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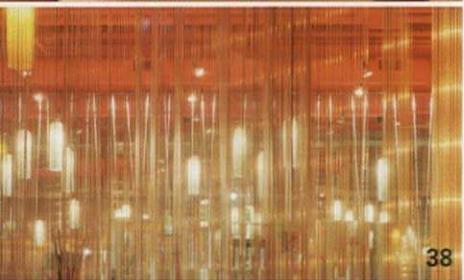
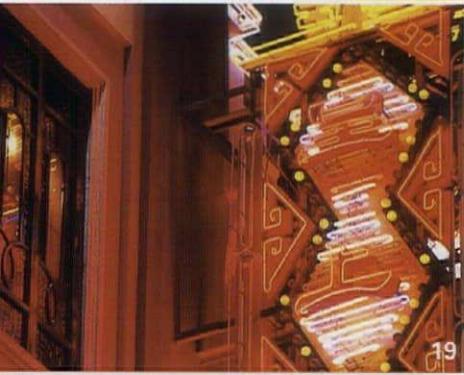
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This page: Guangzhou, China; D'Amour Center for Cancer Care, Massachusetts; Lumiere Salon, Rhode Island; Irish Hunger Memorial, New York City.

A sustainable design article

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Awards Matter

In this issue, we present the nine winners of our First Annual A|L Light and Architecture Design Awards. It is exciting to have the opportunity to recognize quality work, confirmed as such not just by our editorial staff, but by a jury of lighting professionals as well. It has made for a significant

design well, photo rich and talent infused.

But perhaps you are wondering, "Do we really need another awards program?" Indeed, the design community has an abundance of honors, and in the lighting industry—a small group by definition—there are already four major programs: the IALD Awards, the International Illumination Design Awards, the GE Edison Awards, and the Lumens. The list goes on, including awards sponsored by specific manufacturers and others honoring student and professional fixture design. There are so many to enter. How do you choose? Which garners the most respect? Logic would have it that the more programs there are, the more winners the industry has. But is that a good thing? Do too many awards dilute the honor across the board? Shakespeare's Prospero in *The Tempest* understood the repercussions of recognition that comes too easily: "This swift business I must uneasy make, lest too light winning make the prize light." Are the industry's awards shrinking to the weight of fluff?

Anyone who has served on a jury knows that no matter the quality of the photography, it inadequately conveys how well a space is illuminated. Time and again, this is confirmed by a jury member who has actually visited a submitted project. It is either better or worse, darker or lighter, warmer or cooler than the images express, but never "exactly" what is seen. In fact, it seems the better the photography, the more likely it is to include fill light or edits in Photoshop. We require entrants to disclose the use of fill light; and we ask that the jury consider this enhancement in its selection process. While the Photoshop issue can be mitigated by requesting slides or prints, the industry is rapidly moving toward digital.

Finally, as much as these programs attempt to set guidelines for judging (the IES, for example, has a comprehensive point-system checklist), we cannot help but be influenced by our individual experience and taste.

It is a subjective process, no matter what is done to contain this innate bias.

Regardless of their inherent deficiencies, however, these programs are still hosted and entered in, and for good reason. In the January 2003 issue of *Architecture* magazine, Thomas Fisher, dean of the College of Architecture and Landscape Architecture at the University of Minnesota, took a moment to consider the value of such programs. That month marked the 50th anniversary of the P/A Awards, an influential program recognizing innovative unbuilt architecture. In his article "Honorable Intentions," Fisher notes that unlike the marketplace, awards programs have "the advantage of offering an alternative reward system, based not on money, but on the achievement of excellence." Likewise, the criteria by which we judge have "the power to raise awareness about critical issues." The A|L Design Awards, for example, include categories for excellence in lighting design on a budget, in the application of sunlight, and in the incorporation of energy-efficient lighting in LEED-rated designs. Presenting award-winning projects in these areas to our 25,000 readers will, we hope, call the industry's attention to several significant issues.

But fundamentally the most human reason behind our persistent quest for honors is simply that we work hard on these projects, and winning is affirmation that our peers see the effort made and the skill involved. We know because we have also entered awards programs: The magazine and website are currently being considered for several. Such recognition, despite our reservations about the judging process, would be a testimonial to the progress A|L has made in the last year.

Affirming the lengths achieved fuels the fire needed to continue to accomplish excellence, and in this way awards programs encourage the design innovation and virtue they were conceived to honor.

EMILIE W. SOMMERHOFF
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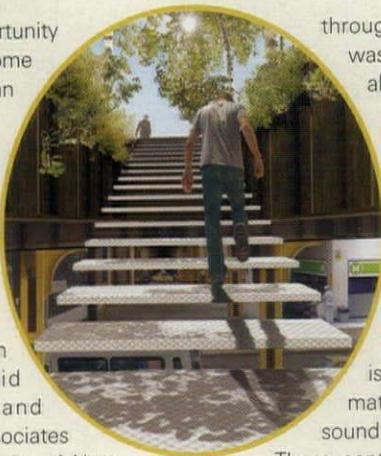
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A MOMENT IN NATURE

An unprecedented urban place-making opportunity on Manhattan's West Side is about to become a reality. The conversion of the High Line, an abandoned 1.45-mile-long elevated rail structure that runs north-south for 22 blocks, is the focus of four master plan proposals by multi-disciplinary teams on view at the Center for Architecture in New York City through August 14, as well as on the Friends of the High Line (FHL) website at www.thehighline.org.

The four teams are: Field Operations with Diller Scofidio + Renfro; Zaha Hadid Architects; Steven Holl Architects; and TerraGRAM; Michael Van Valkenburgh Associates (whose plan is shown right). FHL and the city of New York made the announcement mid-July, and one team will be selected by the end of summer 2004 to further develop its master plan over the next six to nine months. Construction, in this phased process, is anticipated to begin in 2006.

The High Line was built in the 1930s to remove freight trains from city streets, and although the structure has not been used for this purpose since 1980, it has remained an iconic landmark for New Yorkers. Friends of the High Line, a community-based nonprofit group, was formed in 1999 to preserve the structure for reuse as an elevated promenade



through the federal rail-banking program, which was created by Congress in 1983 to preserve abandoned transportation corridors for use as trails. In December 2002, the city of New York endorsed the project and petitioned the federal board with jurisdiction over the High Line to convert it to an elevated pedestrian walkway and public open space. A year later, FHL sponsored an open international ideas competition, which received 720 entries.

What makes the High Line so exceptional is that, while the steel structure has naturally matured (it has been tested and is structurally sound), a wild, natural landscape has blossomed.

These contradictions—man-made versus natural, urban versus pastoral—is what reinforce the importance of maintaining the High Line as an active part of the city fabric, and present a unique opportunity to create a series of dynamic public spaces. Perhaps the only project similar in size, type and urbanistic approach is the Paris Viaduct, a reclaimed railway line converted into a pedestrian promenade with art galleries, shops and cafés below.

Even at this early stage in the High Line proposals, lighting is included as an integrated and considered component: it was

(CONTINUED ON PAGE 10)

ARC05: A NEW LIGHTING SHOW IN THE UK

Mondiale Publishing, creator of *mondo*arc* (among other publications), has established arc05, a two-day architectural, retail and corporate lighting show to be held February 14 and 15, 2005, at London's Business Design Centre. This lighting trade show is directed specifically at architects, interior designers and specifiers, and the show is being promoted in the major UK and international lighting, architectural and interior design markets. Although the organizers have conceived of the event as having an educational focus, the show will also include manufacturer exhibit booths. Arc05 has the backing of the Royal Institute of British Architects, and seminars will offer continuing education credits. "There has to be a reason for people to attend beyond just visiting manufacturer exhibits," explains Justin Gawne, *mondo*arc's* general manager. Up to 60 manufacturers are anticipated to exhibit, and approximately 14 seminar offerings will be available over the course of the two-day event. Confirmed seminars will discuss visual ergonomics, basic lighting principles for architectural spaces, and lighting the exteriors and interiors of historic buildings. For more information, visit www.arc05.uk. **AL**

Long Live Light

Light has been around a long time, and Parsons School of Design will soon have a timeline, and a course, to prove it. With a \$20,000 grant from the Nuckolls Fund received in 2003, Parsons under the guidance of JoAnne Lindsley, director of the school's lighting design program, has nearly finished developing a curriculum around the "Historical Sociological and Spiritual Influences of Light in the Built Environment," beginning in 5000 BC and continuing to present. The material will be taught in the spring semester, though Lindsley says a comprehensive timeline of the history of light and a lengthy bibliography will be completed by the end of the summer and made digitally available to anyone interested in the subject. "We hope to bring students, and anyone else, to look at the various ways light has been important to people," said Lindsley during a presentation of the research findings at the IESNA Annual Conference in Tampa, Florida, in July. She notes that there has not been a book on this topic since W.T. O'Dea's *Social History of Lighting*, published in 1958. Now out of print, the book is hard to find and, therefore, Lindsley hopes to publish—in some form yet to be determined—the information she has gathered. **AL**

("A MOMENT IN NATURE" CONTINUED)

one of the required elements to be discussed in the presentations. Among the four finalist teams, each led by an architectural and landscape architecture firm, prominent lighting designers and artists who work with light are involved. Artist Olafur Eliasson and lighting firm L'Observatoire is part of the Field Operations team; Halie Light and L'Observatoire are working with the Zaha Hadid-led group; Renfro Design Group Lighting Consultants are on board with Holl; and lighting designer Domingo Gonzales and artist James Turrell are working with TerraGRAM.

While it is still early to say how the High Line will ultimately be developed, the proposals offer numerous possibilities to engage architecture, landscape, art and ecology. Field Operations incorporates the diverse ecologies in an "agriculture" that combines the natural and man-made. Hadid's proposal involves a place-making and lighting vocabulary that evokes fluidity and the linear nature of the High Line itself. The Holl team sees a



A sampling of the proposals: Field Operations and Diller Scofidio + Renfro with Olafur Eliasson, Piet Oudolf and Buro Happold (above); Steven Holl Architects with Hargreaves Associates and HNTB (top right); Zaha Hadid Architects with Balmori Associates, Skidmore, Owings & Merrill and studio MDA (bottom right).



"suspended valley," where the underside, illuminated with an LED lighting system, is as important as the top. Finally, TerraGRAM focuses on the "primacy of time and process" in defining the landscape. No matter which team is selected, both the process and the result will leave an urban fabric richer for it.

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Product innovation. It is one of the many challenges facing lighting manufacturers. While some companies strive to achieve this through in-house resources, others look to European manufacturers, which are known for their progressive design approach. And while U.S. companies have imported European lighting products in the past, long lead times and compliance with UL and CUL standards have often proved problematic. Litecontrol, a Massachusetts-based manufacturer, focused on the commercial and institutional lighting markets, has devised a plan to bring innovative European design with UL listings to the North American market. It will put its system into practice with the LC-Euro Collection.

"Lighting design trends start in Europe. Designers want to use European products, but they are not UL approved; that's where Litecontrol comes in. We are able to bring new design content to product development," explains Litecontrol CEO Veda Clark. In an effort to expand its base, Litecontrol set out to find European manufacturers that would complement its own offering of linear fluorescent architectural lighting systems. The result is a partnership with four companies: two from Belgium, DARK and Waco; one from Sweden, Fagerhult; and one from England, Hacel. Under the name LC-Euro Collection, Litecontrol is the exclusive American distributor for these companies, and with this strategic partnership, is able to offer 16 new products. Four products will be launched each



Hacel's Metropolis Cafe (left); Fagerhult's Teres Pendant (middle); DARK's Crosslight (bottom right); and Waco's Chromax (top right).

year. What Litecontrol expects to offer in return is expertise in guiding these companies and their products through the UL approval process. The other important aspect of this partnership is that Litecontrol will maintain a ready-to-ship inventory in the United States, with a duplicate inventory overseas, thereby reducing the wait time for these European-designed, American-assembled products. **ED**

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"Tribute in Light" to Continue

According to a July 9 article in the *New York Times*, the Lower Manhattan Development Corporation (LMDC) board has voted to give an amount not to exceed \$3.5 million to the Municipal Art Society to recreate "Tribute in Light," the twin beam memorial that commemorates the anniversary of September 11, for the next five years. The Society will purchase and maintain the 88 searchlights, which have a 40-year lifespan and form the two columns of light. The memorial was originally illuminated on March 11, 2002, six months after the terrorist attacks, appearing every evening for approximately one month. In August 2003, New York City mayor Michael Bloomberg and New York State governor George Pataki announced this memorial would be brought back each year; and it was on September 11, 2003. However, with the rebuilding efforts well underway at the World Trade Center site, maintaining a location for the searchlights has proved difficult. Almost an acre of staging area is needed to create the two 50-foot-square arrays. The initial location in Battery Park City at West and Vesey Streets is the future location for the new headquarters of Goldman Sachs. Adding to the difficulty each year is finding a supplier and donors to pick up the \$700,000 tab for this single evening tribute. **AJL**

COLOR KINETICS GOES PUBLIC

Color Kinetics' initial public offering of 4 million shares began trading on the Nasdaq National Market on June 22, 2004, under the symbol CLRK. The common stock opened at \$10 per share. The managing underwriters of the offering are CIBC World Markets and Needham & Company; Friedman, Billings, Ramsey & Company and ThinkEquity Partners are acting as joint lead managers. Color Kinetics has granted the underwriters a 30-day option to purchase up to an additional 600,000 shares of common stock to cover over-allotments, if any.

According to Securities and Exchange Commission regulations, until the company's second quarter earnings are reported on August 6, Color Kinetics is not able to comment regarding its decision to take the company public. As of market close on July 27, 2004, the stock was trading at \$9.11 a share. **AJL**

IN THE NEXT ISSUE

- **GREAT PROJECTS AND THE PRODUCTS THAT LIGHT THEM**
A Park in NYC, a Library in Seattle, an Office in Boston
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- **Report: Inflation in the Lighting Industry**

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Lighting Energy Codes: The Debate Continues

IN RESPONSE TO WILLARD WARREN'S LETTER IN APRIL/MAY 2004:

I agree completely. In fact, the Times Square Development Corporation mandated that all of the buildings in its district have extensive signage. Of course we must use energy wisely. But after all, that is what creative lighting does. It excites, it stimulates, it creates, it sees, it composes, it reposes, it makes living better. I hope that Bill, A|L, the AIA and especially the IESNA are sending that message to everyone in Washington that is involved in establishing energy codes and usage.

Sonny Sonnenfeld

Henderson, NV

ON THE OTHER HAND:

While many lighting professionals find it challenging to create drama given the code restrictions they must adhere to, it is nonetheless possible to do so. Codes aren't in place to "squench creativity," which seems to thrive under adversity in any case, but to help make the world we live in more livable. Being conscious of energy usage is timely and important, given our current political/global situation.

In the very issue in which Warren's letter is published, refer to Barrier Motors where designers dealt with stringent Washington State energy codes, as well as the subdued

lighting requirements for the Michigan Vietnam Memorial, in sensitive, dramatic and aesthetically pleasing ways.

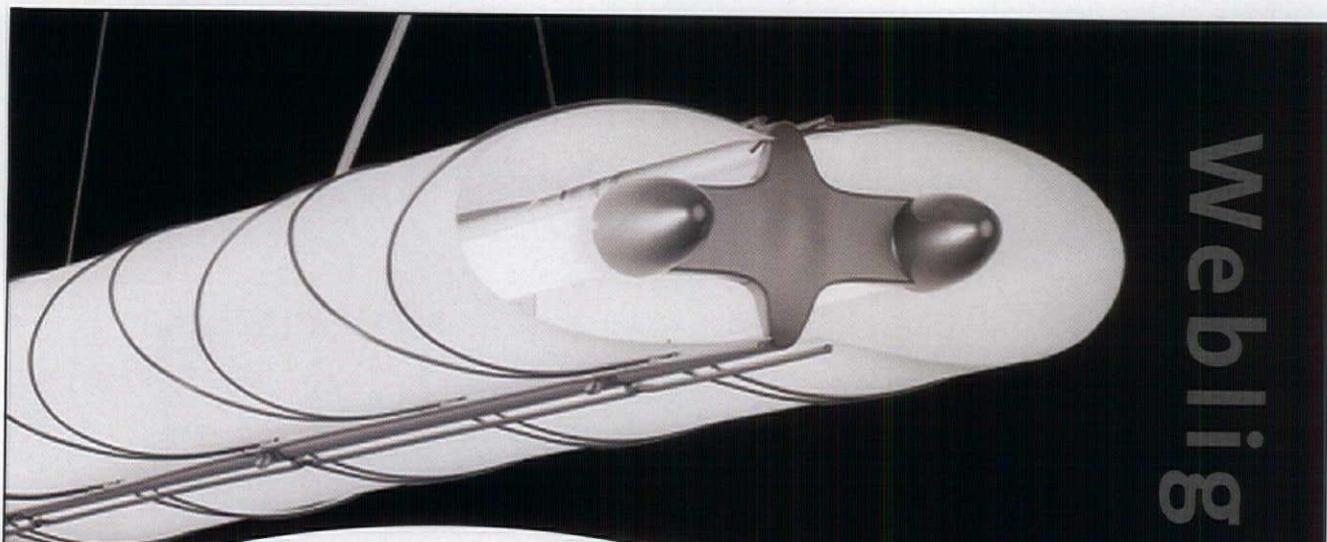
Great lighting in the hands of skilled designers is indeed an art form, but that art is neither as one-dimensional as Mr. Warren seems to feel (e.g., "retail, dining and hotel spaces cannot create excitement under the new lighting codes"), nor as lacking in political-historical context (e.g., "Where is the provision for an occasional "gas-guzzler"? We need...a little indulgence to brighten up our leisure time. It generates lasting memories...for all leisure activities"). What is actually generated is a thoughtless use of resources, an indulgence no one, especially Americans, should be encouraged to expand upon.

Many leisure experiences do not require lighting other than sunlight, and some require an absence of artificial light altogether, like stargazing, for example. I like my lighting to be aesthetically pleasing, environmentally sound and economical. That is both possible and reasonable.

Amie Ziner

Buchanan Architects, New Haven, CT

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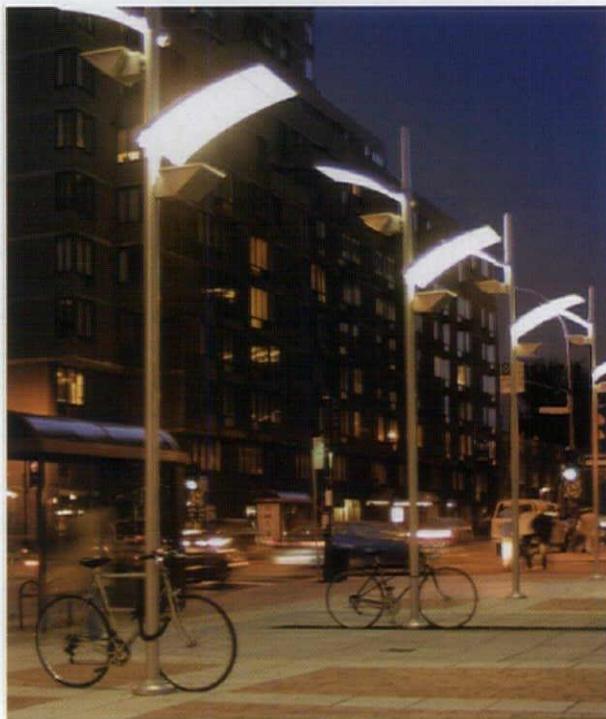
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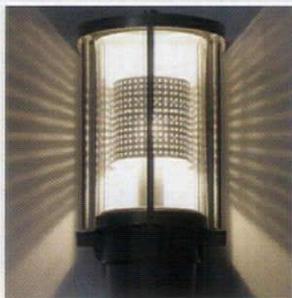


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China: Bright Lights, Big Country

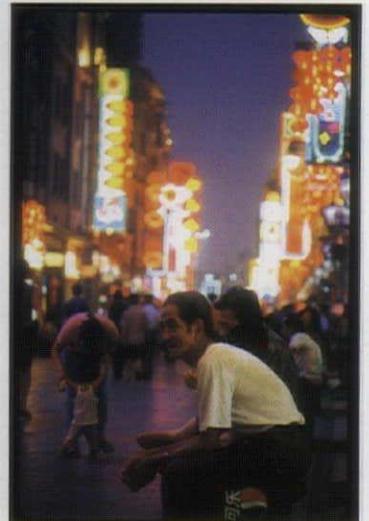
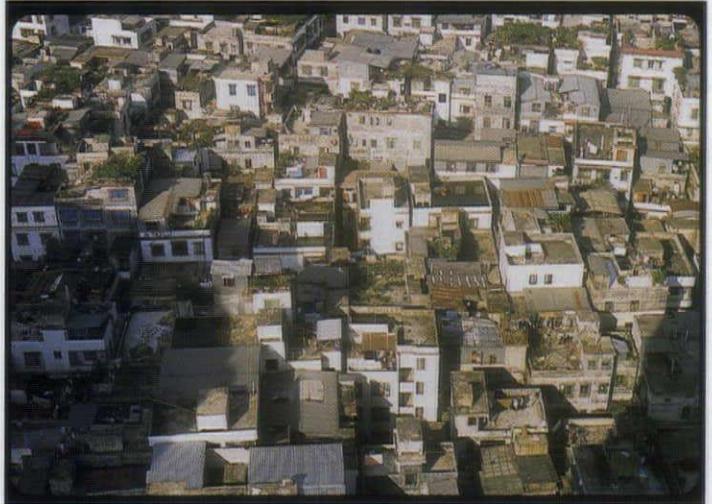
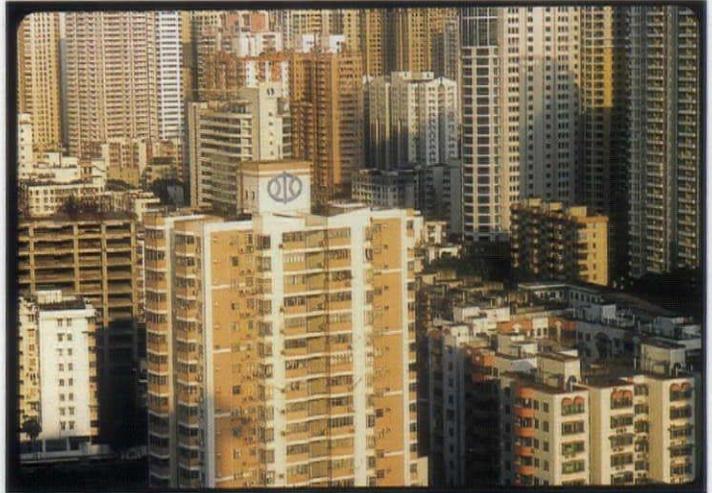
EMILIE W. SOMMERHOFF

CHINA IS HARD TO MISS: BIG COUNTRY. LOTS OF PEOPLE. AND these days, a regular theme on the front page of the *New York Times*. Clearly, this country is a hot topic, and not just in the lighting industry.

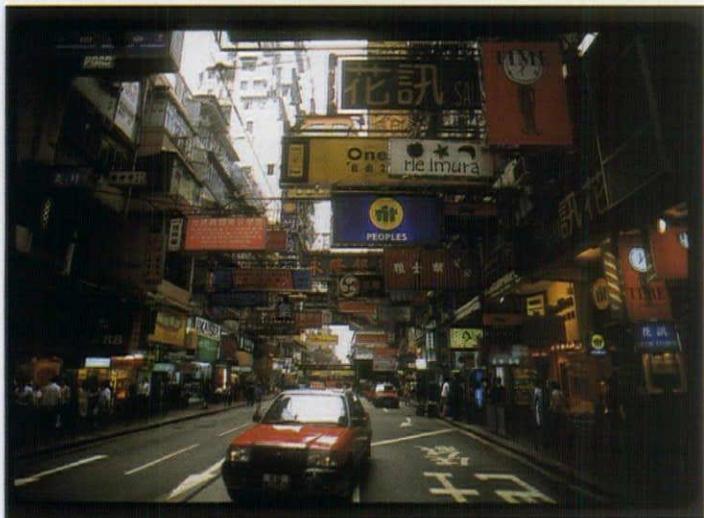
With a slow, wide-eyed nod, we are recognizing the impact a populous of a billion-plus people can have on the world's economy. They are developing a consumer's appetite (something America can appreciate), but this colossal labor machine is more than capable of making its own products to devour—and the rest of the world's while it's at it. The growing demand, and China's resulting industrial capacity, has been a boon for American consumers, who are the lucky recipients of the cost savings Chinese labor can offer retailers like Wal-Mart. However, at the same time we are buying cheap electronics courtesy of China, we are adding gas to the vehicle that will drive profits out of this country. The downward pressure asserted by China on prices forces manufacturers around the world, the United States included, to reduce profit margins in order to remain competitive.

China's growth is arguably precarious; many buildings stand unfinished for lack of funds. Such unchecked development also leads to pollution, wasted resources and overcapacity—details that haunt a country after the fact. But one thing seems certain: China will always be able to produce more cheaply because it has something the United States does not—an immense, increasingly skilled workforce. In a July 4 article in the *New York Times Magazine*, author Ted C. Fishman related the story of the Wanfeng automotive factory outside of Shanghai. In a decade, the company has gone from hand-hammering motorcycle wheels to turning out 60,000 vehicles a year, that look, reports Fishman, remarkably like luxury Jeep Grand Cherokees but sell for only \$8,000 to \$10,000. Wanfeng's secret: the human machine. "The company isn't spending money on multimillion-dollar machines to build cars, it's using highly skilled workers who cost at most a few hundred dollars a month, and whose yearly pay, in other words, is less than the monthly pay of new hires in Detroit," writes Fishman.

It seems the one thing that can't be easily imported from China is quality, and that distinction is American manufacturers' primary advantage. However, while this may be true at present, it is in part because Chinese consumers have not learned to demand it yet. When they do, the Chinese manufacturing infrastructure will be perfectly able to deliver "quality"—and deliver it more cheaply. A July 13 *New York Times* article reported on the yacht-building industry that has recently sprung up in China: "Having mastered the manufacture of many inexpensive goods for mass consumption here and abroad, the country is getting into luxury goods, the kinds coveted by the world's most demanding



Scenes from Guangzhou, China, June 2004.



Scenes from Guangzhou, China, June 2004.

buyers." True to Western expectations, some clients have encountered quality issues—in the case of an Australian marina manager quoted by the *Times*, "with curtains, carpets, cleats and handrails." But, he added, the factory was quick to fix these problems. Quality is not impossible, just foreign.

UP CLOSE

A recent trip to China in June confirmed much of what I had heard. Signs of an enormous population are everywhere: acres of monotonous high-rise apartment buildings; an excess of workers methodically grooming public gardens, city streets and subways; and the traffic. The essence of "cheap" seemed to permeate everything—from clothing and accessories to building interiors, signage and packaging.

My destination was the Guangzhou International Lighting Exhibition. In its 592,000 square feet of booth space, this show encapsulated many of China's deficiencies as a producer (of lighting equipment, at least), as well as its great potential. The Guangya Exhibition & Trade Company, organizer of the Guangzhou exhibition since 1996, teamed with Messe Frankfurt, the exhibit organizer responsible for Light + Building, to produce the 2004 show. According to a Messe Frankfurt report, the fair has almost doubled its number of exhibitors in three years (from 512 in 2001, to 917 in 2004), with booth space in square meters increasing 41 percent over last year. Of the total exhibitor number, 159 were foreign exhibitors, including Martin Professional, Osram, General Electric and Trilux. The organizers logged about 35,000 attendees over the four-day show.

The biennial Light + Building event in Germany proves Messe Frankfurt knows how to put on a lighting trade show, and with its understanding of the Western marketplace, the organization will contribute much to the Guangzhou exhibition; but at this point, the event has a long road to travel before it is relevant from a design and innovation standpoint to the North American and European lighting community. A disproportionate number of pipe-and-drape booths in the five halls were showcasing the next thing in Christmas lights and illuminated kitsch. The hall featuring the "name brand" manufacturers offered more architectural and decorative options, but much of it I had seen before—just under a different name. As one Messe Frankfurt employee explained, "They see copying as a form of flattery." Perhaps, but then why was I quickly discouraged from photographing a collection of Artemide look-alikes at one exhibitor's booth? In conversation, a German manufacturer's representative exhibiting at the show admitted the company does not bring its newer products, for fear of ideas theft. In some ways, the greatest obstacle to the event's relevance was the language barrier: if a sleeping technological innovation did exist, it would have been hard to find through normal modes of inquiry.

The potential of China's lighting industry lies in the numbers. Certainly there is a surplus of small companies producing redundant equipment, and much



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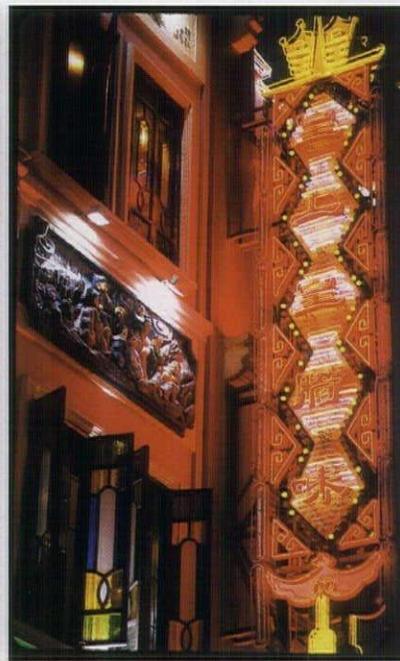
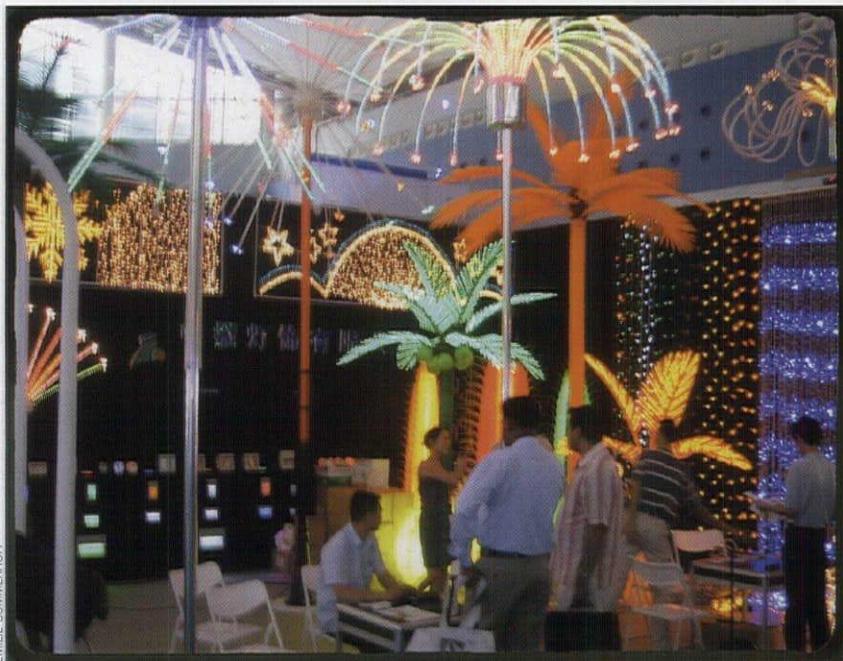
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EMILIE SOMMERHOFF



Guangzhou International Lighting Exhibition (left). A scene from the city of Guangzhou (right).

of it inspired by products designed in the United States and Europe; however, the number of Chinese exhibitors speaks to the capacity for production. The number of both exhibitors and attendees are evidence of the region's growing interest in lighting, and Messe Frankfurt's involvement signals Western interest in this emerging market. Concurrently, the construction boom in China—the one that caused the price of steel to rise 20 percent last spring—means there are a lot of buildings that need lighting. And where there is demand, it seems logical there will be industrial response: more products for less, and maybe even better quality and innovation. Maybe not this year or next, but soon.

With that on the horizon, what role should the U.S. and European lighting industry play in China? The expression "If you can't beat 'em, join 'em" comes to mind. Rather than a "closed-door" policy, perhaps U.S. and European manufacturers and designers should seize the opportunity to work with Chinese manufacturers and the nascent Chinese design community to assure product quality and integrity. It seems better to apply pressure before we start hemorrhaging and the only option is a tourniquet. ■

Photography by Seth Sherman, except as noted.



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The Winners' Circle

The First Annual A|L Light + Architecture Design Awards

IN THIS ISSUE, ARCHITECTURAL LIGHTING PRESENTS THE FIRST ANNUAL A|L Light + Architecture Design Awards. The following photo-filled, color-infused pages are dedicated to the nine winners, and to showcasing excellent lighting design. In their honor, we have created a feature section that is a celebratory fete in its own way: At 23 pages, it is the thickest project well the magazine has ever run.

The distinguished jury was made up of four industry professionals, with a range of experience and expertise, from LEED to daylighting to just plain design savvy. The team included Ken Douglas, principal of New Jersey-based Illumination Arts; Brian Stacy, associate and principal lighting designer in the New York City office of Arup Lighting; Matthew Tanteri, principal of Tanteri + Associates, also of New York; and Christina Trauthwein, editor-in-chief formerly of A|L and currently of Kitchen + Bath Business magazine. The entrants were in knowledgeable, seasoned hands.

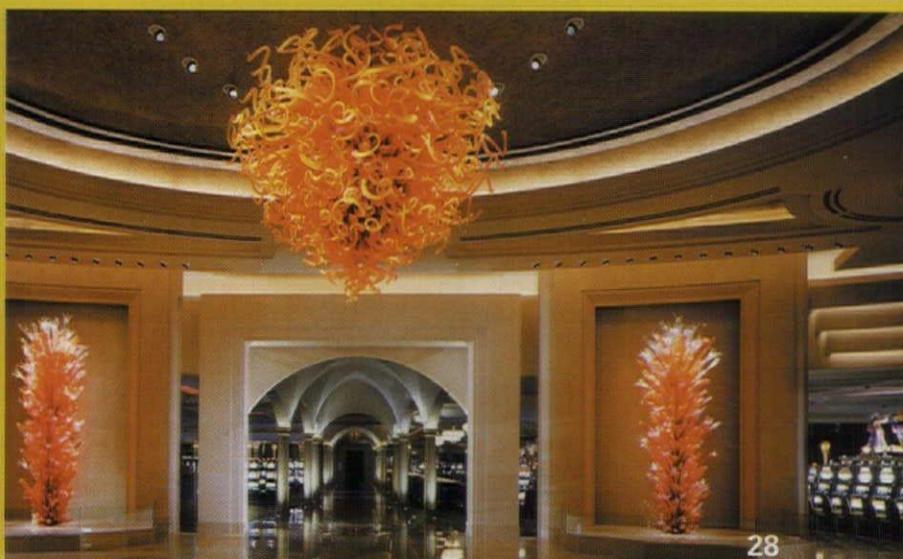
Of the nine projects, three won the top Outstanding Achievement Award, five were winners of the Commendable Achievement Awards, and one project won the A|L Virtuous Achievement (ALVA) honor for Best Design on a Budget. These projects were chosen from 41 submissions. They were not judged against each other, but rather as superior examples of lighting in their category. Therefore, not every category has a

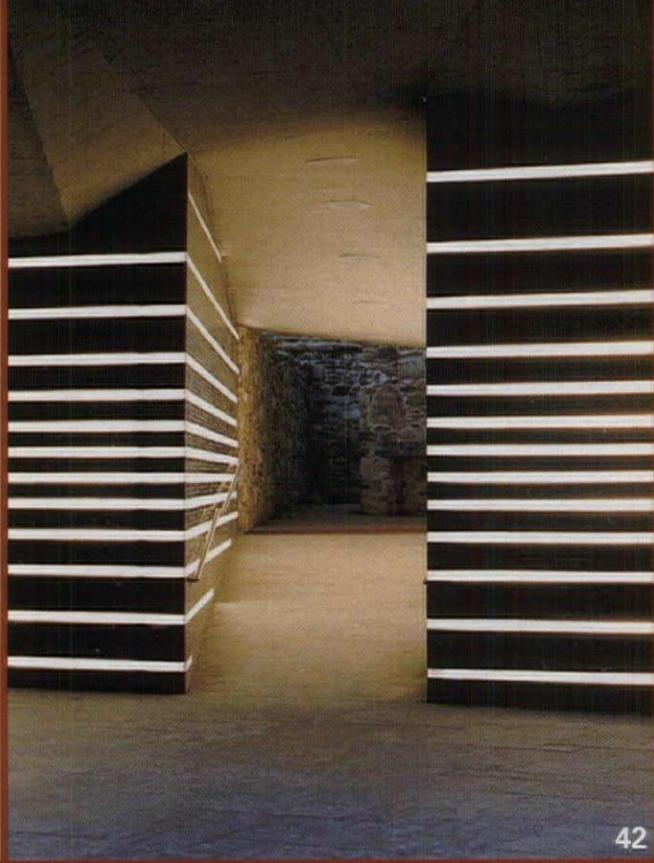
winner, and not every category has both Outstanding and Commendable honorees. Likewise, there are no winners in the ALVA categories for Best Use of Color, Best Design in a LEED-Rated Building or Best Incorporation of Daylight.

The submissions hailed from an encouraging breadth of states and regions, including projects from across the United States, as well as Canada and Mexico; the winning projects are equally diverse, located in Rhode Island, Massachusetts, New York, New Jersey, Oklahoma, Wisconsin, California and Nova Scotia. Also noteworthy, entries were submitted by not only the top lighting designers, but by many architecture firms with an obvious passion for lighting. While there were entries in every category, submissions to the ALVA LEED and Daylight categories were few; we hope this area will attract more projects next year.

A|L's staff congratulates the winners, which represent some of the best architectural lighting happening today. That should be apparent in the following pages; however if readers wish for more details about these projects, including the jury's comments, comprehensive specification information, and additional images and text, a downloadable PDF of each is available at www.archlighting.com.

Without further ado, we invite you to turn the page and feast your eyes on this spread of award-winning projects. **A|L**





THE WINNERS' CIRCLE

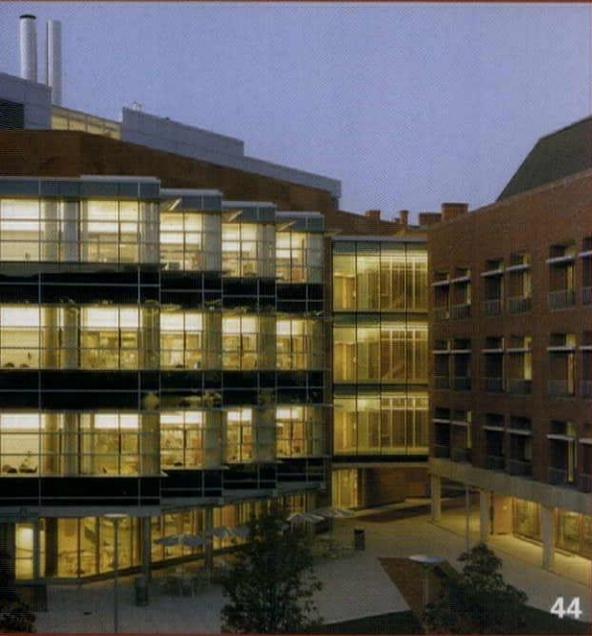
- 28 Borgata Hotel Casino and Spa
- 31 D'Amour Center for Cancer Care
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- 38 Lumiere Salon
- 40 Our Lady of Victory Medical Center
- 42 Irish Hunger Memorial
- 44 Bauer Center for Genomics Research
- 46 K.C. Irving Environmental Science Centre





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Borgata Hotel Casino and Spa

Category: Hospitality

THE BORGATA HOTEL CASINO AND SPA COMBINES A VARIETY OF SERVICES UNDER ONE ROOF.

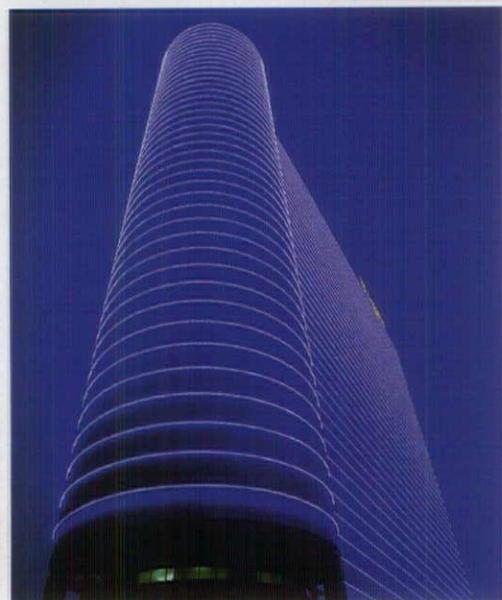
Despite the delineation of space, however, the design unifies the complex by establishing an overall atmosphere that project designer Scott Hatton with Lighting Design Alliance describes as “fun, upscale, energetic, international and sensual.” Lighting treatments unique to each facility are the primary instrument in creating dining, registration and gaming areas that are at once distinct spaces and part of an entertaining whole.

Unlike many casinos, the Borgata’s interior layout allows visitors to enjoy the hotel’s offerings without traversing the gaming floor, which while visible from the lobby, is a secondary view to the three Chihuly glass sculptures in the forefront. AR111 accent lights bring the dynamic sculptures to life, while concealed 2400K neon traces the ceiling details in the lobby and registration areas. “The idea was to get the warm incandescent color without using the typical lamp sources that are three inches on center. It was a maintenance thing.” A passageway featuring dramatically illuminated groin vaults bisects and surrounds the perimeter of the central gaming floor. In-grade fixtures and low-voltage striplights concealed in the column capitals uplift the juncture of arches and vaults, emphasizing this architectural form and, in the process, setting the passageway and casino apart from the surrounding areas. Ambient light on the casino floor is also provided by concealed orange-colored neon.

The registration area’s design highlight is a bank of eight vertical waterwalls that are illuminated by an intricate arrangement of lighting treatments. “These niches were challenging because we had many different effects crammed into a small area,” says Hatton. Each waterwall is illuminated by nine ETC Source 4 fixtures: three fitted with scrollers for alternating color, three with gobos for a break-up effect, and three with film loops projecting fire and water-ripple patterns. A total of 72 Source 4s are C-clamped to a pipe mounted along a soffit set 12 feet into the circulation space behind the wall. At night, preprogrammed effects animate the panels. In addition to the Source 4 luminaires, custom fiber optic extrusions with a 4-degree beam reveal the cascading water from above and below the niches. Three uplights positioned at the base of each niche, and two cove lights concealed vertically in the columns, sidelight a sheer drape that is pulled across the waterwalls during the day.

The Music Box Theater, used for small shows, was similar to the water walls in its complexity. The design called for many point sources in an easily maintainable arrangement. Manufacturer Tokistar developed 2-foot-square panels with four RGB LEDs poking through each panel; at the panel’s perimeter, there is a quick-connect that snaps into the next panel. The lighting treatment also includes the same custom fiber optic fixture used on the water wall; it grazes light over the LED panels, which have a textured finish. A third light layer is provided by low-voltage track fixtures.

As one judge noted, “The project management alone on Borgata is impressive.” Hatton, who spent a month at the site just aiming lights and setting dimming levels, agrees that it was a lesson in coordination. “The fixture schedule gets so long, and there are so many different spaces, there ends up being a lot of revisions. All kinds of RFLs, questions and coordination issues come out of that.” The complexity of the project makes the success of its lighting design that much more impressive. **A|L**



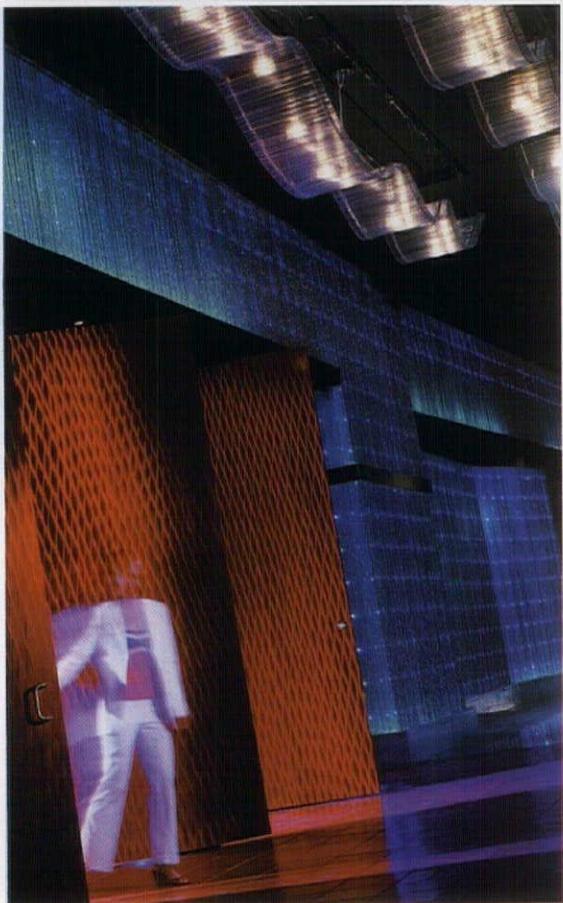
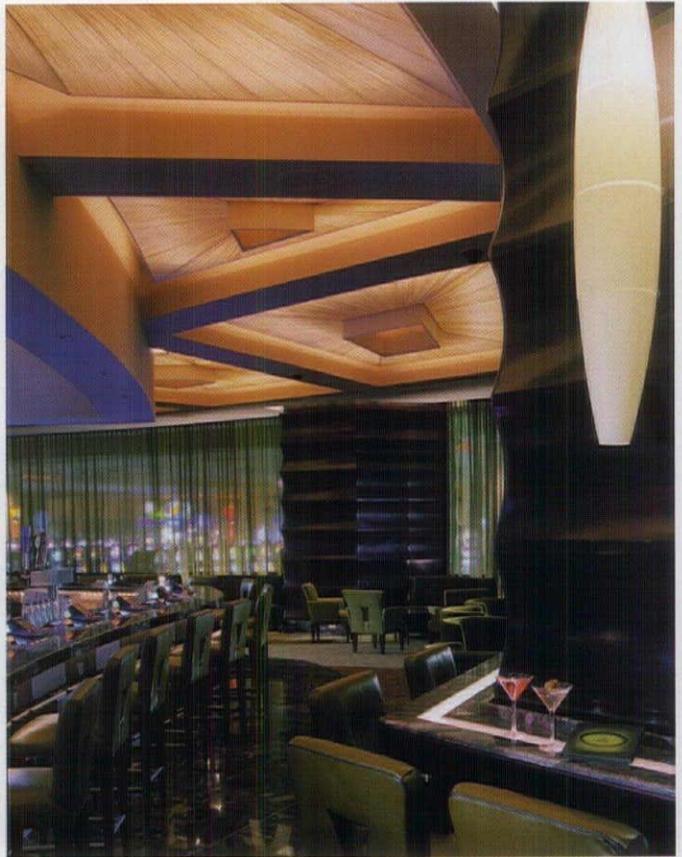
JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.



Static bands of purple neon—located one story width apart—wrap the Borgata's exterior, expressing its agenda of fun and excitement to passersby (left). This atmosphere flows through the interior spaces, from the registration desk with its bank of eight water walls (right), to the gaming floor (above). The water walls, shown here with a red light wash, "were challenging because we had many different effects crammed into a small area," says lighting designer Scott Hatton.



Several restaurants emphasize the lead role lighting plays in creating environments that are distinctly different, yet equally entertaining. Aqua Creations panels recessed and backlit with neon give the B-Bar an organic glow (right). Uplights reveal the arches, while low-voltage downlights pinspot the tables in the Asian-fusion restaurant Suilan (below). Low-voltage striplights illuminated the Steak House (bottom right). The Music Box Theater is a technical and visual jewel, using three layers of light (bottom).



DETAILS

PROJECT Borgata Hotel Casino and Spa, Atlantic City, New Jersey
LIGHTING DESIGN Lighting Design Alliance, Los Angeles
ARCHITECTURE BLT/CLA, Philadelphia
INTERIOR DESIGN Dougall Design Associates, Pasadena, California
ELECTRICAL ENGINEER Giovanetti Shulman Associates, Broomall, Pennsylvania
PHOTOGRAPHER Scott Francis
PROJECT SIZE 135,000 square feet (casino); 70,000 (event space); 50,000 (spa)
WATTS PER SQUARE FOOT NA
INSTALLATION COST NA
MANUFACTURERS Aqua Creations, Color Kinetics, ETC, GAM, Glass Illuminations, Targetti, Lumascape, Lightolier, Lutron, Modular, Tokistar, Wybron

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D'Amour Center For Cancer Care

Category: Healthcare

HOPE AND TRANQUILITY PERMEATE THE D'AMOUR CENTER FOR CANCER CARE IN SPRINGFIELD, Massachusetts, largely owing to the interaction of a handsome architectural plan and a beautifully designed lighting scheme. The 64,000-square-foot, three-story building is the product of a dedicated team that included not only the Boston-based firm Steffian Bradley Architects (responsible for the architectural, lighting and interior design), but cancer survivors and activists, medical staff, and hospital administrators. Together these visionaries have created a space that brings notes of optimism and life to the foreground, dispatching clinical elements to the background.

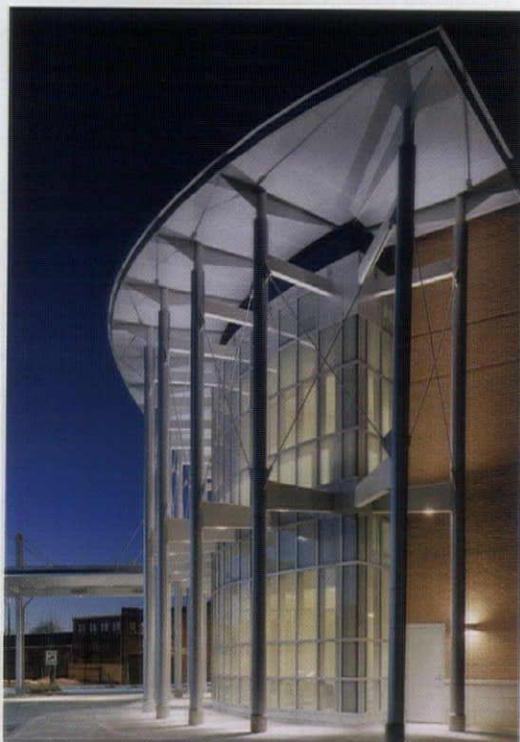
Daylight plays an extensive role in establishing this atmosphere. Enrique Rojas, senior associate at Steffian Bradley and the lighting designer on the project, makes the incorporation of this natural resource a priority in his work: "Whenever possible, I look into the possibility of using daylighting before thinking about the artificial lighting. Once a decision is made to use daylighting the luminance ratios become very important and that affects the way you apply artificial lighting." This appreciation for daylight was shared by the entire team on the D'Amour Center. The building has a 178-foot-by-173-foot floor plate, with an atrium located in the middle. "Sixty feet is about the maximum distance we could go without windows," says Rojas, "which led to the skylight." The building is halved, east to west, by a south-facing, curved, fritted-glass skylight that morphs at the southwest corner into the center's two-story glazed entrance. Decorating the north side of the curving atrium, from the first to the third floor, is an element the design team called the "living wall": A surface of overlapping cherry panels reflects the sun's course throughout the day, creating a pattern of light and shadow on the warm-colored wood that Rojas describes as "ever-changing."

Transparent and semitransparent surfaces invite daylighting further into the interiors: The third-floor conference rooms capture light through windows that overlook the atrium; 10-inch-deep vertical aluminum framing acts as a baffle, limiting glare from the skylight. A 4-foot-wide, 72-foot-long structural-glass slot in the first-floor ceiling connects an otherwise windowless waiting area to the sunshine above. Following the skylight's curve, the diffuse glass maintains visual and acoustic privacy.

The electric lighting pays respectful attention to the architectural details. Regarding his general approach to design, Rojas explains, "Once I've filled the general code requirements and light levels, I look at how to reinforce the architectural features, so that the lighting doesn't conflict with the design intent." To this end, Rojas is careful to keep unsightly equipment out of view. At D'Amour, much of the hardware is hidden in the architectural details. Around the glass slot between the first and second floor, custom-fabricated shrouds disguise the F40 biax asymmetric-distribution uplights. In the corridors, where patients are often transported in a reclined position, high-CRI biax fluorescents in curved coves and T8s in straight coves provide comforting, glare-free light levels; artistic panels featuring natural elements such as ferns are backlit with fluorescent sources to decorate as well as illuminate the space.

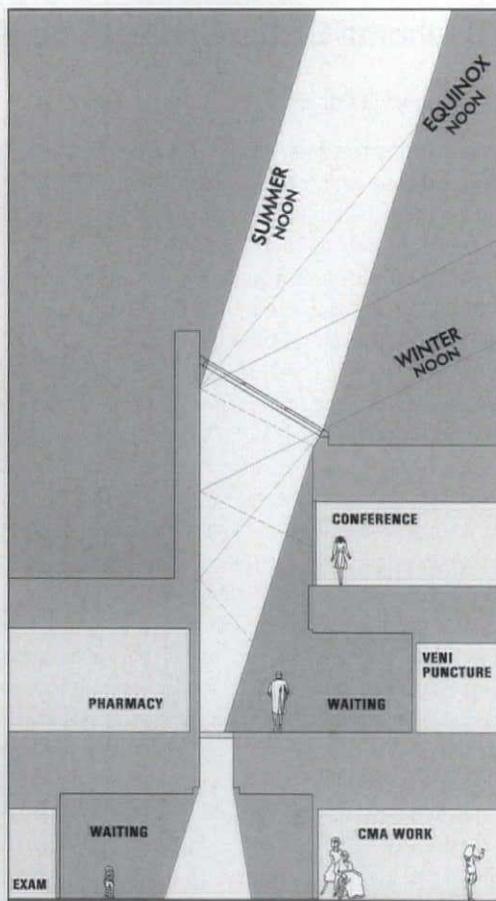
Exam and treatment spaces incorporate multiple light layers to meet the needs of medical staff and patients. Much about D'Amour is designed with a patient-focused perspective—down to the subtlest detail. From the lobby, for example, the curve of the "living wall" prevents one from seeing the end, an architectural tip-of-the-hat to the power of hope. **A|L**

Daylighting is doctor and designer prescribed at the D'Amour Center. Glazing on both interior and exterior surfaces invites sunlight into the facility, while at night, the building's lighting calls to the surrounding campus. PAR20 metal halide fixtures integrated into the column braces provide direct downlighting to the entry sidewalk and indirect accent lighting to the roof canopy (bottom).



JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.





DETAILS

PROJECT D'Amour Center for Cancer Care, Springfield, Massachusetts

LIGHTING DESIGN Steffian Bradley Architects, Boston

ARCHITECTURE / INTERIOR DESIGN Steffian Bradley Architects

GENERAL CONTRACTOR George B.H. Macomber Company, Boston

STRUCTURAL ENGINEER McNamara/Salvia, Boston

ELECTRICAL ENGINEER AHA Consulting Engineers, Lexington, Massachusetts

PHOTOGRAPHER Robert Benson Photography, Hartford

PROJECT SIZE 64,000 square feet

WATTS PER SQUARE FOOT 1.28

INSTALLATION COST \$675,000 (includes lighting control system)

MANUFACTURERS Bega, Belfer, Edison Price, Elliptipar, Erco, Iris, LC&D, Lumiere,

Peerless, Renova, Selux, Tech Lighting, Zumtobel

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Coves provide a gentle ambient light throughout D'Amour Center, particularly in corridors where patients are often transported in a supine position (above left). In exam and treatment spaces, supplementary layers of light are added: For example, low-voltage track and recessed downlights with diffuse glass trims light the infusion suites (above middle). The heart of the facility is a skylight that bisects the space from east to west. Sunshine filters through insulated glazing into the first-floor waiting area (facing page). Daylighting is further drawn into the third-floor conference rooms through a wall of windows overlooking the atrium (top), and into the windowless first-floor waiting area by means of a 4-foot-wide structural-glass slot in its ceiling (above right).

Oklahoma State Capitol Dome

Category: Outdoor

SOME PROJECTS TAKE A FEW YEARS TO COMPLETE AND OTHERS TAKE DECADES; THE LATTER was the case with the Oklahoma State Capitol Dome. The building was nearing completion just as the United States was entering World War I. Materials slated for the capitol were diverted to the war effort, and given the then-current state of events and projected dome costs of \$250,000, an alternate roof design was selected. But 80-plus years of civic perseverance has prevailed.

The state hired architecture and engineering firm Frankfurt-Short-Bruza Associates to determine if the existing structure could support a high dome. The original 1914 construction documents—which were still around—indicated that the building had been completed with footings to support a dome, and further testing confirmed it was structurally feasible; it was just a matter of securing funds. A fundraising team was able to find private donations for the \$21 million project that was officially dedicated in November 2002.

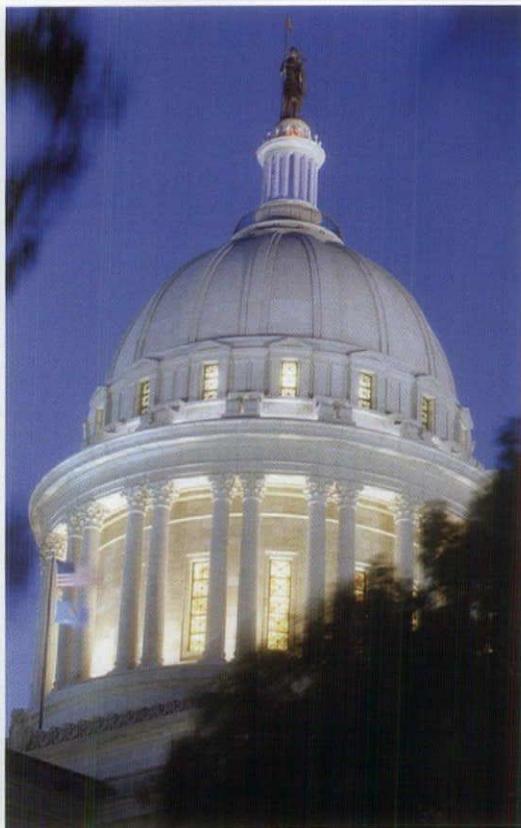
Coordination between architect and lighting designer occurred from the start. “The goal was to make the building feel like it was alive at night, to be a beacon that reads from a distance, and to be just as elegant during the day,” explains lighting designer Keith Yancey of LAM Partners. The dome is broad brushed with light, and then certain features are highlighted to give the dome depth. The lighting system is controlled by photocells and programmable relays located in the dome’s double-shell, and controls are preset for full daylight, full nighttime, full nighttime wash, and a nighttime after-hours mode.

Envisioning how the lighting scheme would interact with the dome’s surfaces on both the interior and exterior was a unique challenge, since there was no existing structure to mock-up. “We did a few calculations on Lightscape,” explains Yancey, “but basically we had to draw on past experience to create a system that had redundancy and flexibility.” The architectural details were developed to disguise the luminaires and lighting hardware in special niches and coves, keeping them hidden from people standing in the rotunda or outside the building.

The light is focused on the building through strategically placed luminaires. On the exterior, ceramic metal halide sources were chosen to provide the best color rendering for the architectural precast stone and concrete. Narrow-beam fixtures focus on the architectural details while limiting stray light.

The dome oculus has a stained-glass center backlit with fluorescent sources. At the apex, a coffered ceiling is cross-lit with PAR38 ceramic metal halide fixtures, and PAR38 metal halide fixtures with spread lenses wash a ring of 16 vertical windows and backlight the peristyle columns. PAR20 metal halides highlight the pilaster capitals. T5HO fluorescent coves illuminate the railing on the lowest level and create a scrim to shield views of the lighting hardware behind.

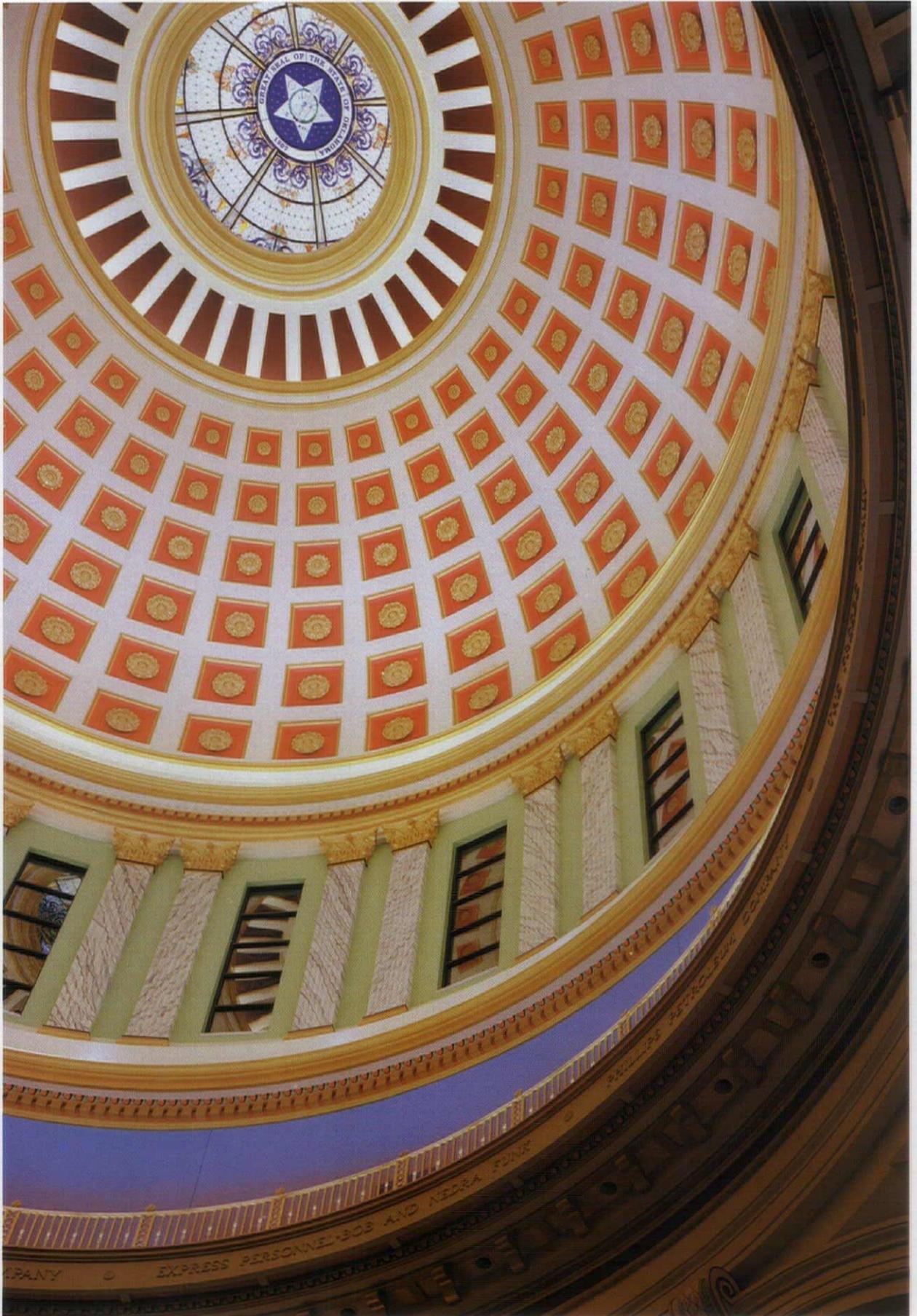
“The completion of the dome was a once-in-a-lifetime project for all the team members involved,” says architect Fred Schmidt. Changing the city skyline, the Oklahoma State Capitol now has a top worthy of its base, and a lighting scheme that lets the architecture be seen. **A|L**

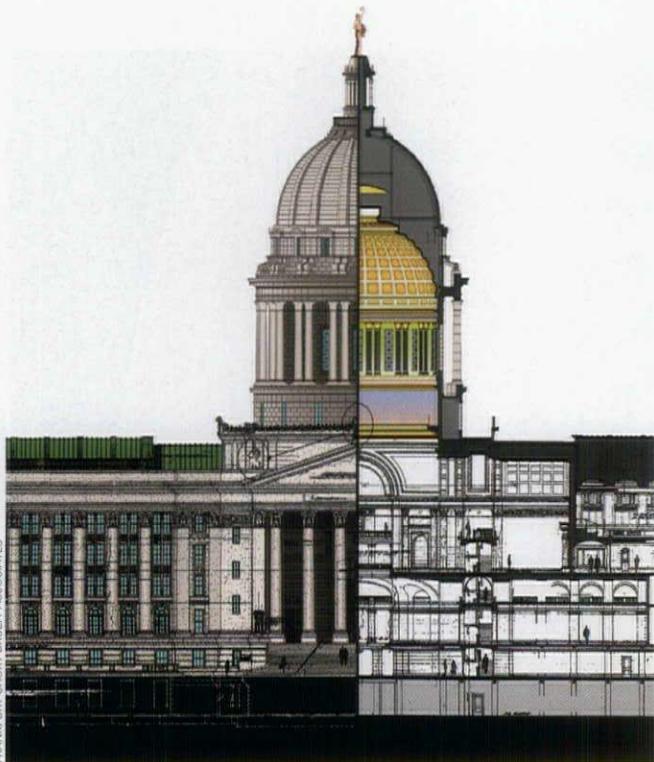


The dome’s top is illuminated with a programmable LED color-wash system to vary the color based on seasons or special events. The galardia, a wild flower native to Oklahoma, inspires the dome’s interior color palette. The columns and frames of the windows are painted a green tone, recalling the plains, and the bottom portion of the dome is a shade of blue to emulate the “Big Sky” seen only in the plain and mountain states.



JUDGES’ COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT **ARCHLIGHTING.COM**.





A cross-section shows the new double-shell dome (above). Mounted on the existing roof, twenty 400W narrow-beam metal halide fixtures circumscribe the dome, creating an ambient wash of light. Rose-colored filters are added to these fixtures with 4100K lamps to approximate the color of the 77 ceramic metal halide sources also on the roof.

DETAILS

PROJECT Oklahoma State Capitol Dome, Oklahoma City, Oklahoma

LIGHTING DESIGN LAM Partners, Cambridge, Massachusetts

ARCHITECTURE Frankfurt-Short-Bruza Associates, Oklahoma City, OK

PROJECT SIZE 5,000 square feet

WATTS PER SQUARE FOOT 18,000 watts maximum, interior and exterior

INSTALLATION COSTS \$21 million for the entire project

PHOTOGRAPHER Greg Hursley

MANUFACTURERS Altman, Color Kinetics, Engineered Lighting Products, Hydrel, Kim, Lithonia, Osram Sylvania, Philips, Quality Lighting, Rab Electric

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Magnet

Category: Healthcare

TO MAKE THIS PRO-BONO DESIGN EFFORT FOR A NONPROFIT CLINIC IN SAN FRANCISCO COME together, lighting consultancy H.E. Banks + Associates was challenged to use limited resources in creative ways. Magnet, a sexual health center for the gay community offering activities such as readings, art exhibits, town hall meetings, and social events, as well as medical services, wanted an environment that would look and feel as inviting and comfortable as a hip lounge, but designed and built within a small budget.

Interior designer David Meckley in collaboration with H.E. Banks's senior lighting designer Claudio Ramos conceived the initial scheme. The team was later joined by architect Rachel Hamilton of Hamilton & Company, who completed the design. Meckley's primary concept for the lobby is an undulating ceiling comprised of curved translucent panels (donated to the project by USG), which are backlit with T5 striplights for ambient illumination. This floating creation is the focal point of the clinic's lobby. Additional lighting is supplied by an adjustable low-voltage rail system.

A secondary lighting strategy illuminates the surfaces and the back of the lobby, drawing visitors deeper into the space. "Initially," relates H.E. Banks designer Jody Pritchard, "the lobby design called for an LED color-changing cove at the back wall to create movement and a rainbow sequence that would attract attention." However, says Pritchard, Ramos "always starts with a 'best-case solution'; then we figure out how we can make it work." With a \$6,900 budget and 1,100 square feet of space to light, the designers settled on a fluorescent cove light with a blue gel filter. Monopoints with blue dichroic filters above the ceiling and fluorescent cove introduce plays of color that mark a curved pathway on the ceiling, helping draw guests through the space. Industrial sign lighters highlight a metal "magnet wall" at the entrance, and a selection of only four standard lamp types employed throughout the project reduce cost and simplify maintenance.

Instead of using less expensive T8 lamps, which would not meet code, Pritchard explains, the designers selected products that would meet codes the first time around, avoiding later changes to the design and saving costs in the long run. "Although we didn't collect any fees," says Pritchard, "I hope we can show the design community how a lighting designer can be an integral component to the success of a project without a huge cost added to the budget." **A|L**



DETAILS

PROJECT Magnet, San Francisco

LIGHTING DESIGN H.E. Banks + Associates, San Francisco

INTERIOR DESIGN MK Think, San Francisco

ARCHITECTURE Hamilton & Company, Berkeley, California

PHOTOGRAPHER David Toerge

PROJECT SIZE 1,100 square feet

WATTS PER SQUARE FOOT 1.32

INSTALLATION COST \$6,900

MANUFACTURES Delray, Forum, Halo, Metalux, Prudential, Tech Lighting

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JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED COVERAGE AT ARCHLIGHTING.COM.

Lumiere Salon

Category: Retail

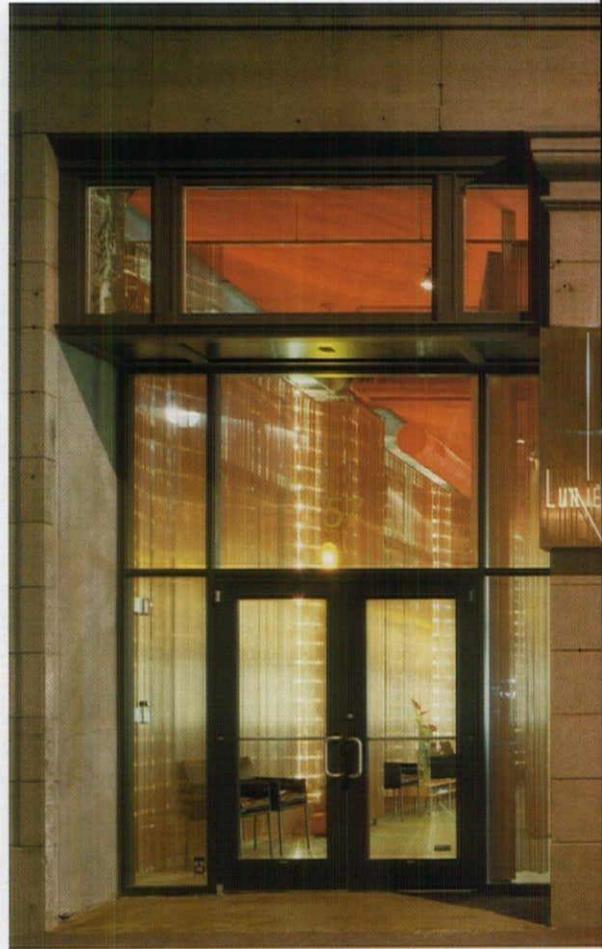
THE NAME SETS THE SCENE AT THE LUMIERE HAIR SALON IN PROVIDENCE, RHODE ISLAND, where architecture firm Hogan/Macaulay was challenged to create a lighting scheme that would communicate the identity of this new business in Downcity, a district that is rapidly transforming from industrial to hip. Brought onto the job by Providence-based interior design team Studio 360, lighting principal Bob Hogan states, "The design relationship with Studio 360 was very smooth, because of the fact that light had been considered as an integral element from the beginning." The seamless marriage of structure and illumination on this project could also be attributed to Hogan/Macaulay's formative years as an architecture firm: founded in 1996, the three-person team started specializing in light in 1998.

Viewed from the street, this 17-foot-high space on a corner lot emits a brilliant, amber glow that boldly sets it apart from the industrial gray of the surrounding buildings. The focal point of the design is a hanging veil of thin copper rods that span the full length of the floor-to-ceiling glass storefront bordering the salon on two sides. The metallic curtain—conceived by the interior designer—provides a sense of privacy for the customers within, while allowing a view to the outside. Light emitted by low-voltage xenon lamps from above is aimed at the rods in such a way that the glow takes on a copper hue, and the visual effect shifts with the viewer's changing perspective. "The transition from daylight to evening and the illusion of depth is really quite magical," says Hogan, "and I love it because it's so simple."

The rods are reflected in a 70-foot-long mirror wall, which further accentuates their shape with etched vertical, slightly angled lines that allow continuous T5HO strips concealed at the base and at the top of the mirror to emanate light. In a third echo of this linear formation, light peeks out from the creases and folds in a wall of fabric behind the manicure area in the rear of the space.

In addition to creating a striking visual identity, one of the client's primary requirements for Hogan/Macaulay was to provide sufficient ambient light in which to work. The designers responded with what they refer to as a "light cloud": a group of low-hanging opal-glass cylinder fixtures that house 60W halogen lamps, and which were custom fabricated by a local glass artist Tracy Glover, a graduate of the Rhode Island School of Design. Costs were kept to a minimum by employing generic components for other light sources.

In several cases, economic solutions entailed blurring the line between structure and lighting, by substituting architectural elements for light fixtures. For example, concealed access panels along the top and bottom of the mirrored wall house fluorescent striplights. Throughout the project, from the xenon lamps glinting off the copper curtain to the mirror that both echoes and reflects the play of light, each element of luminosity and architecture at Lumiere works hand-in-glove to create a fully integrated whole. **A|L**



JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.



Lumiere adds vibrancy to Providence's industrial Downcity neighborhood with its inviting amber glow (left and far left). A curtain of fine copper rods veils the two sides of the salon's double-height storefront (bottom left). Hair stylist and patron are surrounded by a sophisticated yet simple luminosity cast by hand-blown opal-glass cylinders. The copper rod curtain is mimicked in a 70-foot-long etched mirror wall (below).



DETAILS

PROJECT Lumiere Salon, Providence, Rhode Island

LIGHTING DESIGN Hogan/Macaulay

INTERIOR DESIGN Studio 360, Providence, Rhode Island

PHOTOGRAPHER John Horner

PROJECT SIZE 1,900 square feet

WATTS PER SQUARE FOOT 4.0

INSTALLATION COSTS \$6.70 / SF (lighting materials);
\$17.00 / SF (electrical subcontract, with lighting materials)

MANUFACTURERS Ambiance by Sea Gull, Bartco, Capri,
Legion, Stonco

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Our Lady of Victory Medical Center

Category: Healthcare

THE GOAL OF THE LIGHTING SCHEME AT OUR LADY OF VICTORY MEDICAL CENTER in Stanley, Wisconsin, was to provide doctors with cutting-edge, high-tech illumination in which to work, while imbuing the spaces with a sense of warmth and tranquility for patients. Architecture and engineering firm Hammel, Green and Abrahamson (HGA) designed both the lighting and the building in its entirety for their longtime client, Ministry Healthcare.

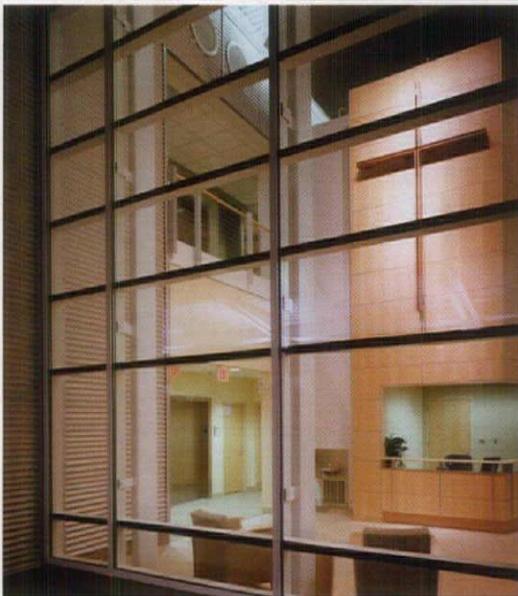
"Functionally, the most important thing was to provide task lighting for the staff, while maintaining patient comfort," says lighting designer Jill Cody, with HGA's lighting design group. To increase the comfort factor, light sources that are visible to patients are shielded to reduce glare, and in areas such as corridors and diagnostic spaces, recessed direct and indirect basketed fixtures supply illumination. "In patient rooms, flexibility is key," Cody relates. Accordingly, different programmatic zones are delineated by lighting schemes that fit each function. At the head of the bed, a wall-mounted fixture supplies either ambient light or directed reading light, with separate user controls for both types of illumination. A recessed fixture above the bed, controlled by the healthcare professional, provides both diffuse and direct light for examinations, with minimal glare directed at the patient. In the charting area, dimmable low-voltage downlights allow for visibility without glare or light leakage into the patient zone. The family area is lit with a downlight and decorative sconce that are separately controlled.

Decorative fixtures add a touch of design throughout: Cylinder-shaped custom pendants hang in the Galleria; glass-trimmed downlights illuminate the nurses' stations; and elliptical sconces in the inpatient corridor echo the forms of furniture and floor patterns throughout the building. In the Galleria, additional light sources include downlights to illuminate the waiting and circulation spaces below, and accent downlights for the walls; both use ceramic metal halide sources. Ceiling clouds—horizontally hung acoustical panels—are distinguished by fluorescent strips that supply uplighting. In fact, fluorescent sources illuminate most of the facility, with T8 lamps in the bulk of the fixtures. A 42W compact fluorescent is the campus standard, while incandescent sources are used sparingly in the diagnostic suites, charting areas in patient rooms, and the chapel.

In the chapel, a wooden cross is hallowed by strategically placed low-voltage downlights, creating a peaceful atmosphere for quiet contemplation. As a symbol to the outside world of the facility's Catholic identity, another cross, accented by ceramic metal halide PAR lamps, shines like a beacon through the glass wall of the building's atrium to the adjacent highway. Paired with the cutting-edge lighting strategies in the clinic's examination rooms, the mood lighting in areas such as the chapel helps to achieve the clinic's goal of "striking a balance between 'high-tech' and 'high touch,'" asserts Cody. **A|L**



At Our Lady of Victory, the Galleria (facing page, top) is the main public gathering area and incorporates different lighting solutions to enhance the double-height space. An elliptical soffit with decorative glass-trimmed downlights defines the nurses' stations (above), while patient rooms incorporate flexible, glare-free lighting solutions (facing page, bottom). The hospital's Catholic identity is announced through windows to passersby (below).



JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.



DETAILS

PROJECT Our Lady of Victory Medical Center, Stanley, Wisconsin

LIGHTING DESIGN Hammel, Green and Abrahamson, Milwaukee

ARCHITECTURE Hammel, Green and Abrahamson

PROJECT SIZE 71,500 square feet

WATTS PER SQUARE FOOT 1.97

INSTALLATION COSTS Approximately \$8.50 / SF

PHOTOGRAPHER John Korom

MANUFACTURERS Alkco, ALS, Belfer, Capri, Daltor, Elliptipar, Eureka, Focal Point, Hydrel, Kirlin, LBL, Litecontrol, Lithonia, Lutron, Starfire, Synergy, USA Architectural, Visa Custom, WattStopper, Winona, Zumtobel

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Irish Hunger Memorial

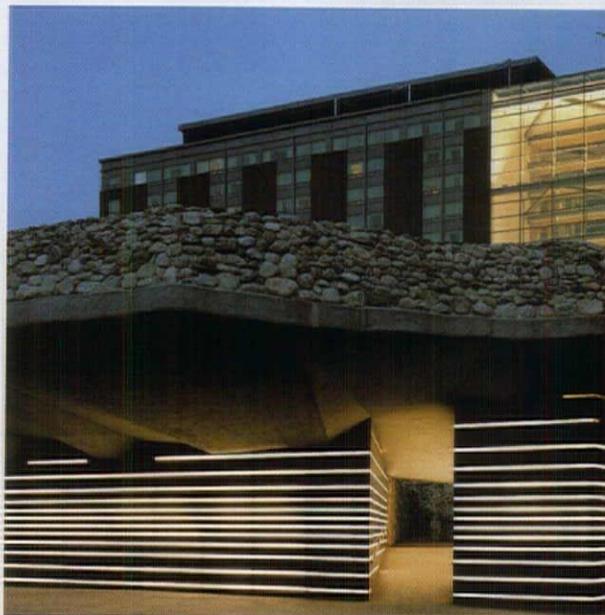
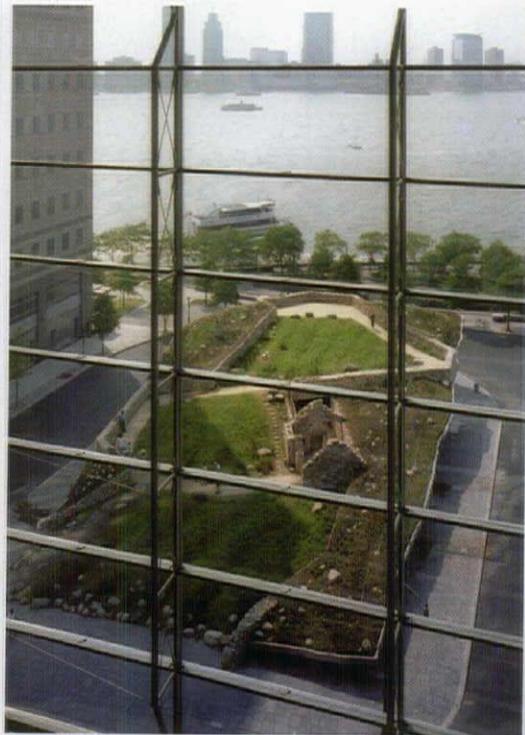
Category: Outdoor

SITED ON A HALF ACRE IN LOWER MANHATTAN, ADJACENT TO NEW YORK HARBOR AND THE Hudson River, the Irish Hunger Memorial inserts a piece of rural Irish landscape atop a luminous plinth amidst the looming downtown skyscrapers. Artist Brian Tolle, whose scheme was selected from an invited competition, conceived this unexpected view. Tolle's vision was realized by a multi-disciplinary team lead by 1100 Architects, and the monument's plinth is animated by a lighting scheme conceived by Johnson Schwinghammer Lighting Consultants.

From the street side, viewers come upon a slopped-up, unlit landscape of green punctuated by stonewalls, which they may freely explore by way of a winding pathway. From the park side, visitors may take shelter under a soaring awning—the under-side of the landscape slab—that is supported by a black granite and glass base, banded by horizontal strips of light. Through a passage that opens at the front of the base structure, visitors may walk into a cavernous space that is actually the bottom floor of a crumbling, roofless stone cottage, whose upper walls emerge through the landscape on top. The bands of light—fluorescent sources behind long, narrow, frosted glass panels—are etched with roughly two miles of text about famines worldwide, both past and present, including excerpts from letters, autobiographies, poems, statistics, songs, and recipes. Together, the words and imagery of the memorial are intended to remind visitors not only of the famine and poverty that occurred in Ireland during the mid-nineteenth century, but of the brutality of comparable circumstances that persist worldwide today.

"Technically, the most difficult problem," reports firm partner Bill Johnson, "was making sure that the structure used to support the glass and granite walls did not impart shadows on the frosted glass signage bands." This was solved, he relates, "by working with the architect to keep the connection points of the structure away from the glass as far as possible," a condition that was ensured by the construction of a prototype. Fluorescent was chosen as the light source, states Johnson, "because it is frank, uncomplicated, and nondismissible." The quality of the light thus reinforces the stark image and forceful message conveyed by the monument's design. To further this message, the light's color temperature is a harsh 5000K, while the color-rendering index is 95, so that the coolness of the light is not so brutal as to alienate and turn away visitors.

After sunset, the black granite of the monument's base fades into the darkness, and only the light strips are visible, searing through the night and serving as a beacon to boats on the nearby Hudson River. This ethereal yet piercing image invites visitors, while simultaneously reminding them of a somber reality. **A|L**



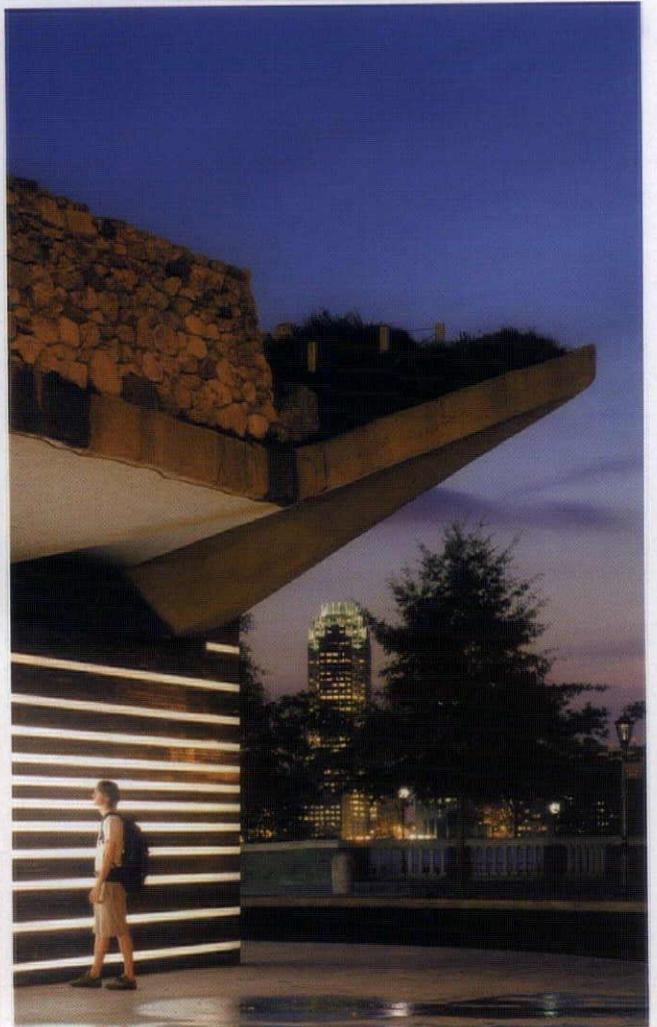
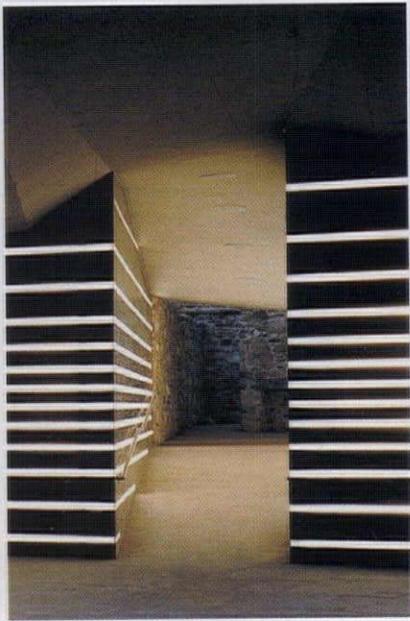
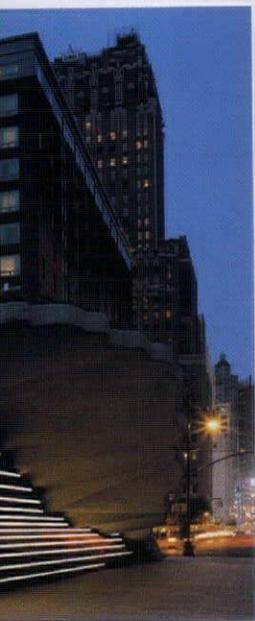
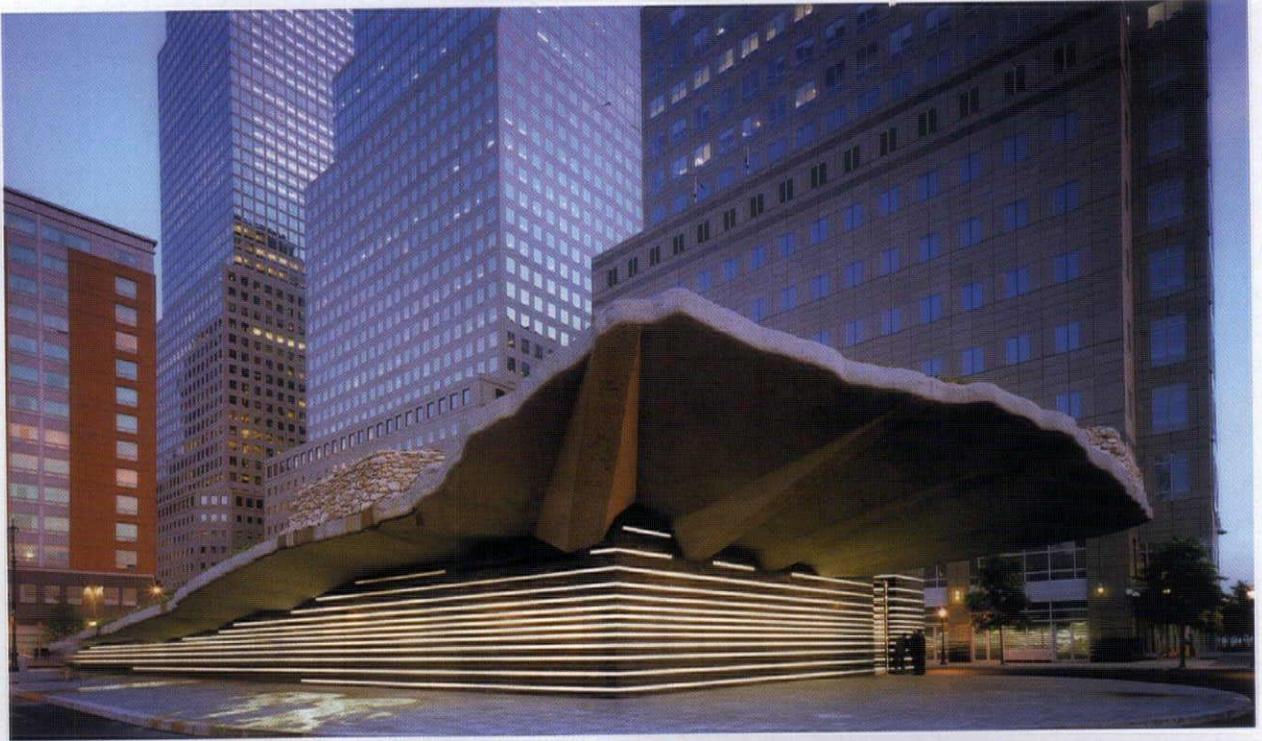
DETAILS

PROJECT Irish Hunger Memorial, New York City
LIGHTING DESIGN Johnson Schwinghammer, New York City
ARTIST Brian Tolle, New York City
ARCHITECTURE 1100 Architects, New York City
PROJECT SIZE 11,500 square feet
WATTS PER SQUARE FOOT 1.0
INSTALLATION COSTS \$40,000
PHOTOGRAPHER Peter Aaron/Esto
MANUFACTURERS A+L Lighting, Philips

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JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT **ARCHLIGHTING.COM**.



The Manhattan memorial recalls the Irish landscape, and the jagged-edge of the plinth (top right) cantilevers over the black granite and glass base while high-rise office buildings loom in the background. Frosted glass signage bands are illuminated with fluorescent sources. The light level in the tunnel is doubled, as it leads guests to the abandoned stone cottage on the plinth. A visitor is reminded of the hardship of famine and poverty as he reads the bands of text (right).

Harvard University, Bauer Center for Genomics Research

Category: Corporate / Institutional

A MODERN COUNTERPOINT TO THE RED BRICK AND IVY-COVERED WALLS OF Harvard University, the Bauer Center for Genomics Research, designed by Cambridge-based Ellenzweig Associates is the final piece in the University's Cabot Science quadrangle, just north of Harvard Yard. The new building connects three existing laboratory facilities, and houses an interdisciplinary group of genomics researchers. Most of the building, almost 30,000 square feet, is actually under Cabot Courtyard, but significant effort was made to locate offices, tea rooms and other communal spaces on the perimeter of the building to allow occupants daylight access.

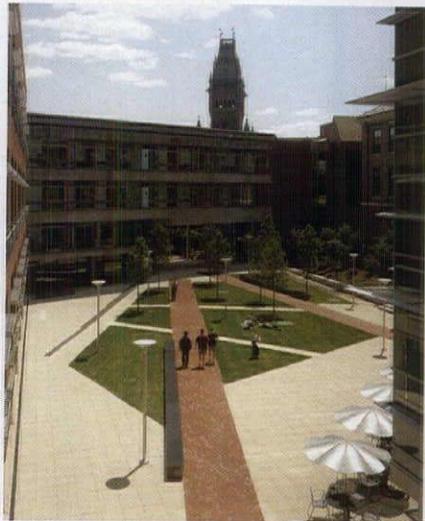
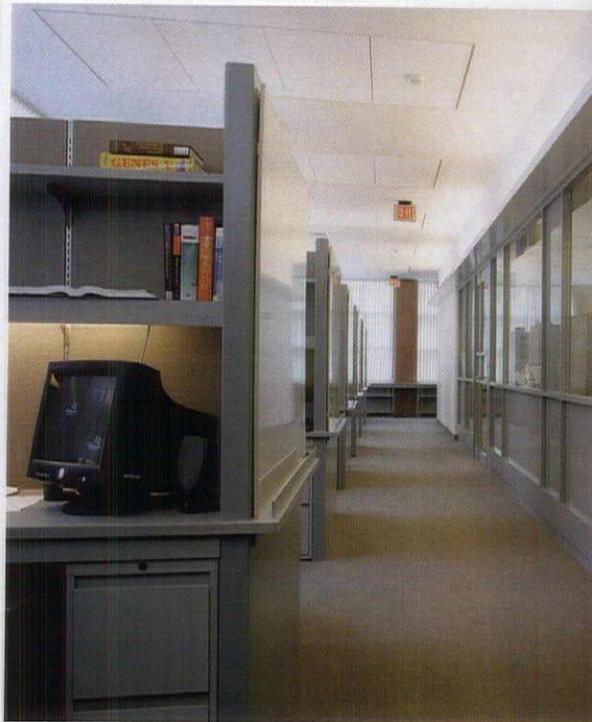
The courtyard is composed of an asymmetric pattern of walkways, greenery and an outdoor café, which continues the building's goal to encourage a sense of community and provide social gathering spaces for the researchers. Post-top lanterns with 100W cut-off ceramic metal halide lamps illuminate the space and the walkways.

In an effort to redefine the traditional stark atmosphere of lab buildings, the color palette of the Bauer Center is light, and where possible, different materials are introduced. The lobby entrance, illuminated by low-voltage downlights and wallwashers that are dimmed to control light levels and extend lamp life, is denoted by a wooden wall that turns up to become the ceiling plane. The space also serves as a gallery where artwork is illuminated by linear fluorescent wallwashers.

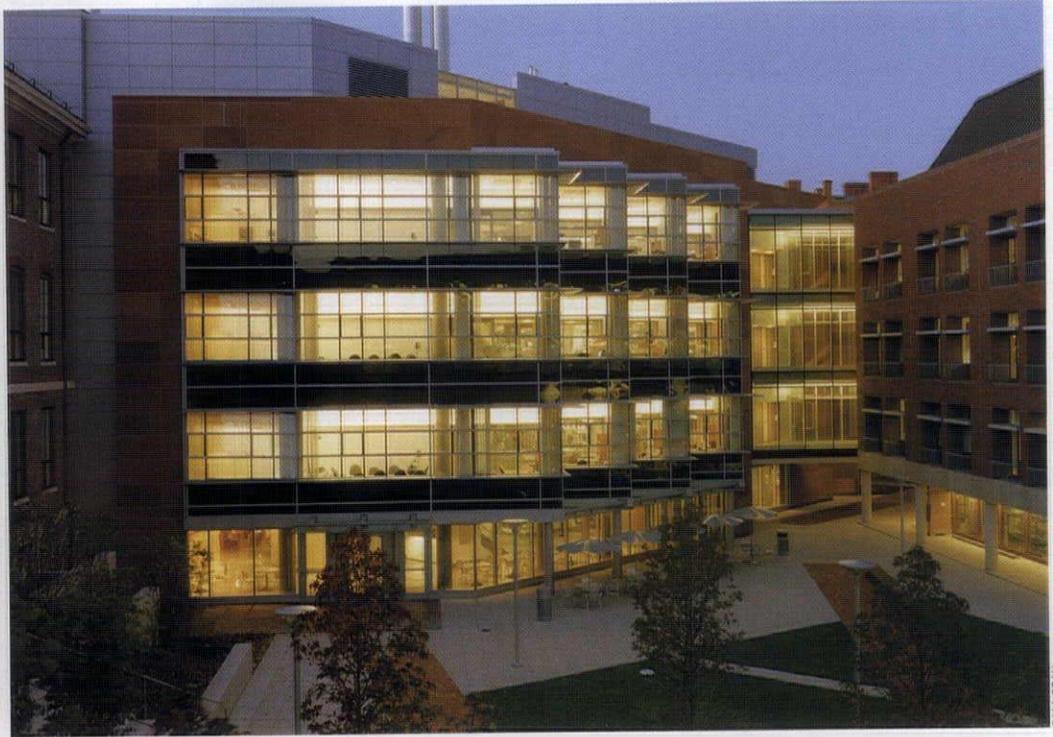
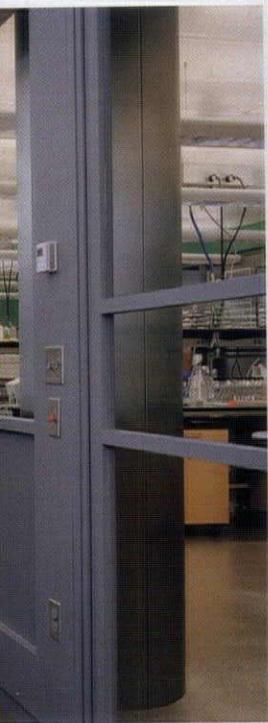
LAM Partners was involved with the project from the beginning. The building is in use 24/7, and the lighting scheme responds with an integrated approach. The labs, located at the core of the building, are designed as if they were display cases to show off the research fellows and the state-of-the-art equipment. Because much of the equipment is on carts, LAM designed for a flexible layout, and used pendant fluorescent fixtures for both the traditional lab bench arrangements and for the mobile robotics equipment. Pendant fluorescent direct/indirect luminaires with 35-percent up and 65-percent down distribution from two T8 lamps provide high light levels on the lab bench areas. Perforated metal panel ceiling tiles were selected for their ability to reflect light and to comply with the 5-foot lab bench and pendant light modules. Square glass-trim downlights with an energy-efficient compact fluorescent light the corridors.

Write-up areas are located on the perimeter of the labs. Continuous aluminum extruded T8 uplight fixtures are integrated into an interior window wall. Dual switching of the lamp rows allows for flexible light levels. A T5HO uplight, hidden in the spine of the desk casework, provides additional uplighting and glare-free conditions for computer screens. Fluorescent undercounter task lights provide higher light levels for reading.

Harvard University wanted this twenty-first-century lab facility to showcase the new robotics technology being used here, while creating a friendly and inviting environment that would foster scientific investigations and ingenuity. The subtle, yet elegant and efficient, lighting system serves these researchers well. **A|L**



 JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.



SAM GRAY

A continuous aluminum extruded uplight is integrated into the top of an interior window partition that separates the laboratory work space from the write-up areas (above left). The Bauer Center completes the cloister around Cabot Courtyard, its glass façade standing in contrast to the red brick buildings on Harvard's campus (above right). The lobby gallery provides a welcoming gathering area for students (below left). Transparent walls allow daylight to permeate the labs and, in turn, showcase both the research fellows and the mobile state-of-the-art equipment (below left).

DETAILS

PROJECT Harvard University Bauer Center for Genomics Research

LIGHTING DESIGN LAM Partners, Cambridge, Massachusetts

ARCHITECTURE Ellenzweig Associates, Cambridge, Massachusetts

PHOTOGRAPHER Edward Jacoby

PROJECT SIZE 62,000 square feet

WATTS PER SQUARE FOOT 1.8

INSTALLATION COSTS \$28 million

MANUFACTURERS Alcco, Artemide, Belfer, Columbia, Elliptipar, Engineered Lighting Products, Kurt Versen, Litecontrol, Lithonia, Louis Poulsen, Luceplan, Lutron, Peerless, Translite, Zumtobel Staff

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ANTON GRASSL

K.C. Irving Environmental Science Centre, Acadia University

Category: Corporate/Institute

LIGHTING DESIGNER ANN KALE WAS CHALLENGED BY SEVERAL STRINGENT STIPULATIONS

for this academic building, designed by Robert A.M. Stern Architects and completed in 2002. At the client's request, the K.C. Irving Environmental Science Centre, a new academic facility for environmental studies at Acadia University in Nova Scotia, was styled after the traditional Georgian vocabulary and brick-and-limestone palette employed by the surrounding campus buildings. In addition to these aesthetic requirements, the client also wanted the building to be energy efficient, which, in terms of lighting, effectively ruled out the use of abundant incandescent sources. "Stern doesn't like the institutional feel of fluorescent, however," relays Kale. "Therefore, the challenge of the project was to make compact fluorescent decorative fixtures provide the lion's share of the lighting, while appearing as if they were lamped with incandescent."

To solve this problem, all of the fluorescent sources—which include 3000K dimmable 18W, 26W and 32W compact fluorescent lamps—are housed in amber-tinted glass that emits a warm glow when illuminated, simulating the look of incandescent. The glass, specified by the architect, is hand-blown, hand-stained, and etched on the interior surface.

A second challenge was calculating how many lumens were necessary to deliver sufficient ambient light. "Stern will accept recessed downlights in this style of building only when absolutely necessary," relates Kale, so almost all of the light sources are housed in decorative fixtures that were custom designed by the architect. In order to conduct calculations before the lamp designs were finalized, Kale explains, "we tested many different types of fixtures, which allowed us to study varying results, since we didn't know what the fixtures would look like. This allowed us to give the architect some guidelines on how many lamps at what wattages we needed from each fixture."

The building—sited on a hilltop—is visible throughout the campus, marked by a cupola that is illuminated at night by ceramic metal halide uplights. Metal halide high-bay pendants also create a glow in the greenhouse that occupies the central length of the building. Decorative fluorescent fixtures illuminated by a series of pendants, chandeliers and wall sconces adorn interior spaces, such as a lobby below the cupola and a "garden room" where students can lounge and study. In the 124-seat auditorium and in a multimedia-equipped conference room, however, the decorative fixtures give way to lighting options better suited to high-tech media displays: semi-recessed downlights in the auditorium and a fluorescent-illuminated laylight in the conference room.

While the limited use of direct light sources in this project posed a challenge, says Kale, "the nice thing about using a lot of ambient light is that it makes the rooms feel more open and airy, creating a nice connection to the other half of the facility, the botanic gardens." **A|L**



Dimmable custom chandeliers and a coffered ceiling accent the Georgian-styled Garden Room, where students can gather or the school can hold special events (above). Sited atop a hill, the building and its greenhouse glow at night like a lantern (right). The hand-blown glass shades and bowls, specified by the architect, provide an amber hue that simulates the quality of incandescent light, although the sources are actually compact fluorescent (facing page, top). Conference rooms are illuminated with a dimmable fluorescent laylight, which provides light levels appropriate for video conferencing (facing page, middle).

 JUDGES' COMMENTS, MANUFACTURER INFO, AND EXPANDED PROJECT COVERAGE AVAILABLE AT ARCHLIGHTING.COM.



DETAILS

PROJECT K.C. Irving Environmental Science Centre, Acadia University, Wolfville, Nova Scotia, Canada

LIGHTING DESIGN Ann Kale Associates, Santa Barbara, CA

ARCHITECTURE Robert A.M. Stern Architects, New York City

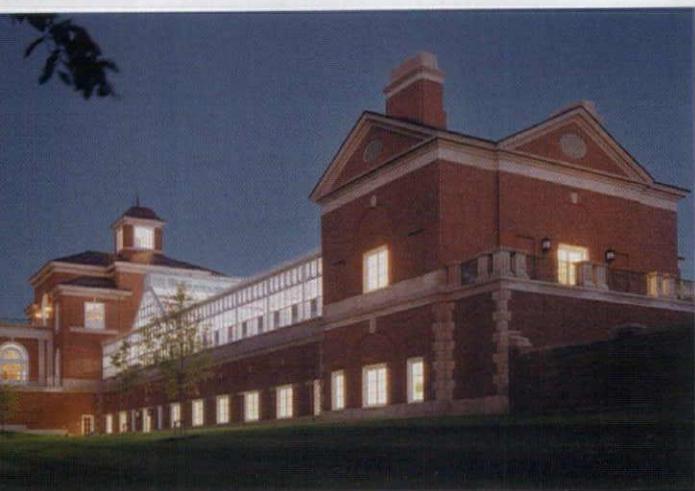
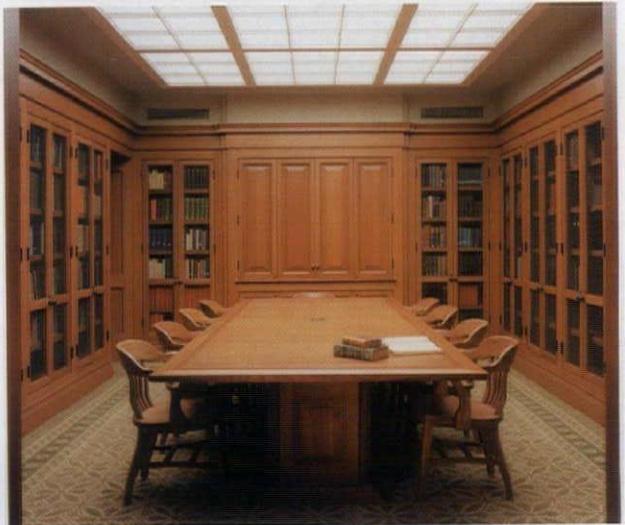
PROJECT SIZE 65,000 square feet

WATTS PER SQUARE FOOT 1.8

PHOTOGRAPHER Peter Aaron/Esto

MANUFACTURERS Bega, CFI, Elliptipar, Exquisite Glass & Stone, Inc., Flickinger Glassworks, Focal Point, Ledalite, Lightolier, Lutron, Neoray, Portfolio, Tivoli, Unilight, Visa

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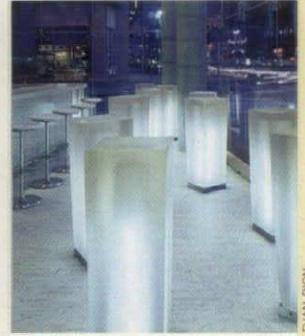
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MAKING THE LIGHT IMPRESSION

Three designers weigh in on their favorite hospitality lighting.

ALBIE COLOTTO, DIRECTOR OF DESIGN | FRIEDMUTTER GROUP

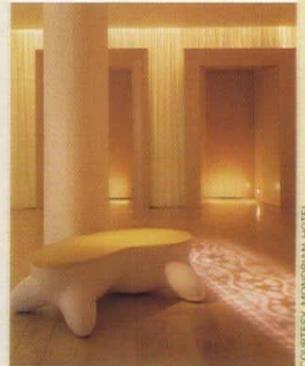
As designers, we continually observe and visit new environments in order to see how spaces are being designed and lit for our own inspiration. We are always looking for clever applications that blend the technology of lighting with various materials and finishes to create unique environments. In our opinion, the effective applications for lighting are those that provide the maximum impact while being cost effective. The point being that clever, artistic and visually stimulating environments do not have to be costly. A couple of restaurants that come to mind that fit this description are Fiamma at the MGM Grand in Las Vegas, and Blue Fin at the W Hotel on Times Square in New York (shown right). Both of these restaurants have cleverly created focal points that have become the signature design elements of the spaces by simply layering the wall surfaces and providing colorful up lighting on these surfaces to illuminate the entire space. We are inspired by many places, yet design statements like these form images in our minds that are constantly recalled.



EVAN DION

SCOTT HATTON, PROJECT DESIGNER | LIGHTING DESIGN ALLIANCE

For me, the Lutece restaurant at the Venetian and the Mondrian Hotel (shown right) stand out from a lighting design perspective. Lutece is impressive in the simplicity and subtlety of the lighting design solution given the complex curving architecture of the interior. A row of in-grade uplights accentuates the curves and rather than illuminate the tables with downlights, adjustable sources are integrated into a central pendant leaving the ceiling clean. A more noticeable theatrical approach was taken with the lighting design of the Mondrian. The backlighting of the sheer drapes around the elevator core and lobby perimeter imbue the space with a warm inviting glow and little details like the projection of a rug gobo pattern at the entrance and the projection of a single letter on the doors of the restrooms are playful without being trite. A lot of time surely was spent integrating the lighting details with the architectural elements, and in both places it paid off with designs that have everything I hope to achieve in my work—subtle, well integrated solutions that, like a good soundtrack to a movie, become such an inseparable element from the rest of the experience that it is impossible to imagine it any other way.

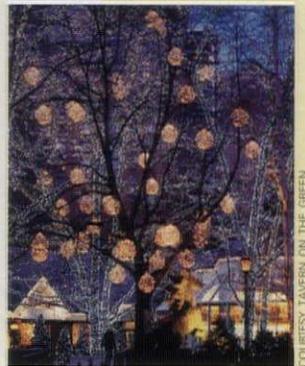


COURTESY MONDRIAN HOTEL

EMILY MONATO, PRINCIPAL | COOLEY MONATO STUDIO

My immediate memory is of the Tavern on the Green. I was fresh out of college, new to New York, and a lighting intern. On a midnight cab ride through the city, I caught a glimpse of a thousand white lights with beautiful lanterns hanging from branches. I thought that it must be a rich person's private garden. Months later I went to a manufacturer's presentation at Tavern on the Green in Central Park and discovered my secret garden! The courtyard trees were wrapped in miles of white Christmas lights and hundreds of flowered lanterns. It was as if the whole sky was glowing with fireflies. I was left with a magical feeling that this place was somehow enchanted and all because of the lights. In some small way, I hope to inspire that same magic through the jobs that we do.

I am now married to Charles Collins, a former lighting designer who teaches photography and theater design to teenagers. And when our baby is old enough we'll take him for a walk in the park and show him the lights in the magic garden—the lights that his daddy helped to design many years ago!



COURTESY TAVERN ON THE GREEN

SUSHI + SAKE, HENDERSON, NEVADA

DETAILS

PROJECT | Sushi + Sake
Restaurant at Green Valley
Ranch, Henderson, Nevada

DESIGN TEAM | Friedmutter Group
(architecture and design);
Kaplan Gehring McCarroll
Architectural Lighting
(lighting designer)

PHOTOGRAPHER | InSite
Architectural Photography (left),
Stations Advertising (middle),
Lynn Campbell (right)

MANUFACTURERS | Celestial,
Leucos, Lumid, Lumiere,
Metalux, RSA

CHALLENGE In an effort to be more than just a place to gamble, casinos are expanding their offerings to include resort activities and fine-dining experiences. But to that end, how does one create a restaurant setting that allows patrons a break from the casino's myriad of noise and sound, yet given the expectation for excitement that comes with being in Las Vegas, remains different and striking enough to stand on its own? That was the primary challenge facing the designers of Sushi + Sake, a 2,700-square-foot restaurant at the Green Valley Ranch Casino Resort and Spa in Henderson, Nevada, a suburb of Las Vegas.

ARCHITECTURAL AND LIGHTING SOLUTION The client turned to the resort's architects, the Friedmutter Group, who designed both Sushi + Sake and the adjacent China Spice restaurant. With Sushi + Sake, the client wanted a jewel that offered patrons a fun and exciting dining option until late into the evening.

From the design part to the materials palette to the lighting features, Sushi + Sake celebrates the art of this Japanese cuisine. The design concept mimics the form and act of preparing sushi. The ebony wood walls with slate insets are symbolic of the bamboo mat used to roll the sushi. But perhaps the most poetic translation of this motif can be seen in the custom wave walls fabricated by Montreal-based Lumid. Friedmutter Director of Design Albie Colotto explains, "We watched the choreography of how a sushi chef rolls sushi and interpreted that shape and movement into the light fixtures."

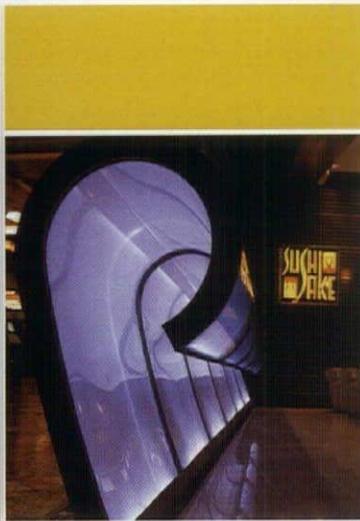
These 24-foot-long, 4-1/2-foot-tall, coned walls are made of a faux alabaster skin on PETG, a co-polyester material, supported by a steel structure. The walls were fabricated in six

sections and assembled on site. Thirty-six inches in depth, they are illuminated with LEDs (72 per foot) that are placed on special boards at the top and bottom of the curve. Each group of RGB LEDs provides 300 watts of light. A special 1/16-inch-thick optical film carries the color through the curve. The color-changing capability, on a 20-minute cycle, is made possible via a DMX computer control system and Lumid's own Lightingtools technology.

Although the wave walls are the key design element in the project, they are not the only lighting feature. As lighting principal Joe Kaplan states, the challenge became "how to integrate such a powerful design element with the other elements." The bar fascia is internally illuminated with T8 fluorescents sources. Incandescent MR16 pendants hang over the bar from a soffit above, which is also lit from the inside out with a neon cove. Behind the bar an abstracted aquarium sculpture comes to life with fiber optics.

The change in lighting levels relates to the different activities occurring in the restaurant. The entrance is slightly brighter. The saki lounge in the back is more intimate. The bar is also fairly bright, and the eating areas range between 5 to 10 footcandles with double that on the tabletops. Although Title 24 is not applicable in Las Vegas, as a Los Angeles-based firm Kaplan always makes an effort to comply with Title 24. "It's good for everyone," he states.

"Las Vegas is not the home of the 99-cent buffet anymore," says Colotto. "It's becoming a mecca for restaurateurs and designers. They take their work here very seriously, and that creates a great forum for design." **ELIZABETH DONOFF**



CAFE LURCAT, NAPLES, FLORIDA

CHALLENGE An over-designed, aquatic-themed restaurant had previously occupied the 9,450-square-foot space intended for Café Lurcat. Located in the affluent community of Naples, Florida, the building, with its barrel-vaulted ceiling, had much to offer Richard D'Amico, CEO of D'Amico & Partners, a Minneapolis-based firm that develops, owns and operates restaurants in Minneapolis and Naples.

The challenge was to create a contemporary, comfortable space for the American cuisine restaurant and lounge within a limited budget. "We went for a total change of décor," says D'Amico, who collaborated with Michelle Piontek, KKE Architects, to redesign the space. Specific goals included eliminating the over-designed look, accenting existing architectural features, and lighting a ceiling mural without obstructing guest sightlines or interfering with the mural.

ARCHITECTURAL AND LIGHTING SOLUTION The most striking feature of the restaurant's dining room is the vaulted ceiling, which is adorned with a reproduction of the Marc Chagall mural that graces the lobby of New York's Metropolitan Opera House. Several lighting systems illuminate the room without compromising the integrity of the artwork.

The stars of the space are three 6-foot-diameter, 65-pound custom-designed pendants suspended from slender cables. Incandescent bulbs beneath the white fabric shades provide downlighting. A sandblasted Plexiglas insert, positioned 12 inches above the bottom rim of each shade, shields direct viewing of the sources by guests below. The central fixture is also equipped with incandescent uplights to softly illuminate the mural.

"I had seen something similar in a hotel lobby in Paris. Then I saw a more traditional-styled version in a New York space. The concept fit in well with the volume of the room," says D'Amico. "Michelle and I scaled it to the size we needed to fill the void. We worked with Chris Poehlmann from CP Lighting, who custom fabricated the fixtures."

Adding to the grandeur of the vault are arched clerestory windows, uplighted by soffit-concealed incandescents. Adjustable track fixtures, reused from the previous restaurant for cost savings, are suspended from newly constructed soffits installed along the vault perimeters. Bolsters between the perimeter banquettes are topped with amber-colored onyx, backlit by two standard fluorescent tubes. The glow uplights the Venetian plastered walls. The overall effect of the dining room lighting is warm and inviting.

Patrons enter Café Lurcat through the lounge; its different areas are defined by decorative fixtures in varied shapes. Rectangular, silk-shaded pendants hang above the glass bartop. Suspended incandescent fixtures featuring drum-shaped fabric shades mark the seating area. Sconces add interest to perimeter walls. The pendants and sconces use incandescent sources. Dramatic accents are provided by pre-existing floor-recessed uplights at the bases of the structural columns. General illumination is cast by MR16s set in the channels between suspended 4-foot-by-8-foot, chocolate-gray wood ceiling panels.

A winding staircase connects the two levels. Concealed beneath the lip of each stair are low-voltage striplights that provide safety lighting. Overhead track lights cast a shadow pattern on the wall of the decorative metal railing retained from the previous restaurant. The lighting components gain added flexibility from a central dimming and control system. The total cost of the lighting was \$14,300.

"The budget we had to work with was small, yet we reused some fixtures and made it look completely different," says Piontek.

WANDA JANKOWSKI

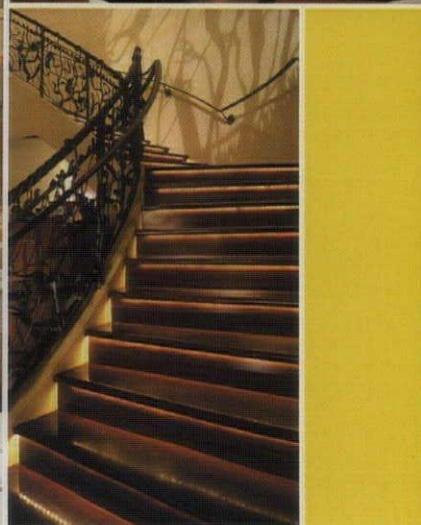
DETAILS

PROJECT | Café Lurcat, Naples, Florida

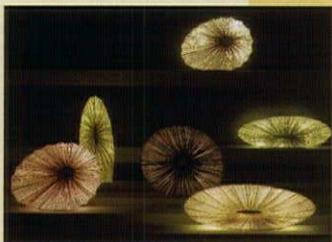
DESIGN TEAM | D'Amico & Partners (concept design); KKE Architects (architect)

PHOTOGRAPHER | Lori Hamilton

MANUFACTURERS | Boon, Bruck, CP Lighting, Donovan, Fire Farm, Flos, Pallucco Italia, Vantage Controls



AN ILLUMINATED FEAST

**AQUA CREATIONS | PRODUCT: THE ORCHESTRA COLLECTION | AQUAGALLERY.COM**

One of five collections, Orchestra embodies the signature style of designer Ayala Serfaty—silk stretched over metal. It includes 10 sculptural luminaries featuring different variations on an oblong form. Designed exclusively for use with compact fluorescent lamps and available in floor, wall or ceiling styles, the pieces range from as small as 13 inches tall to 82 inches in height. The treated hand-dyed silk in neutral to jewel tone colors are resistant to mold and fire. Vacuuming is recommended to clean the pieces. **CIRCLE 125**

**CON-TECH LIGHTING | PRODUCT: CYLINDER PENDANTS | CON-TECHLIGHTING.COM**

The Rock Cottage Glass Collection is the work of glass artist Dierk Van Keppel. Each glass shade is individually hand-crafted and signed. Available in three shapes: cone, cylinder, and flared, and four colors (cobalt blue, ivory, multi-colored and amber wave), the shades can be used with any of Con-Tech's gravity-feed pendant fixtures in the Symphony or Magellan low-voltage systems. The cone (shown left) and flared pendants are available in two sizes: 3 3/4 inches by 4 1/8 inches or 6 3/8 inches by 5 5/8 inches. The cylinder is 9 inches by 3 1/4 inches. **CIRCLE 126**

**VESSEL | PRODUCT: CANDELA PRO | VESSELINE.COM**

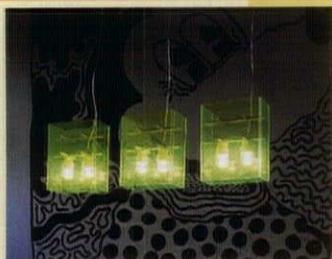
Candela Pro is a set of cool-to-the-touch rechargeable tabletop lamps. With an 8-hour run time per 16-hour charge, they provide a new option in ambient lighting for hospitality environments. Fabricated from polycarbonate, the 2-1/2-inch-wide, 7-inch-tall lamps run on a NiMH battery and an ABS charger. The charger can accommodate up to 10 lamps at one time, has a handle for portability, and plugs into a 110-240V supply. UL, CUL and CE listed, the lamps can be used both indoors and out. **CIRCLE 127**

**BELUX | PRODUCT: ONE BY ONE | BELUX.COM**

Designed by Steve Lehot, One By One is a 9-1/2-inch-square sculptural floor lamp made of high-grade steel and individual stacked layers of Nomex, a high-tech, durable, tear-resistant and non-flammable material made of aramid fiber by DuPont. The fixture uses one 36W TC-L dimmable fluorescent lamp, and comes in two heights: 11 1/2 inches and 4 feet. **CIRCLE 128**

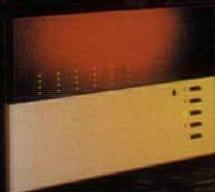
**TRAXON | PRODUCT: AMBIENCE | TRAXON-USA.COM**

Continuing its Mood Light offerings, Traxon-USA introduces Ambience, one of four fixture-objects, that also includes Rotondo, Polaris and Chiller. Ambience is made of mouth-blown, satin-finish glass, is 13 inches wide and 4 1/4 inches tall, and is water-resistant. The RGB-based objects are remote-controlled and can be color-customized to create over 30 different settings. Powered by a rechargeable LED module, the portable Mood Light Objects run for 10 hours per charge. **CIRCLE 129**

**LC-EURO COLLECTION BY LITECONTROL | PRODUCT: BRIDGE | LITECONTROL.COM**

Represented in the North American marketplace by Litecontrol, Belgian lighting manufacturer DARK introduces Bridge, a pendant-mounted indirect-direct luminaire. The housing is comprised of acrylic panels internally connected by aluminum rods, and is available in five colors. One or two ceramic screw-based lamp holders provide for a 60W incandescent or self-ballasted fluorescent lamp. The decorative shades are suspended from two adjustable 51-inch aircraft cables, which are attached to a single canopy that mounts to a standard ceiling junction box. The product is UL listed. **CIRCLE 130**

Leviton's new advanced lighting control system puts the competition in the Dark Ages.



Feature	Leviton D-3208	Brand "G"
Max. no. of scenes, zone-controller accessible	32	4
Max. no. of linkable zone controllers	31	8
Max no. of zones per system	248	48
Max no. of zones controlled from one zone controller	248	6
Max. no. of control points/system	100	24
Scheduled scene changes	64	0
Astronomical clock	Built in, no cost	Accessory-additional charge

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programming information in plain English on its bright 2-line, 32-character display. What's more, on-screen wizards guide you step-by-step through set-up functions. Whether commercial or the most demanding residential application, the D-3208 brings lighting control to a new age of power, convenience and capability. ■ To learn more, visit www.Leviton.com/d3200.

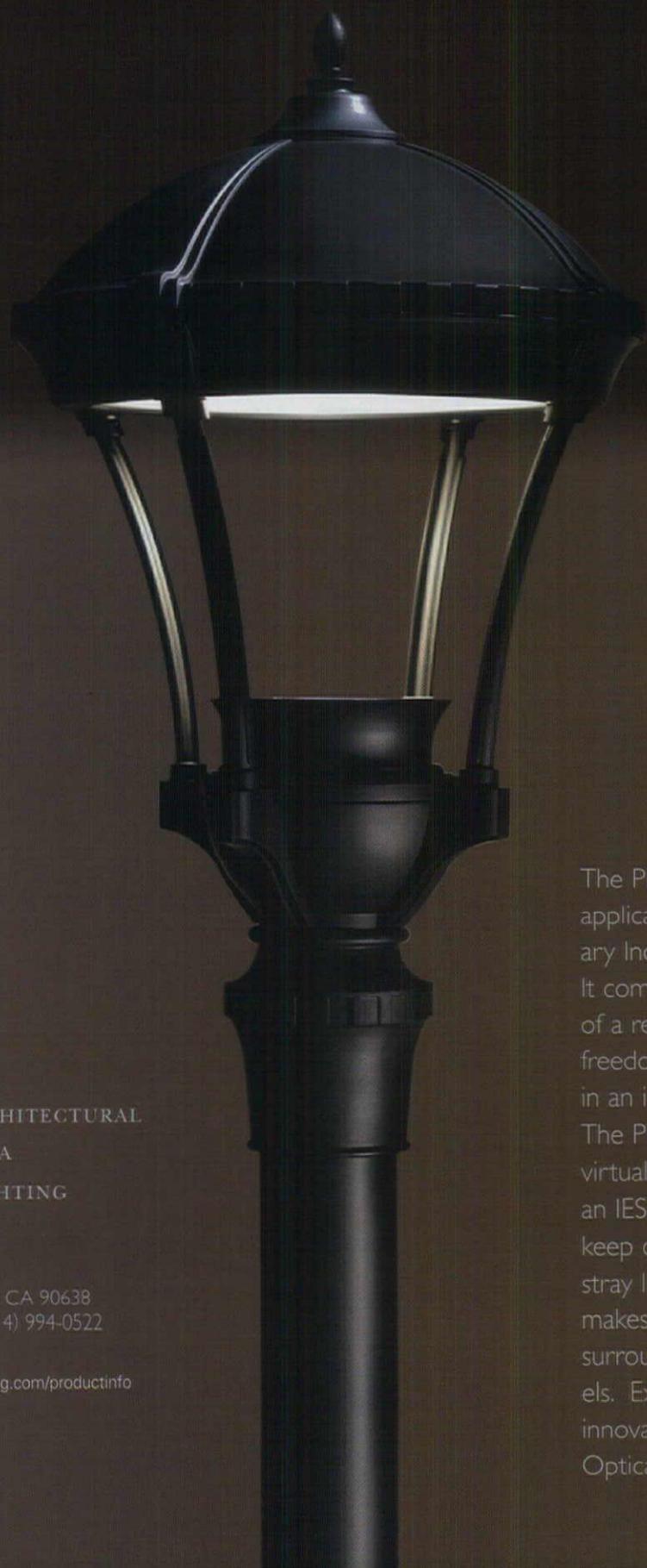


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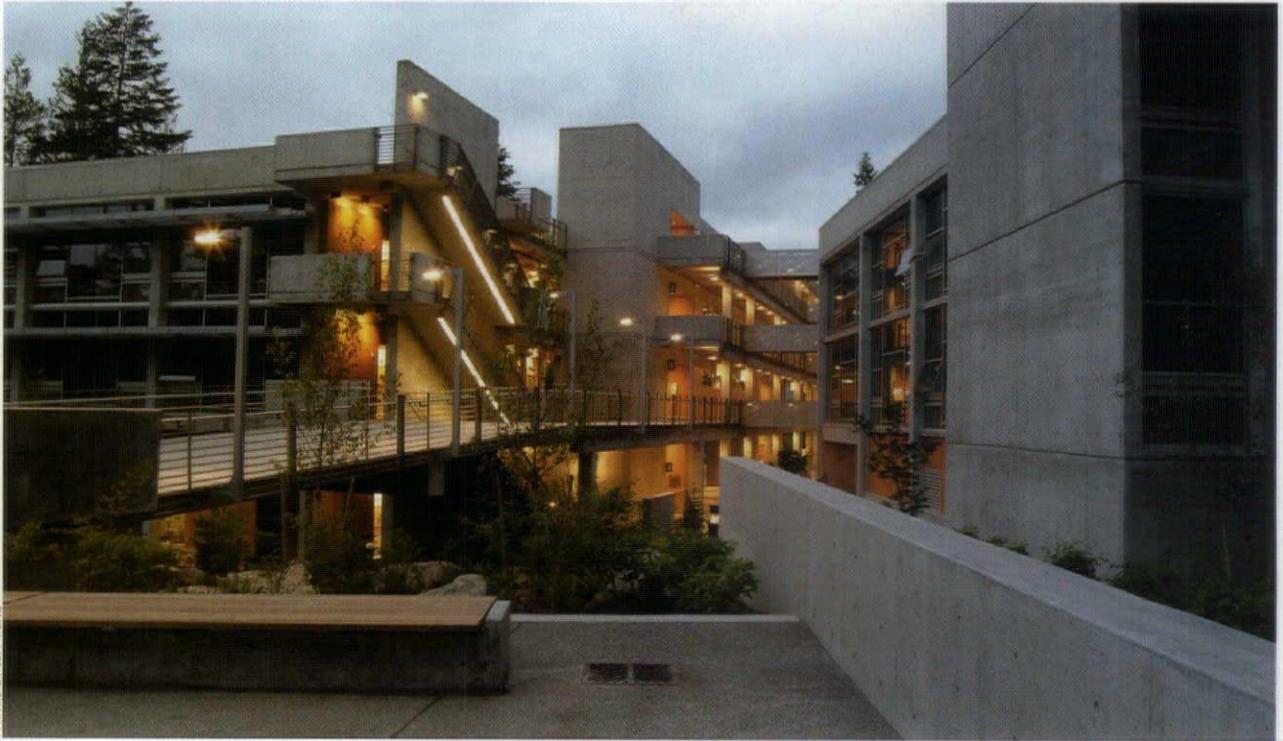
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Sustainable Lighting Goes to School

DENISE B. FONG

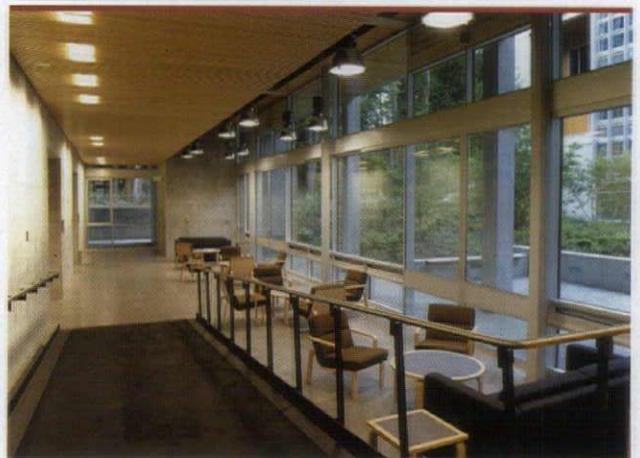


PHOTOS BY JEFF FONG

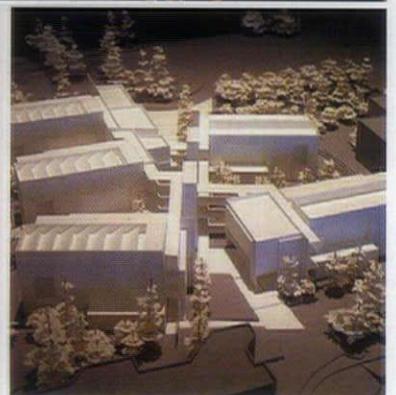
THE EVERGREEN STATE COLLEGE IN OLYMPIA, WASHINGTON, IS A LIBERAL ARTS and sciences school with a different approach to education than most colleges. Its 4,100 students enroll in a single comprehensive program rather than a series of separate courses. Classes are small in size, with "homerooms" and meeting spaces that resemble seminar rooms. A student's learning and progress is assessed in narrative evaluations rather than grades. Collaborative learning is prioritized, and campus governance is guided by a philosophy of collaborative problem-solving.

Green practices are also encouraged throughout the woody campus, and when the college set out to build Seminar II, the newly opened 159,000-square-foot complex designed by Seattle-based Mahlum Architects, administrators and staff wanted it to serve as a learning model for green building projects. As the first new academic facility to be built on the campus in more than 25 years, the building needed to blend with its surroundings, yet promote the school's culture and its focus on ecology.

From the earliest stages of the project, it was the client and architect's intention to produce a LEED-rated project that achieved at least the silver level. To ensure the building was positioned for optimal access to daylight and to facilitate natural ventilation, all project consultants were engaged prior to siting the building. As the lighting designer for both the interior and exterior spaces, Candela was charged with developing a lighting scheme that would fall 10 percent below the acceptable levels of the local energy code, as well as meet the LEED light-trespass requirements.

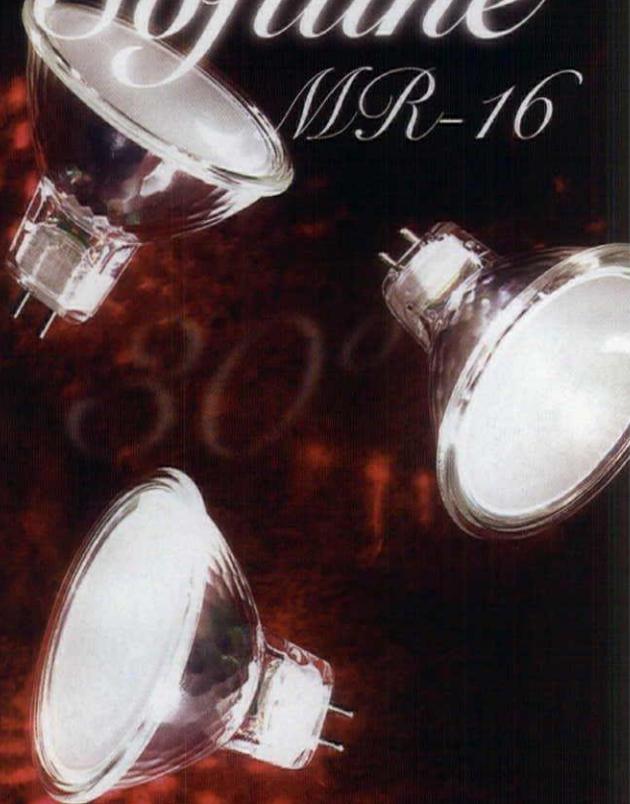


Both wallwashers and up/downlights illuminate the exterior corridors (top). Lounge areas adjacent to the lecture rooms balance brightness wallwashers opposite the window wall, employing fluorescent pendants for ambient lighting (middle). A model of the building master plan (right).



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SUSTAINABLE STRATEGIES

Seminar II comprises five learning clusters with staff offices, student homerooms, an art gallery for student work, and large stepped-floor lecture halls. The clusters are organized vertically to reduce the building's footprint and to encourage interaction among community members.

Although the concrete exterior of the building resembles other structures on campus, the airy, bright and contemporary interior aesthetic differs considerably, and promotes sustainability by using recycled and locally produced materials, and avoids finishes like paint, carpet or gypsum board that often have high VOCs (volatile organic compounds), which can emit noxious fumes and contribute to unhealthy air quality.

On this project, "eco-charettes" were conducted early in the design process to produce a roadmap for achieving the necessary LEED points. Eco-charettes, are informal brainstorming sessions that encourage design teams to focus on the sustainable aspects of a building, creating synergies within the project. Typically hosted at the beginning of design, it provides an opportunity for the owner, architect, and entire design team to collaborate about project goals, design possibilities and the integration of sustainable technologies.

The total number of LEED points obtainable through lighting components in a building varies according to the project, and can range from 4 to 12 points out of the total possible 69 points available for a LEED rating. Specific LEED points for this project were sought in the following areas: light pollution reduction, optimized energy performance, controls, daylight and views, and were rated according to the three levels of achievability as stipulated on the LEED scorecard: easy, (no cost or reduced cost to implement), moderate (somewhat difficult or more costly, but the potential benefit was greater), and difficult (very costly or difficult to achieve and may not be worth the benefit).

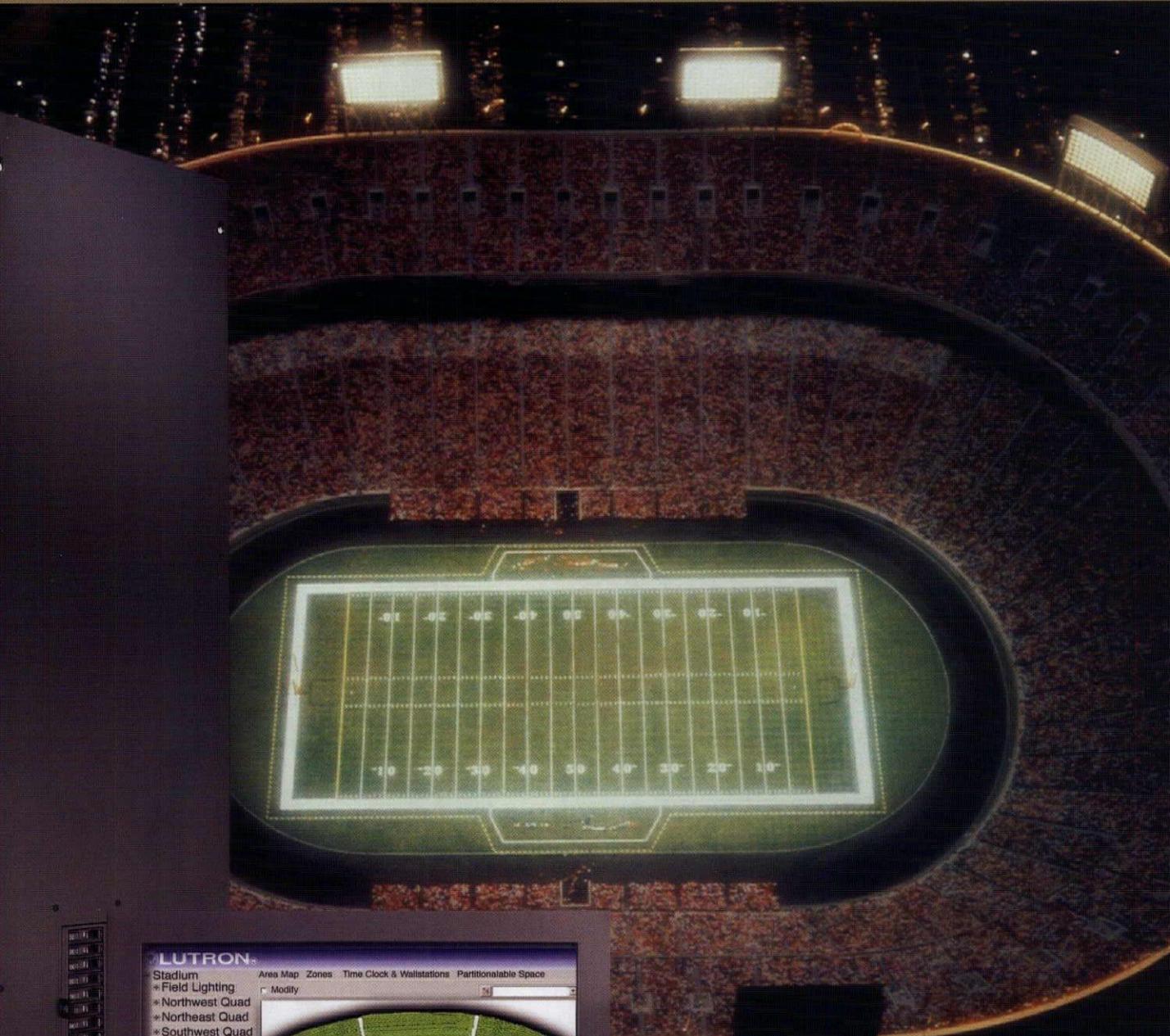
The schematic design narrative described the quality of light, light level and expected load based on a 10 percent reduction in energy over the state code requirement (which is already 10 percent below ASHRAE 90.1-1999, the measuring standard for LEED). The report included task requirements and light level ranges along with the energy usage goal for each space type. Since the Washington State energy code is more stringent than ASHRAE 90.1, meeting the local code was a substantial step toward meeting the overall conservation goal. The final design was 19 percent below the Washington State Energy code, and approximately 29 percent below the LEED standard.

EQUIPMENT SELECTION

Visitors are guided through the pedestrian campus to Seminar II by an exterior lighting scheme consisting of lampposts on perimeter walkways, bollards on the bike path, and a combination of wallwashers and up/downlights on the covered walkways. Exterior lamp sources include ceramic metal halide and compact fluorescent. Cut-off fixtures limit light to the ground plane, reduce glare on pedestrian pathways, and eliminate light trespass beyond the building site. In addition, a few courtyard trees are accented with uplights that are controlled by a timer and turn off at 9:30 at night. Steplights integrated into bridge handrails provide for

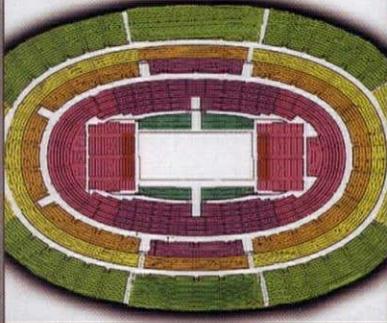
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safety after dark, while metal halide wallwashers illuminate the wood-clad building entries.

The interior lighting uses a combination of T8, T5, 32W triple-tube and F40 twin-tube lamps. The only exceptions are a halogen accent lighting and wallwashing system in the art gallery, and track lighting that allows large classrooms to become occasional performance spaces. Since the building

is intended to have a life span of at least 50 years, the light fixtures were evaluated for durability and ease of maintenance. All lighting systems complement skylights and daylighting in the facility. Daylighting is employed in the offices and classrooms using light shelves. While there are no daylighting controls, general controls are circuited to be manually changed and the classrooms have occupancy sensors.

All classrooms, homerooms and seminar rooms require dimming for projection conditions. Rather than use a switched fluorescent and a redundant incandescent system, which would have required maintaining two different lamping scenarios and created more clutter in the ceiling, the fluorescent system has dual controls. The uplight component of the fixture was switched, and the isolated downlight component was dimmed. During lectures, both lights are used; for low-level note-taking, the uplight is switched off and the downlight is dimmed. Limiting dimming capability to the downlight was a way to maximize flexibility and minimize cost.

T5 lamps were used for most of the wallwashing applications and for the private offices. The smaller diameter lamp allows for a fixture with more controlled optics; it uses less material than its larger T8 counterpart and is less costly; and the T5 lamp also has a lower mercury content.

According to Michel George, Evergreen State College's director of facilities, Seminar II is "as 'green' as we could make it." The building opened in May 2004 and its LEED application is currently undergoing review. Collaborative eco-charrettes, thoughtful site planning and energy-effective design contributed to this project's success, creating a model for green building strategies and continuing the college's legacy of commitment to the Earth's resources. ■



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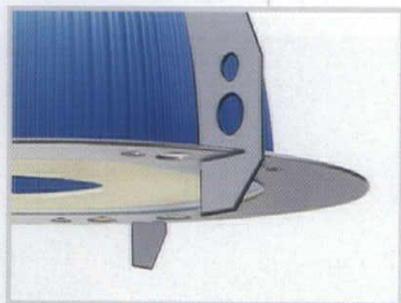
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Denise B. Fong is principal of Seattle-based Candela Architectural Lighting Consultants, which offers design services for commercial, education and medical campuses, as well as restaurants, civic centers, hotels and entertainment venues.

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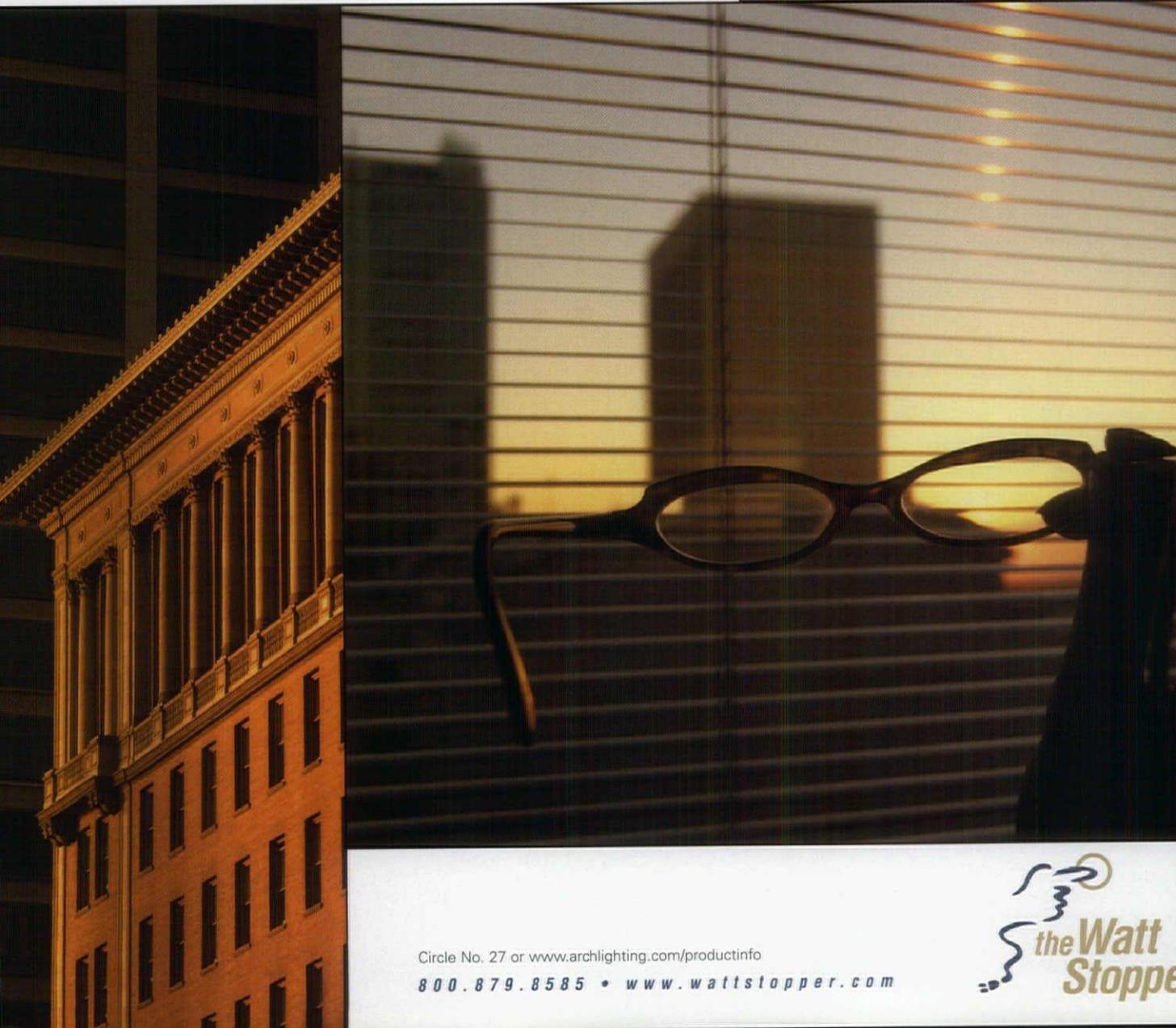
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DALI Basics: A Refresher Course

DR. MARTIN MOECK

OFFICE LIGHTING DOES NOT HAVE TO BE STATIC, LIGHT SOURCES DO NOT HAVE to be white, and lamps can be individually addressable. The key to this variety is to assign a dimming ballast with an individual address for each lamp. This is the advantage of digital addressable lighting control, or DALI, as the concept has come to be called.

DALI was born in Europe. The Austrian firm Tridonic and others developed the digital serial interface ballast in 1991; by 1998, a consortium of European lighting manufacturers had developed the Digital Addressable Lighting Interface. A language or protocol for ballasts and relay switches, DALI was devised to control a small set of up to 64 intelligent luminaires per DALI controller or "busmaster." A busmaster is the size of a cigarette pack and connects to the serial interface of a PC, which means the control panel is small in size.

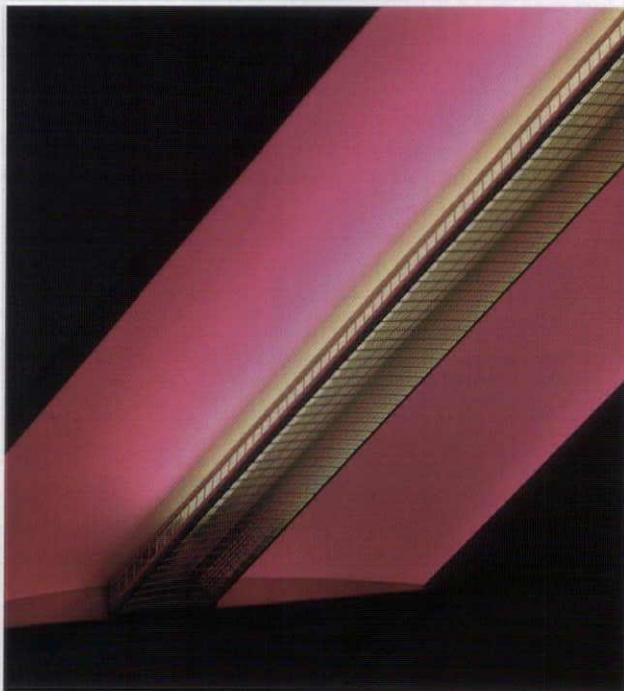
WHAT IS DALI GOOD FOR?

Using this technology, intricate color and luminance patterns can be achieved without applying individual circuits for each lamp to be dimmed. Contrary to analog controls, power is supplied in the traditional way with a minimum number of circuits. However, all chips are connected with a two-wire bus that carries both power and standardized control signals on low-voltage wiring to every device on a network, thereby reducing cabling costs. The messaging system complies with an open-source protocol, so every building automation system can use programs to send commands, and building engineers and lighting designers can write programs to transmit commands. Every ballast and relay switch on the network gets its unique address stored in the ballast and can be controlled via software, and from any PC that has a web browser. Users in Great Britain, Austria and Germany have controlled the DALI Lighting Laboratory at Penn State University in University Park, Pennsylvania, from their desktop. System performance and energy consumption can be monitored from anywhere in the world. This is an invaluable information and maintenance tool (although it may also be the nightmare of facility managers).

DALI control systems can also be an asset in the current race for green building points. The LEED rating system assigns credits directly to lighting, namely for the following design accomplishments: a daylight factor of 2 percent in over 75 percent of the occupied work spaces, no light pollution from excessive façade lighting, and a direct line of sight to windows. Since DALI software performs automatic monitoring of both light energy use and ballasts, a building on a DALI system can obtain additional LEED credits for these points: in the Indoor Environmental Quality category, "Controllability of Systems, Perimeter" (credit 6.1), and "Controllability of Systems, Non-Perimeter" (credit 6.2); and in the Energy and Atmosphere category, "Optimize Energy Performance" (credit 1.3), and "Additional Commissioning" (credit 3).

DIGITAL VERSUS ANALOG

DALI complies with an open-source protocol based on standard IEC60929, which specifies performance requirements for electronic ballasts for use on AC supplies up



DALI enables users to dictate intricate lighting scenes more easily. As an example, the author and his students changed the lamp and ballast layout of the Mellow Light luminaire from Zumtobel Staff. Standard electronic ballasts were replaced with DALI ballasts, and T5 lamps were gelled with color filters. Aluminum strips separate the direct lighting component housed in the center from the indirect component illuminating the wings. Through this lamp/ballast substitution, endless color combinations and different intensity distributions become possible.



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details | technology



Students in the new lighting laboratory at Penn State University acquire hands-on experience with the benefits of DALI technology. Testing the functionality of a DALI control system involved retrofitting the standard electronic ballast used by the fixture with DALI-based ballasts.

to 1000V at 50Hz or 60Hz with operating frequencies deviating from the supply frequency. It only applies to electronic ballasts. A small built-in chip acts as the de-central controller in the electronic ballast or relay switch. One small controller can manage up to 64 ballasts. DALI commands are sent not in analog, but digital format between 0 and typically 16V DC. This ensures reliable, unambiguous command transmission, which is not the case with analog lighting controls operating between 0 and 10V DC.

The advantages of digital over analog controls are many. Unlike analog controls, DALI-based systems operate with two-way communication—receiving information as well as sending it—and therefore, they are able to accept error feedback and lamp and ballast operating information. Furthermore, DALI systems enable programmability of ballasts, disturbance-free transmission, a logarithmic dimming curve based on brightness perception, and insensitivity to polarity (that is, the ability to switch the two low-voltage DALI wires going into the ballast). DALI systems facilitate exact dimming levels for all ballasts regardless of manufacturer, and can handle up to 64 addresses per controller and 16 groups and scenes per busmaster. Ballasts are approved for Class I and Class II wiring installations. Low-

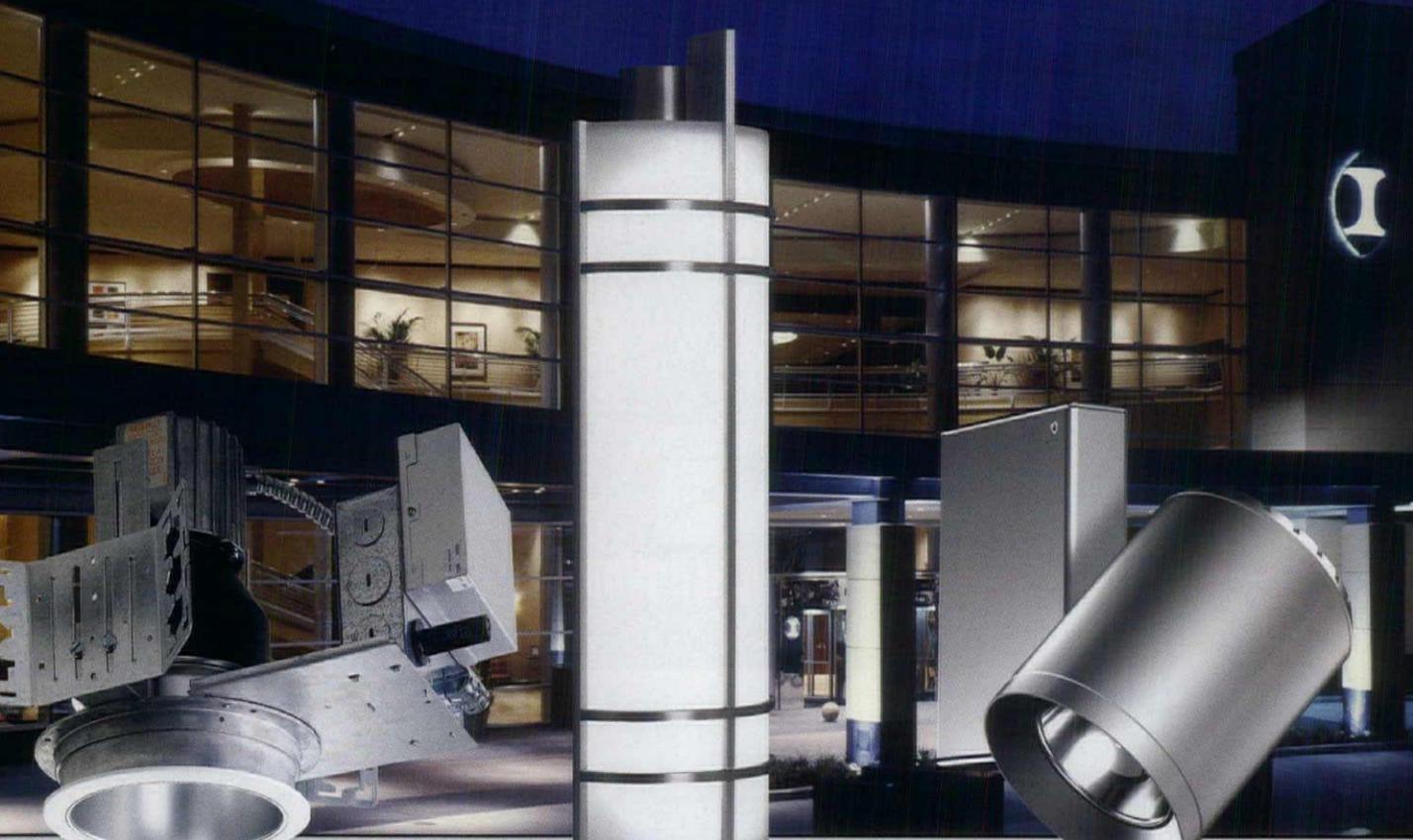
voltage control wires can share the same conduit as power wiring without interference. The control of lighting fixtures is independent of power circuit wiring, thus simplifying electrical design, reducing wiring complexity and lowering costs. DALI commands can be sent at three communication control levels (broadcast, group and address), and programmability includes groups, scenes, maximum and minimum light levels, fade times, and emergency light levels. Other advantages include time-of-day schedules, status reporting and feedback on activity levels, and energy monitoring.

A cost comparison for Penn State's lighting laboratory with 90 fluorescent lights controlled by a conventional 0–10V DC system versus a DALI system shows that the cost of the latter is about 64 percent of the former. While conventional dimming ballasts are approximately 20 percent cheaper, the cost for the software, the PC interface, control panels, and the enclosure is much higher. In addition, the DALI solution requires 6 circuits versus the other solution's 90 circuits.

What are DALI's limitations? It requires wiring, making it better suited for new construction than for renovation. It is strictly a lighting protocol: Interfaces must be used to translate the protocol and communicate with other control protocols,

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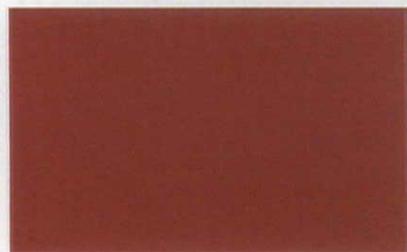
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such as BACnet for HVAC and building automation. In order to maximize energy savings, it will be necessary for lighting controls such as DALI devices to communicate with HVAC controls.

Despite this short list of limitations, DALI is a convenient tool for lighting designers to make dynamic lighting happen. Ongoing research into this technology will further expand its capabilities. Current developments in DALI include window blind control, dimming for tungsten halogen loads and radio control through new and emerging wireless "mesh" networks (using radio frequency). A mesh network employs one of two connection arrangements: full mesh topology or partial mesh topology. In the full mesh topology, each node is connected directly to each of the others. In the partial mesh topology, nodes are connected to only some, not all, of the other nodes. It handles many-to-many connections and is capable of dynamically updating and optimizing these connections. Future developments will include software that performs purpose-driven lighting control based on load shedding, time of day, temperature, occupancy, user preferences, and input from the Internet. ■

Dr. Martin Moeck is an assistant professor in the Department of Architectural Engineering at Pennsylvania State University. Since July 2002, Dr. Moeck has worked on developing a digital addressable lighting laboratory with Internet access and web control. It is the first known light lab of its kind in the United States.



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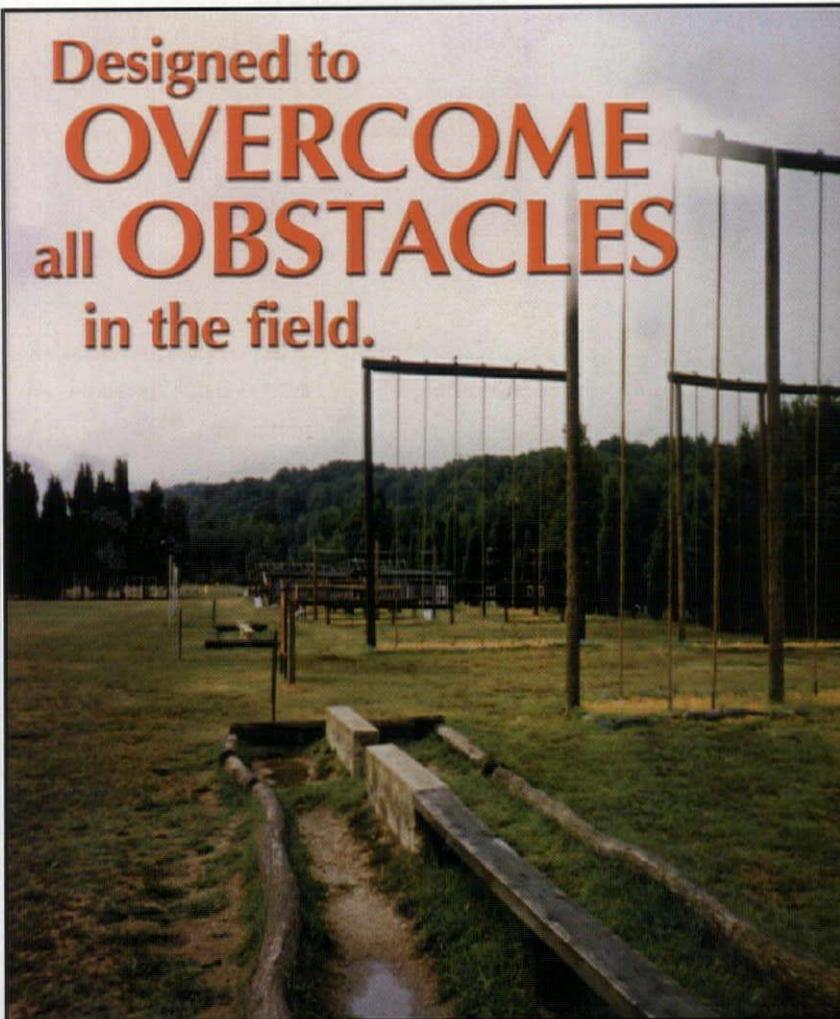
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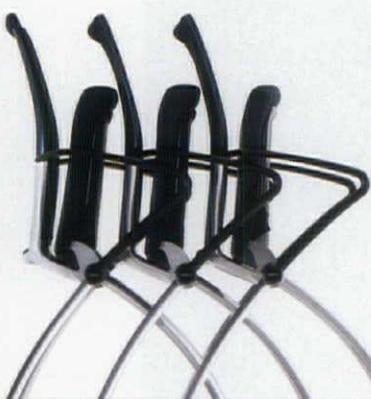
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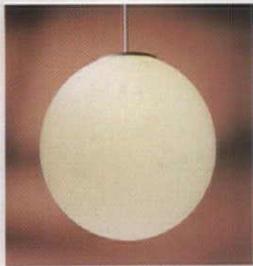


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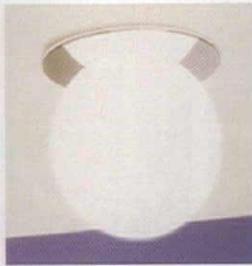
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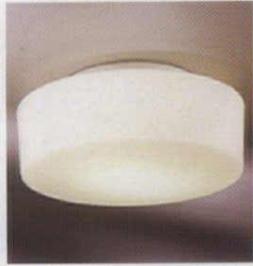
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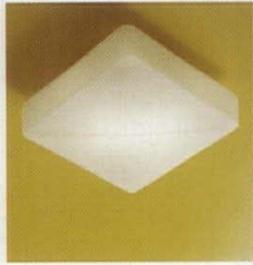
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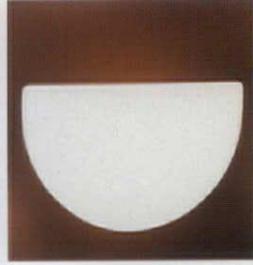
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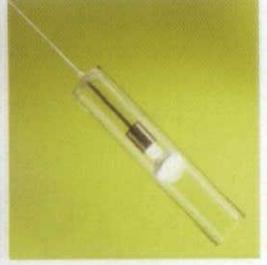
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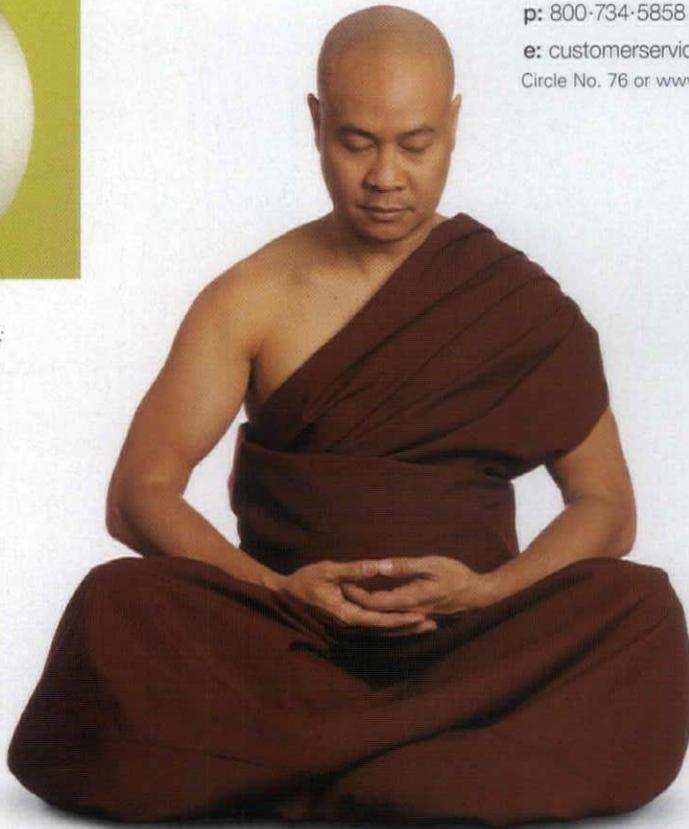


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The independent lighting consultant: Is there really value?

Much effort within the U.S. lighting industry has been focused on preserving and promoting independent lighting consultants. In the most obvious example, members of the International Association of Lighting Designers (IALD) are prohibited from selling or installing lighting equipment. What are the pros and cons of such a policy? Given the economic climate, is this still

the most effective way to promote quality lighting design? Architects: Are you committed to using only independent lighting consultants?

 more commentary at
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CHARLES G. STONE, DESIGN PRINCIPAL | FISHER MARANTZ STONE

My company is an independent lighting design consultancy. We have practiced our craft for 33 years on more than 3,000 unique lighting projects. We have accumulated a body of experience that—when combined with our study of manufacturers' products and of architects' drawings and models—enables us to inhabit the mind of the architect and see each building in light. As independent consultants, we hold our client's interests above all others. We are beholden to no others—neither manufacturers, nor distributors, nor reps. We do not sell lighting fixtures. We are most passionate about the unique vision of each project we share with each client. We strive for excellence in achieving this vision. Speaking for my self, my firm, and the professional members of the International Association of Lighting Designers, I firmly believe that our independent advocacy has value. If you want an independent opinion about how to solve a lighting problem, you'll have to hire an independent lighting designer.

JILL CODY, LIGHTING DESIGNER | HAMMEL, GREEN AND ABRAHAMSON

An independent lighting consultant is the best source for up-to-date and, most importantly, unbiased information. Other sources are inherently biased based on their financial arrangements, which are not always disclosed to the client. I have no doubt that these people have much experience in the lighting field, but they are, at least partially, beholden to the interests of someone other than the owner. Because independent consultants are ultimately paid by the owner, they must put the needs of that owner first. Since design ability and independence are the consultant's selling points, they must provide the best design, regardless of product, to be successful. There is always a less-expensive first-cost option. And other factors come into play—operating costs, employee satisfaction and customer response. These are rarely achieved by the least expensive first-cost system, and those are just the factors that are analyzed by the independent consultant.

DANIEL E. EDENBAUM, PRESIDENT | DRAGO ILLUMINATION

Now more than ever this policy should exist. Since I started my career 15 years ago, the lighting industry has been expanding at an alarming rate. The architectural field needs people dedicated to the understanding of lighting products and design. I wouldn't expect an architect, engineer or interior designer to keep up with the expansion of the lighting industry, and practice their profession, too. Staying on top of new technology and best practices is an undertaking in and of itself. Lighting designers also have to keep up with all of the codes and standards. My grandfather once said to me, "Know your profession."

SEAN O'CONNOR, PRINCIPAL | SEAN O'CONNOR ASSOCIATES

We are an independent lighting design consultancy, and as such, it is easy to see the allure in selling equipment. We could sell a few of our projects and the mark-up might add significantly to the bottom line. But even if there were an accepted standard for selling, we would need to add a whole new business within our existing business model. The challenge for the industry is establishing the following: When is it not just "selling the design," but "designing to sell"? If the economic climate dictates such conditions and enough designers feel it is feasible to sell equipment, I can imagine a proposal that might be accepted by the IALD. However, the inherent problem is that not everyone would choose to sell equipment, creating an unequal playing field. Some clients would learn to expect that type of service from their lighting design firm, potentially excluding the independent firms from those projects.

WAYNE HINSON, PRESIDENT | HINSON DESIGN GROUP

I am a member of IESNA, have my LC and own an independent lighting design firm. Due to the IALD's rule prohibiting the sale or installation of lighting equipment, I cannot become a member of this association. A good business provides services requested by the client, and one of the most frequently requested services is a turnkey solution. Some of my most problematic projects were those in which I acted according to the IALD's rules. These were the projects where inferior products were substituted (by the contractor), installation was done incorrectly (by installers inexperienced with the products), or the overall lighting concept was lost due to creative license taken by the general contractor. These examples are every lighting designer's worst nightmares and most common problems. The easiest way to minimize substitutions is to supply the product, a violation of IALD rules.

Installation of many of the products I specify is extremely difficult if the trades are not experienced in that specific product. This leads to improper installation, poor operation, and safety issues. When I specify, supply, and install products with trades that are experienced, these problems are mitigated. My customer has a full understanding of the cost in advance and a single resource to turn to if the final project is not to their satisfaction.

A basic point of the IALD rule is to discourage allegiance between vendors and designers. How can designers assure quality results if they cannot specify the product (with no substitutions), define the installation plan (with no alterations), and guarantee a proper installation? I am proud of my projects because I can control them; this is in the best interest of the client—which should be the credo of any lighting designer.

This rule should be reviewed in the context of today's successful business models and changed to allow representation of lighting designers that offer a full-service solution to the client.

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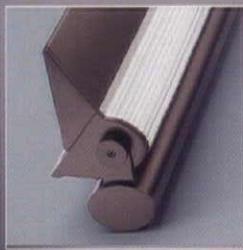
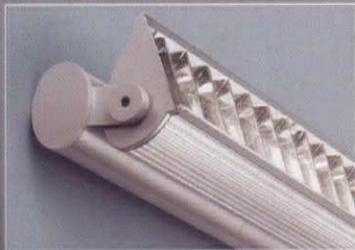
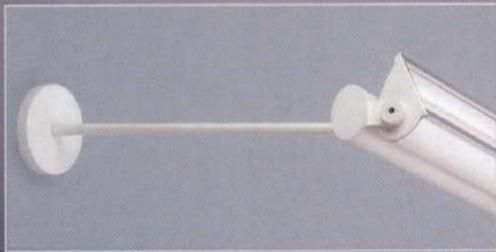
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