wouldn't be able to fight disease as quickly?

The color of light that ganglion cells detect is different from the color detected by rods and cones. While your cone (daytime) vision is most sensitive to the yellow-green portion of the visible spectrum, and your rod (nighttime) vision is centered on the blue-green area, the blue-indigo portion triggers a greater response from these biological receptors. They are most affected by short wavelengths, in the range of 460 and 480 nanometers. This may correspond with the color of the blue sky under which humans evolved.

Exposure to bright light during the day resets your internal clock, and helps regulate sleep/wake cycles and fight depression. Work by Figueiro and

Rea shows that exposure to bright light at night acts "like a cup of coffee" to make night nurses more alert.<sup>3</sup> The amount of light needed to produce this biological effect is under investigation. For example, doses of 250 footcandles measured vertically at the eye and administered for a couple of hours seems to help reset the biological clock, a treatment for sleep disorders, seasonal affective disorder and jet lag. (There may be a time-dose relationship, such that 1,000 footcandles of exposure for X hours may be equally effective, but this requires more research.) These are very high illuminances, and the best way to get them is to walk outside, where daylight levels can exceed 3,000 footcandles even under cloudy skies.



Light levels at night are a different story. Work by Dr. George Brainard of the Jefferson Medical College has shown that administering far lower light levels (as low as 0.1 footcandles for short, or blue, wavelengths) at night can suppress melatonin.<sup>4</sup> Since melatonin seems to have important anti-oxidant effects, and may work in concert with other disease-fighting cells under the

**How will light and health research findings affect electric lighting and buildings?**



presence of darkness, light pouring into bedroom windows at night may cause long-term health consequences. Epidemiological evidence reported by Dr. Richard Stevens and others points to a possible link between exposure to light at night and increased rates of breast cancer and colorectal cancer.<sup>5</sup>

If research continues to produce such results, it means that humans need bright days and dark nights to maintain their health, with high doses of blue-rich light early in the day, subdued light in the evenings, and dark

sleeping environments. If it is impossible to achieve truly dark nights, then low levels of red, orange or amber light are less disruptive than exposure to white or blue light.

**APPLYING RESEARCH TO DESIGN**

Given the direction this research is pointing, will offices, factories and schools be illuminated to 250-plus footcandles in the future? It's too early to know, but my guess is "no." Such light levels would be at least five times greater than those we target now; the

energy used would be expensive, and power production would contribute significantly to air pollution. However, it might make sense to provide high light levels in common areas such as cafeterias, break rooms, and exercise rooms. Building occupants could take a break and simultaneously get their dose of "healthy light." Daylight would be used when available, and supplemented with electric light when unavailable, which would be provided by blue-rich sources like metal halide or fluorescent, or by blue LEDs with traditional sources. Because of where the biological receptors are located in the retina, smearing light on the ceiling and upper surfaces of a room would be more effective than putting it on the floor or desktop.

By far the most significant effect this research could have on buildings is daylight, daylight, and more daylight. Intelligent daylighting does not mean punched openings in walls. It means designing building floors with taller ceilings and window openings to help daylight penetrate spaces more deeply. Increasingly designers will site buildings according to solar angles, and incorporate façades with overhangs, awnings, light shelves, skylights, clerestories, and sawtooth ceilings to prevent glare. And they will specify glass with a spectral transmittance that admits the blue portion of the spectrum. (I wouldn't buy stock in companies that manufacture only bronzetinted glass right now!)

Integration of electric lighting and daylighting will encourage the development of more fluorescent and metal halide dimming systems. Interior layouts and finishes may be affected, since the lighter the surface paint colors, the higher the light levels reflected at the eye. Workstation partitions absorb light, so partition heights will likely drop, especially near windows.

Buildings may also become narrower. In the 1900s, industrial and office buildings were narrow to allow daylight to penetrate the space. Electric lighting enabled a larger footprint, but this research may reinforce the importance of employee access to windows and that biologically essential daylight.

**BUILDINGS MOST IN NEED**

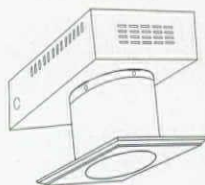
Think about buildings where occupants don't get outside much: Nursing homes, mental institutions, prisons, hospitals, or industrial plants. Even people in home offices or homebound parents may not leave the building during the course of the day, and therefore may not get the blast of light they need. This

When a hole in your ceiling is  
*a good thing.*

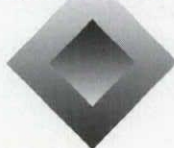


Kenneth Rice Photography — [www.kenricephoto.com](http://www.kenricephoto.com)

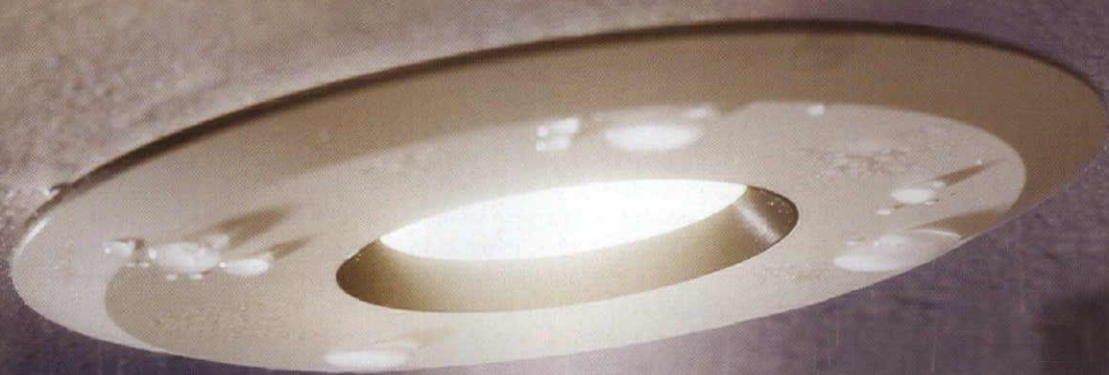
Our "Hole in the Ceiling" fixtures are plaster/fiberglass castings. These trimless down lights not only illuminate your space, but become an architectural element to enhance your design. Call us for more information at 626.579.0943 or visit our website today at [www.elplighting.com](http://www.elplighting.com).



**ENGINEERED  
LIGHTING PRODUCTS**







# polymer naiad

## WET LOCATION DOWNLIGHTS

Lucifer's Naiad is small, graceful...and rugged. The new Naiad Polymer is machined in solid polymer and reinforced with stainless steel, making it impervious to wind, weather and the corrosive effects of salt water. The Naiads are versatile, low-profile downlights adjustable to 45° and perfectly suited for showers, baths, steam rooms, under eaves, and other beachside applications.



Naiad Polymer Round



Naiad Polymer Round (only)  
Patent application pending



Naiad Stainless Square



Naiad Stainless Round

*Tuneable™ Lighting*  
**LUCIFER**  
LIGHTING COMPANY



is exacerbated at latitudes with short winter days. These spaces could use therapeutic doses of electric lighting during the day.

Our corresponding need for dark nights may also influence the design of buildings where people sleep—nursing homes, institutions, prisons, hospitals, school dormitories and military barracks. Research has not yet determined how much white light is too much, but it is a good idea to design bedrooms with window coverings that block outside light. If it is determined

that restroom and corridor lighting should minimize blue wavelengths at night, we could see a separate system of orange lighting or LEDs that emit only long wavelength light in the nighttime hours. Smart switches and automatic panel control systems that disable white lighting at night may also become common.

Nightshift workers pose a particular challenge. Since light at night suppresses melatonin, it can help workers stay alert. However, this may also negatively affect their

long-term health. We must wait for more conclusive research results. For now, blue-blocker sunglasses may help them if they walk or drive home in the daylight; this minimizes the blue wavelengths that seem to interfere with the ability to sleep.<sup>6</sup> Researchers also stress that it is important for nightshift workers to sleep with dense eyeshades and/or in completely dark rooms.

Research into light and health is in its infancy. Our industry needs to come forward to provide financial support to learn more about this important area, developing application guidelines for real world spaces. Stay tuned. In the meantime, go outside for a half hour of exercise and light exposure. Not only will we get our light therapy, but we'll shed a few pounds, too. ■

*Principal of Naomi Miller Lighting Design in Troy, New York, Naomi's interests include lighting quality, the aging eye, health effects of light, dark skies and energy efficiency. She is a member of the Lighting Research Office's Technical Advisory Committee.*

1. Raloff, J. 1998. "Does light have a dark side? Nighttime illumination might elevate cancer risk." *Science News* 154:252.

2. Roberts, J. 2002. "Light interactions with the human eye as a function of age." EPRI/Lighting Research Office International Lighting Research Symposium, "Light and Human Health," Orlando, FL.

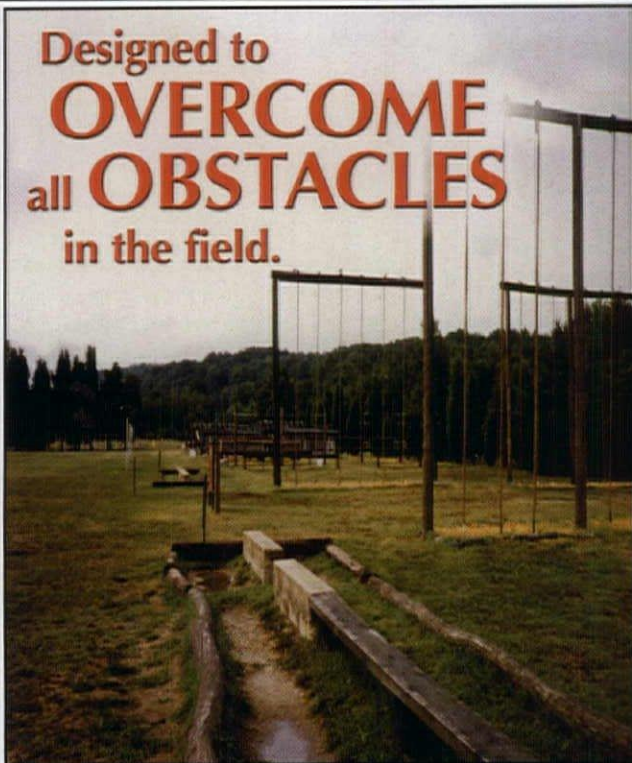
3. Figueiro, M.G., M.S. Rea, P. Boyce, R. White, and K. Kolberg. 2001. "The effects of bright light on day and nightshift nurses' performance and well-being in the NICU." *Neonatal Intensive Care* 14:29-32.

4. Brainard, G. 2002. "Photoreception for regulation of melatonin and the circadian system in humans." EPRI/Lighting Research Office International Lighting Research Symposium, "Light and Human Health," Orlando, FL.

5. Stevens, R. 2002. "Epidemiological evidence indicating light exposure is linked to human cancer development." EPRI/Lighting Research Office International Lighting Research Symposium, "Light and Human Health," Orlando FL.

6. Sasseville, A. 2004. "Investigating the efficacy of orange lens glasses that could be used by shift workers to block the undesired resynchronizing effect of morning light." Presented at the Canadian Sleep Society, 2nd Congress, Quebec.

## Designed to OVERCOME all OBSTACLES in the field.



Semper Fi Remote Transformers are designed to adapt and overcome.

Every job is different and you never know what difficulties you'll face.

Semper Fi Remote Transformers protect the integrity of your design in the field.

Semper Fi Remote Transformers provide features and benefits that overcome all the obstacles to a perfect low voltage lighting design and installation.

UL Listed to Power Low Voltage Lighting. Everything for a safe, versatile installation contained in a single easy to use enclosure that blends into any environment. And they're built to last; warranted 25 years.

Semper Fi Remote Transformers ensure  
NO Noise  
NO Maintenance  
NO Headaches  
+ Maximum Light output, lamp life, FULL range dimming + the use of the smallest aperture available.

Made in the USA.

## LED Lighting Products



- Integral Power module regulates the current, therefore Fluctuations in voltage or ambient temperature do NOT impact performance or life.
- Module allows Integral dimming – field adjustable.
- Fully dimmable: allows user to set mood or extend life
- Expect to lose no more than 50% of original light output after 50,000 hours
- Modules easily interchanged or replaced.
- Environment friendly: long life, no mercury, energy efficient
- No UV – eliminates fading and damage to delicate objects
- Durable: no glass or filaments
- Available in Warm White, Cool White, Blue, Green, Cyan, Red, or Amber
- Consistent color and performance
- Powered by Low voltage AC/DC or 120, 277 VAC
- Cool beam; safe to the touch (won't burn children or flammables)

GEMINI ONE FIVE Luminaires is a manufacturer of LED (Light Emitting Diode) Lighting products. Proudly MADE in the USA with a 5 Year Warranty.

Designed to be driven properly for a long, long time.



**Semper Fi**  
Power Supply Inc.

www.SEMPERFiPowerSupply.com

603.656.9729



# F164

versatility  
matters...

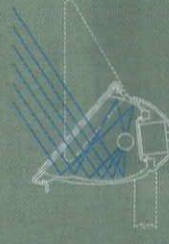
performance, too™

## outdoor integral ballast T5

... mates the precise optical control of fluorescent T5 with **elliptipar's** new medium reflector, optimized for maximum asymmetric performance and efficiency.



69.3% efficiency 54W T5HO.



**elliptipar**

... there is no equal™

A division of Sylvan R. Shemitz Designs, Inc.

203.931.4455

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

Circle No. 6 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)

Patents pending, U.S. and foreign



thinking residential?  
 think cooper lighting



IRiS P3MR



Halo LINEA LV306



Shaper 661-PD



Lumiere Cambria 203



Halo 30SBAT Airtite™ Super

## AWARD-WINNING DESIGN



### Robert H. Singer, Kale E. Lacroux

[Robert Singer &  
 Assoc. Inc.]

The clean  
 architectural style

of this 13,000 sq. ft. Aspen home relied on layers of architectural lighting to accent details and showcase the natural colors of the wood and stone finishes. Cooper Lighting fixtures are elegantly used to create lighting scenes throughout this warm and inviting home.

Project: Aspen Estate in Aspen, CO  
 Photography by Bardagjy Photography

Circle No. 94 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)



### Sherri DuPont and Kim Collins

[Collins & Dupont Interiors]

Lighting adds both drama and ambiance to this sophisticated comfortable penthouse. Downlights seem to disappear into the ceiling while offering adjustability to soften the many accessories. A variety of Cooper Lighting products highlight this beautiful home with multiple control settings to vary each room's mood as the occasion demands.

Project: Petersen Penthouse in Naples, FL  
 Photography by Laurence Taylor Photography

Halo Airtite™ products meet all applicable restricted air flow requirements of ASTM-E283.

**COOPER** Lighti  
 www.cooperlighting.com



# Four Designers on the Edge

## of lighting innovation

### INGO MAURER

**INGO MAURER IS A MAN ON THE MOVE. ANYONE IN THE LIGHTING INDUSTRY AND IN THE design world knows the name.** For a quarter century, he has demonstrated that lighting can be highly creative, dazzling in concept, minimalist in detail, and provocative in its humor and reaction. Despite an established reputation, however, he continues to develop designs and explore emerging technologies, constantly reinventing himself and his work.

I first met Ingo Maurer in Philadelphia in 2002, when an installation of his creative and poetic work was showcased at the Philadelphia Museum of Art, and subsequently, in Milan in 2003 during the Salone di Mobile and Euroluce. We recently sat down in New York City, Maurer's second home after Munich, to chat about his work and his inspiration. **JAMES L. CROWELL**

### ON INSPIRATION

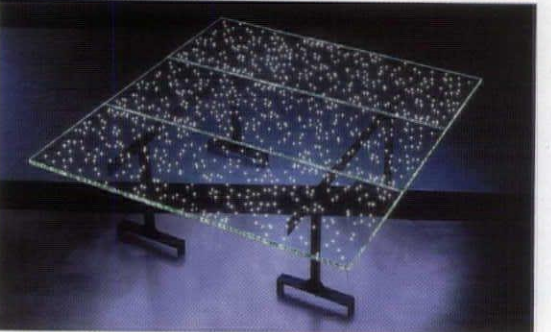
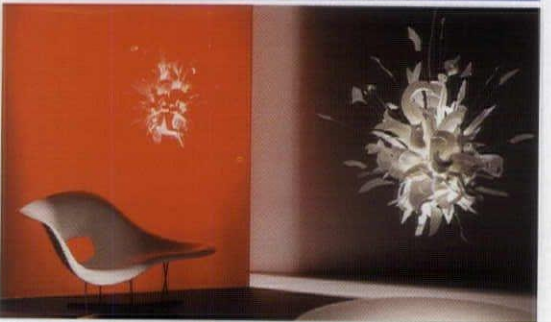
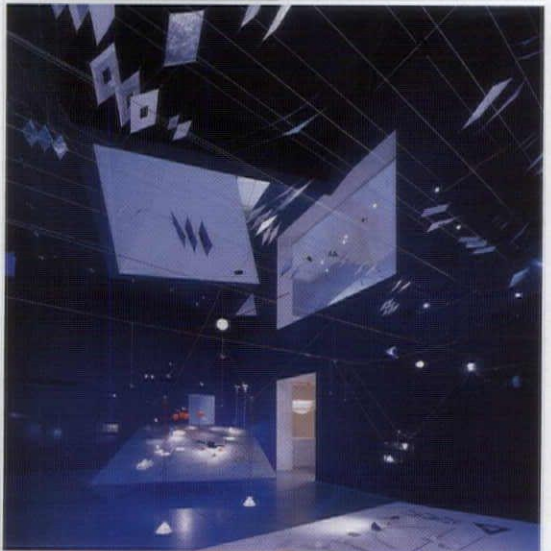
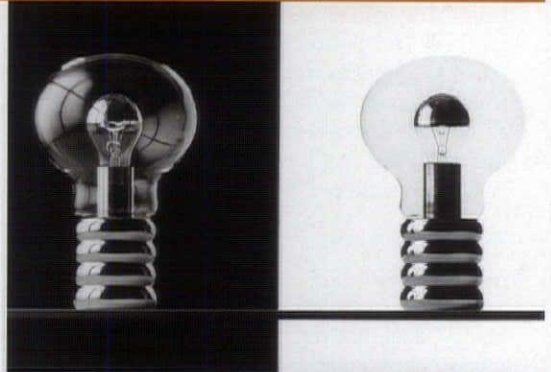
In 1966 he was awarded the "Chevalier des arts et des lettres" by the french minister of culture for his first lighting fixture entitled *Bulb*. "While staying in a pensione in Venice, Italy, I looked up at a hanging light bulb over my head. From there my design evolved." This lamp was his first international success, and first recognition as a creative lighting designer.

Inspiration strikes at unexpected moments. "I spent New Year's Eve 1979 in Haiti with my wife and some American friends. After we'd celebrated in a dance hall, we went out into a little village square at dawn. Two wires had been stretched across the square with a big 500-watt light bulb hanging from them with no mounting, nothing; it was simply soldered onto the wire. I was totally overwhelmed by the sight of this bulb in the sunrise. When I got back to New York, I immediately started stretching cords. Initially I tried it with high-voltage, but that failed, not least of all due to a few safety regulations that I think are totally antiquated. We spent years developing the idea and almost went bust. The bank refused us the small loan we needed at the end with the justification that the stuff we were doing was un-sellable, we should do something rustic instead. In the end we made it even without the loan, and the success wasn't long in coming."

### ON SUPPORT

Maurer attributes his success to his "design team," and to his wife and long-time partner, Dorothee Becker. Her design, *Utensilo*, a wall-mounted storage system, is one of the best-known plastic designs of the late 1960s. A true-to-original version has been reissued by Vitra Design Museum.

**"My philosophy, if I have one at all, is that difficult times are also times offering great possibilities." —Ingo Maurer**





**ON MENTORING**

Several months ago, Maurer called his staff in Munich to an open meeting and gave them two hours to come up with new ideas for "the team." The results were humorous, spontaneous, and in some cases very creative. This is how Maurer involves his team in the design process. Maurer is generous with his time for young, emerging designers. His youngest staff member is only 21, and for the last two years he has asked Paul Cocksedge, a 24-year-old designer from the Royal College of Art in London, to exhibit with him in Milan at Spazio Krizia. (See the Paul Cocksedge profile, facing page.)

**ON PURPOSE**

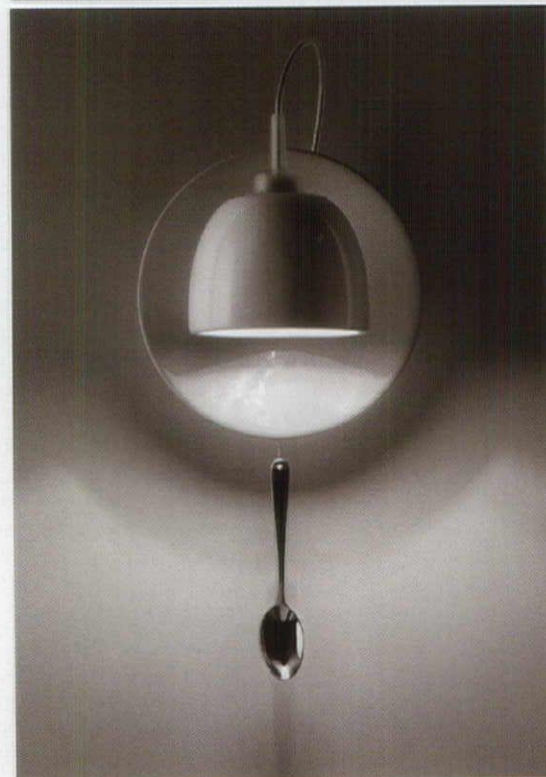
Maurer does not design with the intent of commercial accolades, even though he founded Ingo Maurer, LLC, the company arm of his studio in order to produce his work. He could well sell his successful business, but that would leave him with, as he says, "little control to pursue my next idea or concept." He has his design team—his "family"—to support. He could also design for other lighting companies, or have other venues produce his work, but that process displeases him. What pleases Maurer is how people react to lighting projects. Sitting on the sidelines, he watches people observe his work. "They look and appear curious. They walk in with frowns on their faces, and then they begin to understand the presentation. They look and look again, and then, the smiles." Seeing this reaction is Maurer's ultimate reward.

**ON THE FUTURE**

His recent works include an installation at the Toronto Airport; an installation in Frankfurt, *Ingo Maurer: One Night Only Burning Beauty*; the lighting installation at Galleries Lafayette Maison, in Paris; and the design of a spa in San Paolo, Brazil, where he has "discovered" Corian. "All the walls, floors, ceiling, including the pool are covered in Corian. It is quite an amazing material," he says. While most of us at his age would probably retire, Maurer continues to pursue his passion for understanding the impact of light and design. "I have many design concepts unfulfilled," he explains.

Maurer is a compassionate man, and lives his passion for lighting. After my interview, I saw him the next day at ICFE at the Javits Convention Center, where he was "in a rush." Rushing to discover, to see, and to be involved.

*James L. Crowell, is a lighting designer in Philadelphia and principal of Crowell Design in Radnor, Pennsylvania.*



**"My perception of light is so strong and distinctive, almost an obsession. This forces me to continuously play and experiment with the reflection and the art of light."  
—Ingo Maurer**

From top of page 25 to bottom of page 26: *Bulb*, 1966; *Ingo Maurer-Light-Reaching for the Moon*, Vitra Design Museum, 2002; *LED Table*, 2003; *Porca Miseria*, 1994; *Birdie*, 2002; *Light au Lait*, 2004. Images courtesy of Ingo Maurer, LLC.

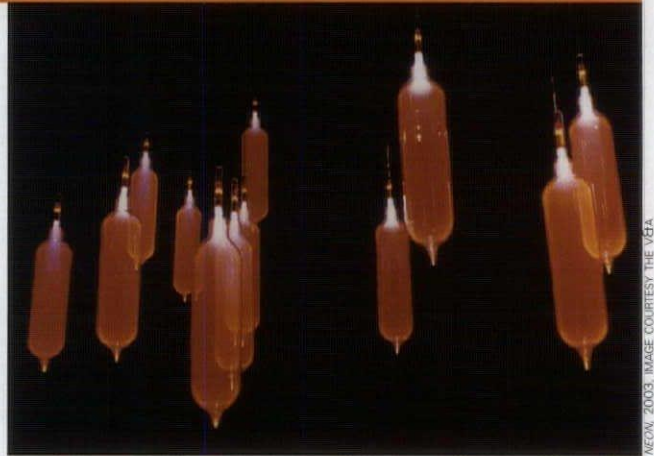


PAUL COCKSEGE

Though only 25, British boy wonder Paul Cockledge is rapidly rising among the luminaries of international lighting design. Since graduating in 2002 from the Royal College of Art (RCA) in London, where he studied under Ron Arad, Cockledge has exhibited his work at the Victoria & Albert Museum (where *Neon*, right, appeared recently) and the Design Museum in London, and has won the 2003 Bombay Sapphire Glass prize and been shortlisted by the Design Museum for Designer of the Year.

All of Cockledge's pieces exhibit a bit of mystery and magic, resulting from his whimsical experimentations with materials and scientific principals. A product called *Watt*, for example, plays on the conductive properties of graphite, requiring the user to join two lines of a pencil drawing in order to turn a light on. *Bulb*, another interactive fixture, contains a small light source at the bottom of a water-filled vase that switches on when a flower is inserted. Cockledge is best known for *Styrene*, a creation made of melted disposable cups. Like most of his work, the project grew out of an abstract exercise: a film he made, while at art school, of the cups morphing when exposed to heat. "I never planned to make lights," he says of his experiments. "The projects end up there rather organically."

Soon after graduating from the RCA, where his entire final term exhibition sold out, Cockledge started his own company.



NEON, 2003. IMAGE COURTESY THE V&A

All of his designs are now fabricated at his shop or by local artisans. He explains, "The things that we design here are very honest, using materials that we're surrounded with."

"Although I design lights," he relates, "I don't really see myself as a conventional lighting designer. When you talk about lighting, it's driven by function." What he strives for, he says, is "to add the passion to light, the emotional side, which I don't think is driven by function at all." **ANNA HOLTZMAN**

**"The product development process associated with building a fixture is much like the process of building a building."**

**—Ann Reo**

more information at  
[WWW.ARCHLIGHTING.COM](http://WWW.ARCHLIGHTING.COM)

ANN REO

Ann Reo, founder and president of the Chicago-based io Lighting, which focuses solely on creating LED-based luminaires, got her start studying architecture. She thrived in an architectural lighting course at the University of Illinois, and never turned back. Beginning her career as a lighting consultant, she found that, "the product development process associated with building a fixture is much like the process of building a building."

After four years as vice president of product development at Focal Point, in Chicago, where she developed fluorescent-based luminaires, Reo sought inspiration in a new technology: Studying LEDs, she says, "I realized that there was the opportunity to change the architecture of the light fixture altogether, because the 'light bulb' now is flat."

Reo's mission currently is to create affordable LED-based lighting that can compete in the mainstream market, and she believes this can be achieved by designing products intelligently



from the ground up. Her 15-person company, launched in 1992, develops modular luminaires that "really harness all of the lumens" by placing them where they are needed most and creating intensely focused light beams. The result is a great amount of illumination at a low cost and minimal wattage.

Reo's newest product, a wall washer called *Line*, garnered the 2004 Best New Product of the Year at Lightfair International. Originally designed as a low-profile luminaire that would sit on a 4- to 6-inch-wide building sill, the fixture was then modified to include wider beam patterns for wall washing and signage. Drawing only 10 watts, it projects light up to 40 feet, with a highly focused beam that emits minimal stray light—

making the product suitable for projects where light trespass and light pollution are concerns.

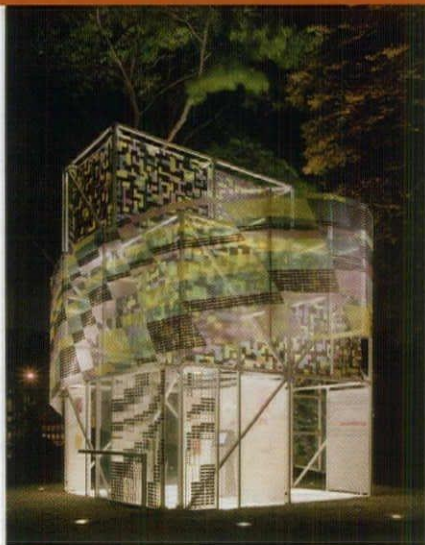
Summing up her devotion to her craft, Reo gushes, "I just love lighting. It's creative; it's an art and a science." **ANNA HOLTZMAN**



SEAN O'CONNOR

Originally trained as an architect, lighting consultant Sean O'Connor started his firm Sean O'Connor Associates in 1997, making a name for himself with commercial clients such as Pottery Barn, the Gap, and Eddie Bauer, among others.

After stints as a display designer at the department store Barney's, in New York City, and later as a lighting consultant at design firm Architecture + Light in San Francisco, O'Connor claims that his own practice came about "by accident," as a handful of freelance projects soon snowballed into a thriving business. His company employs a total of four people—which is hard to believe, since the office typically handles a staggering 15 to 20 projects at a time. While best known for retail projects, the firm has also recently taken on a slew of large residences. O'Connor enjoys both typologies, "retail, because it's always on trend and fast-moving, and the teams are always really strong—but high-end residential as well, because there are so many details, and you get to fall in love with every nook and cranny of the project."



BARRY HALKIN

This year, his firm was recognized with a GE Edison Award and an International Illumination Design Award for SmartWrap (left), an exhibition at the Cooper-Hewitt, National Design Museum, designed by architects Kieran Timberlake Associates. O'Connor's first exhibit, the project presented intense challenges. The museum gave him a load limit of one 20-amp circuit, which had to not only illuminate the installation (a pavilion demonstrating a high-tech, interactive, translucent façade material) but also power a 300W computer kiosk. "That was a killer," he states. Plus, the whole project had to go up in eight days.

At the pace he's going and with commissions continuing to pile up—including additional projects with Kieran

Timberlake—O'Connor is more than an emerging personality in the industry; he has emerged. **ANNA HOLTZMAN**

*A former editor with Architecture magazine, New York City-based Anna Holtzman writes about architecture and design.*

# Innovative Solutions for Decorative Lighting

Pathway Lighting offers innovative solutions to today's design challenges.

Pathway's architectural decorative lighting includes "suspended" bowls, decorative discs and pendant fixtures. Glass, acrylic and metal are available in a wide variety of materials and finishes to yield a multitude of design choices. Custom designs such as hand-blown art glass are also offered.



**PATHWAY**  
the Lighting Source

Corenry  
Architectural Series

tel: 800.342.0592  
www.pathwaylighting.com  
e-mail: sales@pathwaylighting.com



# LITON

L I G H T I N G

three inch



six inch



five inch



four inch

COMMERCIAL AND RESIDENTIAL RECESSED DOWNLIGHTS  
ACCENT LIGHTING • TRACK LIGHTING  
DECORATIVE FLEXICURVE™ TRACK RAIL  
PENDANTS • UNDER CABINET LIGHTING  
EXIT AND EMERGENCY LIGHTING

When looking for  
that signature design,  
sign off on

**Liton Lighting.**

Our new finishes of...

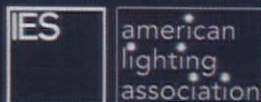
**Antique Copper  
Natural "Raw" Metal  
and Mocha...**

are the designer's choice  
for interior lighting.

Circle No. 88 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)



**LITON LIGHTING • THE COMPLETE LIGHTING SOLUTION**  
**1.800.515.4880 • VISIT US AT [LITON.COM](http://LITON.COM)**





**A TRIUMPH IN TRANSPARENCY AND LIGHT WITH ITS EXPRESSIVE** ceramic tube screen wall and its use of daylighting, the New York Times headquarters will signal the next generation of Manhattan skyscrapers when completed in 2006. Designed by Renzo Piano Building Workshop in association with Fox & Fowle Architects, the design concept addresses first and foremost the culture of the New York Times and its philosophy, or what it refers to as its "rules of the road"—honesty, integrity and the tradition of free speech and press. This idea of openness is articulated in the building's form and the selection of materials. Whereas skyscraper design of the past has had a monolithic, masculine feel, this slender interpretation offers a paradigm for the high-rise tower of the future. The use of steel is tempered by the abundance of glass, ceramic, wood and light.

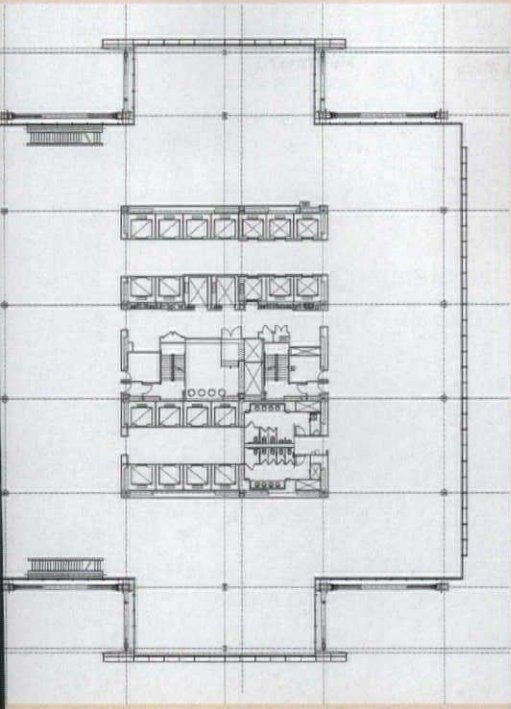
With its sophisticated curtain wall, the building responds to and interacts with light unlike any of its high-rise neighbors. Sunlight is brought into the building via the clear glass curtain wall, and the elegant veil of white ceramic tubes acts as an architectural shading device that absorbs and reflects color, whether it is the golden yellow of a summer sun or the cool blue light of winter. As day turns to night, the glazed building transforms; its interior illumination emerges while the screen wall recedes, and we are reminded that the city and the cycle of news reporting is a 24/7 activity.

The idea of "transparency" is layered throughout the project. It is important to this premier information provider that its activities be visible from the street. In turn, the organization keeps its eyes on the city: the open stairs at both the north and south edges of the tower's floor plan allow New York Times employees to move freely between floors while looking out at the city they serve. A comprehensive electric lighting and shading control system work in tandem with the abundant natural light to ensure that this unusually open work environment also has an unusually refined quality of illumination.

A beacon for the twenty-first century, the New York Times Building announces with its cultivated and graceful voice: Here I am. It is a testament to free exchange and the legacy of the organization, a reminder that design excellence does exist, and a hopeful symbol of the city's evolution and perseverance. **ELIZABETH DONOFF**







RFBW/FEA

### THE NEW YORK TIMES HEADQUARTERS BUILDING

LOCATION: New York City

ARCHITECT: Renzo Piano Building Workshop, Paris, in association with Fox & Fowle Architects, New York City

INTERIOR ARCHITECT: Gensler, New York City



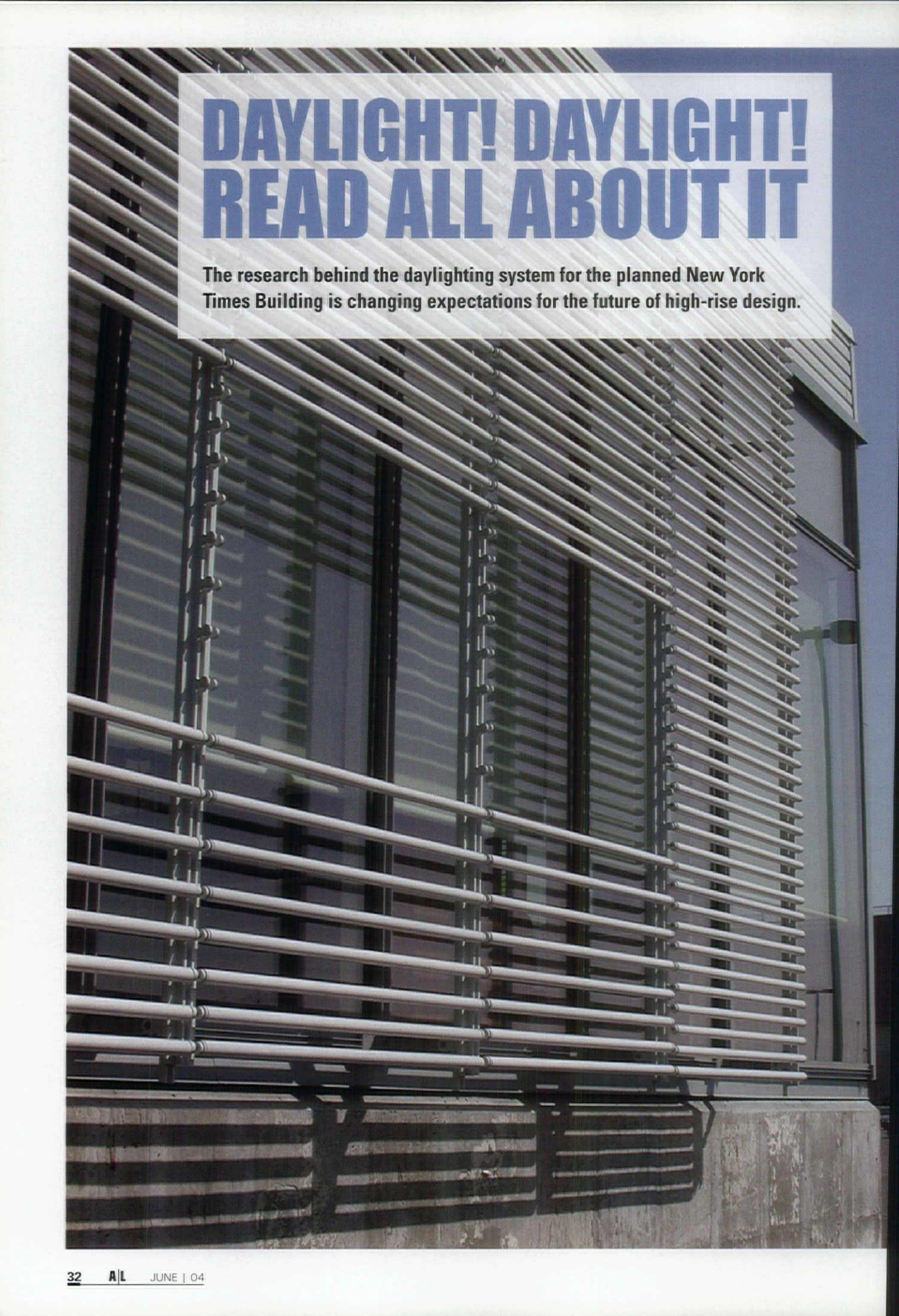
GENSLER

New York Times Building will sore 51-stories draped unique ceramic tube screen wall (left). A typical floor illustrates the building's symmetry (above). The open plan will create a light-filled workplace (right). At night building's interior activities take center stage through glazed façade, which reveals the organization's 24-hour cycle (below).



SCREAMPOINT





# DAYLIGHT! DAYLIGHT! READ ALL ABOUT IT

The research behind the daylighting system for the planned New York Times Building is changing expectations for the future of high-rise design.



**THE NEW YORK TIMES IS NOT YOUR AVERAGE CLIENT, AND NEITHER IS ITS** new 51-story headquarters to be located on 8th Avenue between 40th and 41st Streets. What makes the Times stand out as a client is its research approach (it is a news organization after all) and its project management style, which it developed as a result of building two major printing facilities over the last 20 years. The new building's design is complex, and the process to create it has been even more so. While the project will be home to a whole host of technologically advanced building systems, it is the daylighting mock-up that has garnered particular attention.

In the parking lot of its College Point, Queens, printing facility, the Times has constructed a one-story, 4,500-square-foot, full-scale mock-up of the southwest corner of the planned building. Its purpose has evolved well beyond its original function as a furniture mock-up and constructability exercise; it is a comprehensive investigation of daylighting in combination with shading systems, not paired in this way before, or for a project of this scale. The findings are certain to influence how lighting and the integration of daylighting will be incorporated in future high-rise office buildings around the world.

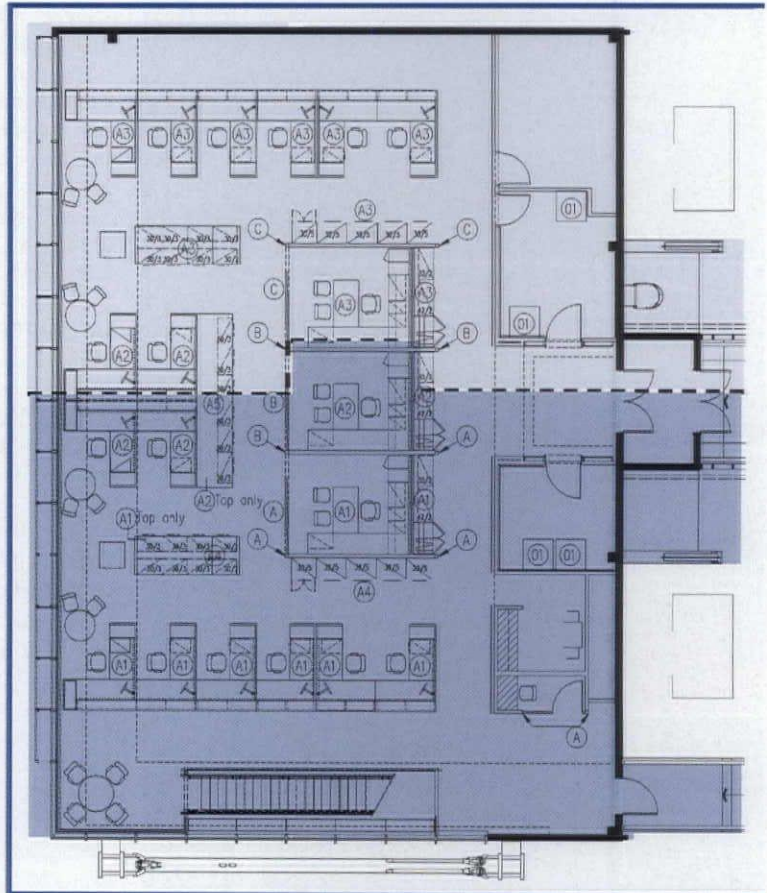
#### TO SHADE OR NOT TO SHADE?

From the outset, the building's design *parti* has been the expression and thorough incorporation of light and transparency. The building's "skin" is a double-layer system comprised of a clear, low-iron-glass curtain wall with a screen of ceramic tubes in front supported by an aluminum armature. The challenge created by this system has been how to control daylight levels so that the work environment is not overly illuminated (brightness and glare), yet maintains a connection to the outside.

The Times was interested in daylighting and energy-efficiency issues related to the building's design early on, which automatically implicated the need for a control system. The organization understands efficient control systems (its printing plants produce over a million copies of the newspaper on a daily basis), so it asked interior architect Gensler Associates, and Susan Brady Lighting Design (SBLD), responsible for the interior lighting, to design an equally systematic interior. The Times also required that each department be able to adjust the lighting according to its needs.

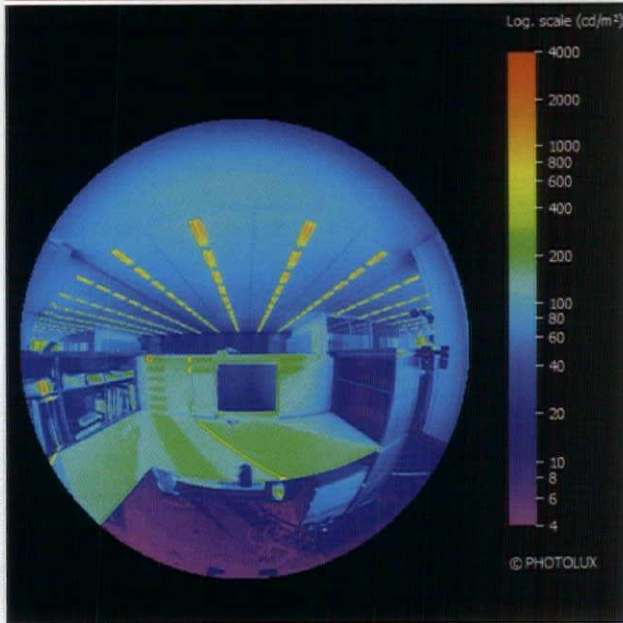
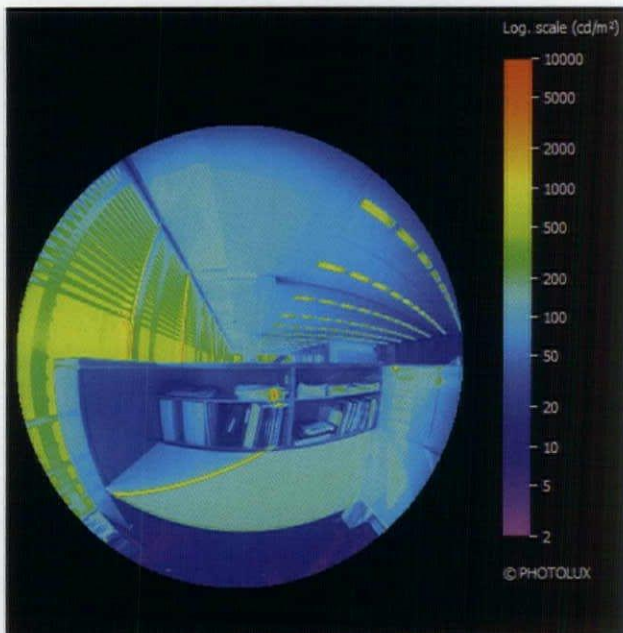
Despite an abundance of natural light in the building, electric light is still necessary to compensate for the very bright contrast at the building's perimeter. The client's desire to implement a lighting control system translated into three possible options: an easy on/off system, a 0-10 volt programmable dimming system, or DALI. But before committing to one, the Times needed more information. To figure out which control system was a viable option, SBLD began a detailed investigation into light sensors. The firm discovered that there were no such systems of note in the United States, and while double curtain walls are prevalent in Europe, the combination of dimming and shading controls in one system is not.

In keeping with the organization's thorough research methodology, David Thurm, vice president of corporate real estate development, had also been looking into daylighting and come across a paper written by Stephen Selkowitz, head of the building technologies program at Lawrence Berkeley



The southwest corner of the building will receive the greatest amount of daylight; therefore, it was chosen as the portion of the building to study. The plan of the 4,500-square-foot mock-up (above, courtesy Gensler) is divided into two areas to test different shading and dimming systems. Lutron equipment occupies the north side of the space (light blue), while MechoShade and Siemens components are installed on the south side of the testing area (dark blue). The ceramic tube screen wall (facing page) acts as both an aesthetic element and an architectural shading device.





Digital luminance maps taken in the north zone of the mock-up facing east (top) and north (above) indicate the light levels on every surface. Both shading systems—MechoShade to the right and Lutron to the left—are installed on the western elevation (center) and respond to the amount of light entering the building at 4:30 PM during the spring equinox in sunny conditions.

National Laboratory (LBNL). Still not sure how to implement a dimmable lighting system or even if it should use one in the new building, the Times decided to visit Lawrence Berkeley. Client, interior architect, lighting designer and engineer made the trek to LBNL in January 2003. During the course of that visit and the discussion that ensued, Glenn Hughes, director of construction for the Times, asked the question everyone seemed to be skirting around: What was the best way to manage the façade and could it be done with a shade system? "The parody of the space is that it allows connectivity to the world and the beauty of natural light to come into the building, but it needs to be tempered in order for people to enjoy it," says Hughes. With that question asked, the visit to LBNL confirmed that both a shading and a dimming system were the answer to the daylight conundrum. Then, serendipitously, a conversation between Thurm and Selkowitz resulted in the mock-up—already in development to review the final three furniture vendors and the lighting control systems—becoming an advanced daylighting study. For this, the team received support from NYSERDA (the New York State Energy Research Development Authority), the California Energy Commission and the Department of Energy.

#### DAYLIGHTING MOCK-UP 101

Glenn Hughes is very clear about the purpose of this mock-up: "We are not collecting data to compare vendors. We are collecting data to find energy savings, to learn about shade control and to figure out the best possible system." Three vendors are involved in the mock-up: Lutron, MechoShade and Siemens. Further neutralizing the playing field, the data collection has occurred under the watchful eye of LBNL, a leader in the field of daylighting and building systems research for the last decade.

A separate set of construction documents, prepared by Gensler and coordinated with LBNL, indicates the location of all the sensors and measuring devices. "The rigging of the measuring equipment was an entire exercise unto itself," says Gensler senior associate Rocco Giannetti. Data is being collected over a six-month period—December 21, 2003, to June 21, 2004. The two shading systems being studied measure daylight in fundamentally different ways. MechoShade's system responds to exterior conditions like the solar path of the sun, while Lutron's system responds to the immediate conditions of the space. The issue is not which is a better method, but which is the best solution for the New York Times application.

The south side of the mock-up and half of the western façade is divided into seven zones and outfitted with MechoShade's equipment. Three radiometers are strategically placed on the rooftop to coordinate the building's location with the direct solar angle. A total of 10 photo sensors—two on the exterior façade and eight inside, including three on the south wall and one in the open-plan area—monitor the brightness level as it changes across the window wall. The shading system maintains a luminance ratio of 10:1, which is a comfortable level for distinguishing visual task surfaces from the background. The notable characteristics of the MechoShade system are that it is both proactive (the system is already set to acknowledge the solar path of the sun) and reactive (the system responds to changes in sky condition and reflecting surfaces).

The MechoShade system is paired with Siemens' Instabus protocol control system, so that the team can test a DALI interface and how the brightness override could be incorporated. To study the DALI system, light level sensors are installed at the work plane. The Siemens system is responding to the general amount of daylight in the space, and dimming

ALL IMAGES THIS PAGE COURTESY LBNL





The dual-lamp ceiling fixtures (above) have a multi-purpose center area to incorporate sensors and sprinklers, and the end compartments take the air return back into the ceiling plenum. The result is a clean and tauged ceiling plane of light slots. Shades on the different elevations of the building respond to the daylight conditions at the southwest corner of the mock-up, while sensors mounted to the ceiling and the floor take illuminance readings (left).



the electric lights accordingly so that the overall luminance level never exceeds 50 footcandles.

Lutron's integrated motorized roller shade and dimming ballast system is installed on the north side of the mock-up and along the second half of the western façade. It has one exterior sensor and eight interior sensors distributed throughout the five zones of its testing area. Lutron is using a closed-loop shield photo sensor system, meaning that the shades are responding to the measurement of light from within the space. The sensors, which read the window luminance, are placed in the ceiling plane near the windows. The goal is to strike a balance between glare and energy savings. Both systems are set so that at night the shades are fully raised. There is also a manual override feature.


There is a combined total of 107 sensors between the manufacturers' and LBNL's testing equipment. Web cams monitor the lighting conditions around the clock, so LBNL can confirm the testing conditions for the actual data collected. From a computer hub in the mock-up, the data is transmitted to the Times printing plant across the parking lot via an optical dish on two secure systems, and that in turn is sent to LBNL, who in turn has secure communication with the manufacturers. LBNL is also conducting a human factor study where a statistically representative group of 60 people will work in the space and then fill out questionnaires.

LBNL's goal is to provide the New York Times with parameters—the best features culled from each system—for its performance specifications. Results should also clarify how the shade system performed and indicate whether the technology of the system is robust enough for continuous use. Data regarding glare has already been analyzed. The Times will issue a performance specification at the end of July, and LBNL will issue its final report in September 2004.

#### THE FUTURE IS CLEAR

The study is a milestone opportunity for all parties involved. The Times hopes its daylight investigation will stimulate the marketplace to offer this technology cost-effectively. For the manufacturers, it is a way to test and confirm their systems via

an independent third party, who also happens to be a world-renowned laboratory. Ultimately, this daylight investigation gives building owners, architects, lighting designers and manufacturers an accurate reference point, so they know that a daylighting-shading-dimming combination is a viable option for future buildings, and not just for commercial office high-rise design. **ELIZABETH DONOFF**

 more information at  
[WWW.ARCHLIGHTING.COM](http://WWW.ARCHLIGHTING.COM)

#### DETAILS

**PROJECT** The New York Times Daylighting Mock-Up, Queens, New York

**ARCHITECT** Renzo Piano Building Workshop, Paris, in association with Fox & Fowle Architects, New York City

**INTERIOR ARCHITECT** Gensler Associates, New York City

**INTERIOR LIGHTING DESIGN** Susan Brady Lighting Design, New York City

**PHOTOGRAPHER** Elizabeth Donoff, except where noted

#### MANUFACTURERS

##### MOCK-UP AREA A (NORTH)

Mark Lighting

USG

Lutron

Advance Transformer

##### MOCK-UP AREA B (SOUTH)

Zumtobel

Armstrong

Siemens

MechoShade

Advance Transformer

#### APPLICATION

Lighting fixtures

Ceiling system

Lighting controls: 0-10 Volt dimming (T8), shades and Eco-10 ballasts

Mark VII ballasts

Lighting fixtures

Ceiling system

Lighting controls: DALI digital dimming (T8)

Shades

ROVR T8 ballasts



# HANDS-ON DESIGN



**Dynamic lighting enhances the relationship between occupants and architecture.**

## **SOME ARCHITECTURE STANDS STOIC AND INERT, AND IT IS IN THIS STABILITY WE**

recognize its greatness. The Pantheon comes to mind. It is what it is, with or without the humans that have inhabited it for 1,900 years. While there are contemporary examples of such architecture, they seem fewer and farther between. Today's buildings are increasingly "organic" in the way they consider and adapt to their occupancy. Rather than passively inhabited, buildings are designed to engage occupants and encourage a dialogue, to employ users in the act of keeping the architecture novel and alive.

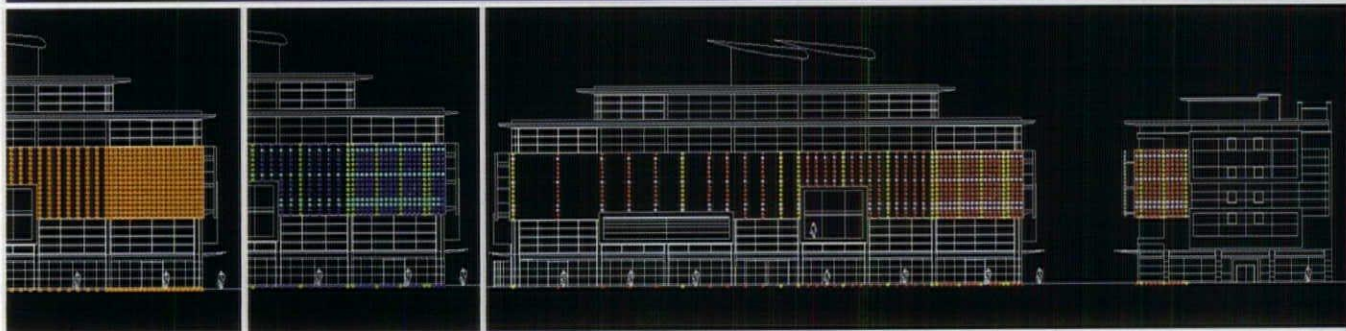
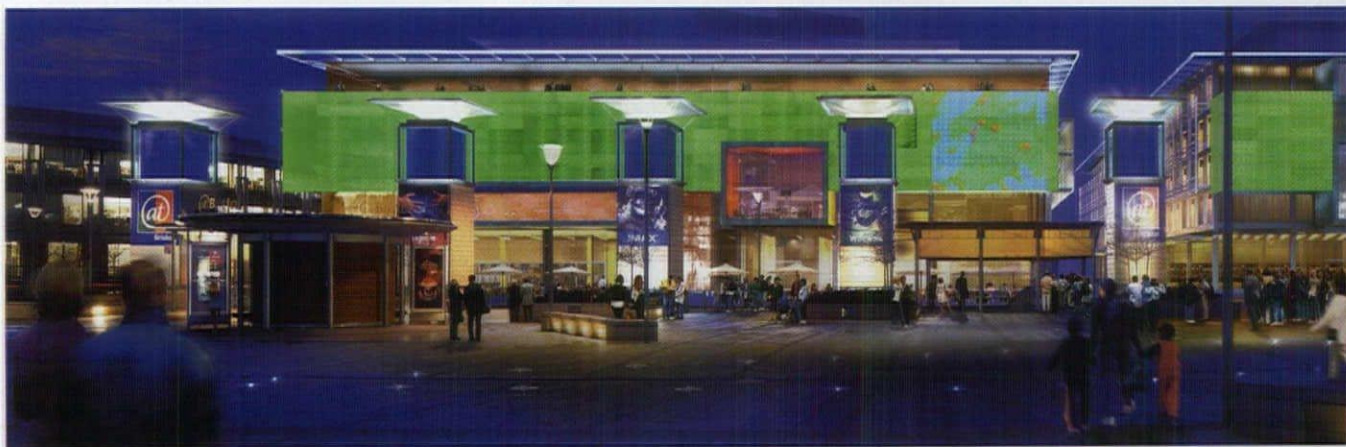
Examples of this kind of interactivity can be as utilitarian as individual climate and dimming controls; as understated as a glazed curtain wall that, to the outside viewer, mutates depending on the activity behind it; or as entertaining and literal as a façade lighting system that depends on the public for the intensity and style of its presentation. Indeed, lighting is proving an ideal medium for enhancing the symbiotic relationship between building and occupant: it is easily noticed (potential users see the building beckoning); it is pretty (they are drawn to it); and given advances in technology, it is adaptable to a variety of creative approaches (users are entertained). Lighting design firm Speirs and Major Associates, which operates out of London and Edinburgh, is behind some of the most innovative, exciting work in this area. Shown here, two projects by the firm demonstrate not only the phenomenon of interactivity, but why architecture benefits from it.

## **TOUCH HARBOURSIDE**

Creating an interactive building is in many ways about energizing an increasingly inactive public. "When people see something, they sit there, look at it and say 'I like it' or 'I don't' and walk away," says director Jonathan Speirs. He has an idea about how to help users participate in their environment. "My strongest sense of event and memory is from places where I have been immersed in the visual experience." When one can interact with something and make it change, this creates a visual interest that is "non-predictable," explains Speirs. "You want to go see it because you get a payback."

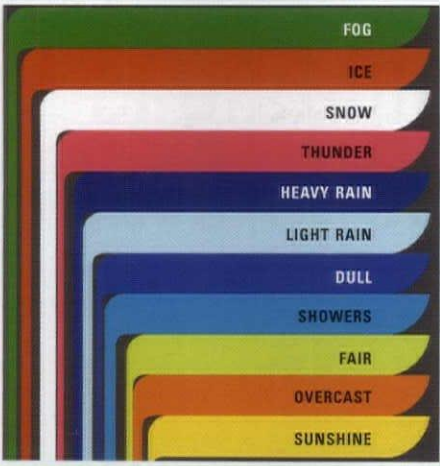
Touch Harbourside, which is currently in the planning and design stage with completion expected in about a year, is a mixed-use development intended to regenerate a rundown waterfront in Bristol, England. The client wanted to attract attention and simultaneously welcome visitors to the complex. "Interactivity was the key for this project," says Speirs, who is collaborating with architecture firm Faulkner Browns of New Castle, England.

Originally, the team discussed installing a television screen in the mesh skin that acts as a gateway to the complex, but a tight budget would not allow it. "And to be honest," notes Speirs, "we wanted to do something less predictable." The TV idea gave way to a system of RGB LEDs. Spanning the mesh screen, the LED points become concentrated near the entrance, subtly directing visitors inside. The scheme is more than a wayfinding device, however. Six obelisks stand in the plaza



The owners of Touch Harbourside, a mixed-use development in Bristol, wanted a "welcoming, beckoning finger" to attract visitors, says lighting designer Jonathan Speirs. The planned lighting installation for the project, which should be completed in about a year, dynamically engages and responds to visitors. The public actually controls the façade wall display by placing their hands and feet in handprint and footprint indentations located in the adjacent plaza; the more people touching, the more dynamic the display.

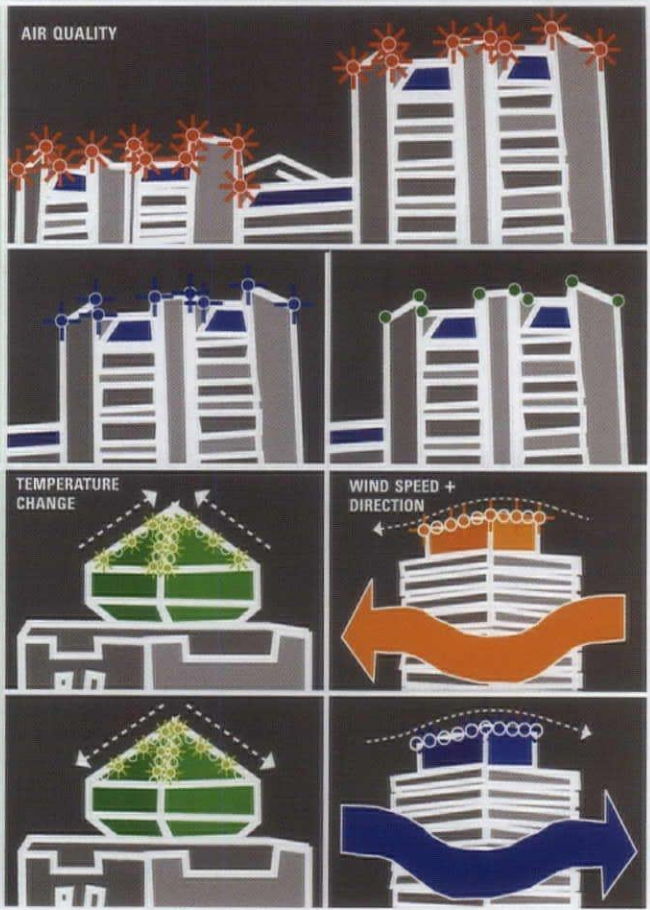




The Coventry Weather Towers broadcast tomorrow's weather forecast—with light.

- **COVENTRY POINT** (top building) indicates poor air quality with fast-pulsing red beacons; moderate with medium-pulsing blue; and poor with slow-pulsing green.
- **MERCIA HOUSE** (left building) has lights that move in the same direction as the forecasted wind direction; the faster they move, the stronger the wind.
- **HILLMAN HOUSE** (right building) indicates temperature change. Red beacons moving up mean a warmer day; static green beacons mean no change; and blue beacons moving down mean cooler temperatures are likely.

All of the towers display a color signifying the general forecast. (See color code above.) To clarify the system, Speirs and Major designed a brochure, which the city of Coventry distributed to its citizens.



adjacent to the wall. Indents in the shapes of handprints, and a few footprints, decorate the pillars, tempting visitors young and old to touch the impressions. When they do, capacitors sensing a presence trigger the façade lighting display, which responds with different sequences depending on the number of handprint and footprint signals. The more people touching, the more dynamic the display.

It is an entertaining, cheerful approach appropriate to this venue and to the process of urban renewal; the lighting scheme attracts visitors, who then participate in "constructing" the space.

**WEATHER TOWERS**

In Coventry, Speirs and Major has designed the exterior lighting for several buildings in an effort to improve the aesthetic of a city severely damaged by fire bombing during World War II and subsequently victimized by bad 1950s and 60s architecture. Completed in 2002, one installation—gracing the tops of three buildings—suggests that interactivity can be a complex exchange, involving the surrounding environment, as well as occupants and the public.

Using a combination of LEDs and RGB neon, each building displays a portion of the weather forecast for the following day, including temperature, wind and air quality. The direction of the lights' movement and the frequency of their pulsing signify expectations for wind direction and speed, falling or rising temperatures, or the air quality. The color of the lights indicates the general prediction (yellow for sunshine, "pea" green for fog, and so on). The display is controlled by a central computer, into which an operator feeds the weather predictions several times a day. A radio signal sent out from the computer resets the systems in the three towers.

Located in the vicinity of the country's primary meteorological facility, the Weather Towers respond not only to their climatic environment but also to the locale in which they reside. The exchange initiated by the lighting treatment extends beyond this, however. While not directly influencing the structure's appearance as the visitors at

Touch Harbourside do, the Coventry public receives something from these buildings. "The towers become information givers," says Speirs. "I believe that is part of an interaction."

In both projects, the lighting installations make a quality contribution to the process of urban renewal; the medium's ability to attract the public and impart a sense of security and joy make it particularly appropriate to such situations. There are, however, many other projects without an agenda of regeneration that establish a similar relationship between users and architecture through dynamic lighting. In fact, Speirs argues, too many. "People are using these tools with abandon, without thinking about the results. If you ask a lighting designer why they do such and such, the answer should not be because it looks pretty; there has to be a philosophy." He points out that the Weather Towers are attractive and colorful, but this is not all there is to them. "If you go beyond the superficial look, there is a rock-solid philosophy of why it does what it does." **EMILIE W. SOMMERHOFF**

DETAILS	
PROJECT	Touch Harbourside, Bristol, England
OWNER	Chrest Development
ARCHITECT	Faulkner Browns, New Castle, England
LIGHTING DESIGNER	Speirs and Major Associates, London and Edinburgh
PROJECT	Weather Towers, Coventry, England
OWNER	Coventry City Council
LIGHTING DESIGNER	Speirs and Major Associates
CITY LIAISON	Andy Telford
IMAGES	All renderings courtesy Speirs and Major Associates



# The world of lighting is about to change forever



## Juno Lighting Group

### A new vision for design and innovation

Five great lighting brands are now available from a single source — Juno Lighting Group. When you need lighting based on design and innovation, Juno Lighting Group now makes it a reality.

Juno, Indy, ALFA, Acculite and ModuLight provide the latest design and technical innovations in retail, hospitality and commercial lighting. Juno leads the industry in quality track and recessed lighting. Indy is recognized for its architectural and commercial lighting. ALFA is a leading brand in low-voltage halogen systems. High-performance HID lighting including innovative fixtures for indoor and outdoor applications is Acculite's specialty. ModuLight is an innovative and game-changing power delivery lighting system. Together, these brands offer a full range of lighting solutions.

### A single source for all brands

Now National Accounts, their specifiers and their lighting distributors can source all brands through our Juno Lighting Group National Account sales team. Our experienced, knowledgeable National Account Managers provide many services from design to energy audits.

Find out how Juno Lighting Group is illuminating retail stores, restaurants and commercial buildings across North America. Experience the combined design and innovation synergy of Juno, Indy, ALFA, Acculite and ModuLight as Juno Lighting Group.



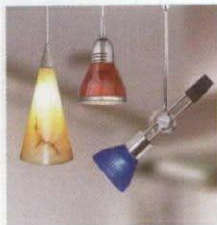
### Juno®

Sell more merchandise while reducing operating costs with Juno's easy-to-install track, recessed and commercial lighting. Distinctive designs and high quality are the hallmarks of Trac-Master and Trac 12 lighting systems, award-winning MH2, CMH downlights, Aculux precision recessed lighting, undercabinet lighting and Danalite architectural linear lighting.



### Indy

Indy offers specification-grade downlighting and track lighting products for retail, hospitality, commercial and institutional projects. Architects, engineers, and lighting designers turn to Indy for innovative lighting solutions, including fluorescent, metal halide, HID and incandescent fixtures.



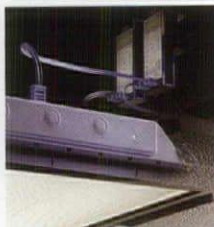
### ALFA

ALFA's versatile low-voltage halogen lighting systems give you limitless possibilities for enhancing retail stores, restaurants, offices and residences. ALFA's MonoTrack, MonoRail and Cable systems enhance a wide range of architectural designs. ALFA is high on style, with a large assortment of fixtures in natural stone, colorful glass and metal finishes.



### Acculite

Specifiers choose Acculite's HID and specialty fluorescent luminaires for commercial and industrial applications. Acculite offers highbays, lowbays and other commercial fixtures for indoor HID and fluorescent lighting applications. Acculite's outdoor products provide security and floodlighting for ceiling, wall or pole.



### ModuLight™

This innovative lighting system provides dramatic savings in the design, installation and re-configuration of commercial lighting. The "quick-connect" cabling system offers unsurpassed flexibility, simplicity and safety, creating a true Plug-and-Play lighting system.

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

Circle No. 90 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)

## Juno Lighting Group

800-323-5068



## SIT ON IT, LOOK IN IT: LUMINAIRES THAT MULTITASK

THERE IS A TREND AFOOT, PERHAPS INSPIRED BY THE INCREASINGLY CLOSE QUARTERS IN which today's urban population is forced to live. Lighting is joining with furniture to create a hybrid that works as a light source as much as it does as a shelf or seating—or for that matter, as *object d'art*. For residential environments low on square footage or for those with a minimalist aesthetic, these products are more than just novelties.

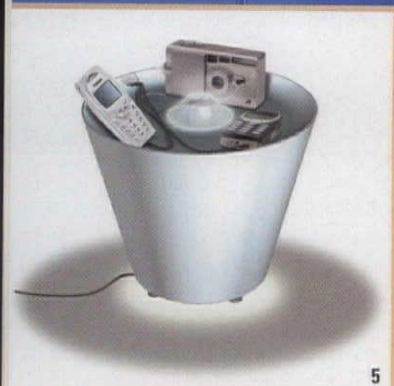
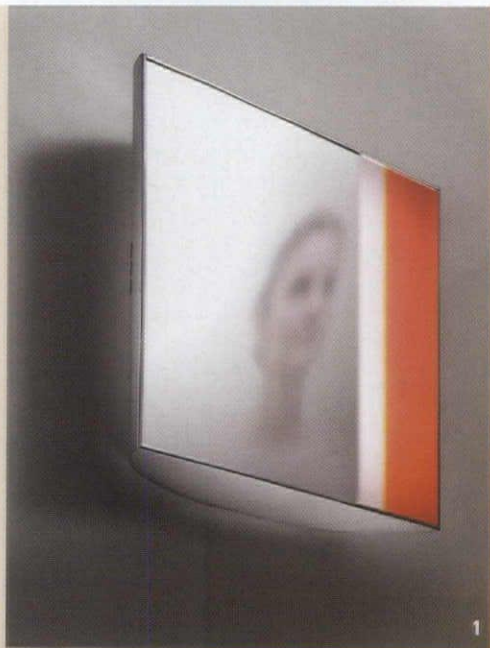
Not surprisingly, Italian manufacturers are at the epicenter of this design phenomenon, and at their heart is Artemide. A company that has been pushing design boundaries for a half century, Artemide recently introduced its Light Objects series, featuring creations from several designers. Karim Rashid's Plodule is both a stool and an ambient light source in white, lemon yellow or light blue thermoplastic resin. The IP 65-rated luminaire can be sat on both indoors and out. His **Time & Space** piece is at once a clock and an oval-shaped diffuse light source atop a polished aluminum stem (3). Designer Carlotta de Bevilacqua developed **Go to the Mirror** for Artemide, which is—you guessed it—a mirror and light source in one (1). A semi-reflective surface treatment enables the glow from three fluorescents in colored gels to transform the square steel plate into an abstract art piece/wall sconce. Six variations are possible, depending on which of the three sources are turned on. This could give new meaning to the fairy tale phrase "mirror, mirror on the wall."

From Foscarini, **Yet** is a modular shelf system illuminated from within its ribbed plastic shell by a compact fluorescent (4). Available in white, orange, grey and yellow, the luminaire has a space-age form, and capable of holding 30 pounds, a dependable shelf life (pun intended).

Newer on the scene, but equally adventurous, manufacturer Rotaliana presents **Multipot** by designers Dante Donegani and Giovanni Lauda (5). A cable-management system disguised as a bucket-shaped light source, Multipot incorporates a multi-plug outlet with an LED board. A cover element hides the cords inside and provides a surface to set the items that are charging—or anything else that needs a place to rest.

Never too far behind, American companies like Chicago-based B-9 furniture are also crossbreeding household objects. At Lightfair 2004, B-9 introduced a prototype of its second line of illuminated seating, the **Corona** chair and love seat (2). Constructed with polypropylene sheet and polished aluminum extrusions, the geometric furniture emits light from six T4 fluorescents located in its base. The company lists the chair and love seat for a mere \$2,600 and \$3,200 respectively. (Clearly, this design phenomenon does not economize in every respect.)

EMILIE W. SOMMERHOFF





## LIVING WITH ART AND IMAGE

"It is usually part of the developer's marketing program for attracting residents to create a strong identity for the multi-unit residential building through a design that is related to the building and its location, beginning with the lobby," says New York City-based lighting designer Dusti Helms. Helms has collaborated with Jay Valgora, principal of V Studio, also located in New York, contributing her lighting expertise to his firm's design of lobbies in two very different multi-unit residential buildings in the city. What the projects have in common is that the image achieved for each establishes an inviting first impression for passersby and a welcoming environment for residents to literally live with over time. **WANDA JANKOWSKI**

### Bridgefront Condos, BROOKLYN, NY

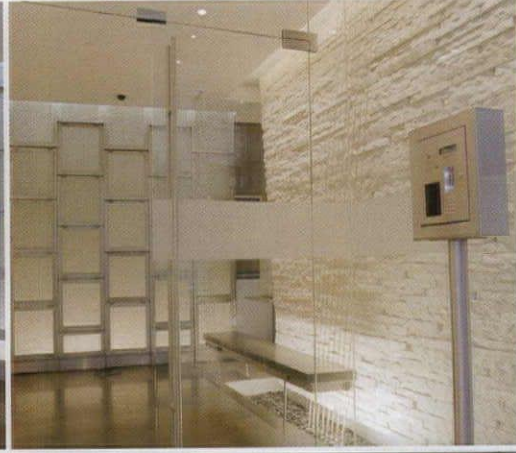
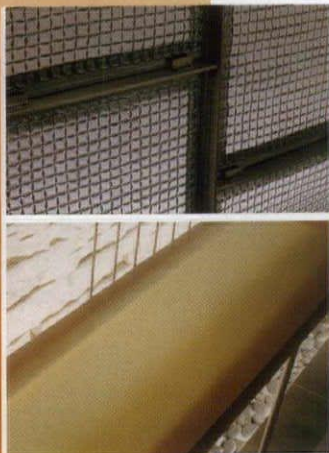
**CHALLENGE** In the Dumbo section of Brooklyn near the base of the Brooklyn Bridge stands the 9-story, 46-unit luxury condominium building called Bridgefront. Its small lobby measures only 300 square feet, yet a striking identity statement had to be made nonetheless. "Dumbo is a dynamic neighborhood that benefits from the artistic nature of its residents and its architecture. We were inspired for this project by the Brooklyn Bridge and the language of its industrial form," Valgora explains.

**ARCHITECTURAL AND LIGHTING SOLUTION** To fulfill the challenge of tying the small lobby visually to the

In front of the right wall, an amber-colored resin bench has been suspended from stainless-steel cables, evoking another bridge image. The bench glows with the effects of underlighting from the T8 fluorescent coves.

At the back of the lobby, the industrial theme is carried through in a panel made of metal mesh slumped into plate glass and held within a steel frame that shields the elevator bank. It is backlit with a floor-mounted T5 fixture fitted with a reflector.

To insure the visibility of the lobby, metal halide PAR lamps are ceiling recessed behind the entry doors, making the entrance bright as a beacon. ■



#### DETAILS

**DESIGN TEAM** | V Studio  
(architect); Dusti Helms  
(lighting designer)

**PHOTOGRAPHER** | Michele Curel

**MANUFACTURERS** | Bartco,  
Celestial, Edison Price,  
Elliptipar, Lucifer, RSA

nearby landmark bridge, Valgora and Helms chose to build on the interplay between light and textured materials. The lobby's angled walls are made of rusticated stone. "The stone is grazed with light from ceiling-recessed, 75-watt halogen PAR lamps," says Helms. "The walls are also backlit, with sparkles of light peeking through holes between the stones from a floor-mounted strip of 75-watt halogen PAR lamps." The fixtures behind the walls are located in passageways accessed for maintenance through a door at the end of each wall. The quartzite and green stone floor has been designed as a slightly raised platform to convey the sense of walking on a bridge. Light emanates along the sides from coves fitted with T8 fluorescents installed underneath.





**CHALLENGE** The 22-story building at 50 Murray Street had served as the New York City headquarters of the Internal Revenue Service in the 1960s. It has been renovated into a 389-unit luxury rental apartment building that includes a 3,500-square-foot lobby. "It was an unattractive prospect to turn a building used for government offices into a residence," says Valgora, "but that circumstance informed the whole idea of the design."

**ARCHITECTURAL AND LIGHTING SOLUTION** "The design for the lobby centers on the interplay of lighting and materials, and the concepts of public and private, given the building's past use and its present one. The building had been a bureaucratic office building, and we now wanted to make it a cherished place," says Valgora. Tall and simply styled, its expanses of glass and views of the city island stand in contrast to the predominantly low-lying, loft-filled residential units in its neighborhood.

"We wanted to play games with curtains of glass in the lobby that mimicked the light coming into the apartments through the windows," says Valgora. "Frosted glass with selective clear glass stripes defines the lobby entrance, creating a voyeuristic opportunity for passersby."

Inside the lobby, the feature wall is back- and front-lighted with LEDs that gradually change color throughout the day. "When a resident leaves for work in the morning and returns at night, the color is different," says Helms. The palette is pink/orange in the morning, blue/green at midday, red/magenta in the evening, and lavender/peach late at night.

In the mailroom portion of the lobby, two banks of what ordinarily would be mundane mailboxes are transformed into artwork using glass and light. The back of one bank faces the street; the back of the other, the lobby interior. The fronts of the mailbox stations are constructed of traditional steel and

aluminum. The backs are capped off by large panels of frosted glass backlit by fluorescent tubes. "The glass is frosted so you don't see anything specific in the mailboxes and the residents' privacy is protected," says Valgora. "The mailman becomes the artist, constantly shifting the 'art' by adding letters in new places and creating new shapes each day." As the mailboxes are the property of the federal government, the design team had to produce a mock-up to garner the approval of the Postmaster General of New York. A second mailroom feature is what Valgora calls "an altar to junk mail." Residents toss their unwanted mail into a basket under the translucent table made of Avonite, a solid surfacing material, and underlit with T8 fluorescents.

The long and low concierge desk is also made of Avonite. "We made it like a bar—a meeting place for people, playing again with the idea of public versus private." The concierge desk is clad with Batik laminate and perforated aluminum filled with acrylic in a circular motif. The area is illuminated by MR16 downlights and by ceiling coves fitted with T8 fluorescents.

The ceiling coves visually divide the mailroom from the concierge desk area, which is outfitted with custom furniture and carpeting designed by Valgora. The mailbox area is also separated from the rest of the lobby by sheets of frosted glass that rise up into ceiling coves. The elevator bank area is illuminated with compact fluorescents.

Rather than simply reflecting the style of the building architecture, the trend in designing luxury lobbies today involves capturing the character of the structure's location and the thoughtful appreciation of its residents. ■

*The former editor-in-chief of A|L and LD+A, Wanda Jankowski has authored seven books, four on aspects of lighting design.*

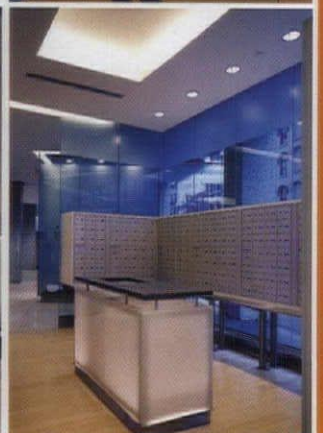
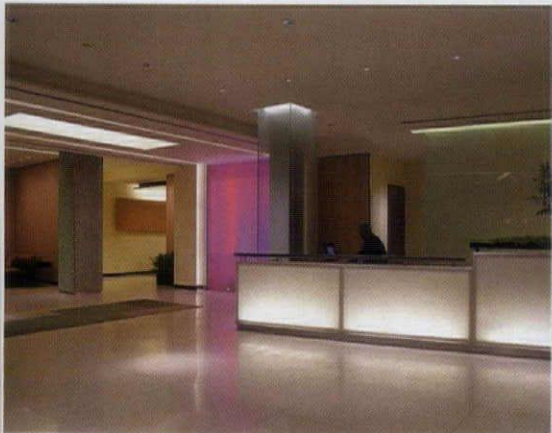
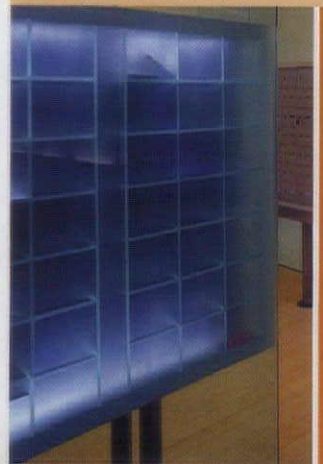
## 50 Murray, NEW YORK CITY

### DETAILS

**DESIGN TEAM** | V Studio (architect); Dusti Helms (lighting designer)

**PHOTOGRAPHER** | Ross Muir, Paul Warchol

**MANUFACTURERS** | Bartco, Color Kinetics, Edison Price, Elliptipar, Kurt Versen, Lucifer





## THE VOS PAD, LONDON

### DETAILS

**PROJECT** | The Vos Pad, London

**DESIGN TEAM** | Vos Solutions  
(architecture and lighting)

**PHOTOGRAPHER** | Costa  
Anastasakis

**MANUFACTURERS** | ACDC Lighting;  
Litelogic; Lumileds; Lutron;  
MK Electric

**CHALLENGE** The \$1 million plus asking price for a one-bedroom apartment overlooking the Thames represents a record breaker by London standards, even for the very exclusive borough of Chelsea. But, the Vos Pad, as it is named, owes its value to more than just a strategic location in the British capital. Displaying contemporary aesthetics and cutting-edge technology, the apartment highlights a radical and innovative approach to residential design through the use of color-changing LEDs.

Marcel Jean Vos, a London-based Dutch designer, confesses that when RGB LEDs first came on the market a few years ago, he was immediately thrilled at the idea of experimenting with the light source in a residential environment. Challenged by the skepticism of other design professionals, he decided to go his own way and produce a prototype that could replace traditional sources of lighting.

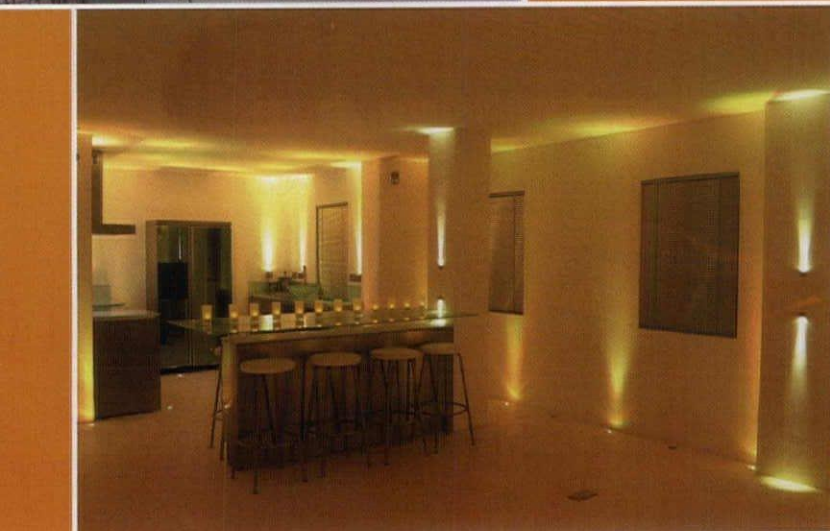
**ARCHITECTURAL AND LIGHTING SOLUTION** Originally a 1,000-square-foot two-bedroom apartment, Vos converted it to a single. His effort to maximize the space led to an open-plan solution for both the kitchen and the living room. Sliding doors make the one-bedroom even more flexible. "Allowing a free combination of uses and ambiances is what the chromatically controlled, fully dimmable LED lighting system is about," says Vos. LEDs are the real medium of the design: the minimalist choice of materials and the simplicity of detail throughout the apartment reveal the creative potential of the color-changing lighting.

The entire apartment comprises white walls that are simply washed with RGB LED bar units recessed in the floor and embedded under glass. Micro aluminum cube wall sconces in the kitchen and lounge provide contrast to the wallwashers and a dramatic effect on the softly illuminated walls and ceilings; they reinforce the sensation of spaciousness and enhance the purity of the surfaces.

The kitchen's glass countertops and the bathroom's shower screen and backsplash are illuminated by panels that provide even distribution of light on all surfaces. The use of stainless-steel panels and mirrored doors for the kitchen appliances illustrates the capacity of LEDs to reveal the reflective quality of materials. The lighting system, centrally controlled, provides pre-programmed scenes with alternating color sequences, and creates a playful environment where lighting becomes a source of entertainment and well-being.

Encouraged by the success of this first experiment, Vos has become actively involved in researching less expensive and more efficient products. Despite the cost—the lighting installation was about \$50,000—LEDs are energy efficient, low maintenance, and have a longer lifespan than traditional light sources, ultimately making them cost effective, explains Vos. He firmly believes in the imminence of a revolution in lighting solutions that will free the design process from the constraints of traditional systems. **AURELIA DUPLOUICH**

*A graduate of the Versailles School of Architecture, Aurelia Duplouich has worked on projects in France and the United States. She is currently completing a master's in urban design at the Bartlett in London.*





## PRODUCTS SWEET PRODUCTS

### EM COLLABORATIVE STUDIO | PRODUCT: ALTER, EGO, OPUS | EMCOLLECTION.COM

A young firm (started in 2003) with a vibrant aesthetic and an innovative design approach, Em Collaborative Studio unveiled its initial collection at the 2004 International Contemporary Furniture Fair. Through proportion, cut and color scheme, pieces like the pendant trio Alter, Ego and Opus come alive. Made from plastic resin, each luminaire has a slight variation. The Em Concept Store opens in Los Angeles this summer. **CIRCLE 121**



### STUDIO ITALIA DESIGN | PRODUCT: SOPHIE | STUDIOITALIADESIGN.COM

The Sophie wall lamp from the Venetian company Studio Italia Design is available in chrome or glazed nickel with transparent white external glass and a sand-blasted internal element. The Sophie family includes an upright wall sconce with either a tubular-shaped or concave-shaped outer glass, or a tubular dual-lamp version, which can be used to provide downlighting (shown). **CIRCLE 122**



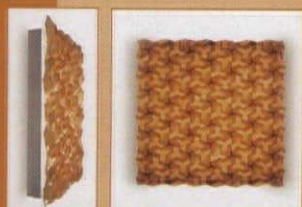
### MIO | PRODUCT: CAPSULE LIGHT | MIOCULTURE.COM

The Philadelphia-based company, which launched in 2003, has released its Green Desire product collection. These objects of "responsible desire" utilize sustainable materials and industries. Made from 100 percent wool shells, the Capsule light is crafted using traditional felt molding technologies. Designed for easy disassembly and recycling, the fixture takes a compact fluorescent lamp. **CIRCLE 123**



### DFORM | PRODUCT: FLAKE LIGHT PANEL | DFORMDESIGN.COM

Dform's punch pattern lighting is made from interlocking die-cut wood veneer or plastic. The integrated shapes create patterns—such as Pinwheel, Arabesque, Flake (shown) and Star—that transform when illuminated. These become the shading element of the company's standing fixtures, pendants and wall sconces, as well as its screens and room dividers. All patterns are customizable and scalable. The luminaires are UL-listed. **CIRCLE 124**



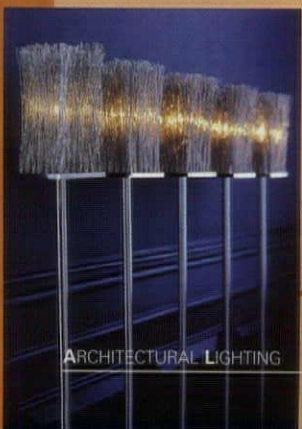
### LAMPA | PRODUCT: CUBE | LAMPA.COM

Available in tasty colors like blue, canary, orange, plum, watermelon and white, Cube features a minimalist, geometric form, 10 inches square and 16 inches high. Its simple materials are a powder-coated steel base and white styrene shade. **CIRCLE 125**



### BRAND EN VAN EGMOND | PRODUCT: BROOM | BRAND-EGMOND.COM

These spectacular pieces are closer to artwork than lighting fixture. Hand-crafted using materials such as metal and glass, each line from the Netherlands-based Brand en van Egmond has a character of its own. Designed in 2002, the Broom collection is available as a pendant, wall sconce, table lamp or standing lamp, all with a nickel finish. **CIRCLE 126**







# ARCHITECTURE CONFERENCES



# Need CEUs?

Fulfill your CEU requirements and get ahead  
in the most active sectors in your business

## THE EDUCATION MARKET SERIES

Building Better Schools

San Diego . . . August 2004  
Dallas . . . . . September 2004  
Atlanta . . . . . November 2004  
New York . . . November 2004

## THE HEALTHCARE MARKET SERIES

Places that Heal

Chicago . . . . . October 2004  
Atlanta . . . . . November 2004

Covering the latest in education and healthcare facility design trends, best practices and business development, *Architecture's Education Market Series* and *Healthcare Market Series* are designed to gear architects with the tools they need to lead education and healthcare construction into 2005.



Architects earn 6 AIA  
and State credits.

To register call **646.654.4581** or log onto [www.architecturemag.com](http://www.architecturemag.com)  
For sponsorship opportunities call Suzanne Tron Haber, Publisher, at **646.654.5756**

Presenting Sponsor



Corporate Sponsors





Some  
opinions  
are more  
powerful  
than  
others.

And we all know opinions  
can change.

Now in its 3rd year,  
*Architectural Lighting's*  
ACE.al Awards have become  
a mark of distinction and  
dependability.

Voice your opinion by  
casting your vote and  
honor those manufacturers  
who have demonstrated  
exceptional value,  
durability, customer  
service and design.

## architectural | lighting

# ACE.al AWARDS

ARCHITECT'S CHOICE  
FOR EXCELLENCE

CHOSEN BY  
LIGHTING DESIGNERS & ARCHITECTS

AWARDED BY  
ARCHITECTURAL LIGHTING

Recognizing:  
durability,  
customer service,  
value, and  
design.

### HOW THE PROGRAM WORKS

1. Take a few minutes to review the list of building materials 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, 2004 in order to have your vote counted. Only official ballots published by the magazine or downloaded from [archlighting.com](http://archlighting.com) 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 November/December 2004 issue of *Architectural Lighting*.

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



# The 3rd Annual ACEA Awards Lighting Specifier's Choice for Excellence

Recognizing Excellence in Lighting Products + Manufacturers

architectural | lighting

Which ONE manufacturer has provided you and your projects with the best value, durability, customer service and design? (Choose ONE MANUFACTURER)

- 1 3M Light Fiber
- 2 Acrilex
- 3 Adaptations
- 4 Advance
- 5 Alanod
- 6 Alera Lighting
- 7 Alkco
- 8 ALS - Architectural Lighting Systems
- 9 Altman Lighting
- 10 Ambiance Lighting Systems
- 11 American Glass Light
- 12 Amerlux
- 13 ANP Lighting
- 14 Architectural Area Lighting
- 15 Architectural Landscape Lighting
- 16 Ardee
- 17 Aromat Corp.
- 18 Arroyo Craftsman
- 19 Artemide
- 20 Artistic Tile
- 21 AVR USA
- 22 Baldinger
- 23 Bartco Lighting
- 24 Beacon Products, Inc.
- 25 Bega Lighting
- 26 Beghelli
- 27 Beta-Calco
- 28 Birchwood Lighting
- 29 B-K Lighting
- 30 B-Light
- 31 Boca Flasher
- 32 Boyd Lighting
- 33 Bruck Lighting Systems
- 34 C.W. Cole & Co.
- 35 Charles Loomis
- 36 Color Kinetics
- 37 Columbia Lighting
- 38 Conant Custom Brass, Inc.
- 39 Con.daz Lighting
- 40 Con-Tech Lighting
- 41 Contrast Lighting
- 42 Cooper Lighting
- 43 Cyclone Lighting Inc.
- 44 D'ac
- 45 Davis/Muller Lighting
- 46 Day-Brite Lighting
- 47 Delray
- 48 Derek Marshall Lighting
- 49 Dernier & Hamlyn
- 50 Dreamscape Lighting Mfg.
- 51 Eclipse Lighting Inc.
- 52 Edison Price
- 53 Eiko Ltd.
- 54 Electrix
- 55 Electronic Theatre Controls
- 56 Elite Bohemia/Bar Del International
- 57 elliptipar
- 58 Engineered Lighting Products
- 59 ERCO Lighting USA, Inc.
- 60 ESTILUZ, INC.
- 61 ETC
- 62 Eureka
- 63 Exceline
- 64 Fabbian USA
- 65 FAD/Delta Light USA
- 66 FC Lighting
- 67 Fiberstars
- 68 FLOS
- 69 Focal Point
- 70 Foscarini
- 71 Gamma 3 Luce
- 72 Gardco Lighting
- 73 GE Lighting Systems
- 74 Ginger
- 75 Gotham Architectural Downlighting
- 76 Guth Lighting
- 77 H.E. Williams
- 78 Hadco
- 79 Halo
- 80 Hampstead Lighting
- 81 Hatch Transformers
- 82 Hemera, Inc.
- 83 Hessamerica
- 84 Hex Architectural Lighting
- 85 High End
- 86 Holophane
- 87 Hubbell
- 88 HUNT Dimming
- 89 Hydrel
- 90 Icon International
- 91 IL America Inc.
- 92 ILEX
- 93 Illuminating Experiences
- 94 Illumination Lighting
- 95 Induction Lighting
- 96 Industry + Design Light
- 97 Indy Lighting
- 98 Insight Lighting
- 99 Intertech
- 100 IRIS
- 101 Ivalo Lighting
- 102 JJI Lighting Group
- 103 Juno Lighting
- 104 Kenall
- 105 Kim Lighting
- 106 Kurt Versen
- 107 Lam Lighting
- 108 Lamar
- 109 LBL
- 110 Ledalite
- 111 Ledtronics Inc.
- 112 Legion Lighting
- 113 Leola
- 114 Leucos USA
- 115 Leviton
- 116 LexaLite International
- 117 Lightech
- 118 LightIdeas
- 119 Lighting Services Inc
- 120 Lightolier
- 121 Lightolier Controls
- 122 Light-Project International
- 123 Linear Lighting
- 124 Litecontrol
- 125 Litemakers
- 126 Lithonia
- 127 Lithonia Controls
- 128 Louis Poulsen
- 129 LUCEPLAN USA, Inc.
- 130 Lucien GAU
- 131 Lucifer Lighting
- 132 Lumca
- 133 Lumec-Schreder
- 134 Lumen Center Italia
- 135 Lumiere
- 136 Luminis
- 137 Luraline Products Co.
- 138 Lutrex
- 139 Lutron
- 140 Luxo Corporation
- 141 Luxo Italiana
- 142 Lyric Lighting (Seagull)
- 143 Manning Lighting
- 144 Mark Lighting
- 145 Martin Architectural
- 146 MaxLite
- 147 McGraw Edison
- 148 MechoShade Systems, Inc.
- 149 Mercury
- 150 Metalumen
- 151 Metalux
- 152 Neoray
- 153 Nessen
- 154 Newmat USA
- 155 New Metal Crafts
- 156 New Star Lighting
- 157 Nora Lighting
- 158 Nordic Aluminum
- 159 NoUVIR Research
- 160 O Luce
- 161 Orbit North America
- 162 Original Cast Lighting
- 163 Osram Sylvania
- 164 Pathway-The Lighting Source
- 165 PCI
- 166 Peerless
- 167 Pennsylvania Globe
- 168 Philips Lighting
- 169 Phoenix Products Co.
- 170 Prescolite Lighting
- 171 PRISMA
- 172 Progress Lighting
- 173 Prudential Lighting
- 174 Q-Tran Inc.
- 175 Quality Lighting
- 176 Rosco Laboratories, Inc.
- 177 RSA
- 178 Ruud
- 179 Schonbek Worldwide Lighting Inc.
- 180 Schott-Fostec LLC
- 181 Schott North America
- 182 Se'lux U.S.
- 183 Sea Gull Lighting
- 184 Selecon
- 185 Semper Fi Power Supply Inc.
- 186 Sentry Electric Corporation
- 187 Sirmos
- 188 Solara Lighting
- 189 Solatube International Inc.
- 190 Space Lighting
- 191 Special FX Lighting Inc.
- 192 Specialty Lighting Industries
- 193 Spero Lighting
- 194 SPI Lighting
- 195 Spring City Electrical Manufacturing
- 196 Starfield
- 197 Sternberg
- 198 Stingray Lighting
- 199 Studio Due s.r.l
- 200 Super Vision International
- 201 Sure-lites
- 202 Targetti North America, Inc.
- 203 Tech Lighting LLC
- 204 Teka Illumination Inc.
- 205 Terzani
- 206 The Original Cast Lighting
- 207 THHC Lighting
- 208 Thomas Daybrite
- 209 Times Square Lighting
- 210 Tivoli, LLC
- 211 Tracomar
- 212 Translite Sonoma
- 213 Traxon USA
- 214 Trend Lighting Co., Inc.
- 215 Tridonic Inc.
- 216 Troy-CSL Lighting
- 217 Tungda Electrical & Lighting Limited
- 218 Unilight Ltd.
- 219 Universal Lighting Technologies
- 220 Ushio America
- 221 Valmont Industries, Inc.
- 222 Vantage
- 223 Van Teal
- 224 Varon Lighting
- 225 Viabizzuno
- 226 Visa Lighting
- 227 Vistawall
- 228 Vossloh-Schwabe Inc.
- 229 W.A.C. Lighting
- 230 Waldmann
- 231 The Watt Stopper
- 232 Weaver & Ducre
- 233 WE-EF Lighting USA
- 234 Wendelighting Inc.
- 235 Wila Lighting
- 236 Winona
- 237 Xilver BV
- 238 Zaneen Lighting
- 239 Zumtobel Staff



# The 3rd Annual ACEA Awards Lighting Specifier's Choice for Excellence

Recognizing Excellence in Lighting Products + Manufacturers

architectural | lighting

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

1	25	49	73	97	121	145	169	193	217
2	26	50	74	98	122	146	170	194	218
3	27	51	75	99	123	147	171	195	219
4	28	52	76	100	124	148	172	196	220
5	29	53	77	101	125	149	173	197	221
6	30	54	78	102	126	150	174	198	222
7	31	55	79	103	127	151	175	199	223
8	32	56	80	104	128	152	176	200	224
9	33	57	81	105	129	153	177	201	225
10	34	58	82	106	130	154	178	202	226
11	35	59	83	107	131	155	179	203	227
12	36	60	84	108	132	156	180	204	228
13	37	61	85	109	133	157	181	205	229
14	38	62	86	110	134	158	182	206	230
15	39	63	87	111	135	159	183	207	231
16	40	64	88	112	136	160	184	208	232
17	41	65	89	113	137	161	185	209	233
18	42	66	90	114	138	162	186	210	234
19	43	67	91	115	139	163	187	211	235
20	44	68	92	116	140	164	188	212	236
21	45	69	93	117	141	165	189	213	237
22	46	70	94	118	142	166	190	214	238
23	47	71	95	119	143	167	191	215	239
24	48	72	96	120	144	168	192	216	

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 \_\_\_\_\_



# Smile for the Camera: Student Solutions

EMILIE W. SOMMERHOFF

WITH TIME FOR TRAVEL AND CONFERENCES INCREASINGLY DEAR IN RECENT YEARS, more companies are turning to a form of videoconferencing where participants don't even have to leave their desk. A tiny video camera mounted to the top of the computer captures the conferencer's face and displays it on the other participant's monitor, and vice versa. Although convenient, the video images of the face can be poor depending on the local lighting conditions at the workstations. Who better to address this next-generation lighting design challenge than a new generation of lighting designers.

The 2004 Robert Bruce Thompson Student Light Fixture Design Competition challenged students to create a luminaire to address the problems associated with videoconferencing. Ideally the light would be unobtrusive, easy to mount on the computer, and light the face in a flattering way (think color rendering and pattern of lighting on the face), without causing glare discomfort for the user. The choice of light source was not restrictive. Judges were looking for clever ideas

that would satisfy the camera color requirements, produce the lighting patterns in a flattering and economical way, be easy to manufacture and to use, and that had a graceful and appealing style.

In its third year, the competition showcased an encouraging degree of young talent. Funded by the Robert Bruce Thompson Charitable Trust, the program awards \$5,000, a trophy and a trip to Lightfair to the winner. In addition to plaques, second and third place, and citations, receive \$2,500, \$1,000 and \$500 respectively. The diversity and talent of this year's judges were also noteworthy. The panel included: Liza Pannozzo, SMWM; Larry French, Auerbach • Glasgow; Virva Kokkonen Nilsen, Virvatuli Lighting Design; Peter Ngai, Peerless Lighting; and Jay Sweet, Boyd Lighting. Additional information is available at [www.rbtcompetition.org](http://www.rbtcompetition.org).

more information at  
[WWW.ARCHLIGHTING.COM](http://WWW.ARCHLIGHTING.COM)



## FIRST PLACE

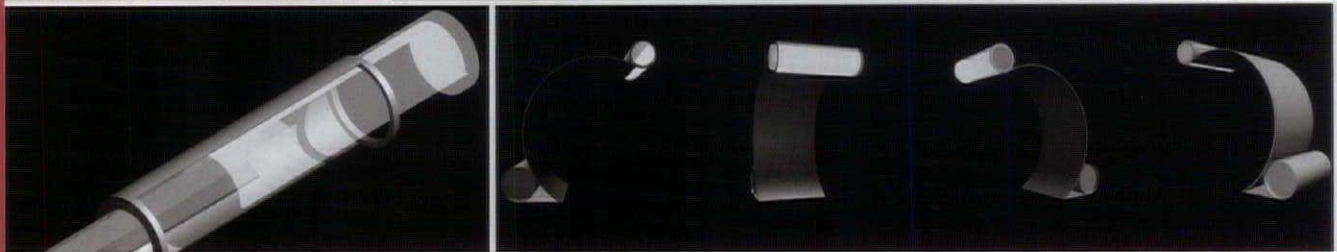
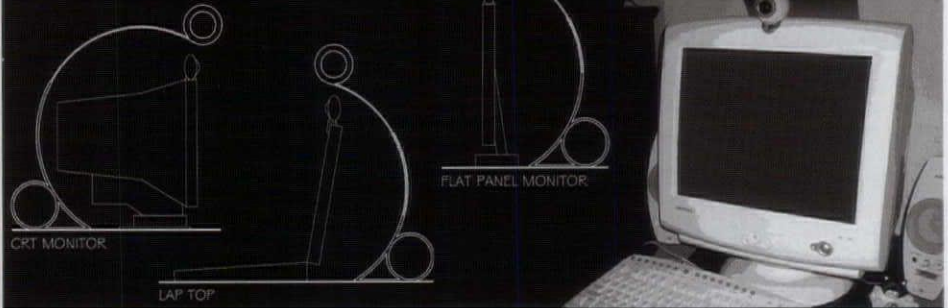
**NAME** Jonas Concepcion  
**SCHOOL** Rensselaer Polytechnic Institute  
**DEGREE** Master in Lighting Science

**JUDGES' COMMENTS** • Well thought out and thoroughly developed • Demonstrated a real understanding of the lighting problem • Beautiful presentation • Innovative • Multi-functional •

**DESCRIPTION** Based on the three-point principles found in television lighting, where a key source provides the primary highlights, a fill light removes shadows, and backlight distinguishes the subject from the background. Freedom of motion enables the user to adjust for multiple scenarios. Manual dimming controls can be supplemented with a wireless Bluetooth connection that would adjust light levels to suit the ambient lighting conditions.



PERSPECTIVE RENDERINGS  
# FIXTURE IN USE

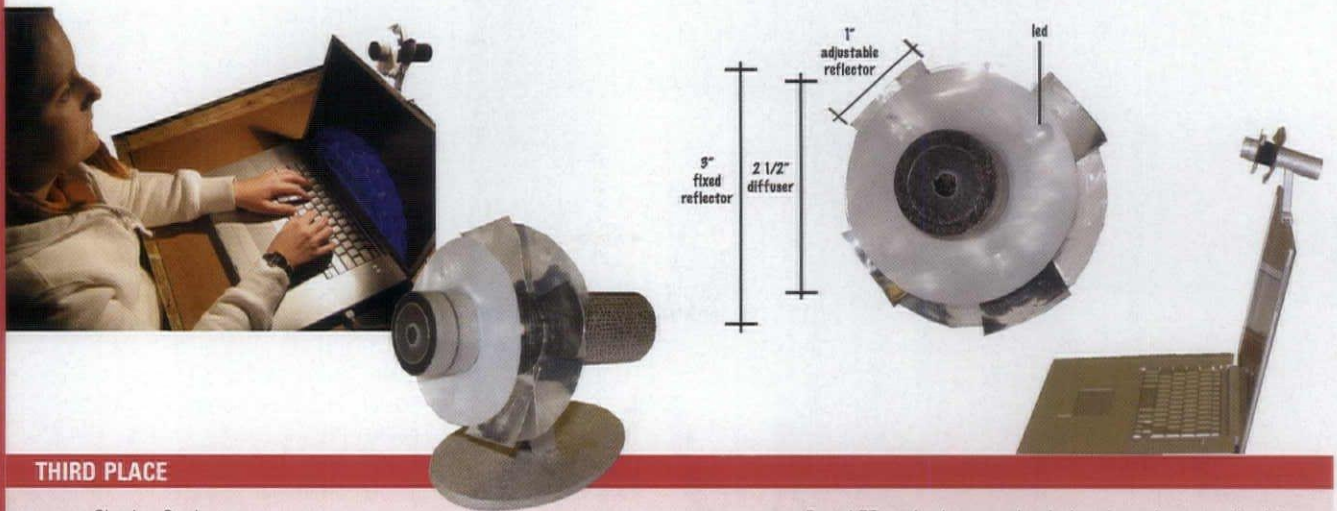


SECOND PLACE

**NAME** Jean McClure  
**SCHOOL** University of Texas at Arlington  
**DEGREE** Interior Design

**JUDGES' COMMENTS** • Aesthetically pleasing • Flexible, adaptable light level and positioning • Ease of use •

**DESCRIPTION** Two cylindrical diffusers rotate around one another to create different light levels. The outer diffusing cylinder is translucent, while the inner is opaque; both sit inside a metal reflecting cylinder. The user controls the light levels and beam spread by adjusting the knobs on either side of the fixture. The fixture head telescopes in and out of its base to accommodate different monitors. The luminaire takes a T2 fluorescent, and the ballast is concealed in the weighted base.



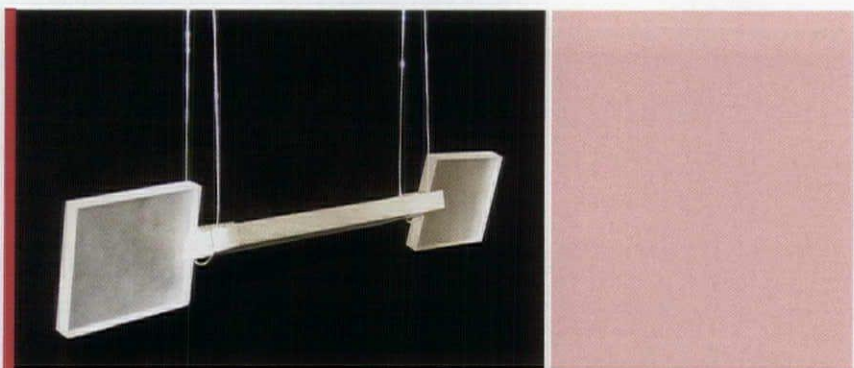
THIRD PLACE

**NAME** Charles Cooley  
**SCHOOL** University of Texas at Arlington  
**DEGREE** Interior Design

**JUDGES' COMMENTS** • Creative idea and use of materials • Adaptable, portable • Specifically lighting what the camera is seeing • Simple •

**DESCRIPTION** Four LEDs wired to an elastic band are integrated with a diffuser and four reflector leaves. The elastic band creates a versatile mounting system that can stretch to fit different cameras. The reflector leaves can be moved to direct light as desired. The circular diffusing shield spreads light to the face, while softening the light from the source. The reflected light is used for task illumination.



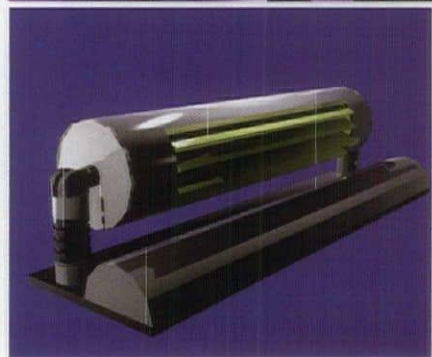
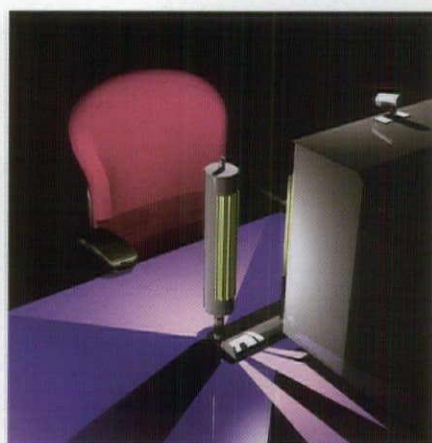


#### CITATION FOR INNOVATION

**NAME** Michael Rene Contreras  
**SCHOOL** University of Texas at Arlington  
**DEGREE** Interior Design

**JUDGES' COMMENTS** • Excellent idea, although the judges recognized the need for further technical and functional development • Created excitement and discussion among the judges  
 • Unique • Simplicity of design

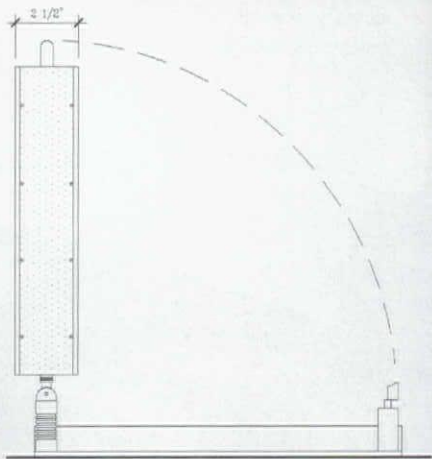
**DESCRIPTION** Conceived as a floating light plane, the 13 3/4-inch-long frosted Plexiglas fixture is illuminated by LEDs. Two side panels rotate to decrease shadows on the face during conferencing.



Everything Looks Better in the Right Light!

**AMBIANCE**  
 LIGHTING SYSTEMS  
 A Sea Gull Lighting Brand

For information call 800.347.5483 or visit [www.AmbianceLightingSystems.com](http://www.AmbianceLightingSystems.com)



#### CITATION FOR PRESENTATION

**NAME** Takeshi Narumi  
**SCHOOL** Utah State University  
**DEGREE** Interior Design

**JUDGES' COMMENTS** • A good example of how it should be done • Clear and excellent graphic presentation •

**DESCRIPTION** The arm has both a horizontal and vertical position. An adjustable fin reflector on the back of the luminaire helps the user control reflected light.



# Mixing Ingredients for a New Flavor

ELIZABETH DONOFF

GENERALLY, WE DO NOT QUESTION HOW THINGS ARE BUILT OR THE MATERIALS USED FOR construction. Concrete is considered a sturdy but cold material, fabrics and textiles are associated with domestic goods, and acrylic is thought to be a less expensive alternative to glass. These materials are not often associated with providing or transmitting light; that is, until

now. Several designers are challenging our way of thinking by pairing light with other materials to create something completely new.

more information at  
[WWW.ARCHLIGHTING.COM](http://WWW.ARCHLIGHTING.COM)

## LiTraCon

Áron Losonczi, a young Hungarian architect, first began testing the possibility of a light transmitting concrete by embedding pieces of glass into a massive block of concrete. With the glass embedded, the concrete acquired a new materiality; its thickness and weight subsided as filtered light passed through.

Since LiTraCon (short for light transmitting concrete) is comprised of only about 5 percent optical fibers and 95 percent fine concrete, the material has almost the same technical data as regular concrete blocks or plates. Thousands of small-diameter fibers run the length of the concrete, and lead light between the block's two surfaces—so effectively a LiTraCon wall can be constructed up to 20 meters thick and



still transmit light. The blocks are also load bearing. Losonczi is currently testing and collecting data, which will be available by the end of 2004.

LiTraCon has already moved beyond the prototype stage. With a German business partner, Losonczi has founded the company LiTraCon GmbH, and the first industrial production of the precast blocks and plates has begun. Recently, the first design object—the LTC lamp—was exhibited at the International Furniture Fair IMM 2004 in Cologne, and the LTC wall will be included in the National Building Museum's exhibit entitled *Liquid Stone: New Architecture in Concrete*, opening June 19, 2004 in Washington, D.C.

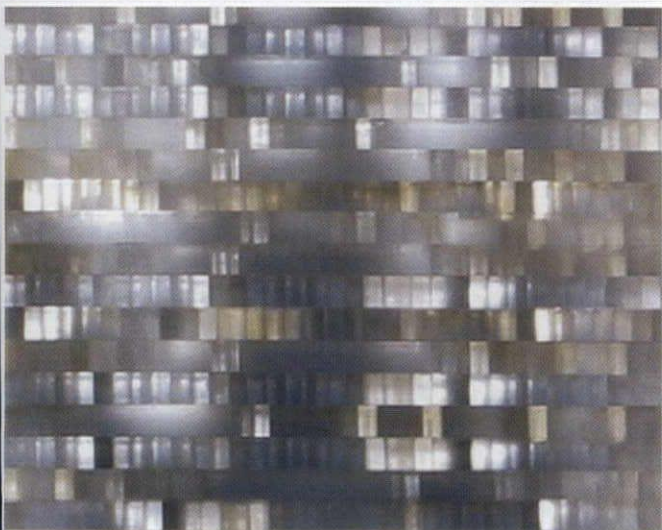
## OpTrix

Conceived of by Abhinand Lath, who has an electrical engineering degree from Arizona State University and a Master of Architecture from the University of Michigan, OpTrix is a light-processing technique that allows materials to respond to light and shadow. Lath first considered the utilitarian idea of bringing light into a building as a result of a studio taken with architects Todd Williams and Billie Tsien in 2002. For his final studio, Lath

expanded this investigation, developing a fiber optics prototype that could bring light into materials. He first embedded fiber optics into concrete, but was not satisfied with the functional and poetic aspects of this combination. It was an eleventh century Japanese poem describing the sensitivity of a bamboo forest to the slightest movement that inspired Lath's epiphany: How can I create a gently responsive surface that reconfigures shadows? He began experimenting with a light-conducting acrylic and a light pipe technique embedded within the concrete.

Lath has since refined his OpTrix system. U-shaped channels of various lengths are cut into the acrylic and stacked to create a continuous surface. How light and shadow respond depends on the angle of the cuts. The surface of acrylic channels can be applied to any material. An S-shaped channel allows light to interact on both sides of a material. OpTrix's real innovation stems from the fact that it is first and foremost a passive system; it responds to existing light sources. The more active the movement of light or an object, the more rapidly the acrylic surface will change.

Lath envisions numerous application possibilities including architectural materials, signage, lighting, and worker safety gear. The University of Michigan has provided Lath with funding to obtain the patent for the concept, process and technique. And with Lath's recent award for Best New Talent at *RAW: the Next Generation* exhibition at this year's International Contemporary Furniture Fair in New York City, OpTrix seems like a smart investment.





## LUME

Lume is the creative brainchild of a diverse design team based in Cambridge, New York City and Montreal: MIT architecture student Talia Dorsey; feature filmmaker Joshua Dorsey; CEO of Divalli Lighting Eran Plonski; and MIT Media Lab researcher Matthew Laibowitz. Lume is conceived of as a versatile and flexible LED-embedded textile that combines safe, energy-efficient light with the fluidity of textiles, and re-examines the paradigm of light, lighting design and its delivery.

To create a broad, even surface of light that could be used in film work, Dorsey and Plonski began investigating LEDs in a fabric format. "It was a broad design concept. That's when we realized that a multidisciplinary team would be the most effective way to tackle it, and think about the quality of the illumination," explains Joshua Dorsey.

LEDs drove the thought process. "Much of the work with LEDs has been replacing the light bulb; no one's using the form to drive a new paradigm for thinking about lighting," continues Dorsey.

The first public launch of the material was at *RAW: the Next Generation* exhibition at this year's International Contemporary



Furniture Fair. Currently, Lume is fabricated with flame-retardant polyester, but the team is experimenting with a variety of fabrics that would change depending on the application. Eventually they want to sell it by the yard or foot, so that whatever the length, transformers and fixtures can run the power management system.

The use of some of the brightest LEDs on the market is how Lume has distinguished itself. "Most people approach these fabrics from a purely decorative standpoint. Ours is a true illumination replacement," says Dorsey. To that end, Light Patch is one form of the

product that addresses a universal problem: lighting tight spaces. A patch of the fabric can be hung or stuck to a surface and then removed as necessary, like a flat flashlight.

With the material's portability and adaptability, application possibilities are only as limited as the current state of LED technology itself. And though initial interest has been from the interior sector, there are also application possibilities in the world of industrial design and humanitarian aid. ■

**AL**  
architectural | lighting

**We've redesigned  
more than just  
our magazine.**

VISIT

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

FOR

- recent **product** releases
- **industry** updates
- compelling **industry** exchange
- expanded **project** content



Our new internet icon will alert you to stories that continue on the web, with additional images, drawings, interesting sidebars, bonus product and manufacturer information, and instructive animations.

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



# The Virtual Thing: Lighting Software Options

MATT FRANKS

**LIGHTING DESIGNERS ARE CHALLENGED WITH PROVIDING** innovative solutions that are increasingly technical while staying sensitive to architectural aesthetics. Many of these solutions go far beyond a simple hand calculation—from calculating illuminance on a workplane to analyzing daylight factors for LEED compliance. The last year has seen significant development in the tools that are available to lighting designers to help them achieve these technical solutions. Lighting software differs from other modeling and 3D rendering programs in that it is physically based, and uses one or both of two methods for calculation: radiosity or raytracing.

## RADIOSITY VERSUS RAYTRACING

The radiosity method of calculation works by dividing all surfaces in a model into patches, where each patch has its own equation for the amount of energy leaving and landing on that surface. The calculation solves the system of equations that results from all of the patches in the model to determine the quantity of light on each patch. A benefit of the radiosity method is that it is view independent: There is one solution regardless of viewpoint, and it is progressive, which means that in most implementations, it can be stopped and re-started to check the progress of the calculation. A disadvantage of the radiosity method is that it only works with diffuse surfaces, so translucent, specular (shiny), and transparent materials cannot be included in the calculation. It can also be memory intensive.

The second method, raytracing, operates by sending calculation rays outward from the viewpoint; the program then follows the ray as it bounces off surfaces and creates additional rays. It is able to handle all material types, including translucent, specular, and transparent surfaces, but it is not view independent; renderings from different viewpoints must be calculated separately.

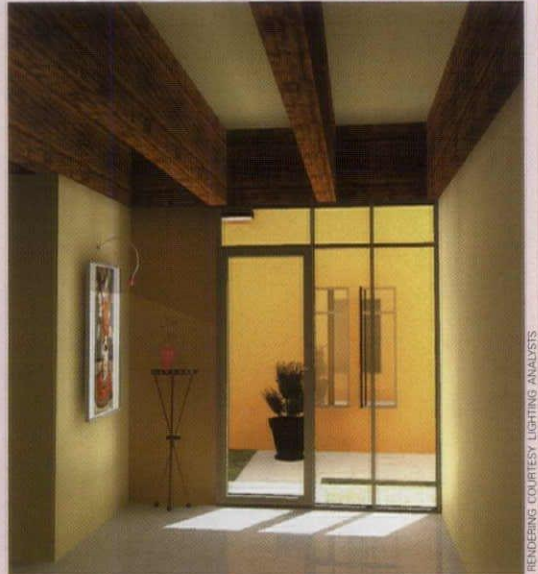
Lighting software uses one or both of the above approaches, with facilities for illuminance and luminance calculations, and methods to output lighting calculation data. Other program features important in any lighting software package include: glare rating calculations, lighting power density, and photo-realistic rendering. With the growing number of projects working towards LEED ratings, daylighting

## TWO CHOICES

the better to create with

### Lighting Analysts | AGI32

AGI32 1.7 is the latest version of this popular lighting calculation package from Lighting Analysts. It uses the radiosity method and includes a raytracing engine for presentation-quality renderings. The color bleed control feature enables designers to dial in the level of color bleeding from surface to surface. The raytracing engine now allows specular material definitions, and the radiosity calculation engine has been updated to allow adjustment of individual surface mesh densities, which enables the user to fine-tune the calculation without affecting the entire model. A revised daylight calculation engine is also part of version 1.7. The program can calculate daylight factor, which is important for LEED requirements. Interior and exterior daylight analyses are available, along with the ability to simulate different daylight conditions. An external daylight study viewer is available for presentation and distribution without the entire AGI32 program.



RENDERING COURTESY LIGHTING ANALYSTS

### Lighting Technologies | LUMEN DESIGNER

Lighting Technologies' Lumen Designer 2004 version 1.1 is a complete lighting calculation and rendering package that incorporates the calculation engine of its widely used Lumen Micro product, and provides new functionality, such as advanced internal modeling and daylighting calculation capabilities. A major focus of this program is the intuitive user interface, which is similar to AutoCAD for modeling, and provides many tools to guide the user. The package is organized around a base program, which provides standard functionality for calculations and rendering, with plug-ins that can be added for roadway calculations and advanced rendering capabilities. Because this package is so new, not all of the final capabilities are included at this time, such as displaying luminance calculation information and falsecolor images. Current functionality does include point-by-point illuminance calculations, rendering from a radiosity engine, daylight factor calculations, and hybrid calculation (raytrace plus radiosity) to produce more accurate renderings and calculations for specular materials.

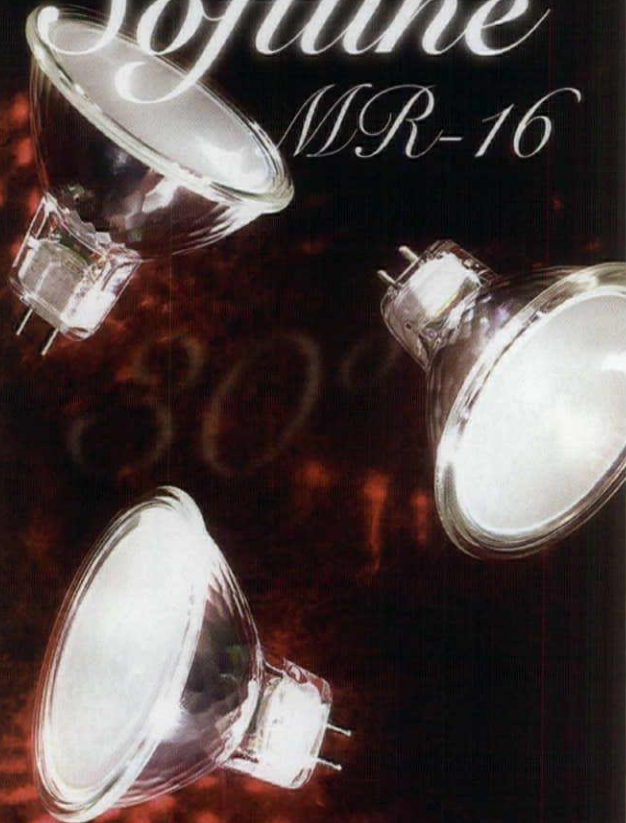


RENDERING COURTESY LIGHTING TECHNOLOGIES



**NEW**

*Softline*<sup>TM</sup>  
MR-16



Titanium Oxide coated reflector  
with **frosted front glass cover**

Reduces glare

Creates soft beam of white  
Halogen light

4000 hours average life

Consistent color

UV protected

Dimmable

Available in:  
20W, 35W, 50W, 75W

**USHIO**

800.838.7446

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

**details | technology**

calculations, which include solar exposure studies and daylight factor calculations are also becoming a required component.

**SOFTWARE SELECTION**

The two leading commercial lighting software developers are Lighting Analysts and Lighting Technologies. Lighting Analysts produces AGI32 ([www.agi32.com](http://www.agi32.com)); version 1.7 was updated with a revised daylighting calculation engine. Lighting Technologies ([www.lighting-technologies.com](http://www.lighting-technologies.com)) has released version 1.1 of Lumen Designer 2004, which takes the widely used Lumen Micro calculation engine to a more user-friendly CAD-oriented interface. Both of these programs use radiosity engines for their lighting calculations and have raytracing engines for photo-realistic rendering. They can also perform daylighting calculations, although they take different approaches to this functionality, and both are able to import and export a variety of 2D and 3D CAD formats.

Other recent developments in lighting software include Autodesk's VIZ-4 ([www.autodesk.com](http://www.autodesk.com)). The program incorporates the radiosity engine of Lightscape, which is no longer being developed past version 3.2. Although VIZ-4 has a very complex modeling interface and easy animation capabilities, some of Lightscape's functionality has been lost. It is difficult to extract calculation data, the falsecolor illuminance and luminance plots do not have scales, and there is no way to run calculation grids.

DIAL ([www.dial.de](http://www.dial.de)), a European lighting services organization supported by manufacturers, produces the calculation program DIALux, which can be downloaded from DIAL's website, and has been updated to version 3.1. DIALux is not as flexible as Lumen Designer and AGI32, but is useful for simple calculations.

The last several years have also seen significant development in Radiance ([www.radiance-online.org](http://www.radiance-online.org)), a raytracing suite of lighting calculation tools developed at the Lawrence Berkeley National Laboratory to run on the Unix/Linux operating systems; it now also runs on both Windows and the Macintosh OS. While Radiance has a steep learning curve, because it uses raytracing for calculations and not just image rendering, it is able to handle a wider range of materials than the programs that use the radiosity calculations method. In addition, because of the Unix interface, which is text-based rather than point-and-click, it is easier to automate certain tasks such as creating multiple renderings for animations. Within the last two years, Radiance has been released as open-source software, meaning it can be downloaded for free, distributed and modified by designers as needed per project requirements.

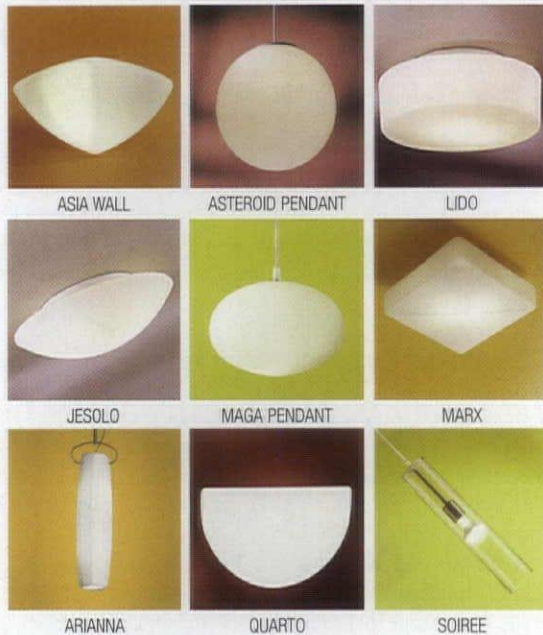
There are also many alternatives for the designer who does not need the complex functionality of the above-mentioned programs. AGI-Light is a simplified version of AGI32, and the Simply Lighting series from Lighting Technologies consists of a set of easy-to-use tools for lighting calculations such as interior room calculations and economic analysis. Most of the programs discussed have trial versions or evaluation licenses available. Lighting software has progressed past point-by-point illuminance calculations and now offers more complete lighting calculation packages that include tasks such as glare rating, daylighting analysis and renderings. This adds new functionality and the ability to consolidate capabilities into one package, reducing the number of software programs a designer must incorporate into his or her practice. ■

*Matt Franks is a lighting designer in Arup's New York City office. He has gained experience in the computer simulation of electric lighting and daylighting through a variety of project types, including museums, educational projects and residential developments.*



PAGE	ADVERTISER	CIRCLE NO.
6	Bartco Lighting	49
10	B-K Lighting	7
15, 24	Cooper Lighting	41, 94
2	Delray	40
12	Electrix	18
23	Elliptipar	6
20	Engineered Lighting Products	42
C2-1	Erco Lighting	31
8	Holophane Corp.	43
55	Illuminating Experiences	76
38	Juno Lighting	90
3	Kim Lighting	12
C3	Leviton	63
7	Lighting Analysts Inc.	53
11, 13	Lightolier	35
29	Liton	88
21	Lucifer	82
16	Lutron Electronics	9
14	Metalumen Mfg. Inc.	91
18	Nouvir Research	24
28	Pathway Lighting	16
5	Prisma Architectural Lighting	5
50	Sea Gull Lighting	67
22	Semper Fi	96
C4	Terzani	1
54	Ushio	10

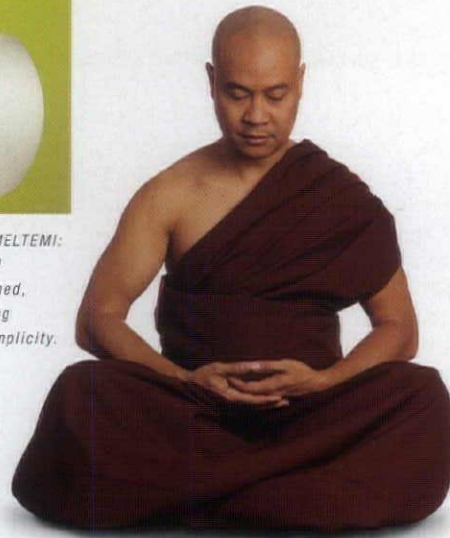
Publisher is not liable for errors or omissions.



Lighting for every personality



*STILLA by MELTEMI: Oval shaped and unadorned, for a calming sense of simplicity.*



Whose life are **you** lighting?

p: 800-734-5858 f: 732-745-9710

e: [customerservice@illuminatingexperiences.com](mailto:customerservice@illuminatingexperiences.com)

Circle No. 76 or [www.archlighting.com/productinfo](http://www.archlighting.com/productinfo)



## How will proposed energy codes affect the future of the lighting design industry?

As of July 15, 2004, all states must certify that they have established energy codes that meet or exceed ASHRAE Standard 90.1-1999, or clarify why they cannot comply. The new code requirements impose stricter power allowances for most spaces, which many argue will hamper the creative

aspect of architectural lighting design. Others say such restrictions will actually make lighting professionals more relevant to the realization of a compliant project. How do you feel the adoption of an energy code will affect the future of professional lighting design?

### BRUCE HOSTETTER, LIGHTING DESIGNER | PQBA

For those practicing in states without energy codes, 90.1-99 will turn heads. In California, it will be a bump in the road. However, three issues will apply regardless of which state you work in.

1. Good energy codes do not assure good design: I worked on passive solar homes in California when Title 24 was launched in the 1970s. We witnessed the "dumbing effect" of T-24, as it allowed buildings whose envelopes were not responsive to climate to comply. This will happen with lighting under 90.1.

2. The code's content is only as good as the system for compliance: Each state will develop its own system. Systems that are too prescriptive will drive designers to riot.

3. ASHRAE 90.1 and LEED must protect the need for high-quality visual impact. Designers must get involved in local and regional energy committees to insure this.

In the past, lighting designers could ignore daylighting and still achieve good designs. In the future, practitioners must integrate daylighting and be more involved to insure that 90.1-2010 will balance sustainability issues with the fundamental purpose of architecture—to shelter and delight, to support our activities and inspire our lives. Enjoy the challenge.

### CRAIG DILOUIE, PRINCIPAL | ZING COMMUNICATIONS

A tougher energy code presents a double-edged sword for lighting specialists. On one hand, it provides another area where education enhances specialization and another problem that lighting specialists can solve, thereby increasing their value. On the other, energy codes pose a challenge to creative expression, and may become so restrictive that design options flatten out toward a common vanilla flavor. However, simply put, as long as there are clients who want creative expression, there will be a market for lighting specialists who provide it. And as long as there are active lighting specialists, there will be a market for manufacturers who can make products that are both efficient and creative. The wave of LED products we saw at Lightfair is evidence of this. Lighting community aside, the impact on our country and economy will be beneficial, resulting in profitability for corporations and more efficient use of tax funds, while improving reliability of national power supplies and reducing air pollution. But I have two questions: First, some states haven't put a code together yet—are they going to make the deadline? And second, are the states that reluctantly adopt a tough energy code going to properly enforce it? I believe this remains to be seen.

### JAMES L. SULTAN, SENIOR LIGHTING DESIGNER | STUDIO LUX

Over the past two decades, several states have legislated energy codes without utilizing qualified lighting professionals. The result has been that lighting designers are challenged to create code-compliant designs when working on out-of-state projects.

The federal mandate of establishing 90.1 as a minimum standard is a great stride toward uniformity; 90.1 is a considered and calculated document that incorporates existing technology into realistic energy-saving targets. Not only did industry professionals provide their time, expertise and resources for the creation of this standard, there were several public reviews that resulted in considerable input from the various disciplines.

It is incumbent upon lighting professionals to create designs that are energy responsible, at the same time achieving the expressed (and unexpressed) needs of the client and design demands of the project. Of course there will be challenges related to energy consumption targets, but these constraints will actually work in our favor by weeding out less qualified lighting practitioners. We have a strategic opportunity to educate our clients about the relationship between good lighting practices and environmental awareness.

Finally, I would like to issue a challenge to the lighting community to become involved with your state and local energy agencies. Our input into such legislation is critical, yet, unfortunately, overlooked by some of these jurisdictions.

### PAUL GREGORY, PRINCIPAL DESIGNER | FOCUS LIGHTING

Stricter energy codes would be harmful to the type of design we do. The current energy codes do not differentiate between the quality and quantity of establishments. It is right to have strict codes when you're lighting 10,000 McDonald's or 50 floors of a building. However, smaller specialty projects, such as lobbies or fine restaurants, require a different set of codes. Now and then, architecture is an artistic endeavor, and should not be restricted.

### GERSIL N. KAY, CONSERVATION LIGHTING INTERNATIONAL

Having spent four years as an appointed member of an ASHRAE/IESNA Standard 90.1 sub-committee, I must agree with Willard Warren's thoughtful remarks on lighting energy codes (April/May 2004, page 18). The differing goals of the various factions retard necessary progress. Unless productivity is equated to energy conservation, this exercise will never gain wide acceptance. The standard's accepted list of traditional light sources does not reflect recent innovations such as light pipes, fiber optics and LEDs, all more efficient than incandescent, fluorescent or halogen. Reducing light levels to the point where miner's caps are needed to see for task, display, architectural contours and even ambient illumination adversely affects safety, sales, attendance and personal comfort. Just when architectural lighting has started incorporating theatrical techniques for better effects, these arbitrary prohibitions are a step backward.