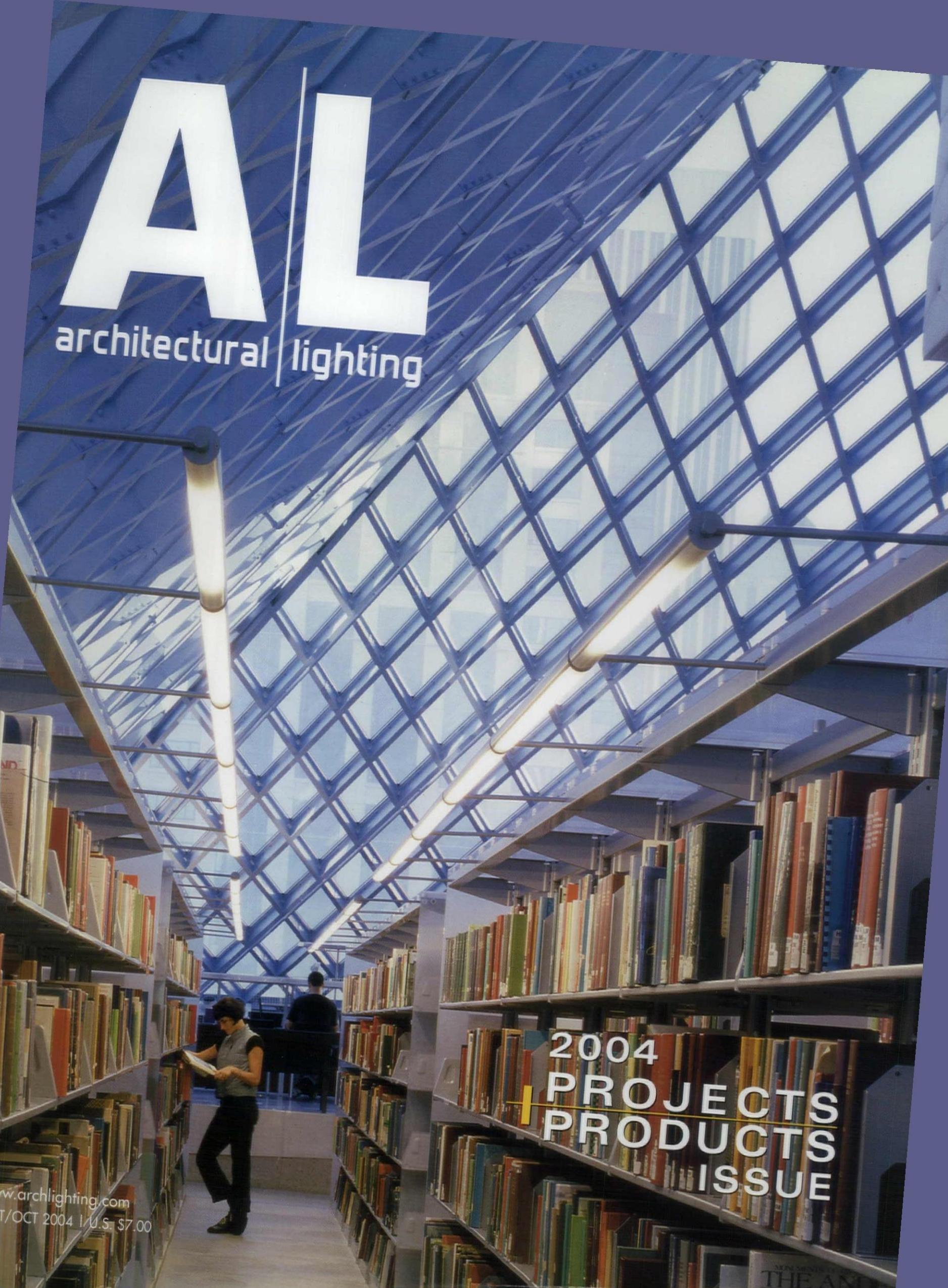


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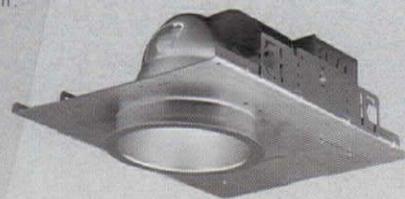
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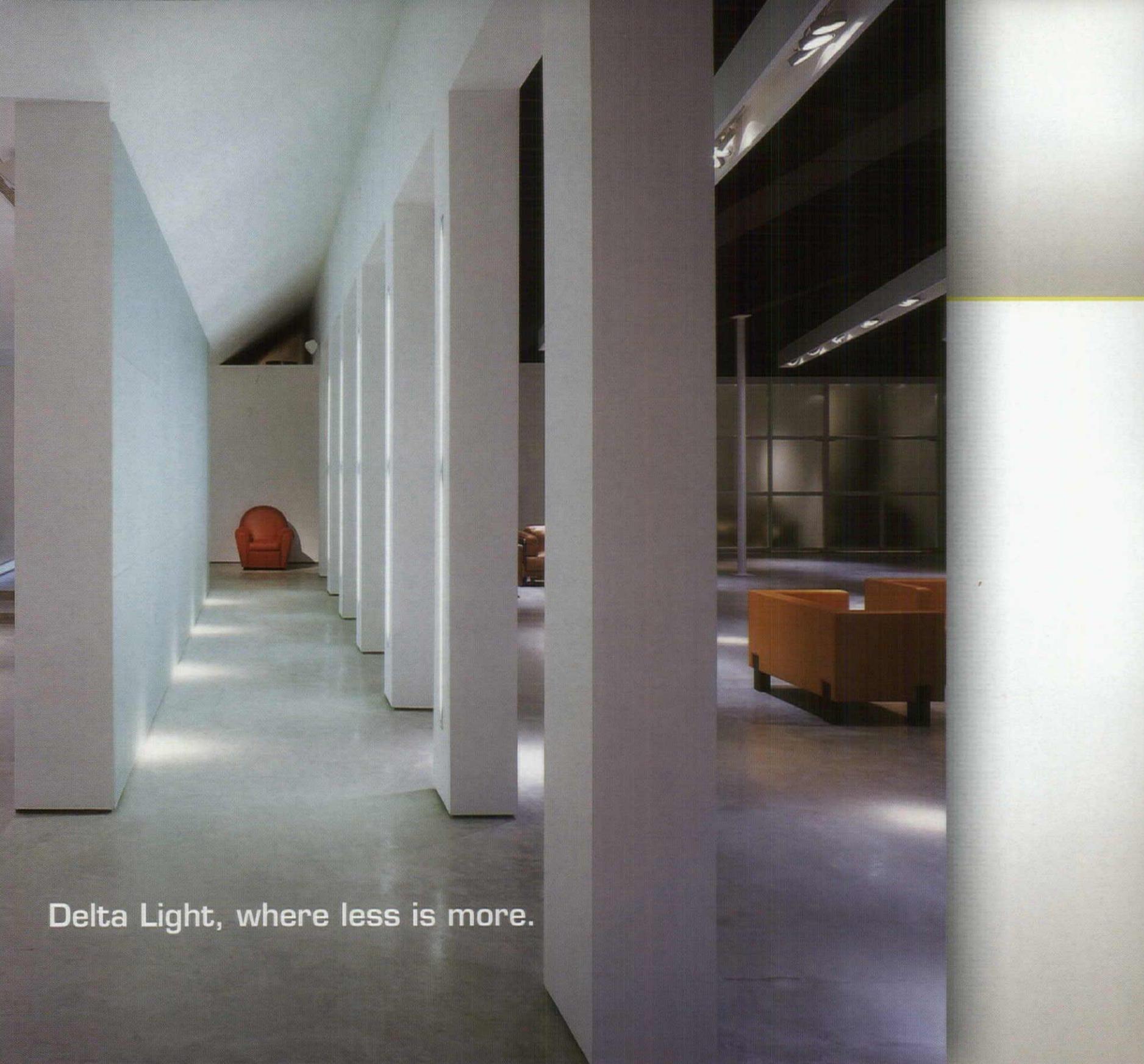
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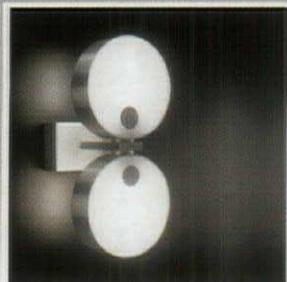




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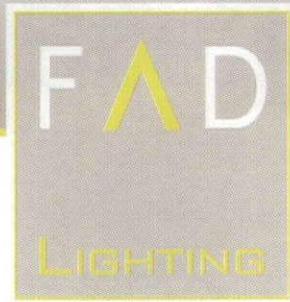
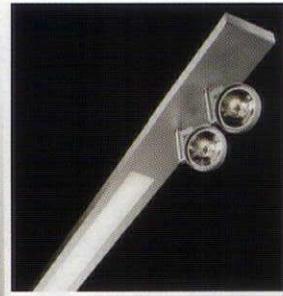
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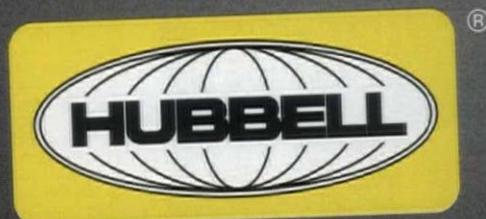
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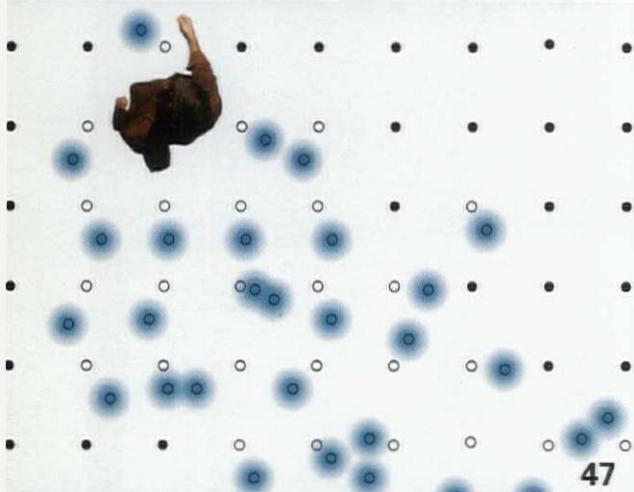
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Cover: A reader engrossed in the stacks of the Central Public Library in Seattle. PHOTO: LARA SWIMMER/ESTO

This page: *White Noise, White Light*, Athens; Le Meridien Hotel, Minneapolis; Central Library, Seattle; and The New School, University Hall Cultural Center, New York City.

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Miles to Go



HOW TIME FLIES, BUT WITHOUT NECESSARILY THE SAME CONSEQUENCE. THAT A YEAR can slip by unnoticed is hardly unfamiliar to anyone. It is the amount accomplished in that period that is not always consistent. Some years yield more than others, justifying in their productivity the swift, selfish flight of time. Such is the year I have been with A|L: the magazine has accomplished much, and for this I thank our readers and advertisers, and of course, A|L's dedicated staff.

In a short twelve months, we have logged a number of accomplishments and milestones. Most obviously, we redesigned the magazine, with a response from our readers and advertisers that I find continuously revitalizing—the power bar that keeps us going long after the day should have ended. Elizabeth and I produced 25 percent more stories during the first half of 2004, as compared to the same period a year ago, and the number of pages dedicated to editorial content is up almost 10 percent over last year for the same timeframe. We also redesigned our website, which launched in February, and has since been populated every two days on average with new web-specific content—from products and news stories to project-related dividends like movies, detail drawings, and bonus images. Consequently, our traffic has increased more than 20 percent over the same period a year ago.

Our first A|L Light and Architecture Design Awards, published last month in the July/August issue, came off with better-than-expected results. The submitted projects represented exactly what we had hoped for, including a breadth of project types from around the country as well as from Canada and Mexico. What is more, many were submitted by architects who clearly understand the value of good lighting design, proof that we are achieving the publication's goal: to promote quality lighting as an integral part of the aesthetics and function of architecture.

A|L has several new endeavors already on the boards for 2005. A residential supplement to our standard issue will launch in November/December 2004 and appear again next summer, and an LED supplement is planned for the spring.

It seems we are not alone in recording a winning year so far. In his piece "Looking into the Crystal Ball" (page 41), contributor Craig DiLouie interviews several industry executives who have a bullish outlook on the present and future. Juno president and CEO T. Tracy Bilbrough reports, "We are not hearing a lot of cautiousness from our customers and end market. If there is any type of slowdown ... we respectfully decline to participate." The five top executives interviewed by DiLouie admit the 2004 elections, the Asian influence on the world economy, and the phenomenon of commoditization could have a powerful—and detrimental—effect on the U.S. lighting market, but nevertheless maintain an upbeat position going forward.

Several project stories in our feature well exemplify the role lighting is playing and will play in defining the successful future of significant architecture (the Seattle Public Library, page 48), of urban spaces (the Hudson River Park, page 58), and of innovative companies (Orange Telecom Offices, page 54.)

But, as tempting as it is to repose and reflect contently on a job well done, we should remember that we are, in general, not yet there—wherever "there" might be. We may have accomplished what we intended to achieve, but that only brings us to the next level of goals to be set and reached. This is a philosophical program applicable to many situations, to many industries, to many individuals, but it has particular relevance to the lighting discipline and to those in the field. Ours is a young profession still inadequately recognized by the design community, never mind the rest of the population; its capacity for great things has not been fulfilled.

Contributor Jim Benya's article on lighting energy codes is a case in point. Codes are here to stay, but the process by which they are developed and implemented needs work. Likewise, this month's Exchange question, regarding the disturbing and increasing incidence of knockoffs and intellectual property theft in the lighting marketplace, demonstrates that copying will always be hard to control, but the industry must establish a system to ensure fair play in the future. Regarding both, to quote poet Robert Frost, we have miles to go before we sleep.

But we're not tired, we're just getting started.

EMILIE W. SOMMERHOFF
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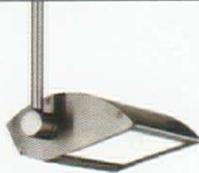
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PUBLIC ADVOCACY LIGHTS THE WAY

Public advocacy has always played a strong role in architecture, planning and preservation, and now thanks to the efforts of organizations like Light Boston, lighting is also a beneficiary of community input. Founded in 1996, this all-volunteer effort is a vehicle for its founder Anne Witherby to pursue lighting historical and cultural sites in the city of Boston. The nonprofit organization's activities are centered around the Diamond Necklace Project, an 88-page published report focusing on 25 sites. As the report states: "The purpose of this plan is to create and implement a vision for downtown Boston at night." Just as landscape architect Frederick Law Olmsted envisioned a sys-

tem of linked parks and open spaces for the city, called the Emerald Necklace, the Diamond Necklace will complement this tradition with a chain of illuminated landmarks, structures, and public spaces.

Working with the city, area lighting design firms, and public and private owners of the respective sites, Light Boston has so far completed and implemented lighting schemes for the State House Dome, the Harrison Gray Otis House, the Old West Church, and the Paramount Theater. Funding has been committed for the Chinatown Gateway, the Old South Meeting House, the Rose Kennedy Greenway, and the Old State House; the latter is the result of a partnership with the city, Osram Sylvania, the National Trust for Historic Preservation, and the Bostonian Society. Planning is in progress for Fort Point Channel, the Longfellow Bridge and Trinity Church.

As Ben Colburn, president of Light Boston explains, "Light Boston has been successful on two additional, and equally important fronts: advocating lighting and integrating its mission with the city's regulatory process." The organization has a representative on the Landmarks Commission and is authorized by the city to monitor meetings and make recommendations regarding the exterior lighting of historic structures throughout the city. A Light Boston representative serves on the Boston Redevelopment Authority Citizen's Advisory Committee for review and recommendations regarding lighting plans for large-scale downtown developments. Finally, Light Boston serves as the only non-government member of the Interagency Lighting Task Force, which coordinates the city's lighting efforts. This participation and advocacy effort has resulted in the amendment of Article 80 of Boston's Development Guidelines—the portion of the city's zoning that regulates large-scale development—to include lighting as a major consideration.

The organization is drafting a plan for other parts of the city and a community-based outreach program to identify sites to light. There is even thought about rolling this out to other cities. But whether or not that happens, one thing is sure, the level of consciousness has been raised, and the city and citizens of Boston are the richer for it. For more information about Light Boston, go to www.lightboston.org. **AL**

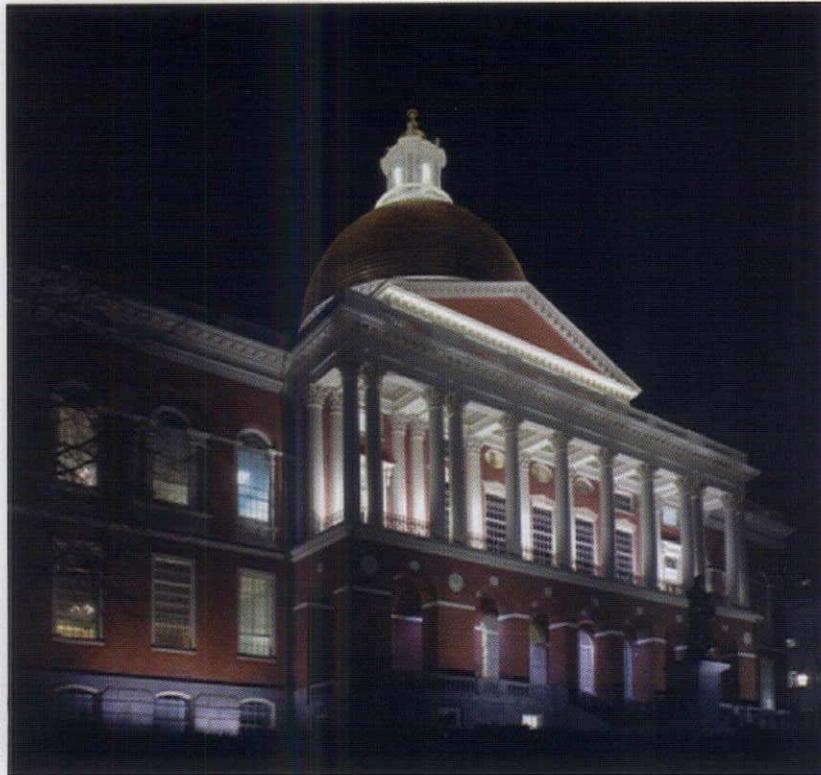


PHOTO COURTESY LAM PARTNERS

Massachusetts State House Dome, Boston (left).

BACK TO SCHOOL

Fall means back to school. A trio of lighting education and research facilities have recently opened and reopened their doors.

After an extensive structural renovation, the Lighting Design Lab in Seattle has reopened. The lab will continue to provide the same seminars and library resources as it has in the past, but will be better equipped to do so in the new facilities with larger classrooms and a more extensive daylight modeling lab. The lab will also focus on three new core research initiatives: the high-performance workplace, sustainable materials, and integrated lighting. For more information, go to the lab's website at www.lightingdesignlab.com.

In Philadelphia, Dr. Craig A. Bernecker has founded the Lighting Education Institute (LEI). The institute is directed toward design professionals, manufacturers and building owners. Programming will include one-day courses available to individuals and groups, and focus on topics such as emergency lighting, lighting field measurements and lighting maintenance. Courses offer CEUs. For more information about the institute's programs, e-mail LEI at lei@lightingeducation.com.

And finally, the California Lighting Technology Center (CLCT) has opened at the University of California, Davis. Established as a collaborative effort between the California Energy Commission (CEC) and UC Davis, with additional support from the U.S. Department of Energy (DOE), the CEC's Pier Building Program, and the National Electrical Manufacturers Association (NEMA).

Directed by Michael Siminovitch and Konstantinos Papamichael, lighting specialists both formerly with Lawrence Berkeley National Laboratory, the CLCT grew

out of series of roundtable conversations between the CEC, DOE and NEMA to address some of the confusion between the State of California and local utilities in the Title 24 process. "The result from this dialogue," says Siminovitch, "was what could all the parties involved do to be more proactive." The result was the creation of an industry-friendly innovation center—the CLCT—where communication between state agencies, the lighting industry, local utilities and the design/engineering community can explore energy-efficient emerging technologies and move that technology to the marketplace. "This laboratory-to-marketplace development process is a completely new way to work," explains Siminovitch.

UC Davis was a logical choice for the CLCT, since it offered an academic setting, a chance to affiliate with the established UC Davis Environmental Design Department, and the ability to create a new 7,000-square-foot facility built to the CLCT's specifications. The facility houses state-of-the-art full-scale lighting and daylighting testing laboratories.

The staff of seven oversees several independent and cooperative research programs between manufacturers, utilities, and designers/engineers including investigations of kitchen lighting systems, retrofit of compact fluorescent downlights, hotel guestroom lighting, exterior LED luminaire, portable luminaires, and the Berkeley Lamp, developed by Siminovitch which reduces the wattage used by traditional lamp technologies by up to 75 percent.

For more information about the CLCT and its programs, go to ctc.ucdavis.edu/clct/index.html. **AL**



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IT'S ENERGY AWARENESS MONTH: TWO PROGRAMS KEEP ENERGY IN MIND

In recognition of October's designation as Energy Awareness Month, here are two current programs in the United States addressing issues of energy conservation and consumption.

Now in its fifth year, the Change a Light, Change the World campaign promotes the wider use of energy-efficient bulbs and fixtures. The program is sponsored by the Environmental Protection Agency (EPA) and Department of Energy (DOE), and runs through November 2004. In a nod to the growing number of Energy Star fixtures becoming available, this year's campaign includes a challenge to consumers to replace their five most frequently used fixtures (or at least their bulbs) with models that have earned the Energy Star rating. "If every home in America made this change, we'd prevent air pollution equivalent to the emissions from more than 8 million cars," says EPA Energy Star spokesperson Wendy Reed.

The Change a Light program also partners with utilities, manufacturers, and retailers during the months of October and November to offer incentives for consumers to make the switch to Energy Star. The Northwest Energy Efficiency Alliance (NEEA), which focuses its attention on Montana, Idaho, Washington, and Oregon, offers online resources including a retail store locator, savings calculators, environmental information and updates on regional opportunities. The Conservation Services Group coordinates marketing activities for Connecticut, Long Island, Massachusetts, Rhode Island, and Vermont Energy Star partner utilities; and the New York State Energy Research & Development Authority (NYSERDA) has plans to launch a 30-second commercial spot directing conscience consumers to www.GetEnergySmart.org for retailers who carry Energy Star-qualified lighting products during the 2004 Change a Light Campaign. The New Jersey Clean Energy program is also an active advocate of the Energy Star program. For more information, visit www.energystar.gov.

Whereas, most programs target consumers, NSTAR, a Massachusetts-based gas and energy utility, has found an ingenious way to promote energy efficiency: by giving lighting designers a free hand. For the past year, NSTAR has been offering a rebate to its industrial and commercial customers of up to 75 percent of the incremental cost of switching from standard to higher efficiency equipment. The type of equipment used is up to the discretion of the lighting designer. The utility stipulates, however, that all projects must use 20 percent fewer baseline watts per square foot than required by the Massachusetts energy code.

"The program has been very well received," states Lisa Zidel, a lighting designer with SEI Companies and one of the authors of the NSTAR program. "Lighting designers are very interested in how they can sell themselves through the rebate." With the project less than a year old, NSTAR has yet to tabulate the numerical success of its program so far. Yet David MacLellan, a project manager at NSTAR, has high hopes. "It's not just the equipment, but the design that keeps buildings from being energy efficient. We don't care about the equipment; just get the wattage down. Customers, designers, architects—everyone seems to like it." Visit www.nstaronline.com/your_business/electricprograms.asp. **KATHERINE LACK**

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One of a group of advertisements from Energy Star's current Change a Light Change the World campaign. Image courtesy of PRBiz on behalf of EPA Energy Star.

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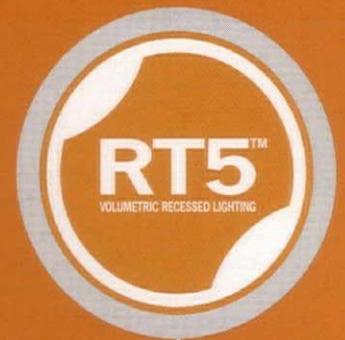
For complete project coverage, jurors' comments and manufacturer applications, visit WWW.ARCHLIGHTING.COM.

THE GIVING SEASON: OSRAM GIVES TO UNIVERSITY OF COLORADO

Education, said investment banker George Peabody (1795-1869), is a debt due from present to future generations. Lighting manufacturer Osram Sylvania shares not only the commonality of Danvers, Massachusetts—Peabody's birth town and Osram's U.S. headquarters—with the nineteenth century philanthropist, but also his philosophy that investment in education is critical to the future. The company recently made a "long-term" commitment to the lighting education program at the University of Colorado at Boulder for \$50,000 a year. The money will be used to create more extensive coursework in the subject. Initially, the university hopes to formulate a new lighting-related "capstone" course for seniors who have completed their other coursework in the lighting program and want to bring together what they have learned. Going forward, after the course is established, the funding will provide for additional instructional resources.

The University of Colorado at Boulder's undergraduate educational program in lighting and illumination engineering prepares about 20 students each year. The school's legacy and the proposal it put forward matched the manufacturer's goals for the grant. For Osram, this gift is about "investing in the future of the lighting industry," says Pam Horner, the environmental marketing manager for the company, who points out that the long-term capability and strength of the industry will be determined by the strength of educational programs for students today. She hopes the lighting industry at large will take up this mantle: "Lighting manufacturers need to step up to the plate to insure that we are getting the best down the road," says Horner. **A|L**

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GETS A NEW LOGO

As Lightfair International continues to grow and respond to the requirements of its attendees and exhibitors, its research has indicated the need for a re-identification. To that end, Lightfair has launched a new brand mark. The result of discussion between the three event partners, the IES, the IALD and AMC, the show stager and manager, the logo was casually introduced at last year's event in Las Vegas. The logo, both in printed materials and at actual show venues,

will be fully implemented by 2006. According to Lightfair show management, "The new mark is the natural next step in a program of continuous improvement for an event, which for 14 years has set the standard in architectural and commercial lighting. In the show's lifecycle we see the need for refreshing, refocusing, and for setting the stage for growth."

In the past, marketing for Lightfair has intentionally been changed from event to event in order to reflect the specifics of each venue in Las Vegas and New York. With the new mark, Lightfair has committed itself to a standard graphic and positioning line, which will serve the event over time. The mark is designed to adapt and evolve so that at some point, as show management explains, "LFI" may in fact be the new signature for Lightfair International, replacing the language "Lightfair International." Along with the new logo, Lightfair has also commissioned a study to see how the mark will evolve for the next 5, 10, and 15 years. The logo, designed by Airvision Partners, a graphic design firm with offices in New York City, Seattle, Portland, and San Francisco, is modular so that it can adopt to different color variations; for instance the daylight institute might have one derivative, the new product showcase another. Look for the new logo in printed materials being sent in January 2005 for this year's event. **AL**

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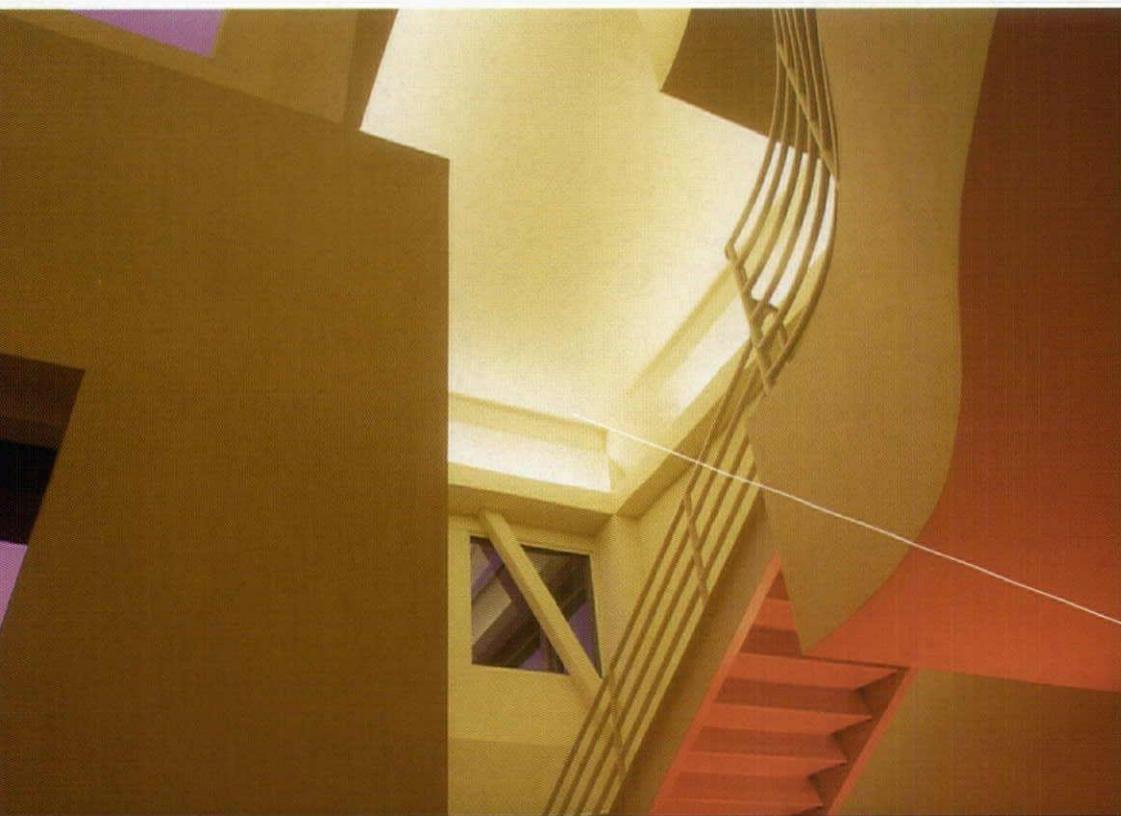
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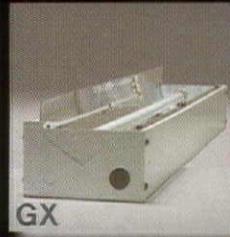


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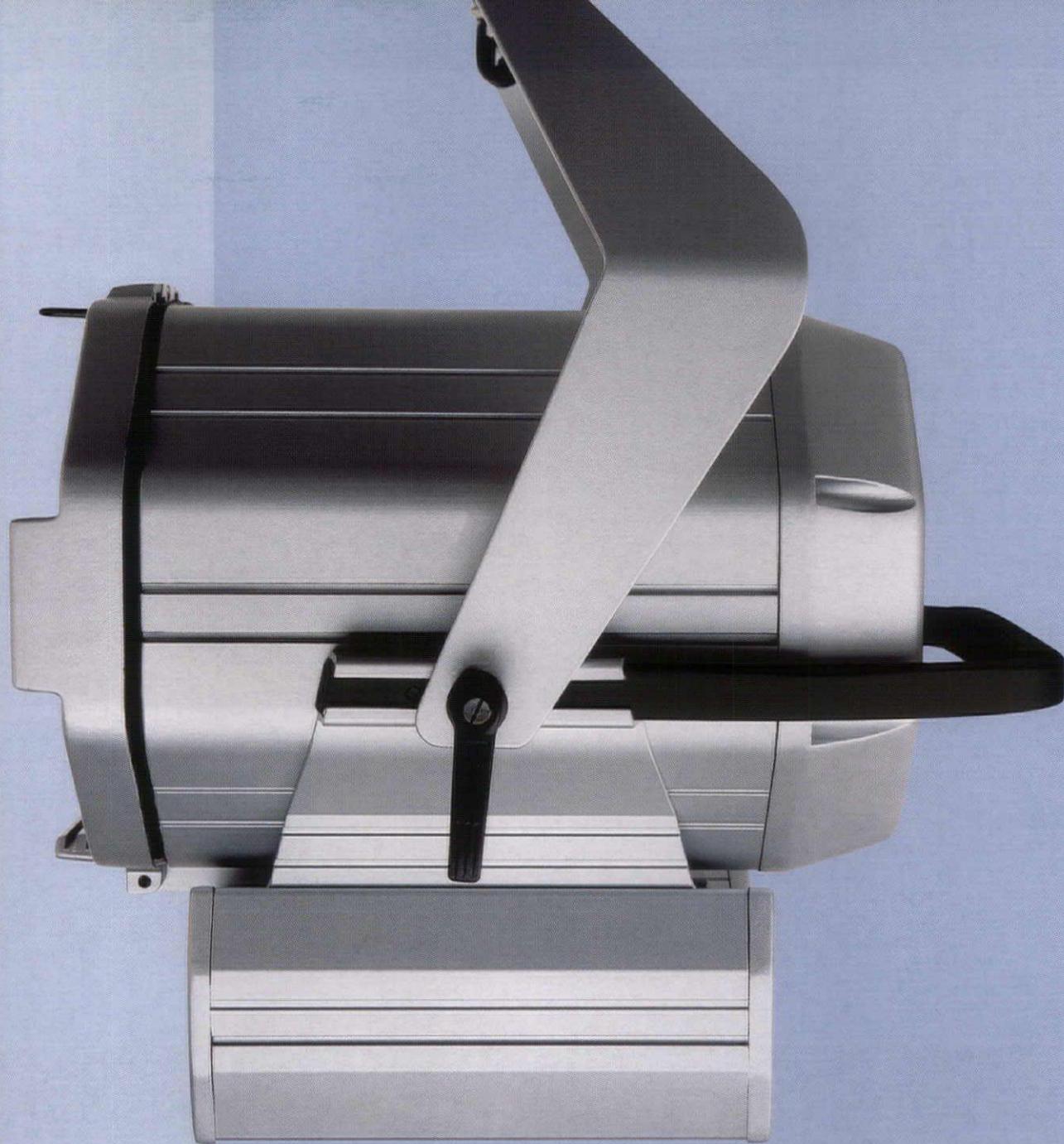


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THE ART OF FUNCTIONALITY

A current exhibit at the Cooper-Hewitt explores the convergence of minimalist and post-minimalist art and functionality. Entitled *Design ≠ Art* ("Design is not Art"), the show brings together a diverse group of 20 artists, and focuses particularly on the work of Donald Judd, Scott Burton, and Richard Tuttle. All of the creations included in the exhibit are not just works of art, but also functioning objects, such as tables, lighting, and chairs. And while their creators are well known, many of these pieces have never been exhibited in a museum setting until now. Taking advantage of the Cooper's location in the former Andrew Carnegie mansion on Manhattan's East Side, the exhibit seeks to create a dialogue between the pieces, while displaying them in a setting that highlights their domestic uses as well as their artistic qualities.

The objects shown at *Design ≠ Art* that can be grouped under the rubric of lighting share little more than the idea of illumination. There are a few old favorites, like Isamu Noguchi's paper and bamboo lamps, whose iconic status has been dulled by too many imitations, or Robert Rauschenberg's *Tire Lamp*, which still has the ability to draw a smile with its knowing wink to the Dadaists. But most of the works will be unknown to a casual art observer, which is exactly what the Cooper wanted. As curator Barbara J. Bloemink explains, "I don't think lighting has even begun to be fully explored as a functional art form. During the late sixties through the seventies, it was seen as a significant art form used by many artists, and I believe it is now, again, being considered more carefully and significantly as design itself is in the ascendent in our culture."

Head over to the Cooper-Hewitt and decide for yourself. The show runs through February 27, 2005. Visit www.cooperhewitt.org, and for extended commentary from curator Bloemink, go to www.archlighting.com/architecturallighting/al/industry/index.jsp. **KL**



Jorge Pardo's *Untitled*, 2003 (above), and Robert Rauschenberg's *Tire Lamp*, 1971 (below). Images courtesy of the Cooper-Hewitt, National Design Museum, New York City.



CITY LIGHTS EVENTS

The two-stage international design competition to create an innovative, state-of-the-art fixture design that responds to New York City's unique architectural and urban landscape, while meeting performance requirements for a city streetlight is nearing completion. In anticipation of selecting a winning proposal, an exhibit and lecture have been scheduled. Details are listed below.

Exhibit: Works from the City Lights Design Competition

Dates: October 21 through November 7, 2004

Location: The Museum of the City of New York

Website: www.mcny.org

The exhibition features models and drawings from the three competition finalists (Atelier Imrey Culbert, New York; Skidmore, Owings & Merrill, Chicago; and Thomas Phifer and Partners, New York) and design concepts by other competitors from around the world.

Lecture: Winner's Lecture

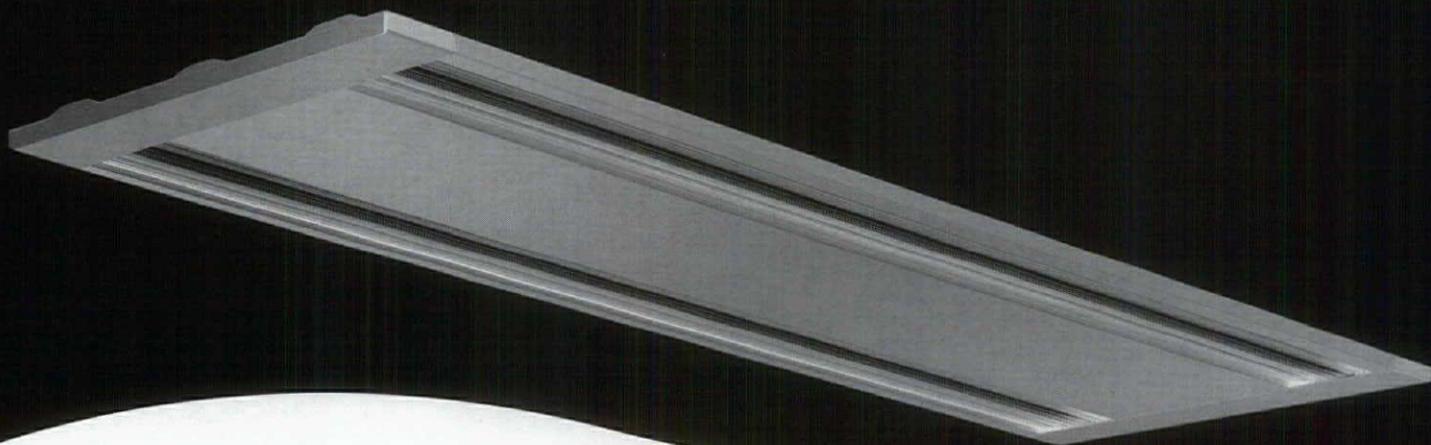
Date: November 8, 2004

Time: 6:00 pm

Location: Center for Architecture
536 LaGuardia Place, New York City

Website: www.aiany.org

The winner of the City Lights Design Competition will discuss the winning entry, which will be selected in October.



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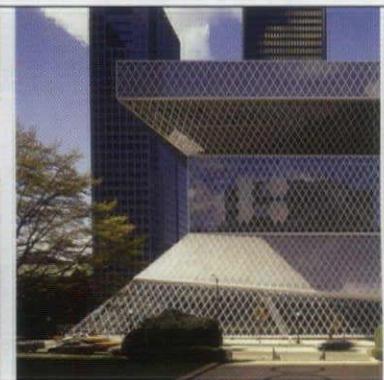
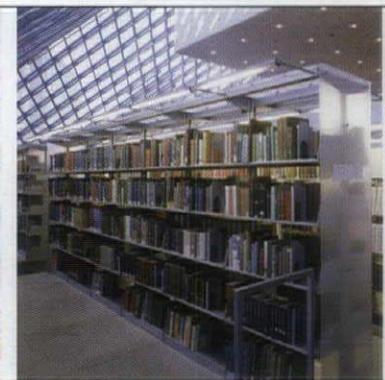
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BRIGHT LIGHTS, BIG CITY

What makes Times Square Times Square? Is it the people? The lights? Whatever your answer, one thing is undeniable: there is no place in the world quite like it. In honor of the Square's centennial, the Times Square Alliance, founded in 1992, is kicking off its first annual Design Times Square—a selection of sites chosen to represent an iconic cross-section of Times Square both old and new.

The 39 selections, picked by a jury of six noted design professionals including architect Hugh Hardy and Van Alen Institute director Ray Gastil, have been grouped into four sub-divisions: interiors, architecture, public space/art, and signage. It is no surprise that signs have their own category. Signage is an integral component to the make-up of this historical district, recognized even by the area's zoning laws, which specify that illuminated signs must decorate the façades of all new buildings within the core Times Square area.

The Alliance invites the public to cast a vote for their favorite designs. But as the 39 contest selections show, Times Square lighting isn't just about the signs. As befits something as bright and brash as this neighborhood, light is an integral component in almost all of the selections. The influence of light can be subtle, as in the subdued interior lighting of the W Times Square hotel; or it can be as obvious as the 10-story light show at the New 42nd Street Studios. The Design Times Square project aims to be more

than just a pretty face, however. As project manager Eddie Nelms explains, "a major role of the program is to capture the iconic essence of the neighborhood, so it is not lost despite the drive for development."

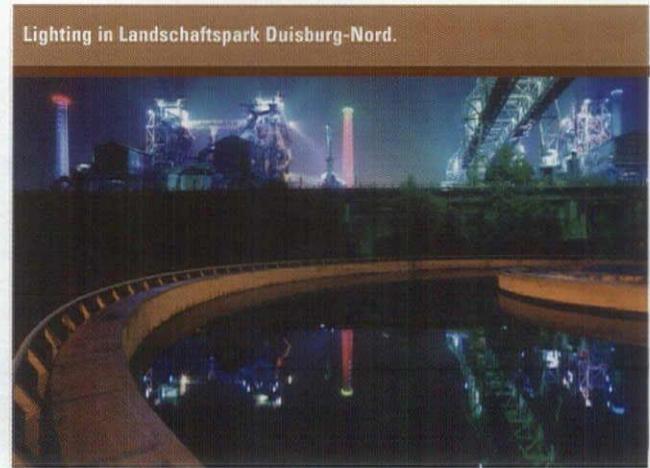
"We want this to be a kind of mood ring for the country," says Alliance president Tim Tompkins. "With signage, whatever new technology comes out is shown off, not just technically, but creatively. As an element, the signs of Times Square are constantly changing. And good design is good for business." Go to www.timessquarenyc.org/design to view selections. Voting ends December 1. **KL**



Lights and architecture seamlessly blend on the façade of the New 42nd Street Studios in New York City. Image courtesy of the Times Square Design Alliance.

ILLUMINATED CITIES

A look at the impact of advertising lighting on the nighttime appearance of cities and the increasing use of lighting spectacles to highlight buildings in North Rhine-Westphalia, Germany, this exhibit focuses on the "interface between light art and city light." *Illuminated Cities—Illuminated Art* is divided into three parts: the integration of outstanding examples of twentieth century light art in the museum's collection; images of international examples of outdoor light art; and new artistic lighting installations designed specifically for Kant park (adjacent to the museum) and in the center of Duisburg. An exhibition catalogue and documentation for public lighting projects in the region will accompany the show, as well as a series of tours and a daylong symposium. The exhibit runs from October 17, 2004, through January 30, 2005. For information, go to www.lehmbruckmuseum.de. **AL**



Lighting in Landschaftspark Duisburg-Nord.

PHOTO: WERNER J. HANNAPPEL

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INNOVATIVE TECHNOLOGY PART OF WINNING COMPETITION ENTRY

A testament to innovation and entrepreneurship, Oprix, an emerging technology conceived of by Abhinand Lath and first reported on in AJL's June 2004 issue (page 51), has been renamed SensiTile, now that it is available commercially. It has also been selected by Zaha Hadid Architects (ZHA) for the firm's award-winning entry, received this September, for the Boulevard der Stars competition in Berlin. The brief called for the creation of a series of plaques to honor German film stars, similar to the Hollywood Walk of Fame. ZHA was one of four firms invited to submit proposals, and ZHA in turn selected SensiTile to develop and fabricate the interactive tiles that make up each plaque. ZHA's scheme proposes 12 SensiTile Terrazzo oval tile-plaques to be installed in front of the Berlin Film Museum, and six additional tile-plaques to be added annually. Tiles will be clustered in groups for directors and actors. The end result will be the "transformation of the pavement and the creation of a living surface for pedestrian traffic."

Utilizing active and passive fiber-optic components organized in an exponential spiral, the tile-plaques will respond passively under daylight or streetlight conditions, while at night, electric light conditions will actively trigger the fiber-optic elements. The overall effect will be hundreds of "points of light emerging from the concrete and dematerializing its mass with a radiance that shimmers and moves in repose to the presence of people."

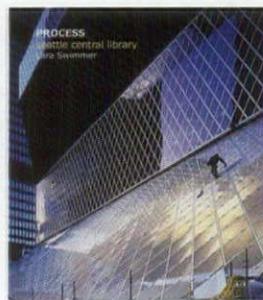
According to ZHA's press release, the firm looked at a palette of materials including transparent concrete (which could be lit from below), stainless-steel castings, and glass beads. The designers wanted "materials that perforate the existing opacity of the floor and make it appear as though it 'floats.' A new development by SensiTile, incorporating terrazzo, passive and active light conducting tubes (fiber optics), excited our imagination as it draws interactive qualities by the simple means of natural or artificial ambient light, without the need for electricity. Ruled by simple low-tech principal, this new material, we found, could provide joy and play on the street." ZHA is awaiting confirmation from the Berlin Film Museum for a project start date in 2005. **AJL**



ZHA's proposal for clusters of tile plaques along the Neue Postdammer Strasse near the Berlin Film Museum.

BEHIND THE SCENES

If you like the project story on page 48, then you'll like this book. Lara Swimmer has been photographing the architectural landscape of the Pacific Northwest for the last decade. Her work has captured some



of the most significant buildings to transform the region, and her images of the Seattle Central Library are no exception. This little jewel of a book captures the process of building and reveals the "how" behind the finished project.

Through a combination of black and white and color images, Swimmer offers a revealing look into the design and construction process behind what many consider to be the single most important building to transform Seattle, architecturally and publicly. Divided into six sections, the book features insightful quotes from the architects, structural engineers, and critics from the region. But text is really not needed; the pictures do the talking.

With their acute compositional understanding, Swimmer's photographs reinforce that the process is equally as important as the finished building. **ELIZABETH DONOFF**



EX-5



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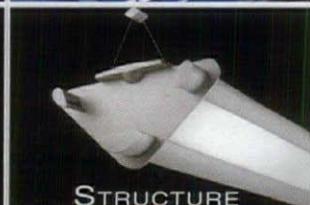
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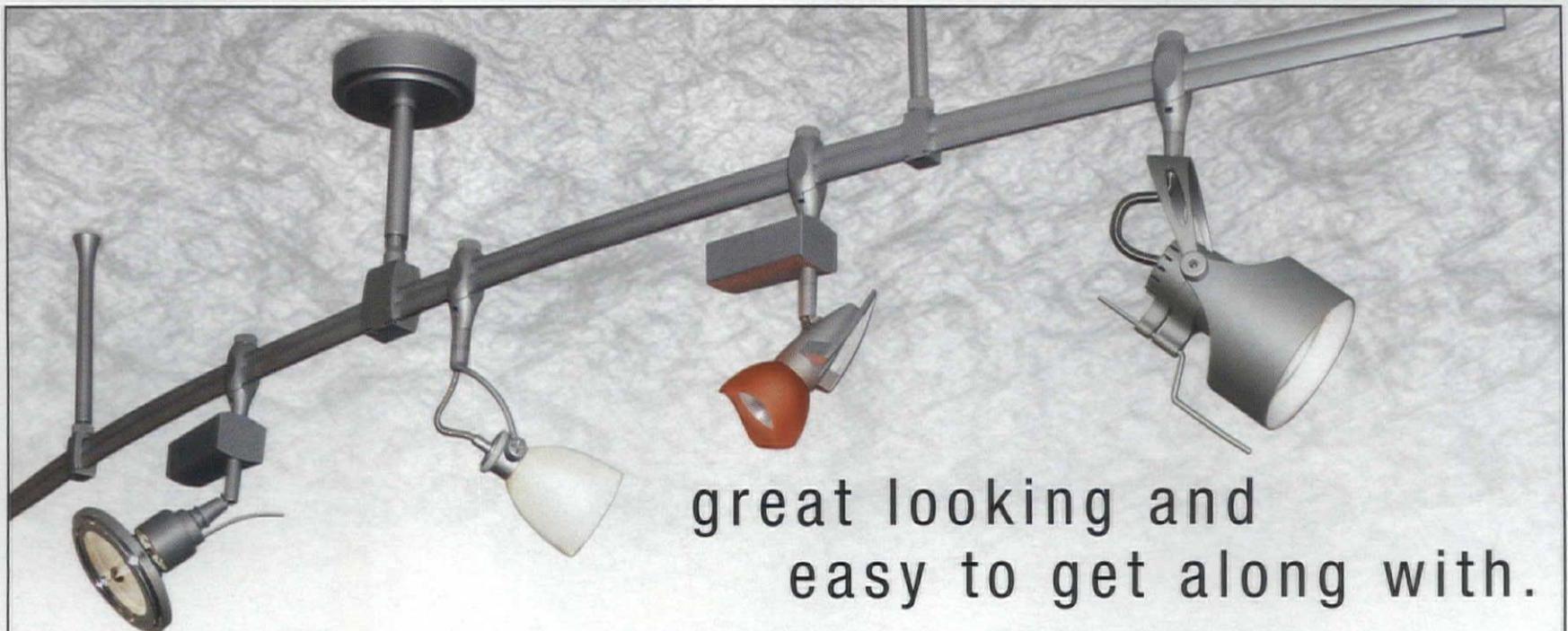
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Design a light fixture to light an 8' wide exterior pathway in an urban park. The park is in proximity to the ocean, in a relatively mild climate where it sometimes snows in the winter. The light fixture needs to illuminate the path as well as provide security. Consider the issues of safety, glare, light trespass and light pollution when designing your fixture. Also consider the issue of identification of people and surround. Your fixture should use high efficiency sources, such as compact fluorescent or metal halide lamps, or LEDs. The ballast should be integral to the fixture. Self-ballasted lamps and other retrofit lamps are not acceptable. Identify all major interior and exterior components and materials. Describe how your fixture addresses the environment and task.

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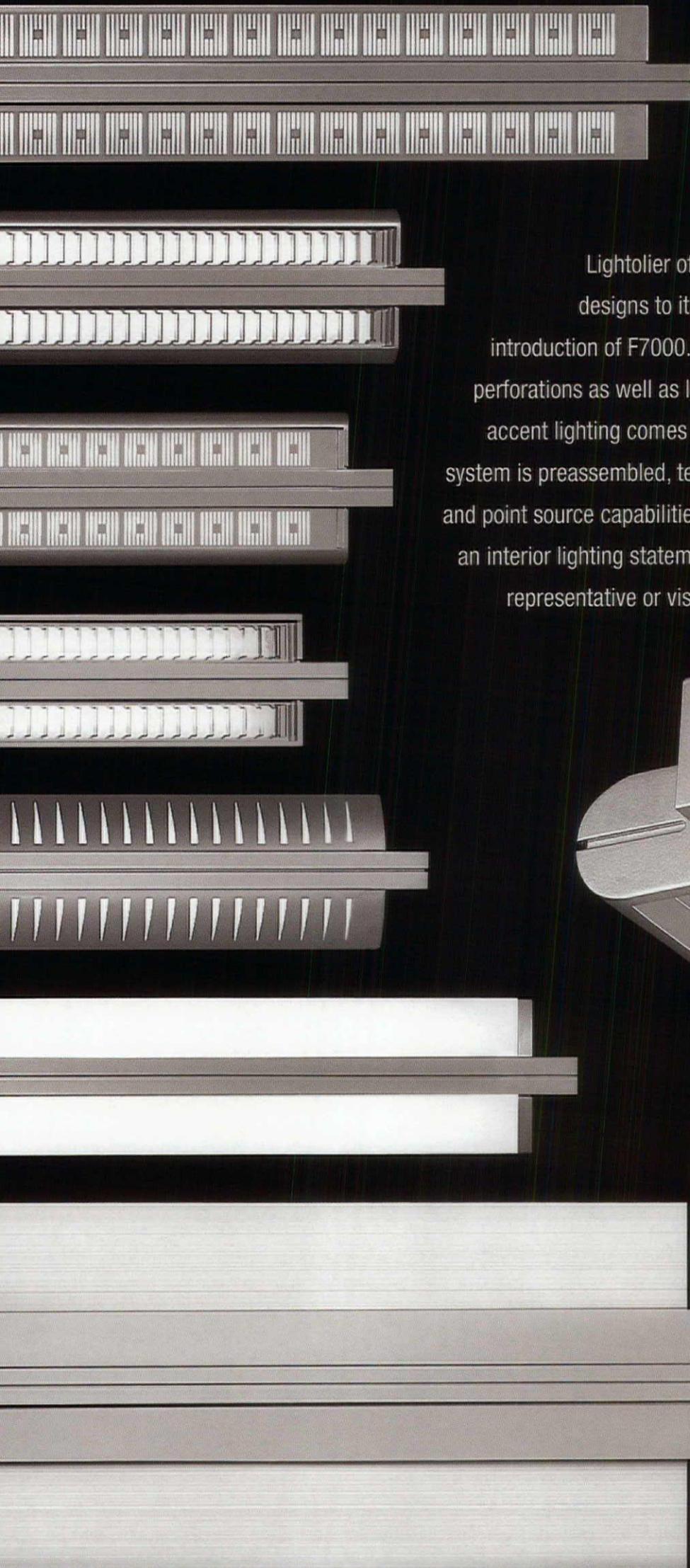
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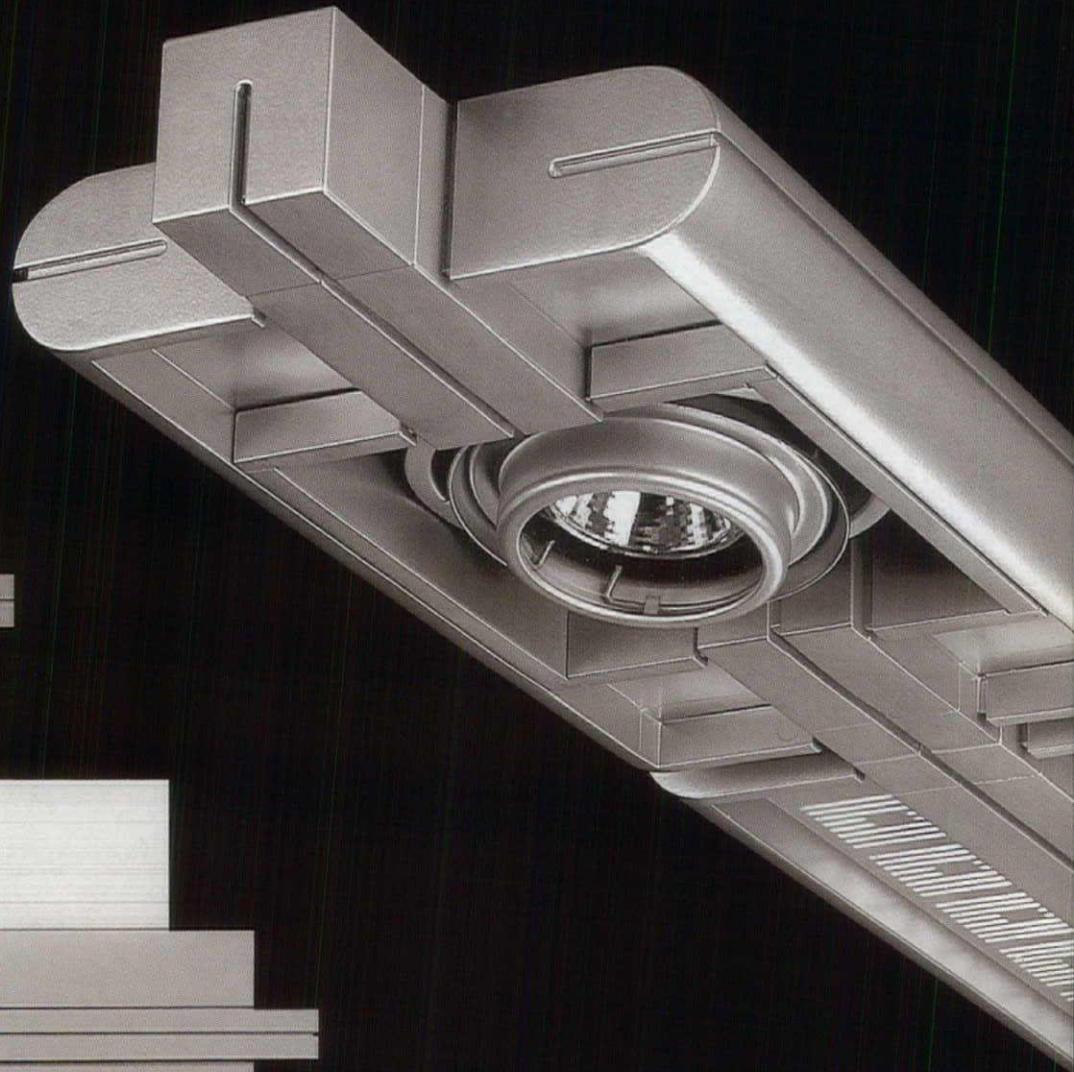
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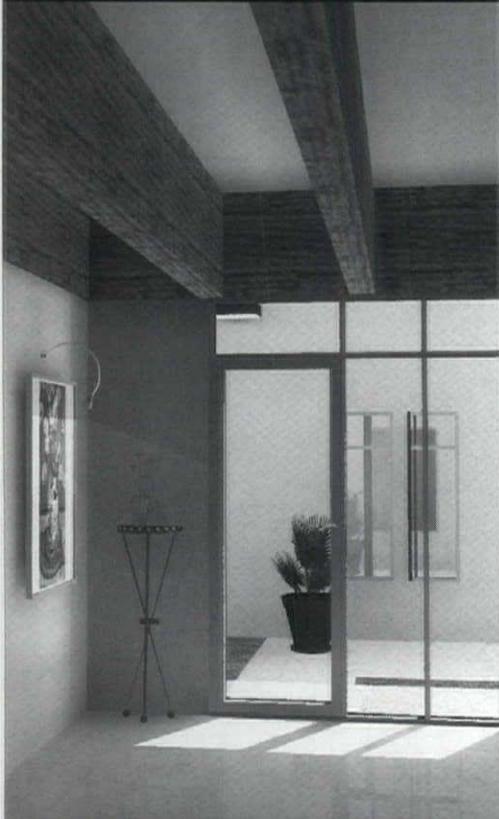
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LIGHTING ENERGY CODE DEBATE: PART II

WILLARD WARREN RESPONDS TO AMIE ZINER:

In the July/August 2004 issue of A|L (page 16), Amie Ziner of Buchanan Architects responded to my letter, "Lighting Energy Codes Squelch Creativity," published in the April/May 2004 issue (page 18).

She wrote, "I like my lighting to be aesthetically pleasing, environmentally sound and economical," and so do we all. Ms. Ziner cites the Barrier Motors project, illustrated in the April/May issue of A|L, done under the strict Washington State energy code, as an example. The article explains that with regard to the Washington State energy code, "There were, however, a few exceptions: the designers used an integrated track with an indirect system within four feet of the display windows, and the low fluorescent lamps were categorized as aesthetic and, therefore, not considered part of the indirect system."

The July/August issue is the first A|L Light + Architecture Design Awards. Nine projects are honored, and eight of them list the connected load in watts per square foot. Not one of them meets the limits of the new 2003 IECC "energy code." Power density in watts per square foot is not energy consump-

tion. Energy codes do not encourage energy conservation measures nor reward them like the LEED qualifications. If a space were almost totally daylighted with lights used only rarely at night, the power density limits still apply.

Energy codes should be written to encourage energy conserving measures and reward the design with power adjustment factors, like California's Title 24, and all the DSM rebate programs popular 10 years ago. The creative judgment and the verification should be left to the designer, not to the code writer.

"Energy codes" do squelch creativity, especially in hospitality, retail, and dining occupancies, which must be attractive destinations to succeed financially. Even today's popular strict diets allow for dessert, so should treats for the eye.

Willard L. Warren

Willard L. Warren Associates, New York City

THOUGHTS ON THE JULY/AUGUST EXCHANGE QUESTION

The independent lighting consultant: Is there real 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 consultants?

It was interesting to me, and I am sure many other A|L subscribers, to read the industry exchange page in the July/August issue. The fine lighting consultants unanimously and empathetically agree that the lighting consultants only loyalty and responsibility is to the client. That is the way it should be. This is equally true of the architect and all of the other consultants on any project. It is the only professional way to conduct a business or profession. As stated, the question often arises whether a professional lighting consultant should ever get involved in the purchasing of the lighting and control equipment specified by them on a project. It depends on the consultant's business philosophy, the project, and the client's wishes.

A lighting design firm can be completely independent and still provide additional services to the client, services, such as, buying and/or installing the lighting and control equipment for the project that the firm specified. These services are provided by agreement and contract with the client for an agreed upon fee. It is up to the client and the consultant to agree on when these services are desired, and at what cost. The question of whether an independent architectural lighting design firm buys and/or installs equipment that they specify is really a business decision that each firm has to make for itself.

Sonny Sonnenfeld

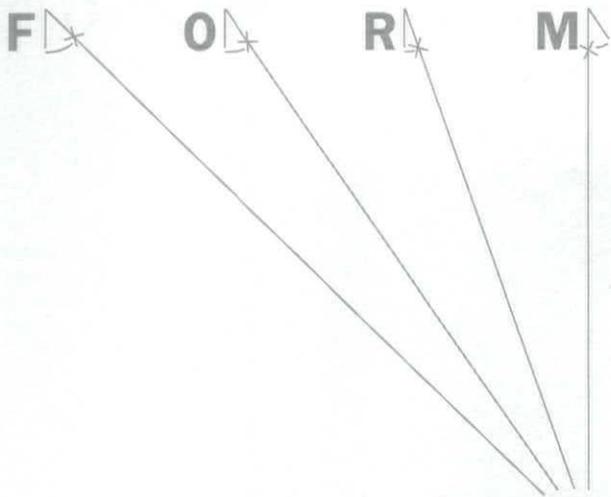
Henderson, NV

I think the issues related to the IALD no purchase-no install policy really has more to do with the ethics of basic business practices. Would a lighting designer specify more luminaires than needed and/or mark up the cost of a luminaire to make a greater profit? The landscape Architecture Association used to (and may still) require, like the IALD that members not sell products. I've always felt that this policy was good for landscape architects. As an independent lighting consultant firm and sole-practitioner, occasionally, I need to purchase luminaires for my clients, and the product is passed onto the client at my cost. In my mind the ethical question is: is it too tempting for a lighting designer to oversell a client for the designer's benefit, not the client's.

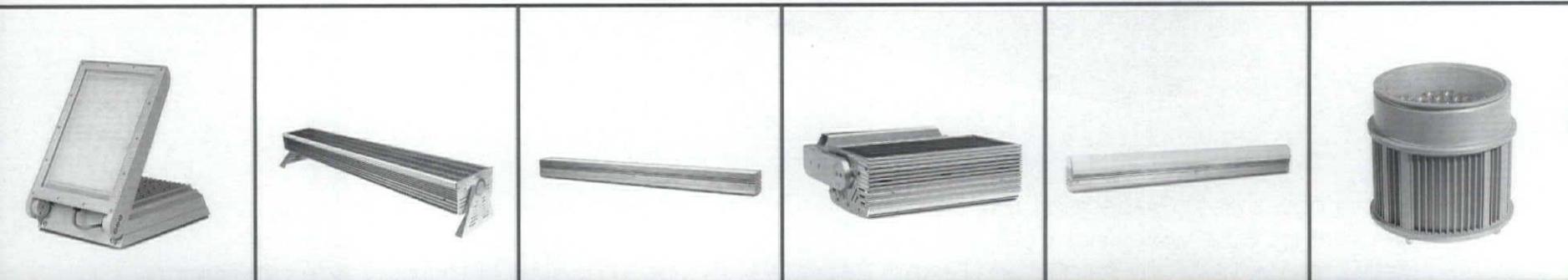
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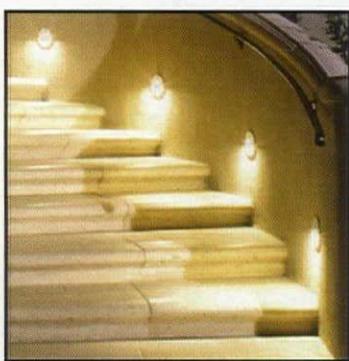
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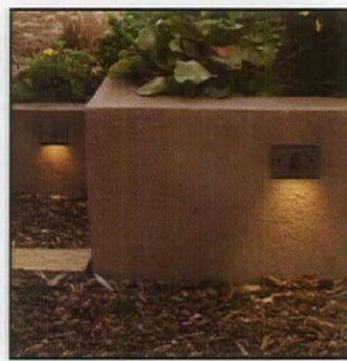
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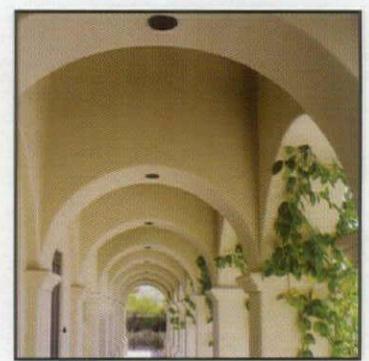
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Codes: The Good, the Bad, and the Ugly

JAMES BENYA

LIGHTING ENERGY CODES HAVE BEEN THE TOPIC OF MUCH DISCUSSION LATELY. In its June 2004 Exchange column (page 56), *Architectural Lighting* featured comments from the industry on energy codes. It seems many designers view these guidelines as an obstacle to design, since they regulate both the types of sources as well as the wattage, while others see them as a necessary step toward more sustainable design. But what very few people see, is the struggle for balance that modern energy codes try to achieve.

The energy crisis of the early 1970s caused massive changes in U.S. energy regulation, with a series of federal laws and executive orders since then requiring the implementation of energy codes. The Federal Energy Policy Act of 1992 made ASHRAE/IESNA 90.1-1989 the national reference standard, requiring states to adopt it or an alternative energy model at least as stringent. Periodically the Department of Energy is required to consider and adopt a more stringent standard, and since 2002, the national reference is ASHRAE/IESNA 90.1-1999.

The International Energy Conservation Code (IECC) is a simplified model roughly equivalent to 90.1. Many states do not want to enforce complex codes, and IECC offers a workable alternative. In terms of lighting, IECC is almost the same as 90.1. The IECC was developed largely by the New Buildings Institute and other contractors to the International Codes Commission.

California's Code of Regulations Title 24 Part Six ("Title 24") is the only major alternative to 90.1; it is equally large, and in some cases, more complex. For instance, in lighting, Title 24 has significantly more restrictions and requirements than 90.1. This complexity has both positive and negative aspects. Title 24 is also the only energy code to regulate lighting within living quarters. (Having been personally involved in developing this code since the 1980s, I admit to prejudice in claiming it is the best of the bunch.)

Owing to the size and complexity of 90.1, a number of "state-specific" codes have been developed. After all, IECC did not appear

No matter the type of project, one thing is clear: lighting energy codes are not going away. Designers must learn to communicate with regulatory agencies as they seek a balance between efficiency and creativity.

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TODAY'S CODES

There are three significant codes in the United States today:

ASHRAE/IESNA Standard 90.1 is a large, daunting code that covers most aspects of building energy use. Compared to building envelope, HVAC, and other sections, lighting is comparatively simple, occupying only about 12 pages of 90.1's 600-page tome. The lighting section of 90.1 is straightforward, easy to understand and to implement. While Standard 90.1-1999 is the federal standard, 90.1-2001 and 90.1-2004 are more recent versions that include changes and updates. Many states use Standards 90.1-1999 or 90.1-2001; Standard 90.1-2004 is so new that few have probably even read it. Because ASHRAE and the IESNA are co-owners and developers of 90.1, it has considerable credibility among lighting designers.

on the scene until 2000, by which time states that wanted a simpler guideline had already created their own. For example, the Oregon Energy Code, which started out as a simplified code allowing 90.1 as an alternative, has now dropped the 90.1 relationship altogether.

CODE COMPONENTS

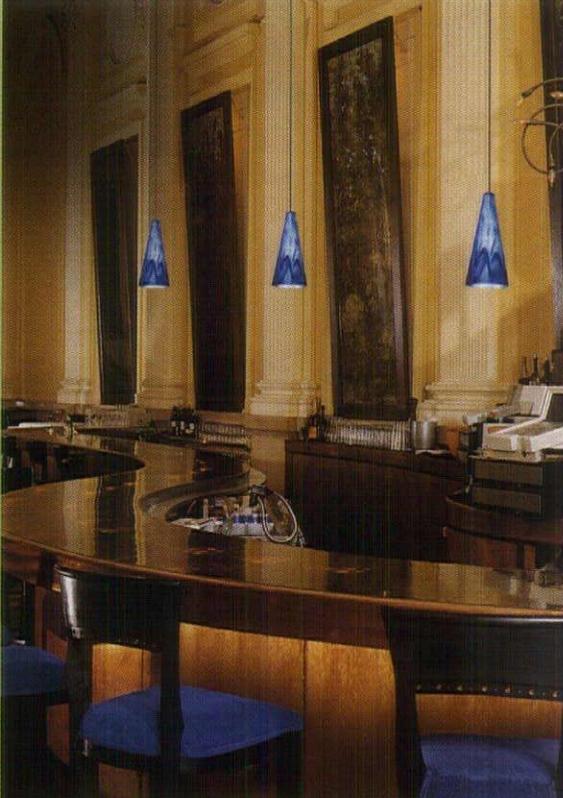
Codes are comprised of a combination of several regulatory methods, including:

- Lists of exemptions and exceptions, such as surgical lighting or emergency exit signs.
- Rules, such as how much wattage must be counted for track and other loads.
- Mandatory measures, such as switching, circuiting and controls.
- Simple prescriptive requirements such as the unrestricted use of low-wattage, highly efficient and efficacious luminaires.

TABLE 1: A SELECTION OF LIGHTING ENERGY CODES FOR RETAIL APPLICATIONS

CODE / VERSION	POWER ALLOWANCE for GENERAL LIGHTING	POWER ALLOWANCE for WALL DISPLAY	POWER ALLOWANCE for FLOOR DISPLAY	POWER ALLOWANCE for CHANDELIERS or SPECIAL NON-DISPLAY LIGHTING	OTHER PROVISIONS / NOTES
90.1-1999: Space-by-Space Method	2.1 w/sf	1.6 w/sf, or 3.9 w/sf for fine merchandise, including jewelry, china, and fine apparel		1.0 w/sf	
90.1-2004 and IECC 2003: Space-by-Space Method	1.7 w/sf	As above, except above values are applied only to the actual display area*		1.0 w/sf	
Title 24-2001: Tailored Method	2.0 w/sf	Up to 4.34 w/sf of wall area actually used for display; allowance varies with ceiling height and throw*	Up to 2.34 w/sf of total floor sales area based on layout; allowance varies with ceiling height and throw*	None	Up to 20 w/sf of display case for "very valuable" merchandise*; additional power multiplier for ceiling heights over 15 feet; "controls credits" possible
Title 24-2005: Tailored Method	0.9 – 1.4 w/sf depending on room cavity ratio (RCR)	21 w/lineal foot of sales area perimeter and internal full-height partitions	1.5 w/sf	0.7 w/sf	Same as above, but for ceiling heights over 12 feet
Minnesota NOTE: Values depend on area factor. Numbers given are for 12-foot ceilings	6.0 – 7.2 w/sf for jewelry; 2.9 – 3.5 w/sf for fine merchandise 2.7 – 3.2 w/sf for mass merchandise	None	None	None	Area factor is multiplier that compensates for high room cavity ratios; it can increase these values by 50 percent in spaces with extremely high ceilings
Seattle 2003	1.5 w/sf	Up to 1.5 w/sf of display lighting is exempt		None	None
Seattle 2003 Prescriptive	Unrestricted use of 1- or 2-lamp T2, T5, T5HO, T8, or compact fluorescent luminaires (except strips) equipped with dimming ballasts and unrestricted use of 150W (max) ceramic metal halide luminaires with electronic ballasts				
Oregon 2003	4.0 w/sf for jewelry 2.0 w/sf for all other	None	None	None	None

* Requires submission of plans indicating area and type of display.



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- Whole-building power allowance, which is determined by multiplying the building's total interior area by the permitted lighting power density.
- Area category power allowance, which calculates interior illumination of each area, separately.
- Space-by-space power allowance, which determines interior illumination for spaces, individually.
- Task-by-task power allowance, which determines allowed power for interior illumination by each task.
- Exterior lighting power allowance, where exterior illumination is determined individually for each exterior lighting task.
- Additional allowances, for spaces or tasks under certain conditions. Often these allowances, such as for display or ornamental lighting, are "use it or lose it." In other words, where general lighting power can usually be traded between spaces, use-it-or-lose-it allowances can only be used for the specific application and space. In California, the ability to use "controls credits"—power reduction credits for the use of certain energy-saving control devices or systems—is also available.

Most models employ only some of these approaches, and the simpler the code, the fewer the options. For example, Title 24 incorporates all except the simple prescriptive method; Oregon only employs the whole-building and space-by-space methods, with no additional allowances.

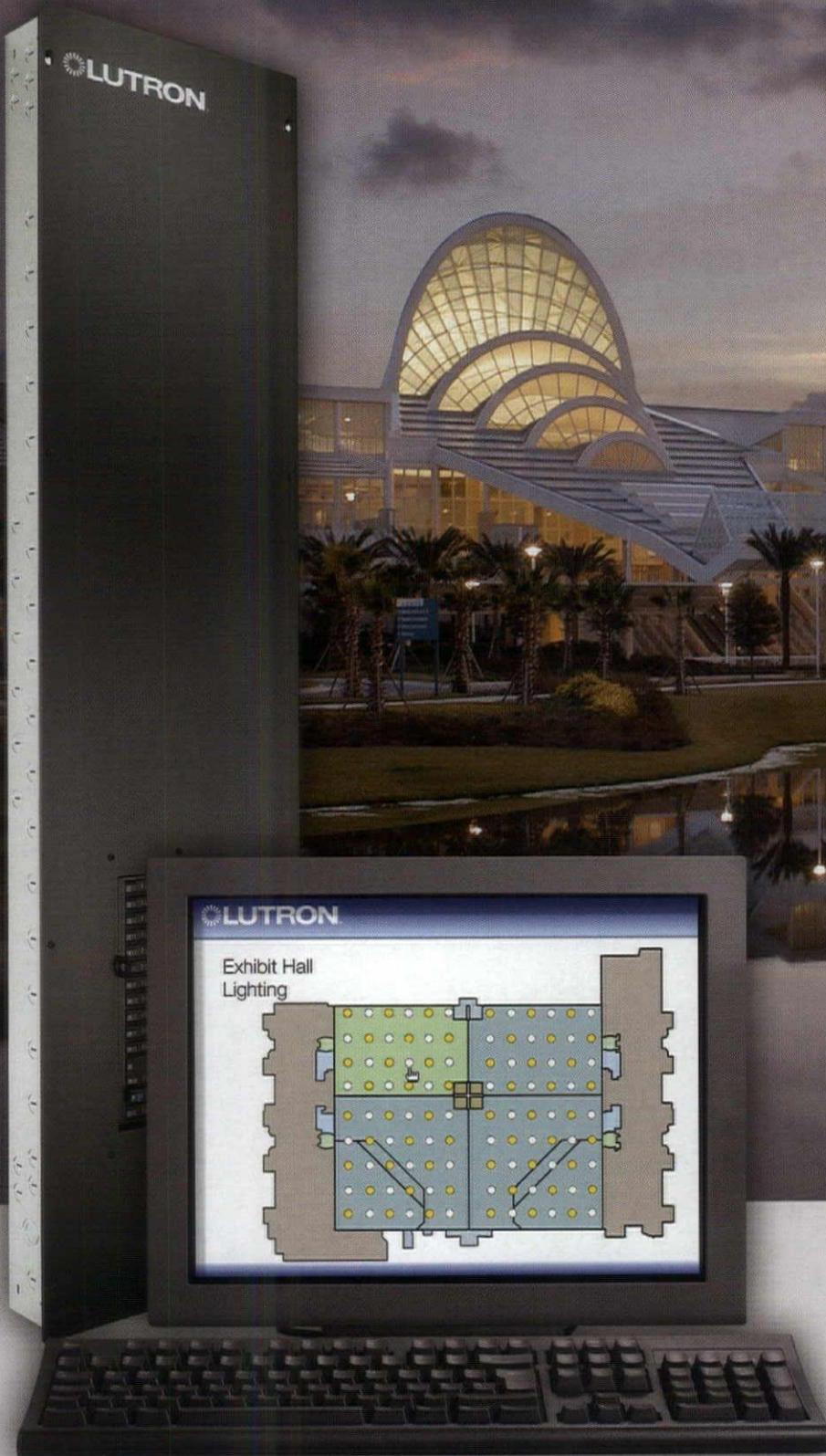
GOOD CODE, BAD CODE

Some might say any code restricting lighting creativity is bad, and to a certain extent, they are right. The issue is, (CONTINUED ON PAGE 35)

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not having a code is not an option. So the challenge is to develop guidelines that do not unreasonably restrict lighting power and applications.

Mandatory measures are very similar among most codes today. They tend to be principally concerned with control, ensuring for example that each space has at least one switch. The biggest issue with mandatory measures involves the extent of controls: In California, automatic shutoff, separate daylight zone switching, multi-level lighting controls, and in some cases, automatic daylight dimming are all required. For now, the mandatory measures are relatively "common sense" and not much of an issue. But then again, there is the Seattle code that effectively requires automatic daylight dimming—even after limiting offices to 1.0 watts per square foot and schools to 1.2 watts per square foot in one of North America's most daylight-deprived areas. Cost effective? Not!

Power density values for the major codes—Standard 90.1 and Title 24—are developed using a process in which lumen-method models are analyzed for their power needs. For each space, a lumen-method model is created in which a task is assigned a pro-rated area, a specific CU (coefficient of utilization), a source LPW (lumens per watt), and an illuminance level. These are added to determine the average lighting power density for the space. If properly determined, the models include general lighting, task lighting, focal and display lighting, wallwashing, and decorative lighting, depending on the building or space type. For each lighting type, the model assumes the most reasonable high-efficiency lighting system. Models are vetted among professional lighting designers, IESNA committees, and the industry to ensure that the choices are reasonable. Lesser codes, such as state-specific guidelines, are generally not modeled as thoroughly nor are they vetted, but rather, they are an amalgamation of values and decisions by the code developers. In other words, while 90.1 and Title 24 have stood the test of public review, codes like those for Seattle and Oregon are too often full of politically correct requirements that often make good lighting design nearly impossible.

The real challenge for the authors of lighting regulations is that contractors, code officials, and just about everyone else want simple, headache-free codes. Code enforcement is a major issue, since inspectors don't have the interest or time in their already overloaded schedules. Furthermore, every member of the design and construction process sees energy codes as one more item that costs money—more design time, more paperwork, and more expensive materials and equipment. Hence, the demand for simpler codes.

For lighting designers, however, simplification is frequently problematic. If a code is too basic, either it will not effectively regulate, or it will unreasonably restrict lighting design. Nowhere is this

more apparent than in specialty and high-end retail lighting. Within reason, most other building types can be designed with modern equipment, and achieve acceptable lighting levels while meeting code. (Lighting-intensive applications, such as lighting stores, nightclubs, theaters, and theme parks, are typically exempt.) The more demanding

retail lighting environments, however, which concurrently require high display levels, elegant aesthetics, and excellent color, can reasonably require three to four times the lighting power levels needed by offices, schools and other common buildings. Moreover, it is difficult to differentiate between general retail, specialty retail (i.e. slightly

upscale), high-end retail, and the exceptionally demanding jewelry and china sales environments. Table 1 on page 32 provides a sampling of how various codes treat retail lighting.

As Table 1 indicates, a designer taking full advantage of Standard 90.1, IECC, or Title 24 can properly justify and (CONTINUED ON PAGE 36)

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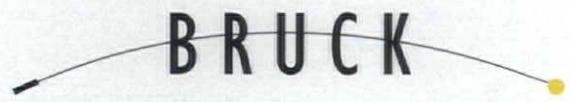
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use 4.0 to 5.0 watts per square foot or more for high-end retail, and over 6.0 watts per square foot for jewelry stores. The secret to success is to utilize every allowed watt in the code, and to apply efficient equipment wherever possible. In general this means abundant use of high-efficacy lamps, but some halogen infrared display lighting and decorative

incandescent lighting is still possible.

In states with their own codes, the reduced allowances for retail lighting will force designers to use more expensive, or very ordinary, lighting equipment. For example, in Minnesota, code-complying retailers must use either general lighting systems or expensive ceramic metal halide display technology.

By code, the intermediate lighting options have been eliminated, and that is the problem. The broad acceptance of ceramic metal halide lighting in Europe—and for that matter in New York—is partly understandable when peak electric rates exceed 20¢ per kWh, and ceramic metal halide pays for itself in a few years. But at 8.5¢ per

kWh, the US national average, ceramic metal halide is not cost justified, and compared to halogen, it can increase the cost of display lighting systems by 500 percent.

Then there are the Pacific Northwest criteria, which are some of the strictest in the country. Seattle's code allows a total retail lighting power of 3.0 watts per square foot, unless one is willing to spend heavily on ceramic metal halide and dimming ballasts for fluorescent lighting systems. But for retail scenarios, Oregon's code is one of the most difficult to work within, where retail stores are limited to 2.0 watts per square foot, with no alternative of any kind. (Jewelry stores are allowed 4.0 watts per square foot.) Oregon's code delivers a clear message to retail merchants: Don't build in Oregon unless you change your store dress and lighting to the basic level of a grocery store.

There are other building typologies that also suffer under energy codes. For instance, in Oregon, libraries are classified as schools. Try lighting a library at 1.0 watt per square foot! Or how about lighting a hotel ballroom at 2.0 watts per square foot? Bye-bye chandeliers.

WHERE DO WE GO FROM HERE?

Many energy advocates believe lighting energy codes can continue to be refined. For instance, in California's 2005 code development process, Pacific Gas & Electric (PG&E) pressed for retail lighting standards to be based on models using ceramic metal halide display lighting. This would have dropped the California watts-per-square-foot values closer to those in Minnesota or Seattle, essentially limiting jewelry store lighting to about 4.5 watts per square foot and high-end retail to about 3.5 watts per square foot. But the PG&E initiative failed because California requires its energy code provisions to be cost effective.

Should ceramic metal halide prices drop (and quality remain high) enough to make it a more broadly useful technology, then one more round of reductions may be possible. But remember, metal halide is not a dimmable source and can *only* be used in retail and other settings without frequent switching.

Beyond this point, it is probably a good idea for ASHRAE, the IESNA, the Department of Energy, and all others interested in lighting energy codes to back off for a while and fix what we have. Both Standard 90.1-2004 and Title 24-2005 are already based on "super T8" and T5 technology. LED is not yet an energy-efficient lighting system and probably won't be for a decade or more. And dimmable fluorescent lighting is *less* energy efficient than non-dimmable, since one must dim fluorescent lights 25 percent just to get system power equal to the full output of the non-dimming system! There are simply no other pressing new technologies (CONTINUED ON PAGE 38)

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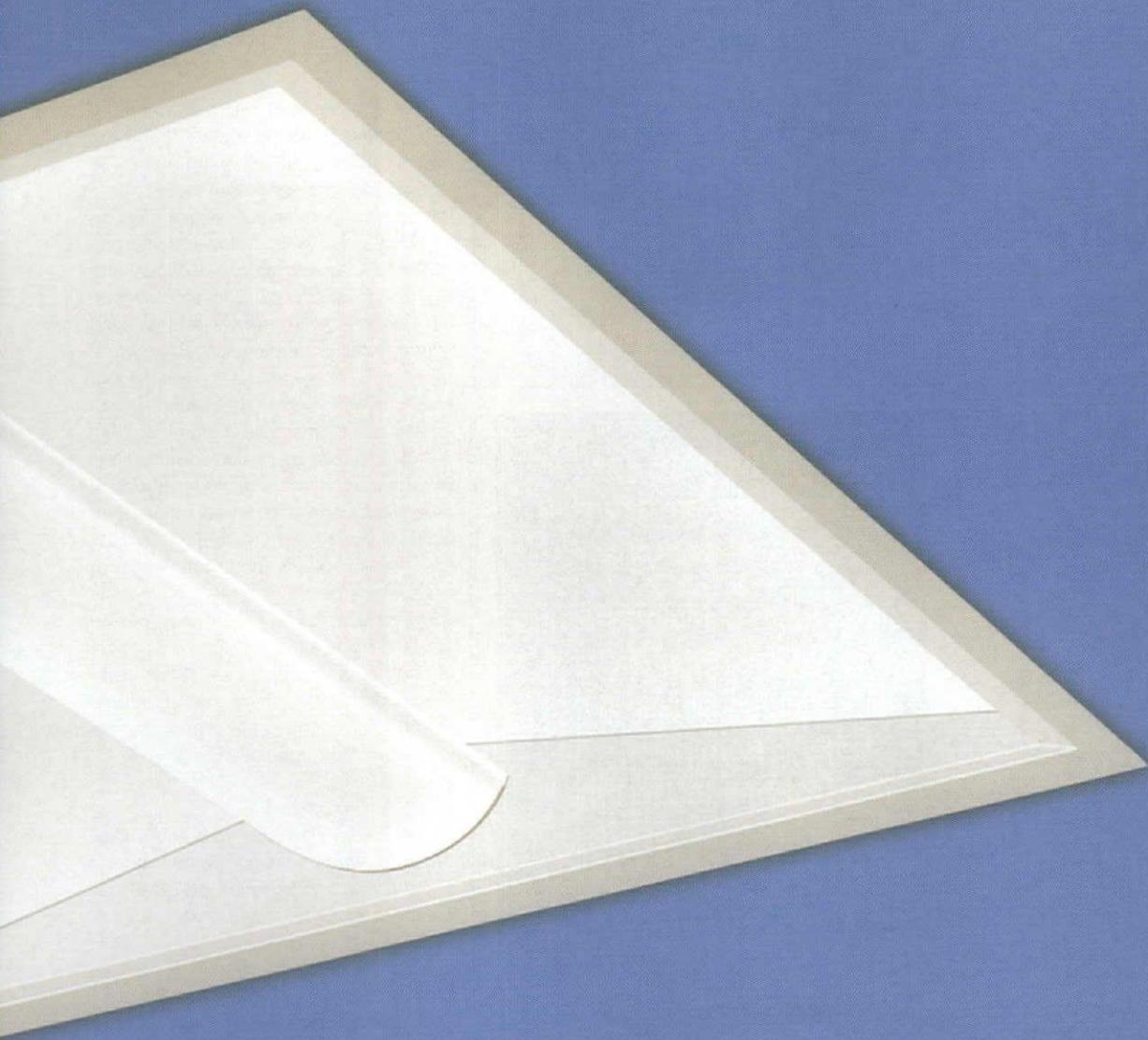
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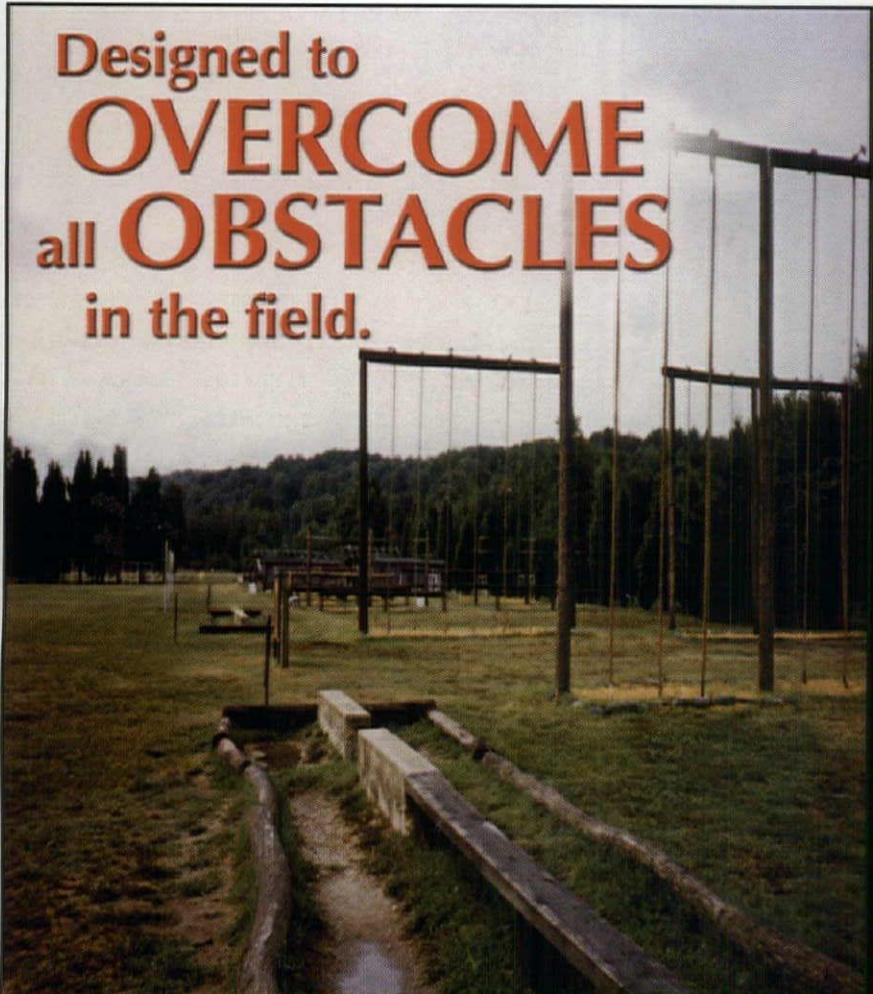
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LIGHTING CODE RESOURCES:

xp20.ashrae.org/frame.asp?standards/std90.html to view (but not copy or print) ASHRAE/IESNA 90.1-2001 for free.
www.energy.ca.gov to download the California Energy Code (2001 and 2005 available) plus supporting documents.
www.ci.seattle.wa.us/dpd/energy/nonres/CHAP15.htm for the Seattle Energy Code.
www.state.mn.us/mn/externalDocs/Chapter_7676_Commercial_111302012949_76rule.pdf for the Minnesota Energy Code.
www.energy.state.or.us/code/ccm/2003_Ch13-eff040104.pdf for the Oregon Energy Code.
www.bcap-energy.org a well-updated reference for energy codes, URLs and the status of code development.

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on the horizon that will make lighting sufficiently more efficient than the codes can be made any more restrictive.

Lighting professionals should learn to develop compliant designs and to reinforce reasonable codes and interpretations. By recognizing that good lighting design is conscious of energy use, we continue to make the architectural lighting design profession stronger. It takes genuine expertise to accomplish quality lighting within the boundaries of energy codes and other limitations.

For those of us in states with unreasonable codes, we need to let our state energy departments know that their actions are at least unfair, and typically, have major unintended and negative consequences. We need to change these regulations so that a good design in California is a good design in Oregon, rather than a code violation. A bad code means one of two things: either people won't build, or those that do, will find a way around the regulations. ■

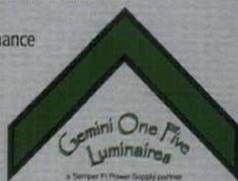
James Benya is a professional lighting designer and principal of Benya Lighting Design, West Linn, Oregon. He serves on the editorial advisory board of A/JL.

Author's note: Based on a belief in controlling my own destiny, I have helped develop energy codes for almost 30 years. My resume includes providing analytical assistance to California in the 1970s, and then joining California's Advanced Lighting Professional Advisory Committee (ALPAC) in the mid-1980s; serving on and chairing the IESNA regional energy committee that developed the second-generation version of California Title 24; serving as a paid consultant to the California Energy Commission in developing two major Title 24 rewrites (1992 and 2005); and participating as a full member of the ASHRAE 90.1 committee that developed 90.1-1999. Since 1985 I have given many hours of pro-bono service to the IESNA Energy Committee, the IESNA South Pacific Coast Energy Committee, the California Energy Commission's ALPAC, LEAGue (Lighting Efficiency Advisory Group), Advanced Lighting Advisory Group (ALAC), and recently, the California Public Interest Energy Research (PIER) program.

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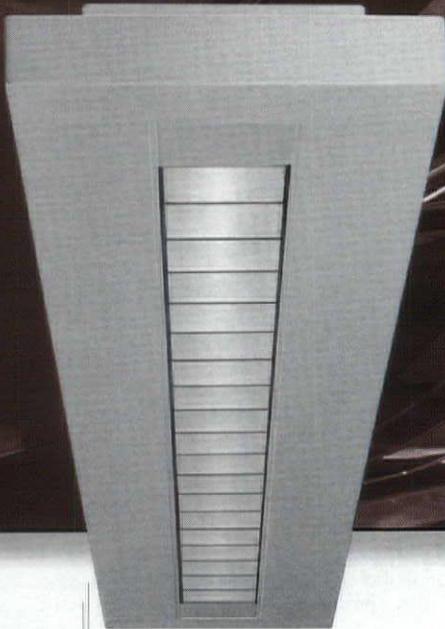
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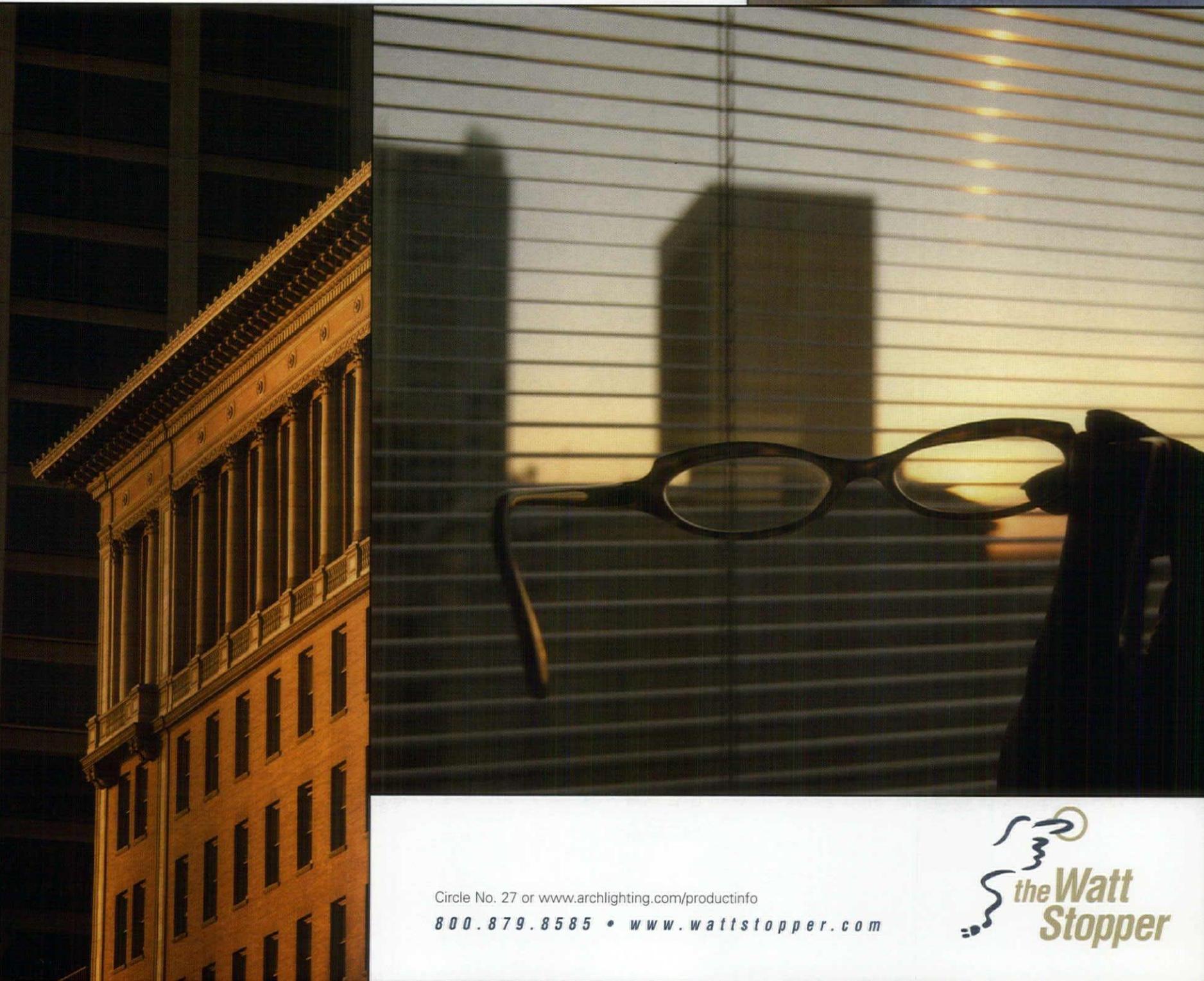
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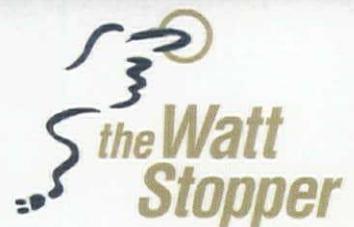
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Looking into the Crystal Ball

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THE YEAR'S ECONOMIC ROLLER COASTER BEGAN WITH GOOD NEWS IN THE FIRST quarter, as the economy grew 4.5 percent, consumer spending increased 4.1 percent, and the recovery finally began producing a net gain of jobs.

In the second quarter, economic growth slowed to 3 percent, consumer spending dropped to 1 percent, and the deficit was revised to a staggering \$454 billion. The third quarter was also off to a bad start, with negative consumer spending, slower job growth with 32,000 new jobs (versus 650,000 in the second quarter), an increase in interest rates by the Fed, and disappointing retail sales. During this period, the construction industry, which had suffered a 25 percent reduction in non-residential construction spending from its peak in 1999, was dealt another bad hand as the price of commodities, such as oil and steel, skyrocketed.

And yet, despite these stats and other forms of adversity, from rising costs to foreign competition, many of the lighting industry's leading manufacturers are not only surviving, but thriving, reporting rising sales and profits—some even posting record sales growth, as shown in Table 1.

With success accompanied so closely by economic uncertainty,

current chief executives of lighting companies are cautious—meaning, for example, we will probably see fewer acquisitions in the short term compared to the large-scale consolidation of the 1990s—but they are also optimistic about the future, and are continuing to invest in product innovation. Most believe the lighting market to be fundamentally sound. Some even see great opportunity.

MARKET OUTLOOK

While "optimism" is consistently qualified with "cautious," the predominant perspective is still positively inclined. The market during the last six months to a year has been hard to predict, says Dave Feldman, president of Cooper Lighting. "There appears to be traction in some of the segments that will bode well for growth during the rest of 2004 and 2005. I think 'cautiously optimistic' is a good description of how we feel at Cooper Lighting."

Larry K. Powers, chairman, president and CEO of Genlyte, believes that significant cost increases impacting all lighting manufacturers is creating uncertainty, but says that current conditions in the lighting market are improving. "Everyone I talk to agrees that business has improved in the first half of 2004, but they are

After a tough few years, the lighting industry faces the future with optimism tempered with a healthy dose of caution.

Table 1. Some of the industry's largest manufacturers are reporting solid sales growth in 2004. Shown is the percentage increase in sales this year, over the same period in 2003.

Manufacturer	Q1/04	Q2/04	First Six Months
Cooper Industries*	10.0%	9.7%	9.9%
The Genlyte Group**	16.6%	18.6%	17.6%
Hubbell Incorporated***	11.0%	12.0%	11.5%
Juno Lighting Group	16.9%	28.2%	23.0%

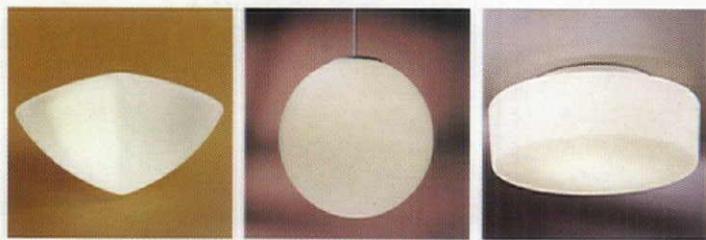
* Entire company, including lighting division, with one acquisition, RSA Lighting.

** With two small acquisitions, a pole company and a small foundry.

*** Entire company, including lighting division.

Table 2. Lighting manufacturers have responded to skyrocketing steel, copper, oil and other costs by increasing prices across the board on their products in the spring of 2004. Below is a sampling of the industry.

Manufacturer	Price Increase
Advance Transformer	8% (fluorescent magnetic)
Cooper Lighting	3-9%
Daybrite	5-8%
GE Lighting Systems	Average 5%
The Genlyte Group	5-8%
Howard	8% (fluorescent magnetic and HID)
Hubbell	About 8%
Juno Lighting	3-5%
Lithonia Lighting	4-8% (fluorescent)
	About 5% (HID and downlight)
Robertson	8% (fluorescent magnetic and HID)
Universal Lighting Technologies	8% (fluorescent magnetic)
Zumtobel Staff Lighting	6%



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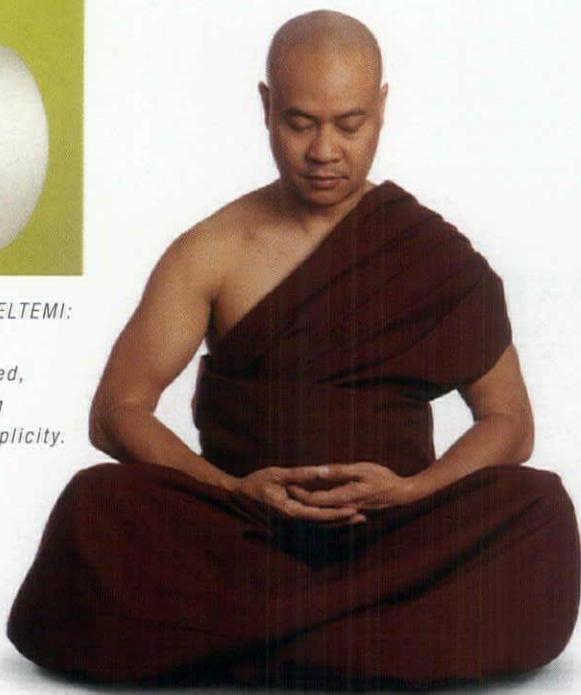
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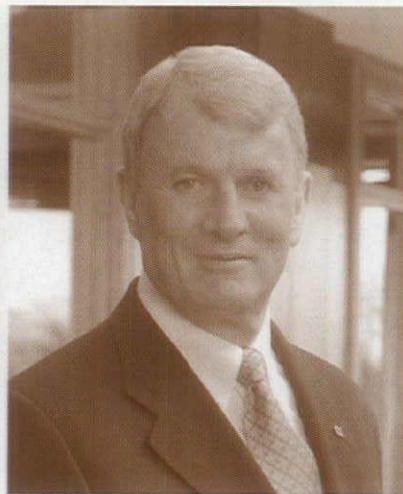
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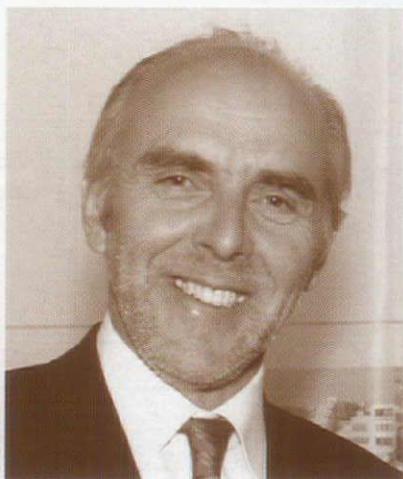
DAVE FELDMAN, PRESIDENT, COOPER LIGHTING: "The biggest opportunity for lighting manufacturers is to educate users about the importance of good lighting for productivity, energy efficiency and aesthetics."



LARRY K. POWERS, CHAIRMAN, PRESIDENT AND CEO, GENLYTE: "A major concern for our industry is if steel and other commodities continue to increase, it will start having a negative impact on the entire new construction industry."



T. TRACY BILBROUGH, PRESIDENT AND CEO, JUNO LIGHTING GROUP: "Competition is moving away from a heavy price focus and more toward design and innovation. That is a very healthy situation for our industry."



WOLFGANG EGGER, PRESIDENT, ZUMTOBEL STAFF LIGHTING: "In our segment of the market—higher end, architectural, design-driven spaces—customers are looking for unique design, high performance and value pricing."



KEN HONEYCUTT, PRESIDENT AND CEO, ACUITY BRANDS LIGHTING: "Our industry needs to work more diligently toward higher levels of value-added performance and more effective communication with our customers about the value of lighting."

concerned about whether these conditions will remain in the second half and into 2005," he says. "We are approaching the market with great caution." Commercial construction, he notes, must improve to support strong growth for the rest of this year and into next.

"We see many factors suggesting construction activity will increase, and drivers such as consumer buying and home and business renovation are on a positive track," says Ken Honeycutt, president and CEO of Acuity Brands Lighting. "But we do see the potential for it to be knocked off, by such things as terrorist threats that drive up oil prices." He notes the upcoming election creates uncertainty, and that policy and tax changes could reduce the impetus for economic improvement.

Wolfgang Egger, president of Zumtobel Staff Lighting, notes the company has "a strong order book—meaning orders that are currently in-house. It's one (CONTINUED ON PAGE 44)

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VLI-0707A1-0904

of the strongest we have seen, and we expect to finish our fiscal year 2004/2005 ahead of goal and certainly ahead of last year." He cautions, however, that Zumtobel has "not seen the flow of day-in-day-out, smaller orders return to the levels of prior years, which makes us cautiously optimistic. This is, by the way, what our customers are saying to us as well."

Egger believes that economic conditions have changed the rules for smaller manufacturers: They must innovate to be able to compete effectively on quality, rather than price. "I believe that some companies, particularly those smaller companies that have little innovation to offer, and are therefore competing with the conglomerates on price only, are

headed for trouble. These are not easy times for smaller, niche companies who don't have a clear competitive advantage."

Compared to other chief executives, T. Tracy Billbrough, president and CEO of Juno Lighting Group, is thoroughly bullish. "Most lighting manufacturers are doing well and seeing real sales growth," he says. "Competition is moving away

"These are not easy times for smaller, niche companies who don't have a clear competitive advantage."

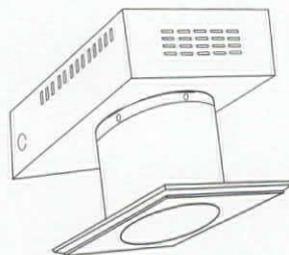
WOLFGANG EGGER, ZUMTOBEL STAFF

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

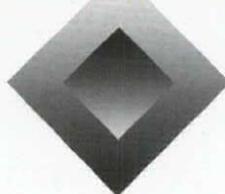


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from a heavy price focus and more toward design and innovation. That is a very healthy situation for our industry."

He adds, "Although the elections this fall leave a level of uncertainty in everyone's mind, we are not hearing a lot of cautiousness from our customers and end markets. If there is any type of slow-down in the next few years, we will respectfully decline to participate."

Chief executives understand that the two sides of the value equation are quality and price, and are sensing that customers have a resurging appetite for innovation rather than simply for the lowest price. As a result, manufacturers report investing not only in internal cost reductions, but also in R&D and product development—a sign of industry health.

RISING COSTS = PRICE INCREASES

Significant increases in operating costs have pushed up the corresponding cost of lighting products. It seems, however, that the market is accepting the price increases without reigning in demand. Hence, manufacturers have maintained a positive outlook, though they naturally remain concerned about rising costs and that the volatility of some markets such as steel, which have the ability to adversely affect the lighting and overall construction markets.

The biggest problem is China, whose economy grew 9.1 percent in 2003 and is now the world's largest consumer of steel, iron ore, copper, tin, zinc and platinum, according to the Asian Development Bank, and the second-largest consumer of oil after the United States. China's fixed-asset investments increased 43 percent in the first quarter of 2004, according to the Associated Press.

The heavy demand for materials has escalated prices and restricted availability. The price of steel rose 75 percent, copper 65 percent, and aluminum 25 percent between fall 2003 and spring 2004, and crude oil rose to about \$49 a barrel in August, the highest level in decades. Many manufacturers responded by increasing prices across the board on their products (see Table 2, page 41). Chief executives say the prices appear to be holding, though they concede that if costs continue to rise, further price inflation will be inevitable.

"Steel and oil prices have driven tremendous cost increases, and this has been passed down the value chain to the consumer," says Honeycutt. "But the economy so far has been able to absorb the increases without negatively impacting construction."

"The lighting industry should work together to grow the 'size of the pie,' in addition to fighting over the biggest piece."

T. TRACY BILBROUGH, JUNO LIGHTING

Some, like Feldman, do not see a near-term end to the upward momentum of such costs: "It is unlikely that steel prices will retreat during 2004 and, in fact, there are some indications that prices will continue to rise, which will drive the need for further across-the-board increases," he says.

"A major concern is if steel and other commodities continue to increase, it will start having a negative impact on the new construction industry," says Powers. "This, in turn, would have a negative impact on the lighting industry."

"The volatility of metals pricing has had a significant financial impact on our business," says Bilbrough. "Although I believe metals have peaked for the near term, I do not expect them to drop for the foreseeable future."

COMMODITIZATION

Despite numerous challenges and uncertainties combining to create a tricky operating environment, chief executives still regard the primary threat to be internal, not external—an overemphasis on price in the sales channel that, in turn, causes commoditization of lighting.

"We need to do a better job of educating the public on good lighting," says Powers. "The lighting industry is becoming more of a commodity business all the time. Good lighting is a great median that enhances people's lives, but most people don't know very much about good lighting, and therefore, settle for inferior products and performance."

"Innovation and design are the ways manufacturers can keep value in the fixture categories," says Bilbrough, adding that the lighting industry should work together to grow the "size of the pie," in addition to fighting over the biggest piece. Other industries, he points out, have marketed themselves to consumers successfully, such as plumbing, doors, windows and home insulation.

"Our industry needs to work more diligently toward higher levels of value-added performance and more effective communication with our customers about the value of lighting," says Honeycutt.

"In our segment of the market—higher end, architectural, design-driven spaces—customers are looking for unique design, high performance and value pricing," says Egger. "They are looking for a partner to help them develop solutions."

OPTIMISM, WITH UNCERTAINTY

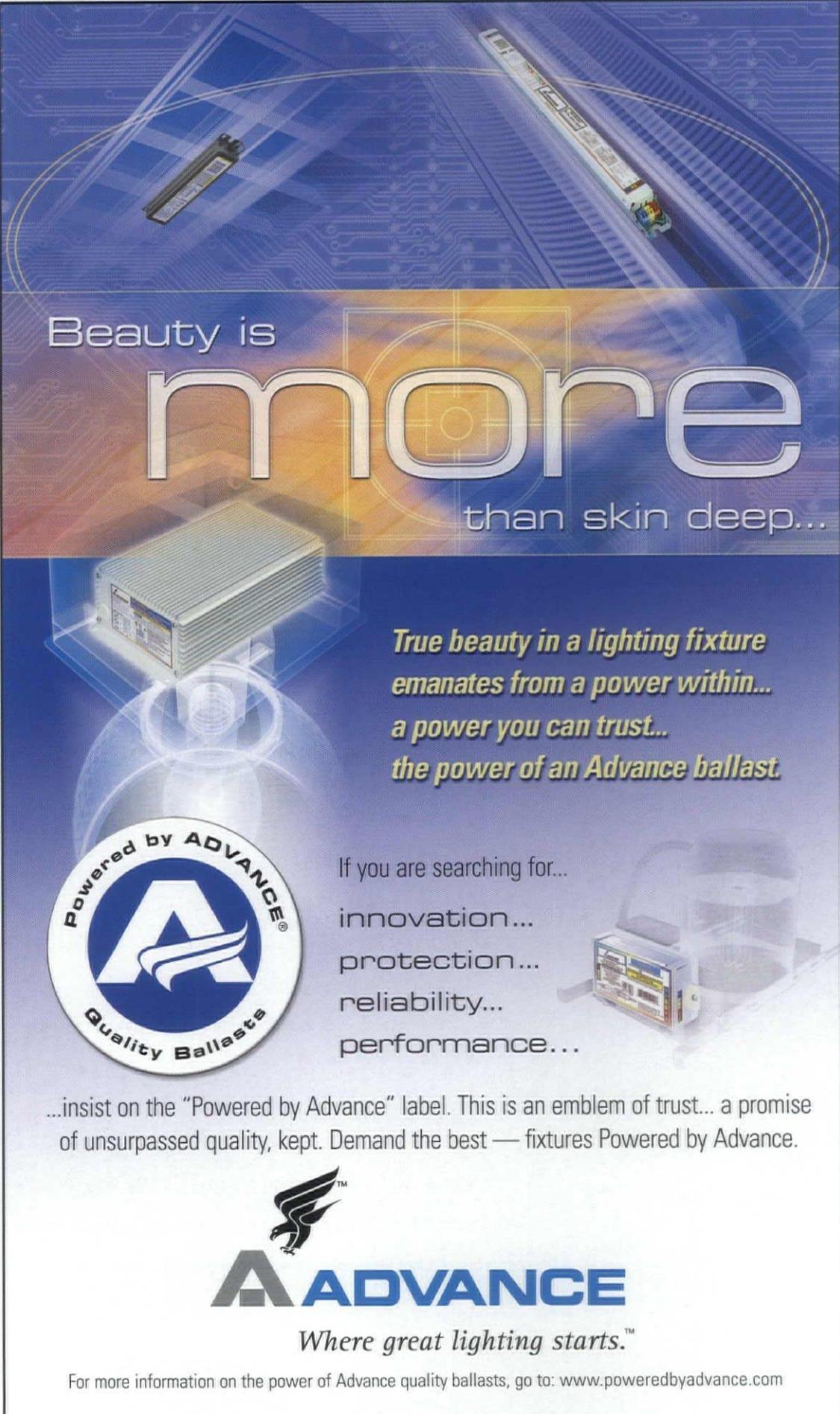
While the economic recovery has stumbled and has yet to show consistent

strength, chief executives of major lighting companies see the lighting market as strong and sound; some of these companies have even generated record sales growth this year. Chief executives have countered rising costs with the first significant price increases in years, and have maintained profitability. Manufacturers are optimistic to the extent that they are

investing in innovation in a market where they hope to compete on quality as well as price. While the lighting market has many threats—such as volatility in oil and metals markets—chief executives largely see the biggest threat to its health to be the "commoditization" of lighting products, and believe the industry should unite to convince the channel of the benefits of

quality lighting solutions. ■

Craig DiLouie is principal of ZING Communications, a marketing communications and consulting firm specializing in the lighting and electrical industries. A former publisher of Architectural Lighting, he is the author of many books and articles on lighting and electrical engineering.



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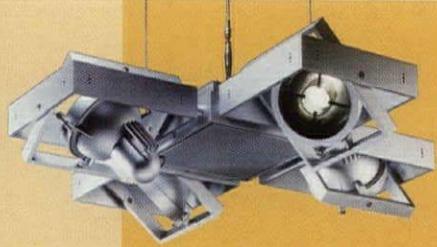
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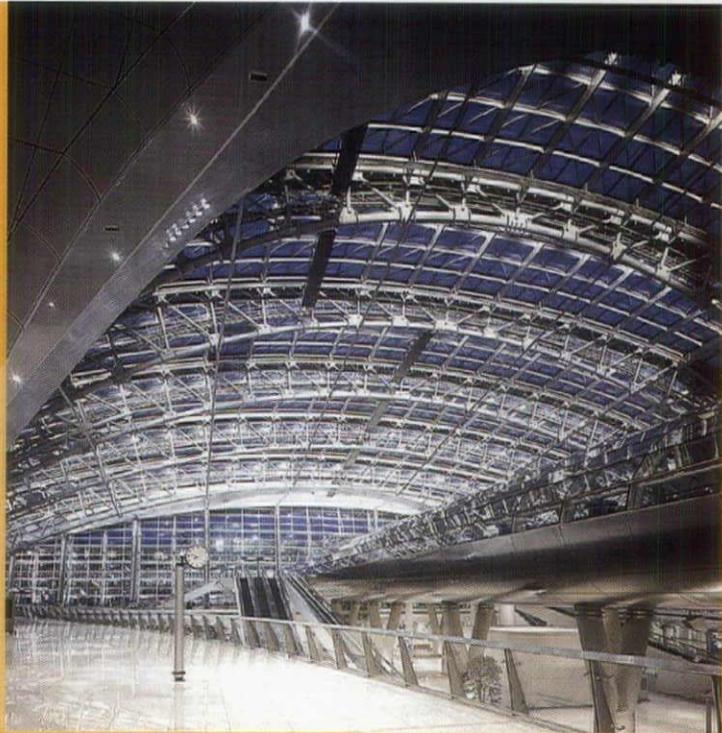
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DESPITE THE COMPLAINTS OF SOME THAT THE OLYMPICS HAS BECOME TOO COMMERCIAL, OR that it is really politics and nationalism disguised, at its honest best, the games celebrate sport and the accomplishments of athletes. It is also an opportunity for the host cities to introduce themselves to the world. A lot was at stake for Athens, the birthplace of the modern Olympiad, as it prepared to host the 2004 Summer Games. The city extended its imaging campaign beyond the realm of athletics to include culture and architecture with a program called "Catch the Light: Routes through Athens." Designed to introduce visitors to parts of the city beyond the Olympic venues, "Catch the Light" celebrated Athens, past and present, and focused on the unique quality of light associated with the city. Nine international artists/design teams were invited to create interactive art installations along five prescribed walking routes through the historic center of the city. *White Noise, White Light*, created by architect and MIT faculty member J. Meejin Yoon with the help of a team of six young design and engineering professionals, interpreted the spirit of the city through light and sound.

Yoon was asked by the Look of the City Section of Athens 2004 to submit a proposal because of her interactive media work and a project she had created as a recipient of a 2002 Young Architects award from the Architectural League in New York City. Although she had never specifically worked with the medium of light before, because of her background in interactive installations she felt the Athens venue was a "great opportunity to investigate lighting."

When Yoon submitted her proposal she knew her installation would be along the "Listen to Athens" route, and she would be charged to consider the sounds of the city in its presentation. She explains, "There are so many sounds in the city you hear unadulterated; I didn't want to just record the city and play it back without filtering it in some way. We wanted to achieve something that was poetic, quiet and powerful all at the same time." The team generated its own white noise samples electronically, incorporating all sounds at all frequencies.

Located at the plaza at Dionysiou Areopagitou Street, which is in view of the Acropolis, as well as the Ancient Theater of Dionysus, the project is a 15-square-meter field of 4-foot-tall fiber optic "light stalks" embedded in a 6-inch-high wooden platform. The light source for each stalk is comprised of three white LEDs, and the fiber, because it is pliant, yet resilient, carries the light through the rod to a silicone end-cap. The stems respond to pedestrian movement swaying, as visitors brush by. "We wanted the installation to be a piece of artificial nature in the city, and we were interested in the relationship of the stalks to one's body as one moves through the field," says Yoon. Initially illuminated at 40 percent, as people touch the stalks, they illuminate to a 100 percent output. Simultaneously, concealed speakers are activated to emit electronic sound samples. Collectively the sounds create an array of "white noise" and visitors interact with the city in a way previously unimagined—as both a generator and manipulator of light, sound and space.

For Yoon, the experience of being in Athens and the interaction with the people and other artists was tremendous. "The most amazing thing," she says, "was how public this project was. Everyone had an opinion, or advice on how we could improve the installation. That was great, listening to all the comments and misinterpretations. As an architect you never really stand by your building and watch people interact with it and make comments."

She continues, "One of the most incredible moments was the opening night when an elderly Greek woman came with roses for the entire project team and said, 'Thank you so much for bringing this to Athens. Thank you from the city'—which proves that art can be just as important as athletics in fostering cross-cultural communication.

ELIZABETH DONOFF

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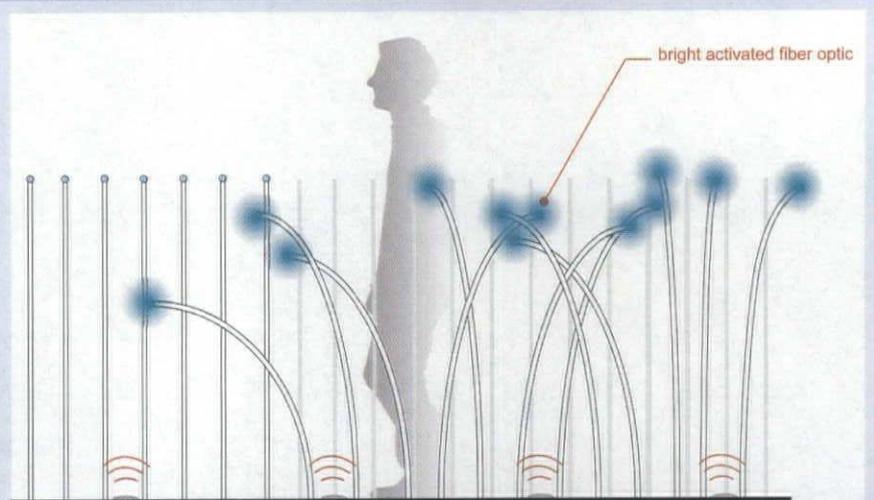
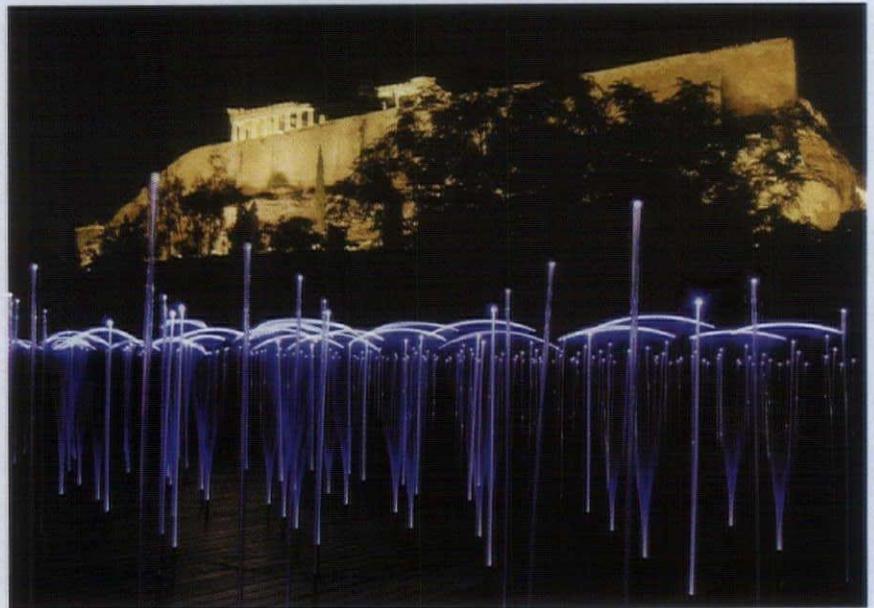
WHITE NOISE, WHITE LIGHT

LOCATION: Athens

ARCHITECT: J. Meejin Yoon, Cambridge, MA

DESIGN TEAM: Mathew Reynolds, Marlene Kuhn, Kyle Steinfeld, Eric Howeler, Naomi Munro and Lisa Smith

IMAGES: J. Meejin Yoon



Set against a backdrop of the Acropolis, *White Noise, White Light* (top) provides a contemporary counterpoint to the historical site, while incorporating the timeless elements of light and sound through composition and form. Pedestrian movement through the "light stalks" triggers the illumination and sound components of the installation as proposed (middle) and realized (bottom).

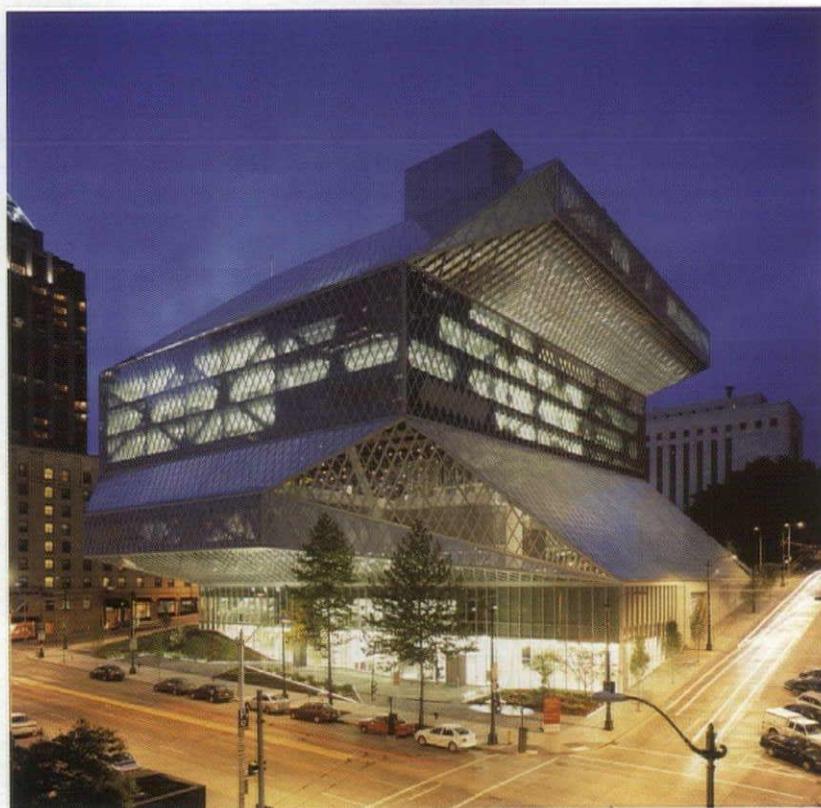


ugh and jane ferguson
eattle room

seattle

Light Reading

The lighting program for the Seattle Public Library offers a model for efficiently illuminating a building dedicated to the experience of engaging books.



THE NEW \$165 MILLION CENTRAL BRANCH OF THE SEATTLE PUBLIC LIBRARY, DESIGNED BY THE OFFICE OF metropolitan architecture (OMA) with Seattle's LMN Architects, in a joint venture, is garnering worldwide attention for its striking 11-story glass form. Rising on the site where two previous and much smaller central branches stood, this nearly 363,000-square-foot structure, the hub of Seattle's 26-library network, consists of five platforms that OMA pushed and pulled to the site's boundary. This design, which produced irregular ceiling heights, proved a challenge to its lighting designer, Manhattan's Kugler Tillotson Associates (KTA), and demanded out-of-the-ordinary applications for conventional materials.

OMA was selected after an intensive open request for qualifications and interview process, which also included the notable firms of Norman Foster, Cesar Pelli, and Steven Holl. OMA was selected for the project because of its ability to design bold structures with impressive acoustics and finishes on very low budgets, recalls library head Deborah Jacobs. "More than design ability, the library wanted an architect," Jacobs continues, "who didn't have the answers, but who had the intelligence for approaching the answers."

Working in close collaboration with KTA, who also designed the lighting for OMA's Prada Guggenheim store in New York City, OMA and LMN created a building with a cost- and energy-efficient lighting design comprised of three elements: a custom-crafted metal-mesh curtain-wall glazing, a system of dot and strip fixtures, and an arrangement of reflectors and directional lighting. The team chose these solutions in response to the facilities program, architectural design, tight construction budget (\$272 per square foot), and Seattle's strict municipal energy codes (1.5 watts per square foot for general library areas; 1 watt in the three-story auditorium; and 0.2 watts for the 143-vehicle underground garage). KTA's lighting challenge was intensified by OMA's directive that prohibited attaching lighting fixtures to both the exterior and interior faces of the curtain wall.

METAL GLASS

To clad the curtain wall that encloses the reading and heavily trafficked public areas, OMA/LMN developed a triple-layer glazing system. Embedded with a curved aluminum mesh in the outer air cavity and filled with krypton gas in the inner, OMA partner Joshua Ramus—a Seattle native and OMA's principal-in-charge—calls

it Metal Glass. Custom-manufactured by the German firm Okalux, it strategically covers approximately 50 percent of the building, while a standard double-layer glazing system encloses the other 50 percent. This glazing minimizes glare and diffuses direct wavelengths, which in turn reduces thermal transmittance, improves UV value, lowers solar heat gain, and lessens the use of cooling systems. Metal Glass is similar to a tint coating, except that it only filters non-visible wavelengths. To maximize the performance of the Metal Glass and double-layer glazing, OMA/LMN added an extremely high-efficiency, low-e coating.

The design scheme also includes a 40-foot-square skylit atrium to channel more daylight into the interior. As a result of the structural design, the building is sculpted to maximize daylighting opportunities in communal areas like the "living room" and the reading room (on the third and tenth levels, respectively); and the designers positioned heavy-use spaces (i.e., book stacks and meeting rooms) in areas shaded from daylight, further minimizing heat gain and eliminates glare on the monitors of the 400 computers for public use. OMA's daylighting system set the stage for KTA's electrical lighting solution.

DOTS AND LINES

KTA was an obvious choice for the library's lighting design. With a recommendation from OMA and after an intensive interview with the library's board, KTA won the project because of its experience lighting libraries. Former principal Suzan Tillotson, who recently opened her own firm, Tillotson Design Associates, has 35 libraries in her portfolio. From the beginning, Tillotson strove to accommodate the library's desire for a warm and inviting atmosphere and its need for adequate illumination, particularly in the book stacks. The lighting system needed to support the regular operations of the library's nearly 330 employees, while serving the diverse activities of the institution's anticipated 8,000 daily visitors—double the number of visitors to the previous central branch. Further complicating these challenges, KTA was charged with illuminating spaces configured with ceilings ranging in height from 8 feet to 50 feet, while complying with Seattle's strict energy codes. KTA's response was to go with the basics: dots and lines.

Tillotson began by studying models that showed the interior's quality and quantity of natural light. Armed with this information, she created a map to evaluate how changes in sunlight, by hour and season, would affect the interior

Overlooking the stacks, a visitor witnesses the juxtaposition of the building's different spaces, while daylight fills the library through the canted curtain wall (facing page). Just beyond, the library's Seattle Collection is announced with super graphics on the information desk, underneath a ceiling tufted with recessed luminaires. At night the building glows like a lantern, revealing its space-age structural system (above).

atmosphere. Both KTA and OMA wanted to use dots (points of light) for the lower levels, and two types were selected: luminous pendants and recessed fixtures. These fixtures accommodate the building's varying-shaped structural modules. For the first-floor children's section, where the ceiling ranges from 8 feet to 16 feet, Tillotson designed single-bulb acrylic pendants alternately lit with 55W and 85W Philips QL induction lamps. She explains that this source, enhanced by the use of reflectors, "provides an abundance of functional light without exceeding code." For the building's upper levels, such as the four-story switchback-slope spiral-stack area (where the library's 1.4 million non-fiction collection is organized in a seamless Dewey Run), Tillotson selected 4-foot-long, double-lamp T8 striplights.

Arranged perpendicularly to the site's steep slope to create a flattering exterior visual of the building at night, the inexpensive fluorescent striplights are hung in the stacks above a polycarbonate ceiling plane, which OMA also used in its design for the Prada Guggenheim store. Sam Miller of LMN explains that the polycarbonate diffuses light evenly without producing shadows and provides enough illumination for visitors to view books on the bottom shelves. The selected metal halide fixtures have perforated metal screens that offer transmissions of 20 percent, 60 percent, and 80 percent. In some areas, where these lights are hung above perforated and corrugated metal ceiling planes, KTA calculated the light loss to create a light pattern that Tillotson says, "provides ample and functional puddles of light." The budget prevented KTA from using dimmers; instead, occupancy sensors conserve electricity in low-use areas, such as the special collection section. KTA also backlit the eye-popping chartreuse escalators and elevator cabs to enhance the building's wayfinding system, which includes, in lieu of navigational signs, the hierarchy of dots on the public floors and lines on the non-public floors.

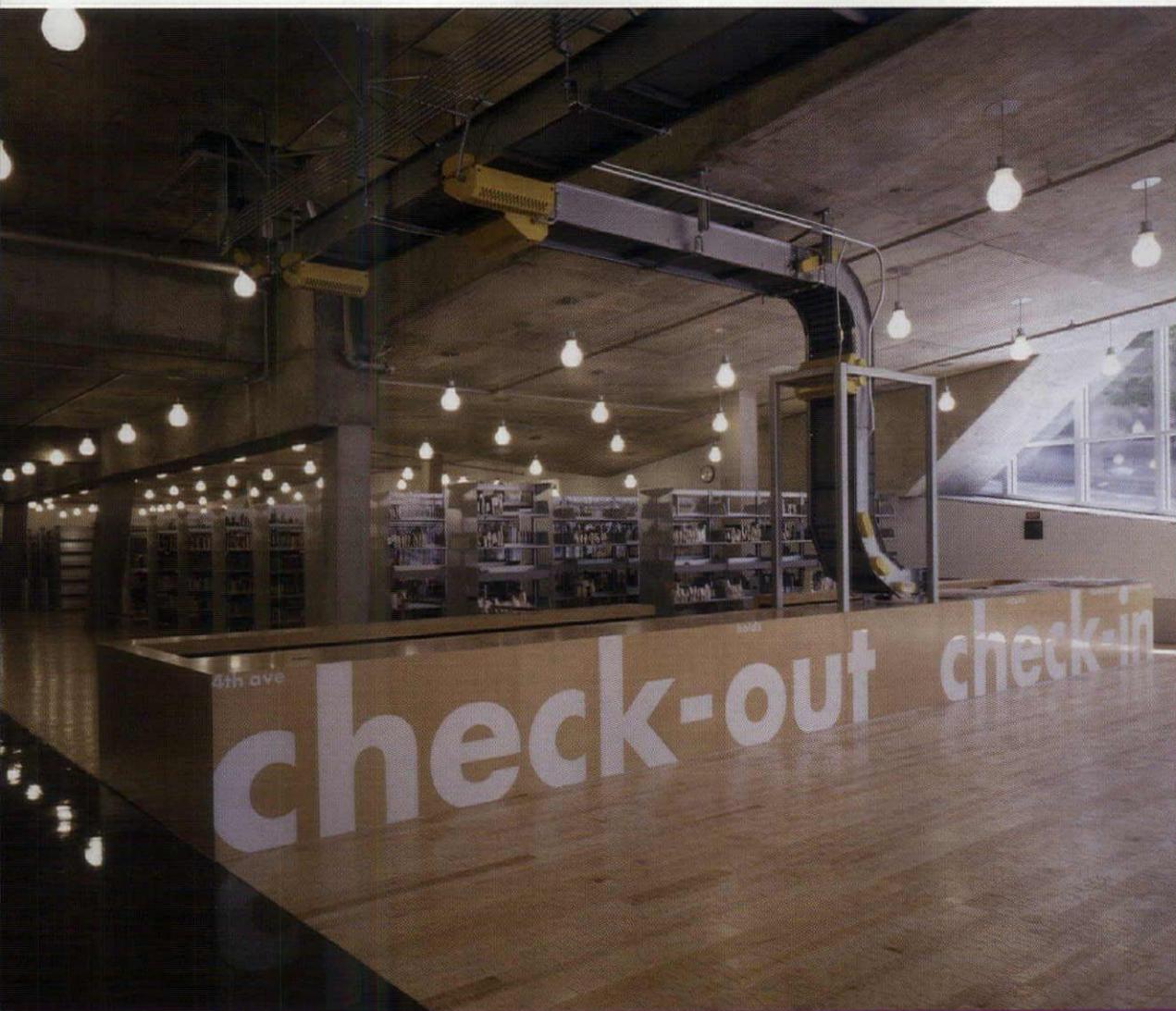
DIRECTIONAL LIGHTING

Lighting the glass-ceiling reading room proved KTA's greatest challenge. OMA prohibited KTA from attaching lighting fixtures to the diamond-grid curtain wall on both the interior and exterior of the building. Tillotson's solution utilizes task lighting on the desks and upright floor luminaires—both designed by KTA and manufactured by Vitra—that emit light on all four sides in the seating areas. Lit from within, and without employing exterior structural illumination of any kind, the library reads as a beacon at night. Interior lights on the lower levels are positioned outward to illuminate the building's immediate exterior perimeter.

KTA used common yet effective sources and materials—Philips QLs, metal halides, and reflectors—to provide a solution that is economically efficient to maintain. (Because the structure's atypical design includes interior cantilevered spaces, OMA/LMN developed a maintenance access plan that enables the library to easily replace bulbs and service fixtures.) Perhaps even more important, Miller notes, is that the lighting design stands as an example of Tillotson's appreciation for the library's criteria: a practical lighting solution, inexpensive and easy to service, that amply illuminates the interior with a friendly and inviting warmth. Together, the lighting design and the architecture it illuminates have created a thriving urban center that is fast becoming an integral part of the city's culture. **JOSEPH DENNIS KELLY III**

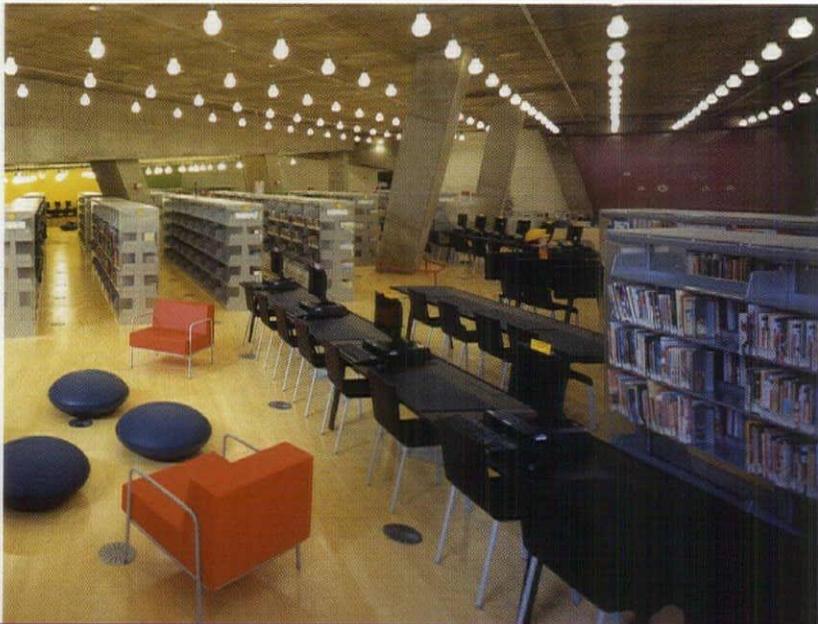
Visitors enjoy the "living room," one of the library's numerous public spaces. Daylight provides ambient light, while the structural frame of the curtain wall, modulated in a diamond pattern, casts shadows on the floor, adding another layer of visual interest to this dynamic space.





The building's automated book-retrieval system is showcased at the check-in/check-out area, while point sources (Philip's QL lamps) accent the ceiling (left). Custom luminaires, designed by KTA and manufactured by Vitra, provide a second level of direct/indirect light in the upper-level reading room (below left). A major feature of the building—the chartreuse escalator that winds its way through the library—is internally illuminated. Public work tables lie beyond, and the ceiling, painted black, is accented with point sources (below right).





In the children's area, Philip's QL lamps, suspended from the ceiling, create a field of light (top). In the book stacks, fluorescent lamps are concealed behind a polycarbonate ceiling, providing a diffused ambient light that is safe for the books but bright enough to enable readers to find their text of choice (middle). A section of the building helps clarify the interplay of its architectural volumes (bottom).

more information at
WWW.ARCHLIGHTING.COM

DETAILS

PROJECT The Seattle Public Library, Seattle

ARCHITECTURE Office for Metropolitan Architecture, Rotterdam; and LMN Architects, Seattle

LIGHTING DESIGN Kugler Tillotson Associates, New York City

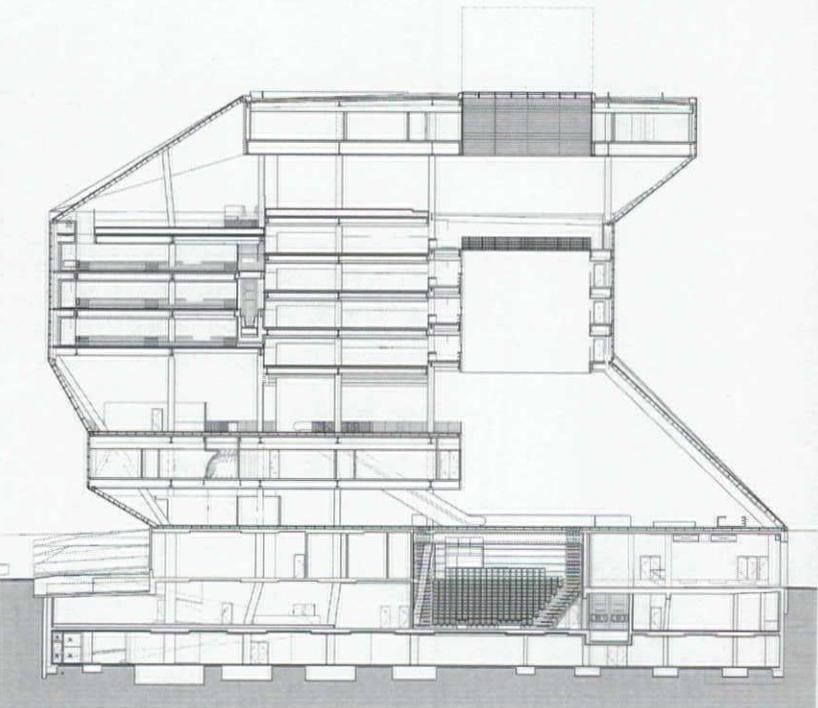
PROJECT SIZE 363,000 square feet

WATTS PER SQUARE FOOT 1.5 watts per square foot for general library areas; 1 watt in the three-story auditorium; 0.2 watts for the 143-vehicle underground garage

INSTALLATION COSTS \$165 million

PHOTOGRAPHER Lara Swimmer/Esto

Photographs and drawing on pages 49 and 52, courtesy of LMN Architects.



MANUFACTURERS

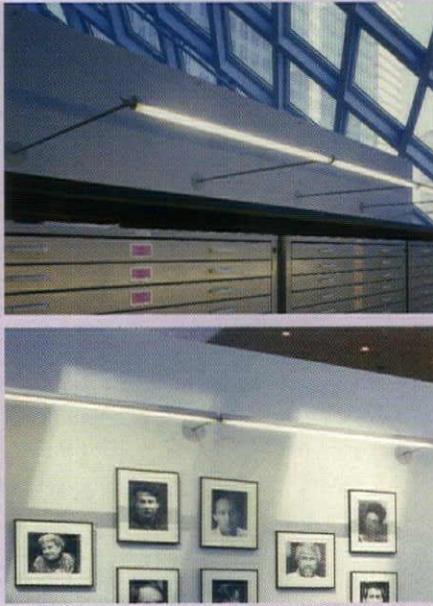
Abolite
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Hydrel
Iris
Kim
Lightolier
Lighting Services Inc
Paramount
Phoenix
Philips
Rambusch
RSA
Starfire
Stern
Stonco
Vitra
Zumtobel Staff

APPLICATIONS

Metal reflector pendant at garage
Striplights in stacks, Map and Writers Rooms; display lighting in gift shop
Fluorescent wall sconce at loading dock
Exterior entry surface-mounted metal halide PAR20 adjustable cylinder; and concrete-pour MR16 downlight with glass diffuser in Children's Story House
PAR38 downlights in auditorium
T8 fluorescent bracket light in offices
Exterior T5 trench lighting
Metal halide with glass refractor in garage/loading dock
Fountain lights
MR16 downlights with red cones fourth-floor corridor
Recessed metal halide downlights at garage ramp
All recessed and surface-mounted custom downlights
PAR38 tracks in exhibition spaces; PAR56 track heads in auditorium/exhibition; PAR56 heads in Reading Room
Surface-mounted single-lamp T8 fluorescents at stairs
Dock light
QL lamps
Ellipsoidal downlights in the auditorium
Four-lamp PAR38 metal halide modular fixtures
Custom striplights in bathrooms and escalator ceilings
Custom QL
Mechanical shaft vaporlight
T5 custom table lamps with acrylic diffuser
All recessed troffer and pendants (T8) throughout

BARTCO | PRODUCT: BFL292 |
WWW.BARTCOLIGHTING.COM

Used in the Map Room (top), the Writers' Room (bottom), and the tenth-floor stacks (shown on the cover), Bartco's BFL282 is a low-profile linear T5 fluorescent for remote-ballast installations. For this project, the product was cantilevered and wall-mounted. Available in polished chrome, satin aluminum and polished brass, the fixture features a mere 129/32-inch diameter. A rotational locking lamp holder keeps the tubes in place. **CIRCLE 110**



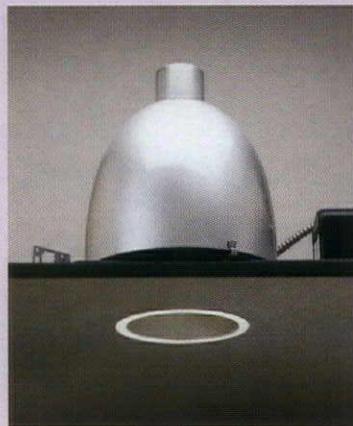
LIGHTING SERVICES INC | PRODUCT: 280
SERIES | WWW.LIGHTINGSERVICESINC.COM

The 280 Series is a track-mounted quartz halogen PAR56 adjustable accent fixture. Featuring an 8 1/2-inch diameter and a 7 1/2-inch depth, the fixture provides a 45-degree cut-off and beam softener, and a locking yolk for horizontal and vertical adjustments. The 280 was specified with a matte-black finish for the library. **CIRCLE 111**



LIGHTOLIER | PRODUCT: CYLINDRICAL
DOWNLIGHT WITH INTEGRAL BALLAST |
WWW.LIGHTOLIER.COM

Three custom downlight optics were designed for the project. Using the same lamp, the luminaires were "tuned" to deliver the same illumination level at the floor from varying ceiling heights through the proper combination of optic and diffusion media. A custom compression ring flanged downlight is the "button" in the acoustical ceiling "pillows." Lightolier's unitized optics float above the pillows to preserve optical performance. **CIRCLE 112**



HYDREL | PRODUCT: WD4413 |
WWW.HYDREL.COM

This exterior wet/dry in-grade adjustable uplight is 8 3/4 inches in diameter and 4 inches deep. Specified with a natural bronze finish, the reflector has a diffuse Alzak for floodlight distribution. The 360-degree horizontal and 45-degree vertical adjustments can be locked so relamping can be achieved without changing adjustments. **CIRCLE 113**



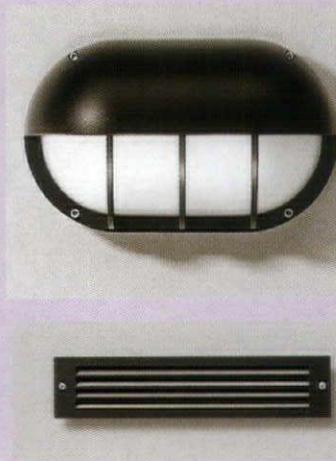
LSI | PRODUCT: ABOLITE |
WWW.LSI-INDUSTRIES.COM

The Abolite Deep Bowl provides focused, reduced-glare light. The compact-profile fixture is available in two diameters (10 and 14 inches), and takes a choice of lamps: compact fluorescent, HID and incandescent. The product is UL-listed for wet locations. **CIRCLE 114**

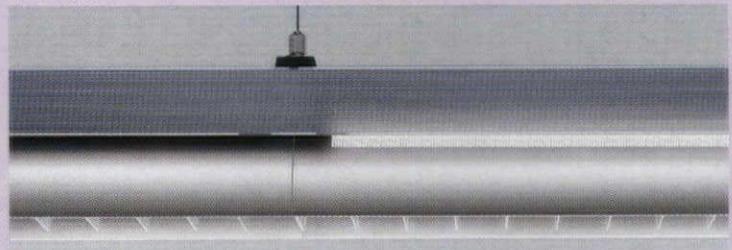


BEGA/US | PRODUCT: WALL LUMINAIRE |
WWW.BEGA.COM

For indoor and outdoor applications, this wall sconce features one-piece die-cast aluminum housing and a glass or polycarbonate diffuser. It is painted using an eight-step process; available in a standard black or white, or with custom color.



PRODUCT: RECESSED WALL LUMINAIRE
 Designed for low mounting heights, this recessed fixture features die-cast and extruded aluminum. Suitable for wet locations. **CIRCLE 115**



ZUMTOBEL STAFF | PRODUCT: RTX | WWW.ZUMTOBELSTAFF.US

Minimalist design with maximum functionality is the intention behind this luminaire. Can be used alone or in a continuous-run system, and offers fast installation without the use of tools; T5, T5HO or T8 lamping; and multiple suspension options. Light is controlled with a matte-silver bivergence louver. **CIRCLE 116**

HOLOPHANE | PRODUCT: BANTAM 2000 |
WWW.HOLOPHANE.COM

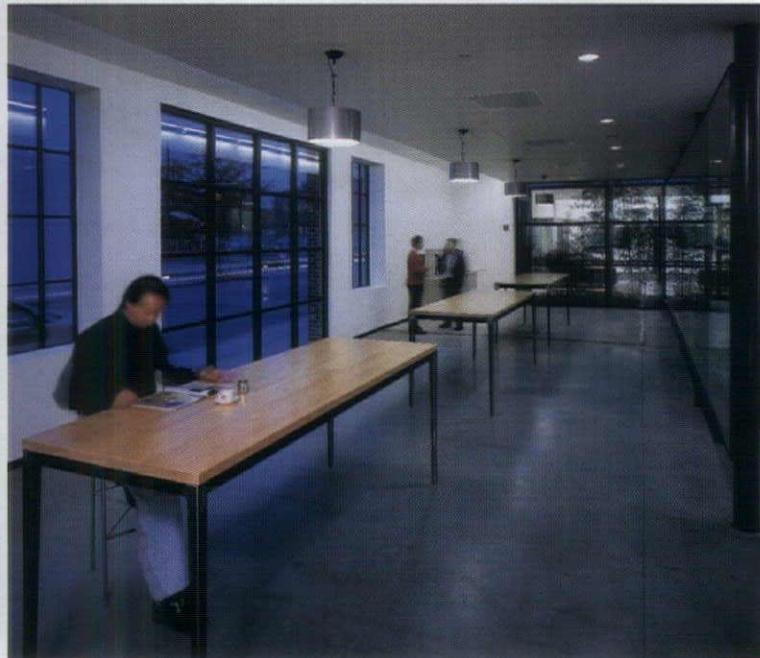
The Bantam 2000 addresses heavy-duty industrial and low-ceiling applications. Four optics choices are available, including the Prismalume and Prispack (shown), both of which were used on the library. Prismalume provides balanced uplight, while Prispack offers cut-off for comfortable viewing in low-mounting situations. **CIRCLE 117**



Here Comes the Sun

A telecommunications company raises the bar with an inventive workplace.





DOT-COMS AND TELECOMMUNICATIONS COMPANIES HAVE COME AND GONE OVER the last decade. But some, like Orange Innovations, the U.K.-based wireless phone division of France Telecom, have found a niche in this volatile market, and forged ahead. Complementing the company's business success is its innovative approach to work, and the creation of environments in which that can occur. It seems fitting that the company should choose nineteenth-century warehouses in East Cambridge as the location for its first North American headquarters. This "it" technology and science area, just down the road from MIT, would put Orange near the academic world, where its new facility could easily attract smart, young graduates.

But transforming the five single-story warehouses was no easy task. As project architect John Paul Dunn of the Cambridge-based architectural firm Anmahain Winton explains, "we literally rebuilt the entire building, from the concrete floor, to the columns, to the windows, to the roof. I like to say the only thing left was the sprinkler system." One unexpected site condition after another placed inordinate pressure on the budget, and forced the designers to create innovative design solutions.

BALANCE AND TRANSFORMATION

The project is a dedicated collaboration between the client, Anmahain Winton (AW), and Cambridge-based lighting design firm LAM Partners. AW and LAM had collaborated on several projects before, and through that work LAM had come to understand AW's style and architectural compositions.

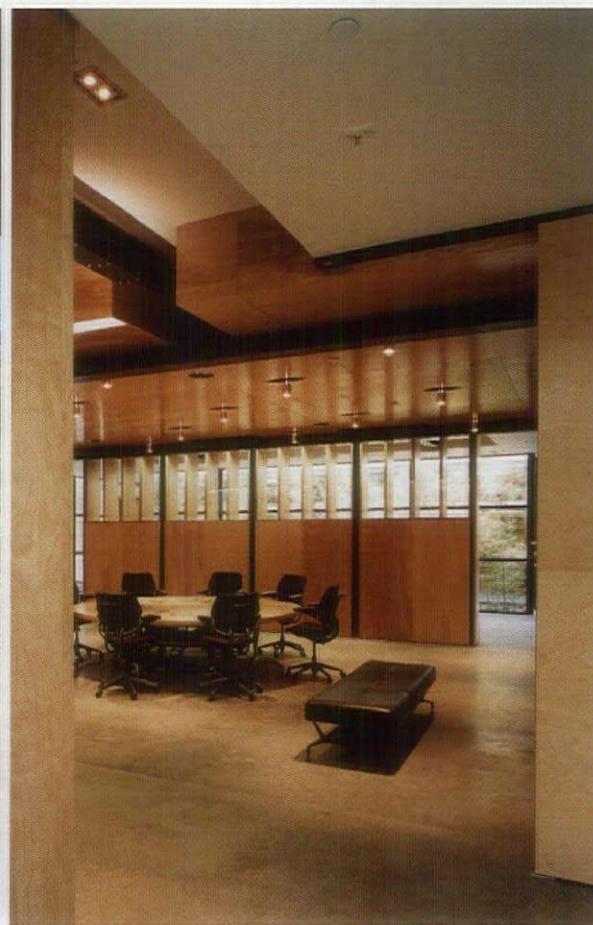
The architects were challenged with balancing the needs of private offices, flexible open-office space that could be reconfigured on a regular basis, and the communal areas that would tie it all together. AW's solution is nothing short of unique, as it joined the dark warehouses into one bright, airy workspace. By converting the 6-foot-wide alleyways between the buildings into atria planted with bamboo, the architects used the existing features of the site and structures to create natural light funnels. The result is an exceptional quality of light throughout the year. It also brings an element of nature into the building, further complemented by the unaffected material palette of wood, concrete, steel, and glass.

"The space has been completely transformed," says Michael Cappelletti, director of the North American headquarters, who was involved from the beginning of the project. "The space works well for what Orange does. It is a very comfortable environment for people to stay in throughout the day, owing to the daylighting. Staff is here 24/7, and because they feel comfortable and safe in the space at all hours, we were able to switch over to a hand-print scanning security system, rather than employ security guards."

The lighting also responds to the unique architectural elements in the project, which were conceived to meet the needs of this cutting-edge telecommunications company. There are four types of electric light sources: pendants, soffits, cans and a horizontal strip. The daylight that permeates the space through the atria is further emphasized as it bounces off of the architect's custom-designed metal-mesh ceiling panels. Out of 100 staff, there has only been one request for supplemental task lighting.

In the open-office areas, the architects designed mobile wood workstations that function like a kit of parts. Typical workstations link to data and electrical connections at only a few points, making it difficult to reconfigure; here, the architects designed an

Visitors are greeted by a composition of light in the reception area (facing page), where daylight and electric sources sculpt the horizontal and vertical surfaces. The board room, used often for videoconferencing, has ceiling-mounted indirect lighting with T5 lamps that can be adjusted to prevent glare (top). Suspended semi-indirect pendants bounce light from T8 sources off the architect-designed metal-mesh ceiling panels in the open offices and provide an even, ambient light throughout the space (middle). Pendants, with 26W fluorescent lamps, provide table-surface illumination in the cafe (bottom).



In keeping with Orange's interest in creating new work and business paradigms, the architect's responded with the "Imaginarium," a space that literally opens up with the help of custom hydraulic elevator motors installed horizontally (above left). The motors allow the side walls to pull away, transforming the center of the building from an enclosed conference room for 15 (above right) to an auditorium for 100 people. Low-voltage monopoint luminaires punch through the wood soffit of the ceiling.

electrical busway and data cable trays suspended from the ceiling that the stations can attach to at any point. "The stations tie into the grid," says Dunn, "but they are not tied down to a specific linear system." Adds Cappelletti, "It only takes two people to reconfigure 12 to 14 stations in less than two days. The system saves an immense amount of time."

The lighting is equally flexible and provides a consistent level of ambient light. Since the facility is in operation around the clock, the designers created a central and perimeter switching system. During the day, there is enough light coming in through windows and atria, and the electric sources are not required. The perimeter switching is turned on only at night. "We didn't need to adjust the light levels given the abundance of daylight. It's a tremendous amenity, a unique feature you don't see in other buildings," says LAM principal Paul Zaferiou.

The natural material palette and abundance of light facilitates Orange's approach to work. The commitment of all involved, from the design team to the client, speaks to the importance of good design and how that can be integrated with business. "This building embodies everything that is the Orange brand value to the nth degree," says Cappelletti. "When you first walk into the space its completely different—concrete floors, exposed ceiling, and glass. You don't realize how comfortable you are in the space; it comes down to the lighting design, it really works." **ELIZABETH DONOFF**



DETAILS

PROJECT Orange Innovations, Cambridge, Massachusetts
ARCHITECT Anmahain Winton, Cambridge
LIGHTING DESIGNER LAM Partners, Cambridge
CONTRACTOR Essex Newbury North Contracting Corporation, Haverhill, Massachusetts
LIGHTING SUPPLIER: Reflex Lighting Group, Boston
PROJECT SIZE 25,000 sq. ft.
INSTALLATION COSTS \$120,000
PHOTOGRAPHER Peter Vanderwarker

MANUFACTURERS

Cooper Lighting

d'ac Lighting

Engineered Lighting Products

Legion Lighting

Linear Lighting

Regiani

SPI Lighting

Translite Systems

APPLICATIONS

Pendants in open-office space; recessed ceiling fixtures throughout common areas and private offices; track-system in board room; striplights in equipment room; undercabinet fixtures in bathrooms; and exit signage and emergency lighting.

Ceiling-mounted cans in small conference rooms; pendants in cafe

Recessed light niche in cafe

Wall-mounted reflector at open-office perimeter

Wall-wash cove in the Imaginarium

Recessed low-voltage fixtures in Imaginarium corridor

Atria floodlights

Pendants in reception area and Imaginarium

SEE FACING PAGE FOR MORE INFORMATION ON A SELECTION OF THESE PRODUCTS.

TRANSLITE SYSTEMS | PRODUCT: RETRO 55 |
WWW.TRANSLITESONOMA.COM

This monopoint luminaire is available for either AR70 or MR16 lamps, 50W max. It is suspended by a rod, flexible hose, continuous spring or coaxial cable. The standard length is 48 inches. Finishes include: aluminum, satin nickel, polished brass, bright copper and black. **CIRCLE 130**



LEGION LIGHTING | PRODUCT: SERIES 275 | **WWW.LEGIONLIGHTING.COM**

Appropriate for display and utility lighting applications, this compact luminaire can be installed either horizontally or vertically. The fixture also includes a class "P" energy-saving rapid-start magnetic ballast, and a polished chromium housing and reflector. Luminaire dimensions are 2 7/8 inches high by 4 1/4 inches deep. **CIRCLE 134**



TRANSLITE SYSTEMS | PRODUCT: SLIMLITE | **WWW.TRANSLITESONOMA.COM**

This extremely thin luminaire is available for either T2 or T5 lamps, between 13 to 80 watts, and is available in lengths from 21 to 60 inches, with remote or integral ballast options. Maximum length for cantilevering is 18 inches. Finishes include: satin nickel, polished brass, bright copper, white and black. **CIRCLE 131**



ENGINEERED LIGHTING PRODUCTS | PRODUCT:
HITW SERIES | **WWW.ELPLIGHTING.COM**

This recessed fiberglass-reinforced composite fixture looks like a custom-formed drywall "light niche." The shallow 3-1/2-inch fixture allows installation in a 4-inch wall, while maintaining a one-hour fire rating. **CIRCLE 135**

D'AC LIGHTING | PRODUCT: MERIDIAN |
WWW.DACLIGHTING.COM

This pendant, which has a ceiling-mount option, features an aluminum shade and canopy, a white opal acrylic bottom lens, and brushed aluminum buttons. Adjustable aircraft cable supports the fixture, which accepts incandescent or fluorescent lamps. The shade is available in 21 colors. UL listed and CUL certified for dry locations. **CIRCLE 132**



LINEAR LIGHTING | PRODUCT: WALL WASH 4 |
WWW.LINEARLIGHTING.COM

This cove-style direct wall-wash luminaire is 8-inches tall by 10-inches deep, for use with T8 and T12 lamps. Housing is made of 20-gauge steel with a 3/4-inch extruded aluminum ceiling flange. Comes in standard lengths up to 8 feet. Finish is white enamel with a 92 percent reflectance. **CIRCLE 136**



COOPER LIGHTING | PRODUCT: CORELITE CLASS-A PERF | **WWW.COOPERLIGHTING.COM**

This suspended semi-indirect perforated fixture housing creates a soft downlight component to match ceiling brightness, while minimizing contrast. For use with three T8 lamps. **CIRCLE 133**



SPI LIGHTING | PRODUCT: ECHO 1 |
WWW.SPILIGHTING.COM

Compact 5-inch-diameter housings are solid or perforated. Quartz halogen lamps provide excellent color rendition and allow for easy dimming. For use with double-ended metal halide lamps. **CIRCLE 137**

On the Waterfront

An artful lighting scheme helps New York City reclaim its Hudson River waterfront.

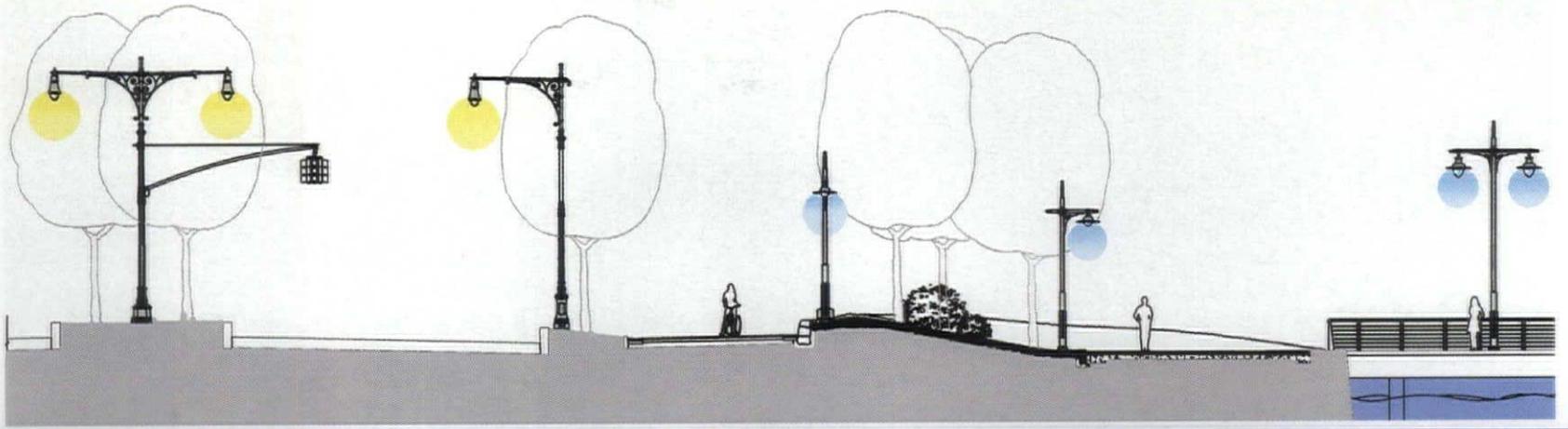


LITTLE MORE THAN A DECADE AGO, THE PIERS ON THE HUDSON RIVER ALONG THE SOUTHERNMOST STRETCH of Manhattan's West Side lay fallow, and the adjacent strip of riverfront served as a seedy city fringe—the domain of drifters, drug dealers and addicts. Today, owing to the perseverance of a group of local visionaries, the area bustles with the energy of teens on skate boards, seniors out for a stroll, families playing miniature golf, and cyclers and roller-bladers taking in the waterfront view along the esplanade. With the first phase of the 15-year, \$300 million development plan (which stretches over seven segments) complete, a broad stretch of this property also glows safely at night with an artful lighting scheme designed by New York City-based Domingo Gonzalez Associates.

Now known as Hudson River Park, the five-and-a-half-mile strip of land had been the subject of a strenuous multi-year debate among local and state officials, the Hudson River Park Conservancy, and activists opposed to the development. The park was conceived as the successor to the unexecuted multi-billion-dollar Westway initiative, an even broader riverfront development project that occupied New York City and State politics from 1969 to 1985, and would have been the nation's largest urban design project. In the Westway scheme, the park spanned across the West Side Highway, the thoroughfare that runs along the city's western perimeter and which

master planners had sought to sink as a tunnel below ground. Although local activists campaigned successfully to thwart depressing the West Side Highway for fear of the ecological disruption it would cause, a grassroots desire to create a riverfront public park remained. So in 1994, the nonprofit Hudson River Park Conservancy commissioned the design of a different master plan to develop park space in tandem with the New York State Department of Transportation's plan to reconstruct the West Side Highway. As enthusiasm grew for the master plan conceived by landscape architecture firm Quenell, Rothschild, Signe & Nielsen, \$42 million of the total \$300 million was allocated for the execution of Segment 4 of the plan—a roughly 3,500-foot-long stretch that was designed by landscape architects Abel Bainson Butz (ABB).

Here is where Domingo Gonzalez's lighting design, whose office partnered with the ABB team, brings vitality and a sense of safety to Hudson River Park at night. Having been involved in the master planning process since 1994, the lighting designer answered to three different clients along the way—the Hudson River Park Conservancy, the Empire State Development Corporation (an organization empowered by the state as the conduit for the project funds), and the Hudson River Park Trust (an entity created by the state legislature to oversee the entire \$300 million, seven-segment



project). "The master plan was an evolutionary document, and lighting was always part of the evolution," says lighting designer Domingo Gonzalez. "The question all along was "How do we make the park safe without overriding aesthetic concerns and people's ability to enjoy the landscape of the park and view to the river?"

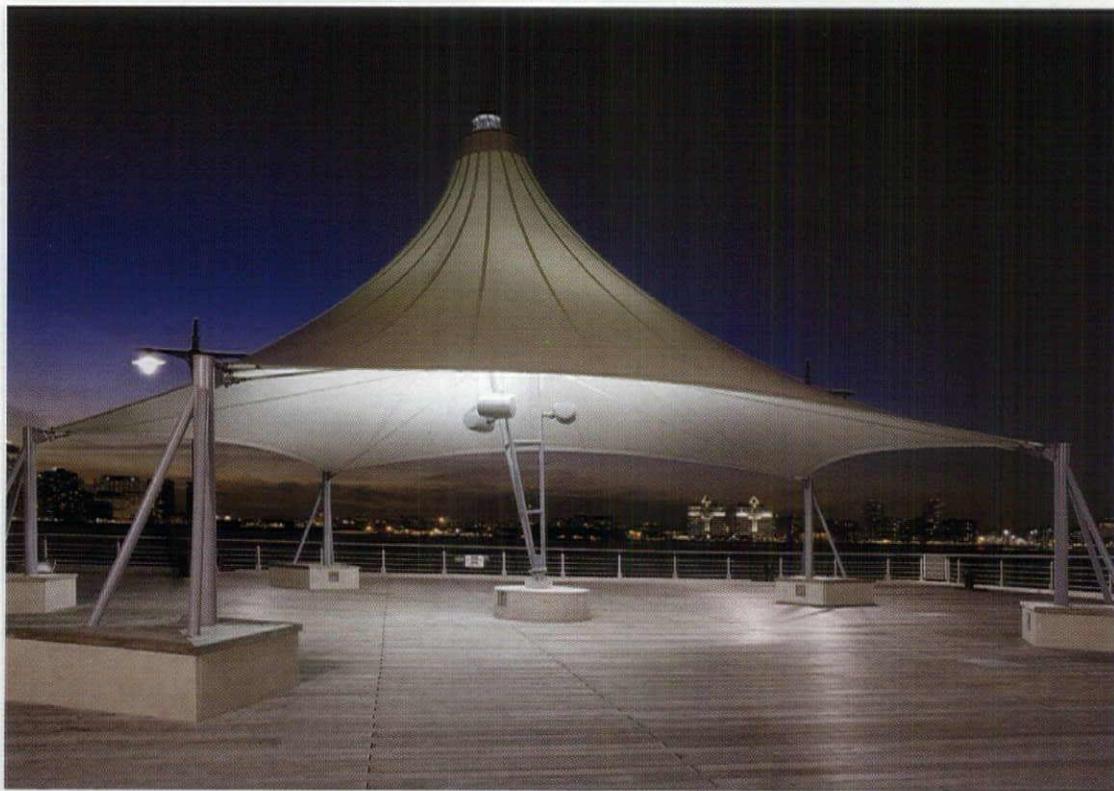
According to Gonzalez, his firm responded to that question with a lighting scheme based on three core concepts: First, the plan employed metal halide sources, which emit white light with better color-rendering qualities than the high-pressure sodium sources typically used in parks. Second, the designers established minimum standards for light levels that would enable people to feel safe. And finally, the scheme relied on a hierarchy of illumination—a three-part system of fixtures, including street lamps that provide general illumination of the park and pierscape, a feature luminaire integrated within the esplanade handrail, and standard fixtures that illuminate the park's structures and artwork.

The workhorse of the lighting scheme is a sleek, pole fixture, the design of which evolved after years of research, much discussion and numerous mock-ups, says Gonzalez. "The legacy of parks in New York is an Olmsteadian one, and part of that legacy is the Madison B pole, a standard fixture in New York for almost 100 years that

appears in Prospect, Fort Greene and Central Parks," says Gonzalez. "But for Hudson River Park, there was a profound desire for something different. Since it was the first park in New York to be developed in the twenty-first century, those involved didn't want it to be characterized by a nineteenth-century vocabulary. The process of selecting the right light pole became an amazing search—not only did we look at 50 to 60 fixtures, but also their lamping and photometric performance characteristics and the durability of their materials and finishes. It was quite a process."

Although the fixture the Trust ultimately chose departs from the predominant Victorian vocabulary of New York park fixtures, it does have roots in the city's more recent history. "In our research, we found a New York City light pole that had a modern quality, but it wasn't as banal as many contemporary fixtures that are so sleek and

A nautical theme informed the fixture design and selection for Hudson River Park: Porthole-like louvered steplights (facing page) are recessed into park benches along the pier. Integrated into the esplanade handrail and spaced 20 feet on center, customized stainless-steel bollards lamped with LEDs resemble miniature lighthouses (above).



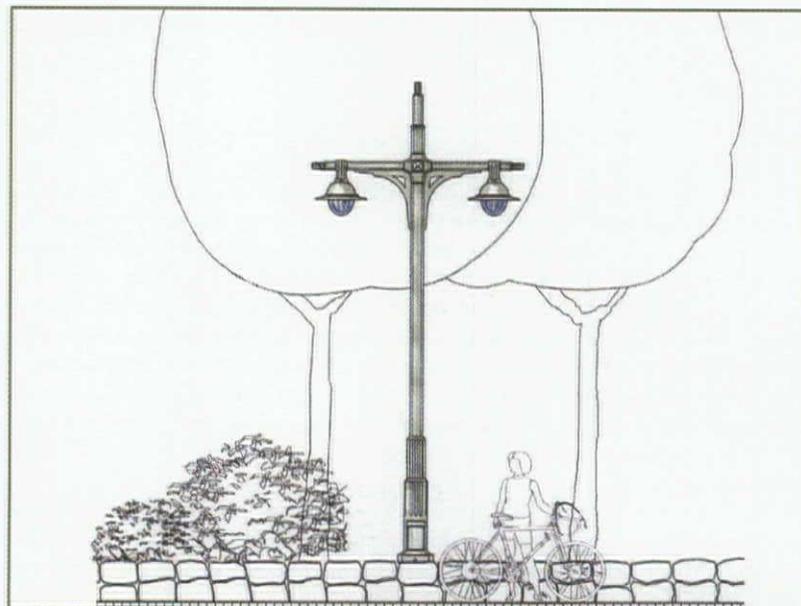
A series of tensile shade structures, which were designed by New Jersey-based Sowinski Sullivan Architects, are reminiscent of ship masts and sails (left and top left). These structures are illuminated with standard 150W, 250W or 400W metal halide floods painted to match the "masts." The designers adapted a 1936 fixture designed for the Triboro Bridge for the light poles. Fitted with 150W and 250W metal halides, the fixtures have downlight refractors with shields that minimize upward glare (drawing below).

- 1 Perspective of image on page 59
- 2 Location of structure shown in image on this page, bottom left
- 3 Location of structure shown in image, page 58
- 4 Location of circus-tent-like structure on this page, top left



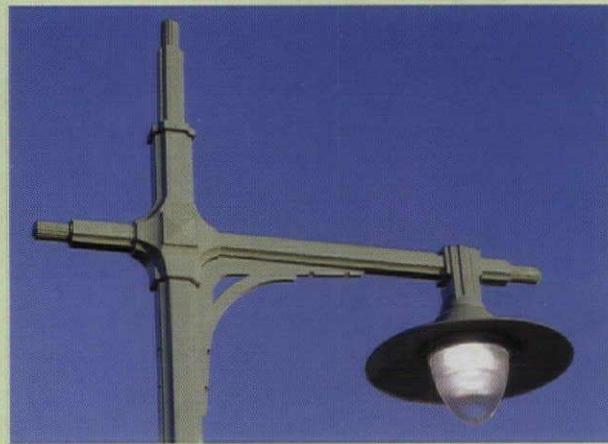
simple that there's just not a lot of 'there' there," say Gonzalez. The designers found a discontinued fixture called the TBTA pole, which had been designed in 1936 for the Triboro Bridge. "It was Arte Moderne in character with a lot of detail," says Gonzalez. Its cast-iron base meant that it was also durable enough to meet the 35- to 50-year life span for the fixture that the client demanded. Furthermore, its diagonal brace had a nautical flavor that characterizes the entire family of fixtures the designers developed for Segment 4, including a lighthouse-like bollard integrated into the esplanade rail; standard floodlights mounted with ship cleats to various tensile structures punctuating the pierscape like the masts of sailing ships; and the porthole-like louvered steplights integrated into benches and landscape.

By limiting the range of sources for the lighting scheme, to energy-efficient 150W, 250W, and 400W metal halides and LEDs, the lighting designers aimed to ease maintenance over the long haul. And by controlling the direction and quality of the light with louvers, filters and prismatic light-refracting glass shields, they offered a forward-looking nod to an evolving demand among city dwellers for a "dark sky"—or one that is at least not so obscured by bright city lights as to virtually obliterate the view of nature's naturally twinkling nighttime illumination. "Although we have no Dark Sky laws here yet because it's hard to legislate against flashy lighting in a place like New York City," says Gonzalez, "we still tried to extend a modest offering to the Dark Sky idea, and also to the idea that residents in high-rise dwellings should have a visually unencumbered view into the park." **JEAN NAYAR**



KIM LIGHTING | PRODUCT: AFL11 | WWW.KIMLIGHTING.COM

Designed for broad illumination, the AFL11 flood has a uniform beam pattern. The housing is a one-piece die-cast, low-copper aluminum cylindrical shape with integral cooling fins over the entire length. For use with 70W to 175W HID medium base lamps. An optional heavy-duty swivel that allows rotation from 55 to 145 degrees is also available. Recommended distance from the lighted surface is 3 to 20 feet depending on lamp and wattage. **CIRCLE 140**

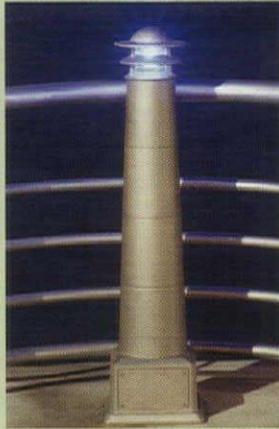


SPRING CITY | PRODUCT: TBTA POLES | WWW.SPRINGCITY.COM

This lamppost is manufactured in three sections. The base is fabricated out of ductile iron, has two access doors for wiring, and meets ASTM A536-84 standards. The pole is a heavy-wall 6063-T6 custom aluminum extrusion, and is bolted on-site to the cast base. For this particular project, the aluminum arm and bracket were shop-assembled and shipped together. The luminaire uses a 250W metal halide lamp with a type 3 distribution refractive globe and a remote ballast assembly with a quick disconnect. **CIRCLE 144**

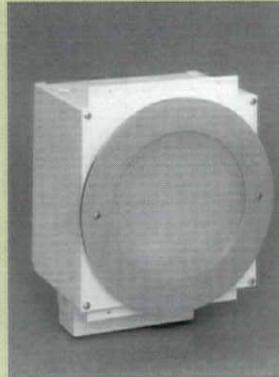
FORMS + SURFACES | PRODUCT: LIGHTHOUSE BOLLARD | WWW.FORMS-SURFACES.COM

This tapered cast-aluminum bollard with horizontal score lines is finished in a polyester powdercoat. Dimensions are 41.8 inches high by 9 inches round. The head is comprised of a three-part cast aluminum frosted borosilicate glass cylinder, gasketed at both the top and bottom, housing 26W, 32W, or 42W compact fluorescent lamps. The electronic ballast is thermally protected. For this project, the bollard was customized with a stainless-steel housing and a LED source covered by a blue glass shield. **CIRCLE 141**



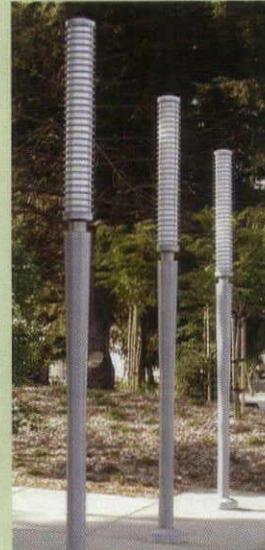
C.W. COLE | PRODUCT: 3300 SERIES STEPLITES | WWW.COELIGHTING.COM

Appropriate for exterior concrete pour/block wall mounting, this product features a round or square cast-aluminum faceplate. The large aperture allows high light levels to the front and sides of the luminaire. A die-formed 16-gauge steel housing finished with a white polyester coating, and a tempered glass diffuser set in a silicone sealant, form the fixture. Mercury vapor, high-pressure sodium or metal halide may be specified. For this project, the fixture was modified to incorporate a 32W triple-tube compact fluorescent. The faceplate was also customized with extra fasteners to resemble a nautical porthole. **CIRCLE 142**



SELUX | PRODUCT: CORRAL COLUMN | WWW.SELUX.COM/USA

The Corral fixture is available with a round or slightly tapered column, and can be specified for use with one, two, three or four 32W fluorescent lamps. An impact-resistant diffuser behind protective die-cast aluminum rings, vandal-resistant fasteners, and a die-cast fixture cover make this durable luminaire appropriate for high-traffic locations like parks. Continuous gasketing provides weather proofing, and dust and insect control. Finish options include white, black, bronze and silver. This product was used for the playground on neighboring pier 51, which was also part of the Segment 4 project, though not depicted in the images. **CIRCLE 144**



DETAILS

PROJECT Hudson River Park, Segment 4, New York City
CLIENT Hudson River Park Trust
LIGHTING DESIGNER Domingo Gonzalez Associates, New York City
LANDSCAPE ARCHITECT Abel Bainnson Butz, New York City
PROJECT SIZE 3,500 sq. ft.
INSTALLATION COSTS \$42 million
PHOTOGRAPHER John Bartlestone

MANUFACTURERS

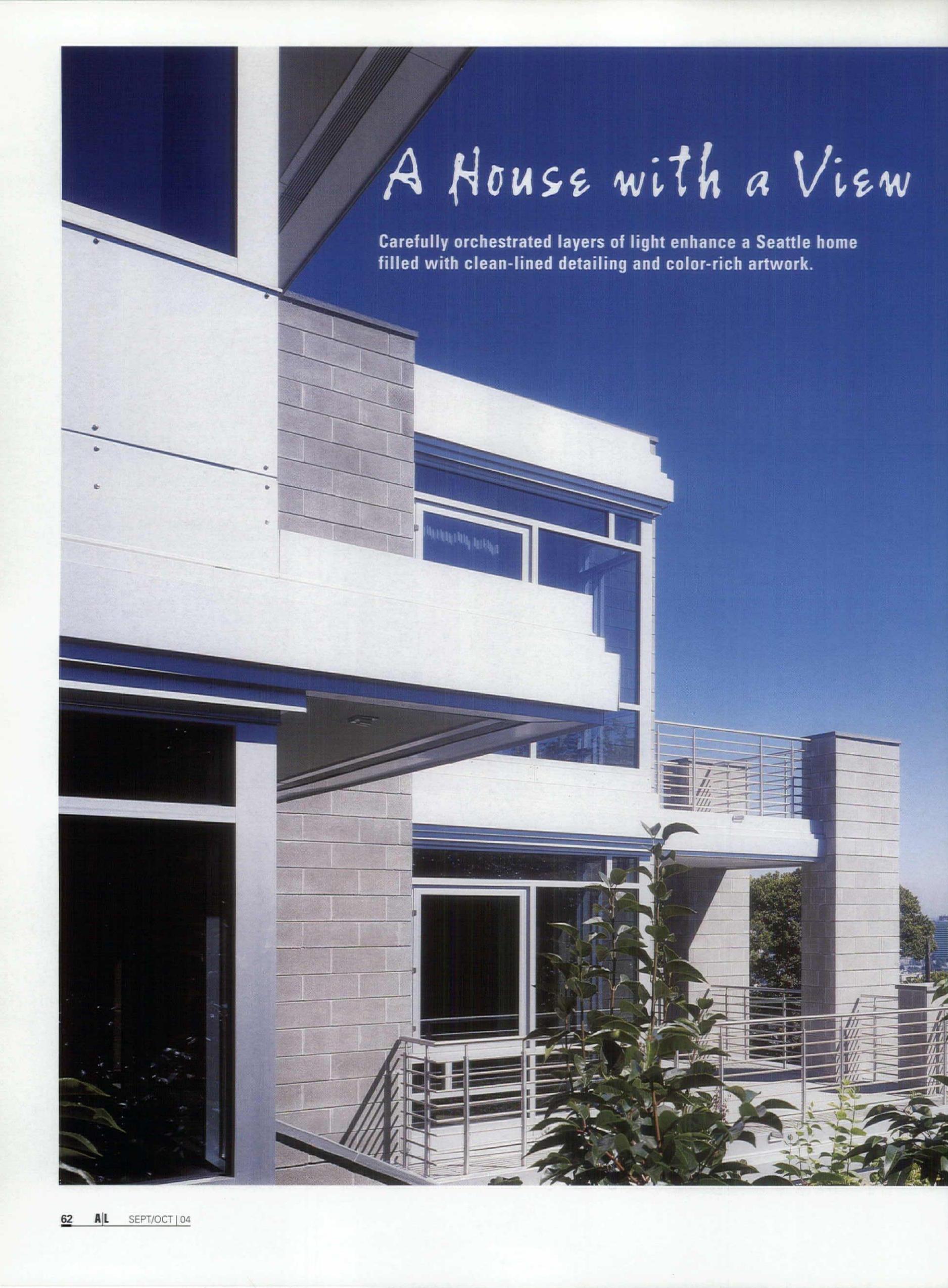
C.W. Cole
 Forms + Surfaces
 Kim Lighting
 Selux
 Spring City

APPLICATIONS

Steplights
 Lighthouse bollards
 Floodlights
 Playground poles
 TBTA Poles

SEE ABOVE FOR MORE INFORMATION ON A SELECTION OF THESE PRODUCTS.





A House with a View

Carefully orchestrated layers of light enhance a Seattle home filled with clean-lined detailing and color-rich artwork.

"THERE WAS MORE THAN 20 FEET OF BAD LANDFILL AND WEEDS," SAYS SEATTLE ARCHITECT Clint Pehrson of the vacant one-third acre in the Queen Anne Hill residential neighborhood adjacent to downtown Seattle. But appreciating the spectacular views of the city skyline that the property offered, Pehrson purchased the land, reworked it, and designed a 5,900-square-foot, three-story home for himself, his wife and their two small children.

Pehrson based the home's architecture on three broad concepts—the juxtaposition of "heavy" and "lightweight" elements, the views, and his commitment to art—each of which influenced the lighting design created by Christopher Thompson, principal and project designer and James Sultan, studio manager and assistant project designer of Seattle-based Studio Lux. The home's massive masonry exteriors are counterbalanced with expansive window walls and aluminum framing. Opacity is blended with transparency, and the lighting projects warmth from within. Thompson explains, "In any approach we take, we listen to the client's needs, then study the architecture, and that dictates what lamps and fixtures are selected. The exterior of the structure is sparse, constructed with gray cement blocks. The client wanted the home to be like a lantern; and because of the glass walls, the whole interior can be seen illuminated at night."

Another key feature of the house is its commanding view of Seattle and the mountains beyond. "The house deals with the notion that humans have a primal need for shelter, and to seek high ground and inhabit a place of refuge that protects and offers a commanding view so you can see what is approaching," Pehrson explains. The lighting scheme developed by Studio Lux had to leave the exterior views unobstructed by both bulky fixtures and offending reflections in the myriad of window walls.

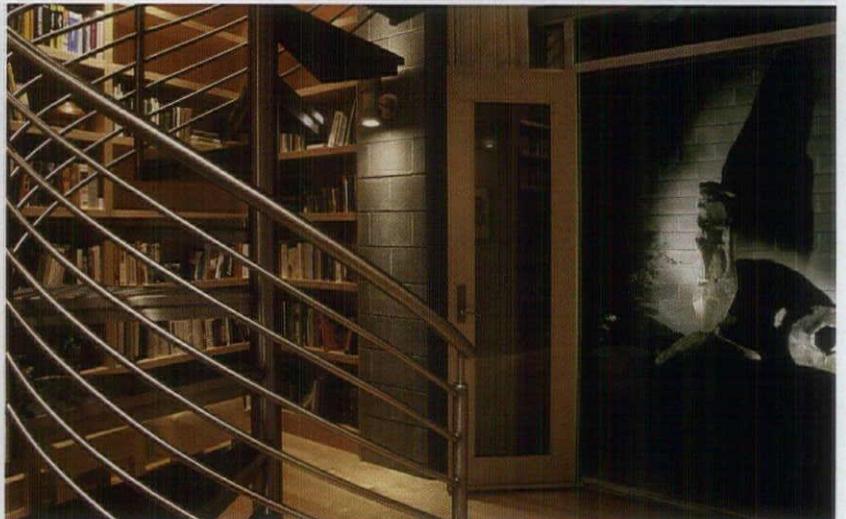
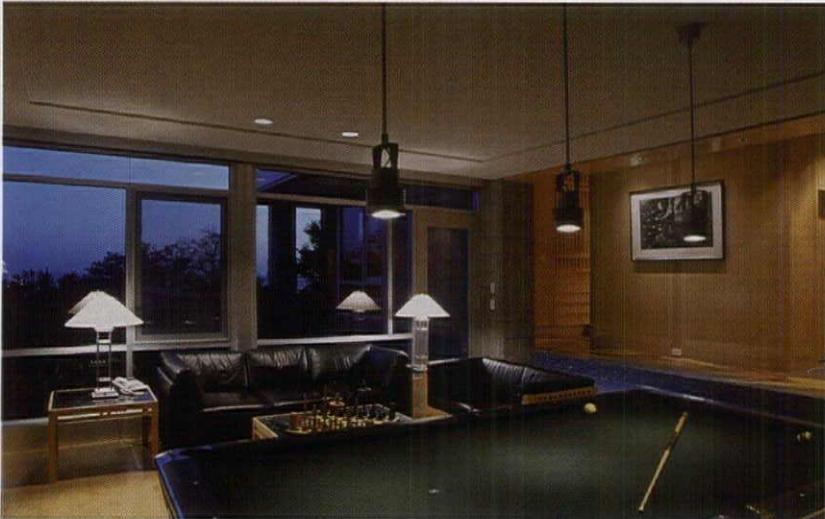
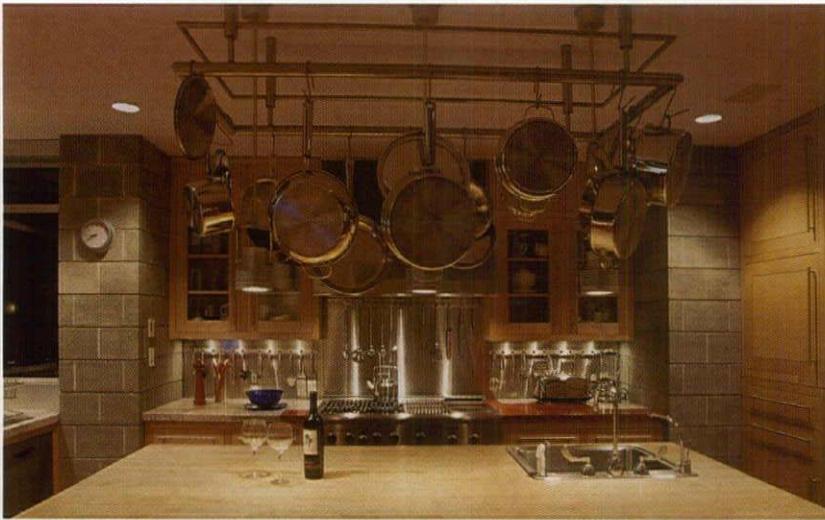
Pehrson's involvement in the arts community and passion for fine art led him to incorporate a variety of original pieces into the home. Artwork not only adorns the walls suspended on stainless-steel rail systems custom designed by Pehrson, but is embedded in the floors as well. Artist Jack Mackie set the tone for the residence in the floor of its entryway by depicting multi-seasonal maple leaves in saturated, vivid colors using mother-of-pearl and exotic granites on a background of cobalt-blue terrazzo. The lighting designers had to illuminate the array of both wall-mounted and floor-embedded art, while respecting the clean lines of the architecture.

LIGHT LAYERS

To create a consistent yet effective lighting system, Studio Lux developed a palette of fixtures that when combined, achieve customized results throughout the house. Ceiling-recessed downlights fitted with halogen lamps provide the bulk of the lighting. The designers opted for this solution because it offers the ability to adjust a fixture and lock in the focus, preserving the integrity of the lighting. "After the lighting was installed, we studied the artwork, added lenses and filters, and locked down the adjustments," Thompson says. "The fixtures don't have to be refocused after relamping."

"One of the interesting things Clint Pehrson did in his design was pay attention to focal points. He studied each focal point, how one would move toward it, and then what the next visual composition and focal point would be as you moved throughout the house," says Thompson. "We made sure the lighting design addressed this." In addition to considering how the rooms would look when all the lighting components were illuminated, the lighting designers also studied what would happen if only individual layers of light





Studio Lux created a layered approach for the home, with ceiling-recessed downlights providing one level, pendants another, and table/task another throughout the 5,900-square-foot residence. All fixtures are fitted with halogen lamps to maintain a consistent color temperature throughout the house; their wattage depends on how much light is reflected and absorbed in any given space. In the master bath (below), miniaturized

versions of the pendants used in other areas of the home are suspended near the fireplace. "The lighting was planned to allow the bather to see the skyline through the window wall, rather than distracting overhead lighting," says Thompson. (Other spaces clockwise from top left include: the kitchen, dining room, library and billiard room. The stairwell is featured on the facing page.)

were introduced. "The visual compositions for each room were choreographed and programmed in the control system so they can be accessed any time," says Thompson.

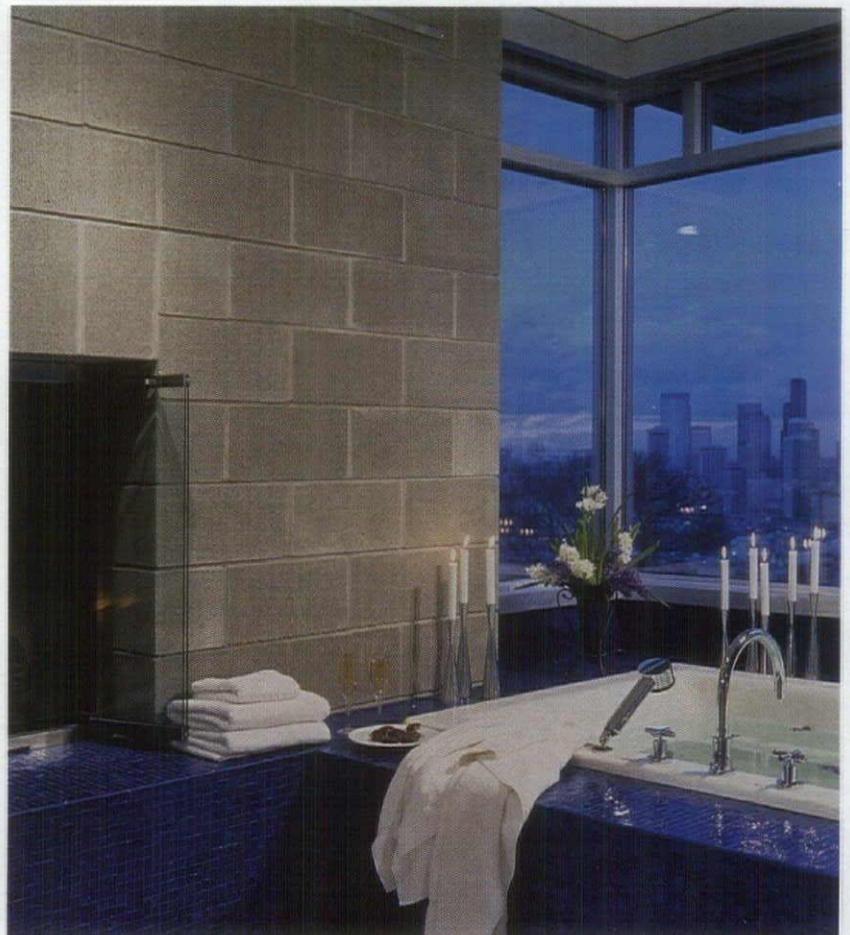
The layered approach to lighting is apparent throughout the house. The dining room includes two levels: Ceiling-recessed downlights positioned above the table focus on the food and the diners, and a second level, provided by a pendant that warms the room, distributes light gently throughout for an inviting atmosphere. "The selected pendant doesn't overwhelm the space or interfere with sightlines," explains Thompson. Recessed halogen downlights have also been carefully planned here, as in the rest of the home, to spotlight the art on the dining area walls. The fixtures highlighting artwork have been fitted with UV filters to protect against fading and material damage.

In the kitchen the challenge for the lighting team was to provide task illumination at countertop level while simultaneously highlighting artwork in the floor. Spun aluminum pendants suspended above the central island provide task light on the wood counter. In the cooking area, halogen fixtures are mounted under the maple cabinets to light the terrazzo countertops. The designers installed fixtures that would cast pinspots of light onto the stainless-steel backsplash to create sparkle in that area, which is recessed between matte concrete pillars.

In the billiard room there was no capacity to recess fixtures in the ceiling above the game table, so the designers opted to include pendants for task lighting, which allows a clear view of the vistas beyond the window wall. Two downlights above the sofa area and two low-lying table lamps complete the task and general illumination for the space.

The two-story library, which soars 18 feet, was a particular challenge. "It was difficult to get vertical footcandles on the books," says Thompson, who specified the same spun aluminum pendants used in the kitchen. "That gave us good reading light, and the solution complemented the architecture, emphasizing the vertical aspect of the spiral staircase."

"The interior structure of the home includes clean-lined finished wood, masonry, stone and glass elements that are well detailed, but without ornate embellishment," Pehrson explains, "and the tectonic, substantive backdrop is awakened by the artwork, people and furnishings that inhabit the house." Artistry abounds in this stunning Seattle home, not only in the artwork it contains, but also in the skillful orchestration of the architectural and lighting details that enrich the art of living. **WANDA JANKOWSKI**





DETAILS

PROJECT Highland Drive Residence, Seattle

ARCHITECT AND CLIENT Clint Pehrson, Seattle

LIGHTING DESIGNER Studio Lux, Seattle

PHOTOGRAPHERS Steve Keating (opening spread); Stephen McGehee (interiors)

MANUFACTURERS

Baldinger

Baldinger

Cooper Lighting

HessAmerica

LiteTouch

APPLICATIONS

Joseph pendant in dining room

Max wall sconce in white acrylic and polished brass used throughout the house

IRIS adjustable 3-inch downlights and angle-cut reflectors, and 5-inch downlights with 50-degree cutoff reflectors used throughout the house

BARI 130 wall sconce and adjustable pendant

Lighting control system

SEE BELOW FOR MORE INFORMATION ON A SELECTION OF THESE PRODUCTS.

HESSAMERICA | PRODUCT: BARI WALL SCONCE |
WWW.HESSAMERICA.COM

Precision-machined cooling grooves and an aluminum finish give the BARI family of luminaires (available in wall- and ceiling-mounted and pendant versions) a contemporary appearance. Both models take a low-voltage halogen lamp. **CIRCLE 150**



BALDINGER | PRODUCT: JOSEPH PENDANT |
WWW.BALDINGER.COM

The Joseph pendant comes in a variety of metal finishes, including black or white gloss, polished or satin brass, and polished or satin chrome. Diffuser options include opal glass, black or white perforated metal, acrylic, and beige or white faux alabaster. Shown is the 25-inch length; a 48-inch double pendant is also available. Both pendants are 22 3/8-inches wide. **CIRCLE 151**



BALDINGER | PRODUCT: MAX WALL SCONCE |
WWW.BALDINGER.COM

The ADA-compliant Max wall sconce is also available as a ceiling fixture. Both versions are 11 1/2 inches wide and 12 7/8 inches long. The luminaire comes in a variety of metal finishes, including black or white gloss, polished or satin brass, and polished or satin chrome. Diffuser options include opal glass, black or white perforated metal, acrylic, and beige or white faux alabaster. **CIRCLE 152**

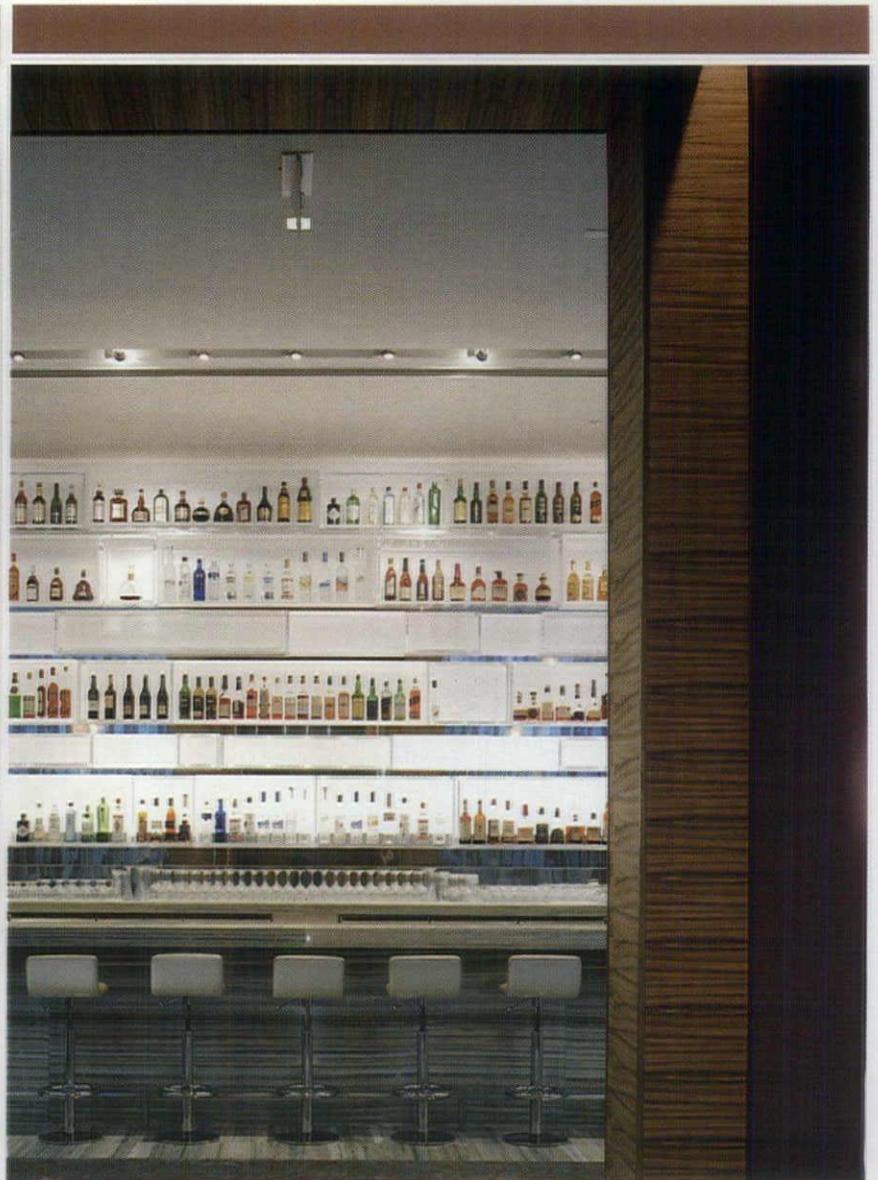


COOPER LIGHTING | PRODUCT: RECESSED DOWNLIGHT |
WWW.COOPERLIGHTING.COM

The 3-inch IRIS adjustable downlight (shown) is used for task and accent lighting in the house, and takes low-voltage MR16 lamps. A 5-inch adjustable IRIS downlight was used to provide ambient light in areas like the kitchen; this luminaire operates on a line-voltage system. **CIRCLE 153**

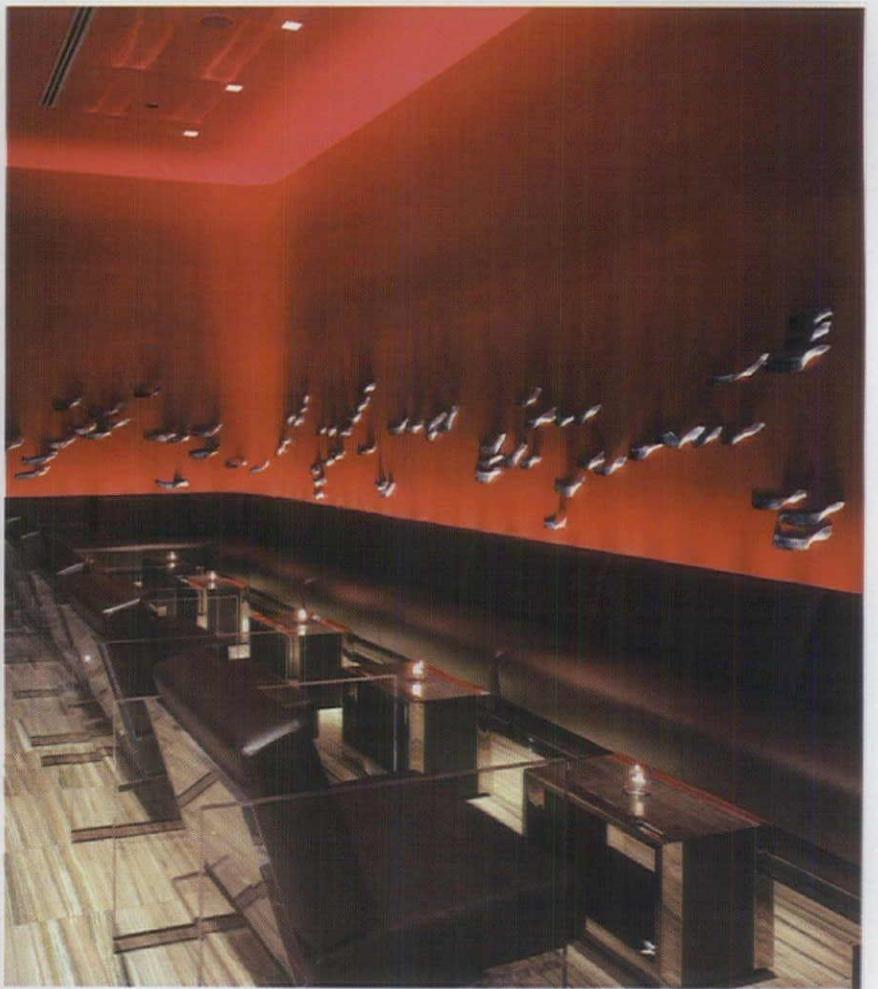


PRODUCTS



la lumiere artistique

A hypnotic brew of light, art, and decadently textured materials creates a dramatic and mysterious effect for Le Meridien Hotel.





WHAT GUESTS VISITING LE MERIDIEN SEE IS A EURO-CHIC HOTEL WITH A SEXY, THEATRICAL atmosphere. What they do not see is the lighting equipment—or the value engineering that almost rendered the lighting plan by Cooley Monato Studio of New York City a flight of imagination.

This striking project in Minneapolis is in part the product of a well-choreographed team. Cooley Monato has had a six-year working relationship with Yabu Pushelberg (YP), the Toronto-based firm that has “arrived” on the design scene like a hip guest at a dull party. Together, the duo has created striking interiors for the Four Seasons in Tokyo, Bergdorf Goodman in New York City, Amore Pacific skin care boutique, also in Manhattan, and of course Le Meridien; the latter two won 2004 Lumen Awards of Excellence.

It is easy to see why: The interiors of Le Meridien are sensual and inviting. Says YP project manager Mary Mark, “The design is strong, but simple. We wanted to create glamour, tastefully, with a little sparkle, so that guests are transformed but they can’t quite tell why.” The modern art installed throughout is simultaneously organic and urbane. The earthy color palette calms, while the surfaces and materials—shiny copper, a dark metal filigree screen, an exotic bark-like veneer, mirrors—engage and titillate the viewer. The artwork and materials are highlighted and brought to the fore with a carefully planned but simple lighting approach.

From the beginning, the project was a canvas primed for creative expression. YP creates interiors that become pieces of art in their own right, but are actually a collection of artist-designed installations. “If you did not know it was a hotel, you would have the impression that it was a modern art gallery,” says lighting designer and firm principal Emily Monato. “YP is heavily invested in showcasing art pieces as architecture.”

Monato and Giselle Mercado, a senior designer with Cooley Monato, approached Le Meridien with a sense of this potential. However, it soon seemed that their lighting concepts would not survive the value-engineering process. “The

lighting approach was so light-handed and carefully balanced,” explains Monato, “any change could have ruined it.” Monato and Mercado rallied to find a solution. Working with Andy Pott, principal of lighting agency TPL Marketing in Toronto, they were able to select substitutions that preserved most of the original lighting scheme. “We credit Andy with saving the intent of the project,” says Monato. “He has the kind of sensitivity that says ‘OK, I know what you are trying to do here.’”

The lighting throughout the public areas (the guest rooms had already been designed by the time YP and Cooley Monato came on the scene) is a variation on one detail, explains Monato. “Everything is hidden away in some sort of pocket.” From the Minneapolis sidewalk, the hotel has an unassuming façade. Once through the front door, however, visitors are greeted by the first of a series of interesting surfaces. Copper-clad walls form the lobby and concierge area; these are grazed with light from incandescent channels that skirt the room’s perimeter. Walking to the elevators that transport guests to the registration area on the fourth-floor, one passes through a second transition space characterized by filigreed screens. During the day, sunlight enhances the decorated surface; by night, a low-voltage uplight sandwiched between the wall and the panel brings the detail alive. On the fourth floor, a special wood veneer lines the walls, and like they did the copper facing, the lighting designers grazed this with a track fixture recessed in a deep pocket between the ceiling and perimeter wall.

A similar approach is taken to the restaurant/lounge on the fourth floor, and in the bar/lounge on the first floor; here, walls—painted a provocative red—are uplighted with an adjustable line-voltage fixture recessed in a 5-inch-wide space behind the banquette. In the bar, an art installation by Belgian ceramic artist Piet Stockmans is embedded in the wall, and the adjustable equipment enabled the designers to focus the lighting on the variable heights of the installation.

Custom fixtures are a legitimate part of the project’s stable of artwork. A pendant fixture, designed by YP and fabricated by a local porcelain artist, hangs in

Le Meridien Hotel is first and foremost about mood. Says Emily Monato, a principal of the lighting design firm on the project, “One of the reasons I think we get along with Yabu Pushelberg, the project’s interior designer, so well is because we don’t talk numbers; we talk feeling and atmosphere.” A combination of factors create a sexy, theatrical atmosphere, such as in the first-floor bar/lounge (facing page, bottom right) or the fourth-floor bar and restaurant (facing page, top

right; and above). One critical element is the artwork, which YP excels at incorporating into the architecture. Pieces include a wood-block relief by Dennis Lin (facing page, bottom left); a ceramic sculpture by Piet Stockmans embedded in the bar/lounge wall; and acrylic partitions designed by YP and formed of individually glued slats.



For Giselle Mercado, senior lighting designer on the project, the dining room has the best effect: "You can feel the different temperatures of the materials, the blue of the acrylic, the warmth of the wood, the intense red color of the banquette wall." At the far end of the restaurant, a "kinetic sculpture" of disc-shaped mirrors enables diners to watch their fellow guests (left). In lieu of a color-wash luminaire, which was value engineered out of the project, the lighting designers bathed the sculpture with accent lights fitted with blue dichroic filters, similar to those used on the acrylic partitions across the room. Facing page: Downstairs in the first-floor lobby, dark metal filigree screens are detailed by both sunlight (bottom right) and electric light (left); copper-clad walls greet guest as they enter from the street (top right).



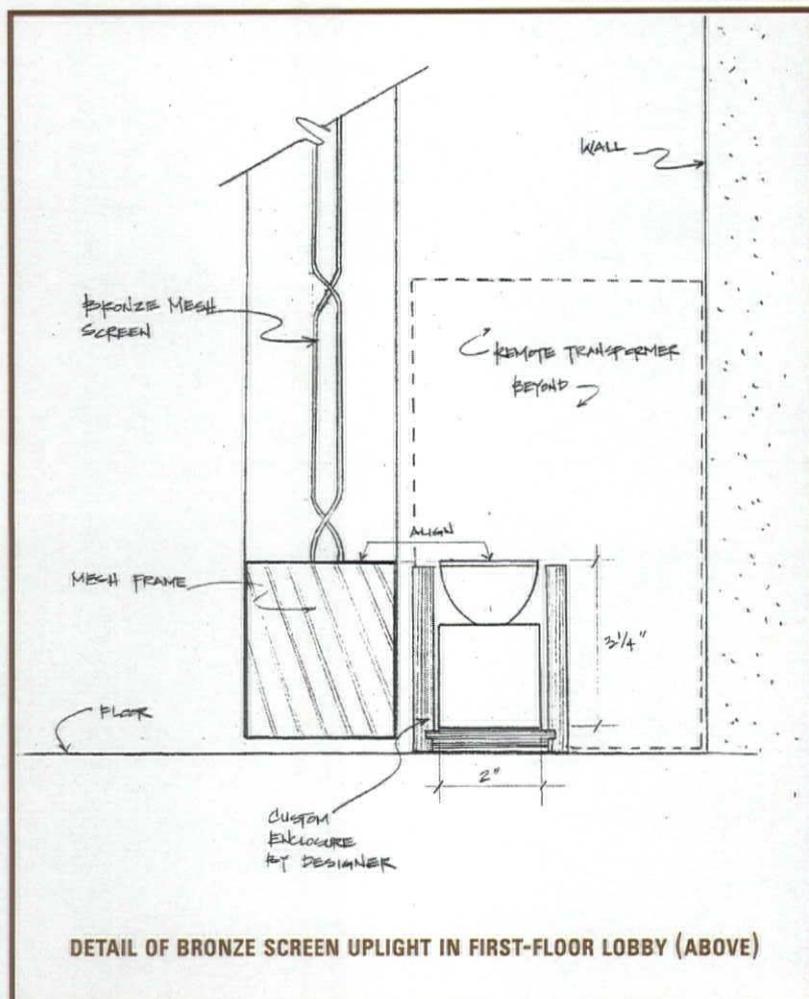
the first-floor bar. A lantern-like custom fixture, also designed by YP with technical input from Cooley Monato, is a reoccurring theme throughout the hotel and is first introduced in the entry lobby, where its yellow-cast light complements the copper surfacing. Upstairs, the lanterns are the "fire" against the "ice" of the acrylic partitions. Forming the entryway to the hotel restaurant, the partitions—which are constructed with meticulously stacked and glued frosted and clear acrylic slats—are enhanced with blue-dichroic-filtered light. The artwork throughout—like the individually strung bits of paper that form a "curtain" behind the reception desk (by artist Hirotoishi Sawada) and the wood-block relief (by artist Dennis Lin) near the elevators—is lighted with MR16s.

LIGHT LOST

Despite the team's best efforts, a few concepts were ultimately omitted in the reengineering process. In the dining room, stacked disc-shaped mirrors line the far wall; Monato and Mercado had hoped to emphasize the installation with a color-wash luminaire mounted behind the discs, but ended up settling for a starkly painted back wall and a few adjustable accent lights fitted with the same glacial-blue filters that light the acrylic panels on the other side of the room. The banquettes were another area for compromise: instead of the low-voltage ALRs originally specified, the designers settled on line-voltage PAR20s; in addition to being less expensive equipment, they eliminated the need for a transformer. Also, to reduce the number of fixtures, the luminaires were spaced farther apart. The scallop on the wall is perhaps more pronounced than it would have been with the original specification, notes Monato, but otherwise the effect is very close to what was intended.

Le Meridien has the look of an opulent project that never suffered an ounce of value engineering; that it actually did makes the design team's accomplishments that much more outstanding. **EMILIE WORTHEN SOMMERHOFF**

 more information at
WWW.ARCHLIGHTING.COM



DETAILS

PROJECT Hotel Meridien, Minneapolis
OWNER James Graves, Graves Hospitality
INTERIOR DESIGNER Yabu Pushelberg, Toronto
LIGHTING DESIGNER Cooley Monato, New York City
LIGHTING AGENT TPL Marketing, Toronto
PHOTOGRAPHER David Joseph, New York City

MANUFACTURERS

Altman
 Bartco
 Belfer
 Lightolier
 Lucebella / 3G Lighting
 Reggiani
 Tokistar

APPLICATIONS

Master Ellipse theatrical projectors in first-floor bar
 Linear T5 fluorescent strips in first-floor bar, linear T5 dimmable fluorescent strips in business center
 Halogen Star linear (straight and curvable) incandescent channel in lobbies, waiting area, bar, color niches, and private dining; Marquee linear incandescent channel behind banquettes on first and fourth floor
 Recessed track and fixture in fourth-floor bar and dining room
 Square trimless downlight throughout; multihead trimless accent in fourth-floor lobby and lounge
 Accent lights throughout; accent light with dichroic lens at acrylic partitions
 Low-voltage incandescent strip in millwork on fourth floor reception design and bar

SEE FOLLOWING PAGE FOR MORE INFORMATION ON A SELECTION OF THESE PRODUCTS.



3G LIGHTING | PRODUCT: MADISON COLLECTION | WWW.3GLIGHTING.COM

These high-end, decorative lighting fixtures lend themselves to both commercial and residential applications. The 3G-RC116TR and 3G-RC216TR (one and two light MR16) are trimless and finished with a natural double gimbal, white interior, and integral electronic transformer. This product was used at the fourth floor reception desk for an art installation of individually strung pieces of paper mache. See detail below. **CIRCLE 154**



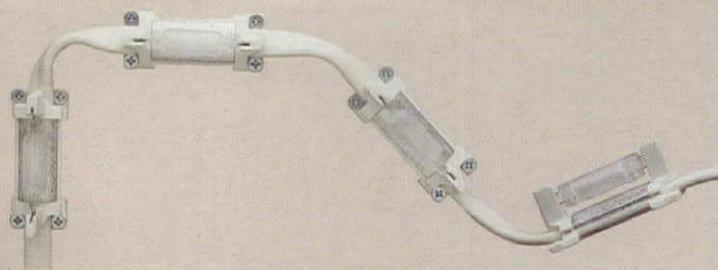
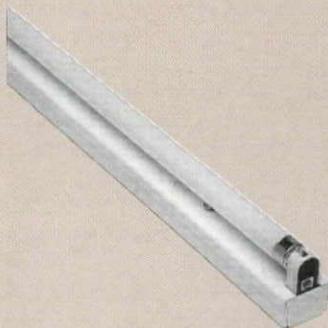
ALTMAN | PRODUCT: MASTER ELLIPSE | WWW.ALTMANLIGHTING.COM

This luminaire fits 39- and 70W 12,000 hour ceramic discharge metal halide lamps; provides 20- to 50-degree zoom optics; is fabricated from a compact, rugged extruded aluminum construction; includes a low-noise, high-efficiency electronic ballast; has an easy-operating lamp centering knob and peak-or flat-field adjustment knob; an accessory slot that accepts Master Spin rotating gobo accessory or pattern holders; and low-friction Teflon lens slides, among its many features. **CIRCLE 155**



BARTCO | PRODUCT: BFL-SAM | WWW.BARTCOLIGHTING.COM

This miniature linear T5 fluorescent architectural fixture with an integral ballast comes in a fully assembled 20 gauge steel housing. Available for 8-, 13-, 14-, 21-, 28- or 35W lamps. Standard finish is a high reflectance white powder coat, applied post production. Luminaire includes rotational locking lamp holders. Installed end feed connectors accept 3/8-inch steel flex conduit. UL and C-UL listed. **CIRCLE 156**



TOKISTAR | PRODUCT: ADVANTAGE SERIES | WWW.TOKISTAR.COM

This flexible conductor luminaire is designed around a 24V frosted rigid-loop xenon lamp, which evenly distributes light in all directions, has a rated life of up to 20,000 hours, and is available in 3-, 5- and 8.5W. Other features include: recessed lamp contacts, self-mounting sockets, optional lens to shield lamp, and a reflector to spread and soften light. **CIRCLE 157**

LIGHTOLIER | PRODUCT: LYTESPAN TRACK LIGHTING | WWW.LIGHTOLIER.COM



This low-voltage enclosed spot MR16 50W (max.) features a die-cast aluminum ring; a bi-pin ceramic socket; an electronic transformer; track attachment fittings; and a tempered glass lamp guard in an aluminum housing. Available in three finishes: matte white or black, and metallic aluminum, the luminaire is 4-inches tall by 4-5/8-inches deep. UL listed. **CIRCLE 158**

REGGIANI | PRODUCT: SERIES 71TW | WWW.REGGIANI.NET

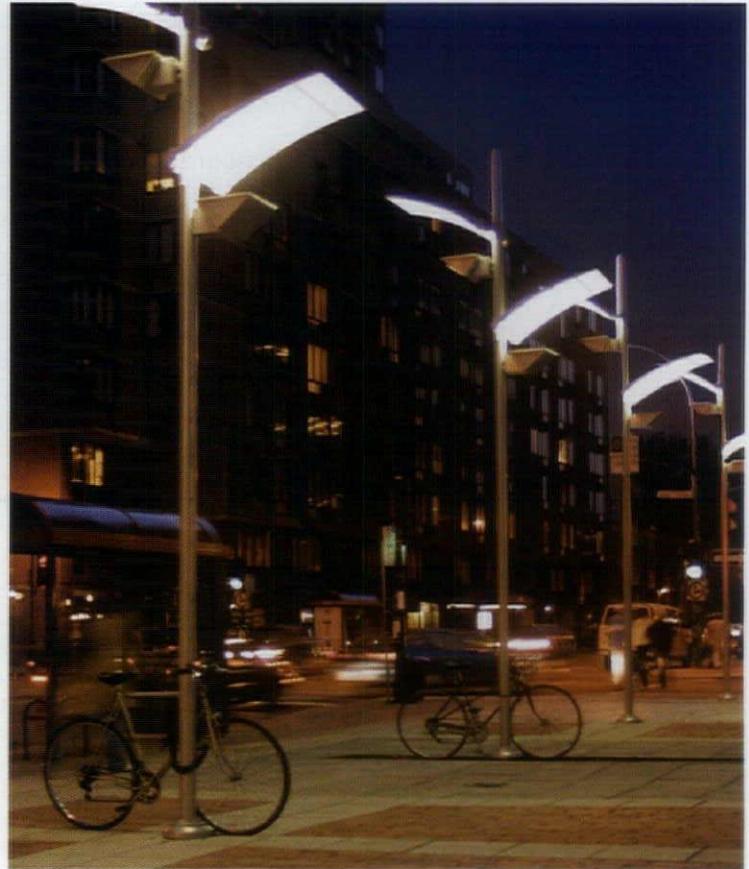
This low-voltage, adjustable (32-degrees) recessed luminaire for 20- to 50W 12V halogen lamps with dichroic reflectors, also includes a polyblok system with clear safety glass; a die-cast aluminum body; and zinc coated spring clips. Available in five finishes: chrome, bronze, white, black and metallised grey. **CIRCLE 159**



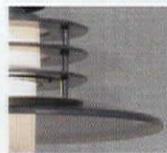
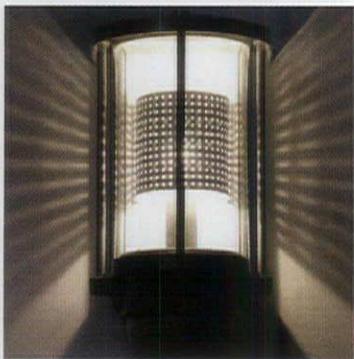


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LINCOLN SCHOOL, PROVIDENCE, RHODE ISLAND

DETAILS

PROJECT | Lincoln School, Providence, Rhode Island
DESIGN TEAM | PDT Architects, Portland, Maine (architect); Allied Engineering, Westbrook, Maine (electrical engineer); Lightolier (lighting technology consultant)
PHOTOGRAPHER | Jim Kelly, Boston
MANUFACTURER | Lightolier

 more information at
WWW.ARCHLIGHTING.COM

CHALLENGE Creating a comprehensive, coordinated lighting package for an environment with as many diverse spaces as a school is a conundrum for only an advanced problem solver. A school's facilities package usually includes locker rooms, athletic spaces, teacher lounges, offices, meeting and event rooms, hallways, and of course classrooms, which have a distinct set of programmatic demands depending on the subject. Current educational philosophy also requires architectural flexibility: As educators realize individuals learn differently, and thus are attempting to teach differently, they expect their buildings to have equally variable responses. Finally, for both public and private schools, cost is a critical factor, not only up front, but for the life of the building, meaning the lighting must do its part to save energy and limit maintenance.

ARCHITECTURAL AND LIGHTING SOLUTION Lincoln School in Providence, Rhode Island, provides a case in point—of both the challenges faced when lighting a learning environment and best-practice solutions to those challenges. A 2003 renovation of the middle school by PDT Architects was the first step in a master plan the firm had developed in the late 1990s. In addition to enhancing the school's program, the building inspired a unique collaboration between PDT and Fall River, Massachusetts-based Lightolier. According to Dan Blitzer, a consultant to Lightolier, the manufacturer wanted to create a working example of its approaches to quality lighting. Appropriately, the situation also provided a chance for learning. Says PDT's principal in charge, David Webster, "The level of information and technology was much higher than we as architects usually get, so for us it was an educational process."

"Our design focus is to support what is going on in the classroom," says Webster, "so we look at air quality, the proportion of the spaces, and certainly at the lighting." Today, teachers rarely lecture from a post at the front of the room. As Webster explains, "In the early twentieth century, information was presented in a way that was suitable to only one style of learning. Progressive education today says 'kids are different and we need to accommodate them,' so teachers now put information out in a number of ways." Concordantly, Lincoln needed spaces that supported a variety of teaching approaches.

Flexibility is at its most developed in the classrooms. The first element in the three-pronged lighting approach involved an indirect/direct pendant. Webster wanted

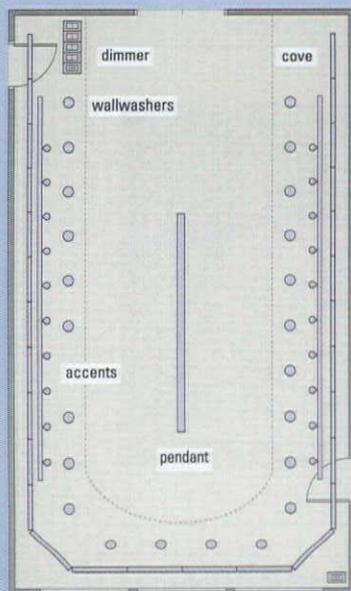
to avoid the "fatigue factor" that comes from harsh lighting, so the classrooms are illuminated with an indirect luminaire, that also casts about 25 percent direct light. "We wanted some directional illumination on the faces of the kids," says Blitzer. "While it is IES recommended practice regardless of class size, in a room with 10 children, the teacher really has the ability to read a student's face and respond on an individualized basis." Secondly, adjustable track-mounted wallwashers allow teachers to focus attention on the front of the room. The third element, a dimmer system, enables instructors to customize the lighting to the task at hand and to compensate for daylight levels. A similarly flexible approach is taken in the 1,200-square-foot main meeting room, which accommodates everything from trustee functions to performances to the Quaker school's weekly "silent meeting." A four-layer arrangement of wallwashers, accent and cove lighting, and a canopied pendant, controlled with a programmable multi-scene dimmer, support a variety of scenarios.

A contemporary fixture aesthetic marks the renovation, which is otherwise a riff on the early twentieth-century design of the main building. Located in a historic district, the school wanted to maintain its traditional character. These concerns, and a preexisting footprint, meant PDT was limited in the amount of daylight it could bring into the building. Skylights offer the suggestion of natural light, but otherwise are not an energy-saving solution. Instead, compact and linear fluorescents, and a few incandescent spotlights, illuminate most of the renovated space. The commitment to an energy-efficient pallet did not compromise the quality of the lighting. By reducing the wattage and number of lamps in each luminaire, the team installed enough fixtures to "spread light around," ensuring there would be light on important surfaces. "Less light is counterintuitive," admits Blitzer. "The more light you get from each fixture, it seems the more efficient the system, because there are fewer parts, but my experience says spaces with fewer fixtures feel shadowy and uninspired."

Conscious of cost throughout the project, the team specified mid-range luminaires. Eliminating occupancy sensors in the classrooms also helped the budget, though, for Lincoln, sensors and timers seemed to undermine a higher goal: "In an independent school, where there is a very high sense of ownership, an automated controls system deprives teachers and students of both the responsibility and the opportunity to teach concern for the environment," says Blitzer.

With the first stage of the master plan an example of superior architectural lighting, Webster believes the school is committed to this aspect of the design going forward—a refreshing change from many of the educational projects his firm works on where lighting is often the first thing to be compromised. **EMILIE W. SOMMERHOFF**

LEFT: HALLWAY; BELOW: DIAGRAM OF MAIN MEETING ROOM, MEETING ROOM, CLASSROOM



UNIVERSITY HALL CULTURAL CENTER, NEW YORK CITY

CHALLENGE If lighting design has particular symbolic relevance to any one building type, it is education: Here it can be more than a functional necessity, but a metaphor for the architecture's fundamental purpose. This opportunity was not lost on Sylvia Smith of Fox & Fowle, project principal for the University Hall Cultural Center at Manhattan's New School. Smith likes to create "an overlay where I try to find the metaphorical content, the meaning of the program within the organization. The lighting in this case was very pertinent to the metaphor. I equated the evolution of the lighting treatment through the space to the unfolding of learning."

From a more pragmatic standpoint, the lighting design was challenged to address what Smith calls the only constant in educational settings—change. The democratic, inquisitive nature of the academic community places an emphasis on dialogue and a give and take in the balance of power. "Even if you think you have worked out a meticulous program regarding how a space will be used, it frequently evolves. The character and kinds of lighting need to take this into account," says Smith.

ARCHITECTURAL AND LIGHTING SOLUTION Light as a metaphor for knowledge "determined not just the effects, but the degree and level of the lighting and how it transitioned between spaces," says Smith.

From the sidewalk, visitors pass briefly under the shade of the building's canopy into a story-and-a-half-high vestibule. The entryway is energetically bright with a panel—evenly illuminated with ceramic metal halide sources positioned 12 inches on center—that features the New School logo. "I wanted to convey that you are entering a place where the light of learning is burning," says Smith. Beyond the vestibule, a pattern of semi-recessed downlights uniformly light the heavily trafficked space, kinetic with the comings and goings of people who must check in to pass upstairs. The 8-foot-9-inch floor-to-floor ceiling height of the space did not leave much room for "something with sparkle that would not be hidden, but also would not project and weigh down the space," says Smith. Lighting consultant Karen Goldstick specified decorative Louis Poulsen fixtures featuring simple but eye-catching glass phalanges.

On the far side of the lobby is the center's primary architectural feature: a 30-foot-high glass wall (laminated with a frosted interlayer), set aglow with lightpipes vertically arranged in each of the five bays. The ceramic metal halide source that illuminates the lightpipes is easily accessible and maintainable—a primary reason Goldstick chose the remote source solution. This element, which backs the main stairwell, becomes a critical piece in the journey metaphor: the staircase, which both literally and figuratively represents the luminous interior of the school, leads visitors to the Cultural Center's gallery above. "The stairwell helps

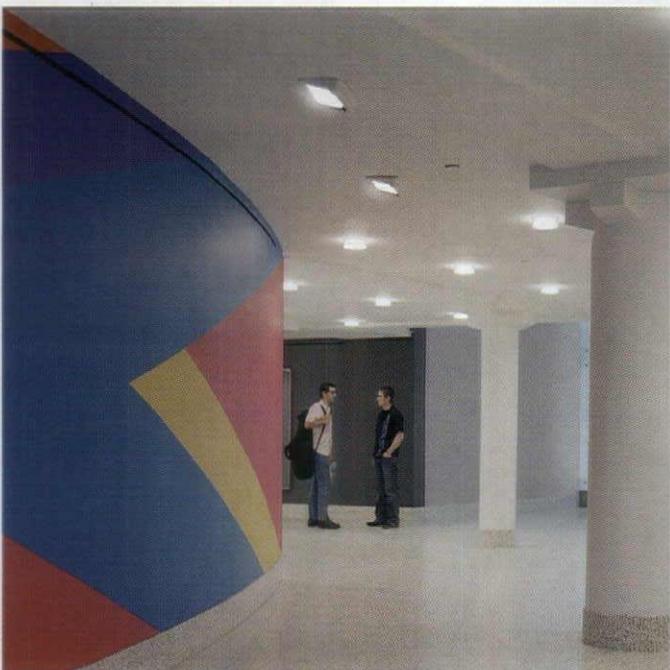
create a two-story public space," says Goldstick.

In a nod to the second-floor gallery, which hosts temporary exhibits, two permanent Sol LeWitt murals decorate the first-floor lobby and the second-floor gallery. The "wall drawings" were illuminated with ceramic metal halide, a high-output source that provides great clarity and color. "It brought out and enhanced the bold primary color of the paintings," says Goldstick. While Smith did not request a specific color temperature, she did want consistency, so the lighting designer kept the sources in the 3000K range, which Goldstick "prefers for interior spaces."

A significant requirement of the lighting, says Goldstick, was that it integrate in a "non-self-conscious way." This goal is particularly apparent in the gallery, where the architect hoped to preserve a connection between the old space (a classic 1920s department store) and the renovated space. The ceiling is cut away from the large cast-iron columns, enabling recessed track to light the artwork on the walls, while remaining hidden. Disguising the track was important to Smith, who hates what she calls the "bat" aesthetic: "Light fixtures hanging from a tree branch." Low-voltage recessed downlights surround and accent the architectural detail of the column capitals, while compact fluorescent downlights provide general illumination for the nearly 2,000 square-foot room.

The lighting seems to come full circle in the second-floor multipurpose space, adjacent to the gallery. The Main Hall is used for everything from concerts and lectures to multimedia presentations, and the recessed multi-headed incandescent lighting system controlled by an extensive dimmer panel is designed to handle virtually any scene. The real focal point of the space, however, is the large double-hung windows that line the far wall. "The ceiling plain tips up toward the window wall," explains Smith. "The idea here was to put the emphasis back on the natural light"—in essence, returning the visitor's perspective to the outside, as a learning institution would its graduates. **EMILIE W. SOMMERHOFF**

CLOCKWISE FROM TOP CENTER: VESTIBULE, STAIRWELL, MULTIPURPOSE SPACE, LOBBY



DETAILS

PROJECT | University Hall Cultural Center, The New School, New York City

DESIGN TEAM | Fox & Fowle Architects, New York City (architect); Goldstick Lighting Design, White Plains, New York (lighting consultant)

PHOTOGRAPHER | David Sundberg/Esto

MANUFACTURERS | At Lite, Columbia, Edison Price, Elliptipar, Kurt Versen, Lamar, Louis Poulsen, Neo-Ray, RSA Lighting, TIR Systems, USA Illumination

 more information at
WWW.ARCHLIGHTING.COM



BRIGHT LIGHTS GO TO SCHOOL

BOYD | PRODUCT: LANTERN SERIES | WWW.BOYDLIGHTING.COM

Inspired by the fin designs of the classic cars for which they are named, the pendants in the lantern series created by Doyle Crosby for Boyd come in five styles: Futura (shown), Premier, Rocket, Imperial, and Windsor. All are constructed of quarter-inch-thick copper and completed with the following finishes: polished, satin or antiqued copper, or polished or satin nickel. A satin-etched glass diffuser shields an incandescent or fluorescent lamp. The luminaires range from 8 to 10 1/2 inches in diameter; the different cage styles are between 12 1/4 and 13 1/4 inches in height. The series is well suited to high-profile areas in educational environments, like libraries and event spaces. **CIRCLE 170**



INSIGHT LIGHTING | PRODUCT: VISIO | WWW.INSIGHTLIGHTING.COM

The Visio wall-wash luminaire features an innovative reflector design that allows the fixture to be mounted close to the reflective surface and still provide uniform glare-free illumination. Lamping options include T5, T5HO, T8 and long twin-tube fluorescent. Single-luminaire housings are available in up to 12-foot lengths, with a variety of mounting options. **CIRCLE 171.**



LAM LIGHTING | PRODUCT: IMPERIAL COLLECTION | WWW.LAMLIGHTING.COM

The pendants, ceiling fixtures and ADA-compliant wall sconces, conceived by Wooding Design in conjunction with LAM, feature a glare-free indirect illumination suited to computer-intensive environments. The broad-domed shape and pendant-rod trims impart a classic appearance appropriate to institutional applications. The components are constructed from aluminum and steel, and are available in polished, brushed, satin-plated or powder-coated finishes. The luminaire accepts fluorescent, HID or incandescent sources, and options include dimming ballasts, emergency power switching, and multi-circuit wiring. **CIRCLE 172**



SURE-LITES | PRODUCT: EMERGENCY LIGHT | WWW.COOPERLIGHTING.COM

Designed to resist vandalism, weather, corrosion, and dust, the UEL NEMA 4X emergency light features a durable die-cast aluminum housing in silver, black, or white, and a UV-stable clear polycarbonate shield, which is secured with tamperproof screws. Standard features include a nickel cadmium battery, the proprietary Watchguard EMS Self-Diagnostic System, photocell laser test and two adjustable 12W MR16 lamps. With a temperature range of minus 31 degrees to 122 degrees Fahrenheit, the product is appropriate for walk-in freezers and other severe environments. **CIRCLE 173**



WESTINGHOUSE LIGHTING | PRODUCT: ECOMAX | WWW.WESTINGHOUSELIGHTING.COM

EcoMax T8 fluorescent lamps are available with both 78 and 86 CRI, which is closer to natural sunlight and portrays colors more accurately than standard fluorescents, according to the company. The product also contains 70 percent less mercury than the standard linear fluorescent, and can be used for specifications requiring a TCLP-approved lamp. The EcoMax features a 20,000-hour life, at 32 watts, and is available in 3000K, 3500K and 4100K temperatures. **CIRCLE 174**



BALDINGER | PRODUCT: ROBERT A.M. STERN LIBRARY COLLECTION | WWW.BALDINGER.COM

Designed by renowned architect Robert A.M. Stern upon the realization that there was a void in the market for attractive products for library environments, this collection features table lamps, wall sconces and pendants. A contemporary interpretation of traditional forms, the collection aims to satisfy modern needs: for example, the table lamps, including the Tompkins (shown), enable individuals to control the level of illumination, while providing users direct access to electrical and data outlets for their laptops. **CIRCLE 175**



WALDMANN LIGHTING | PRODUCT: MONTREAUX | WWW.WALDMANNLIGHTING.COM

An internal band spring and tension system (eliminating external springs and related breakage) and a 10-year warranty on mechanical parts make this task light tough enough for the dorm-room environment. The Montreaux uses an 18W compact fluorescent lamp, providing 10,000 hours of life, 1100 lumen output, and 4100K color temperature. A built-in parabolic louver spreads light evenly, controlling glare. An in-line electronic ballast offers additional efficiency, while dual-level switching provides output options. Three arm styles are available, as well as a wall-mounted option. **CIRCLE 176**

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

With Leviton's new D-3208 Multizone Dimmer/Controller, architectural lighting control systems enter the Age of Enlightenment. It's that far ahead of the competition! With the power and capability once found only in "big box" cabinet systems, the D-3208 offers such progressive features as join/separate functions, astronomical clock for event scheduling, PC interface and unprecedented networking capability that can link up to 31 units together. And where other units kept you in the dark, the D-3208 keeps you informed, spelling out zone, channel and

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.



New Astronomical clock now available also on D-3206



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Classifieds

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27th Annual Source Award Winners

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Honorable Mentions



Thomas J. Skradski and Takae Oyake

[Lumenworks Inc., Oakland, CA]

Creating a friendly multi-functional executive working environment was the goal in this business office that is limited on ceiling space, budget and time. Unity is created using pendants throughout which provided indirect and direct ambient lighting and gave a comfortable feeling to the space. IRIS adjustable downlights are strategically placed to accent the table.

Project: Diageo Chateau & Estate Wines in San Mateo, CA
Photography by John Sutton

Winners



Robert H. Singer, Kale E. Lacroux

[Robert Singer & Assoc. Inc., Basalt, CO]

The clean architectural style of this 13,000 sq. ft. Aspen home relied on layers of



architectural lighting to accent details and showcase the natural colors of the wood and stone finishes. IRIS fixtures are elegantly used to create lighting scenes throughout this warm and inviting home.

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



Paul M. Kuhlmann, Darren Stross, and Bill Goehe

[Le Pique and Orme S.S.C. Engineering, St. Louis, MO]

Reflecting an old world feel, the Immaculate Heart of Mary Catholic Church sits in the center of a small agricultural town. Upon entering, parishioners are greeted by the 28-foot tall gable wood ceilings softly split by modified Shaper chandeliers. The chandeliers also feature four downlights per assembly providing direct illumination below.

Project: Catholic Church in New Melle, MO.
Photography by Bardagjy Photography



Carrie Welker

[C. Welker Lighting Design & Consultation/TCI, Atlanta GA]

A timeless and upscale mall for the more sophisticated South Florida shopper was the goal of this mall renovation. The classic look of the Shaper 447 Pendants illuminate the entrances while Cooper Lighting fixtures are used throughout for general illumination and accent lighting.



Project: Broward Mall Renovation in Plantation, FL
Photography by Michael Hernandez



Sherri DuPont and Kim Collins; Mary Andalia

[Collins & Dupont Interiors, Bonita Springs, FL; AVL Pro, Naples FL]

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

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

Deadline for 28th Annual Source Awards is Dec. 3, 2004.
For more information visit the Cooper Lighting website.

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Copying: flattery or theft?

Copying is said to be a form of flattery, but when it occurs on the scale of the global marketplace, is it? With an overwhelming increase in the production and sale of counterfeit goods worldwide, how do designers and manufacturers protect their intellectual property? The issue of copying products seems to have struck a particular nerve within the lighting industry. How do these "knockoffs" affect the design and manufacturing process? How are small start-up companies affected as they try to enter the lighting marketplace? What can the lighting industry do to respond to this issue?

 more commentary at
WWW.ARCHLIGHTING.COM

DEREK MARSHALL, CEO | DEREK MARSHALL LIGHTING

The copying of other's designs is certainly not a new phenomenon. However, given the hugely competitive manufacturing market of the world today, and the lack of respect for copyright laws in some of the emerging manufacturing countries, it is a growing problem for lighting manufacturers.

As a designer and manufacturer of decorative lighting fixtures for both commercial and residential markets, I am acutely aware of this threat. I am also aware that there is very little prospect of this situation improving in the short term. The first defense against this infringement is to design lighting products that are not amenable to reproduction. This is not easily done, but briefly it would involve design elements that do not lend themselves to simple stamping and extrusion operations, key elements of off-shore manufacturing. This has another benefit in producing designs with more intrinsically interesting form and character. Subtle asymmetry and surface texture are elements not easily reproduced and add interest in their settings. The second defense is to keep designing. Knockoffs take time and effort, and new designs keep you ahead of the pack.

TED CHAPPELL, PRESIDENT | ERCO

ERCO is a global company recognized as a leader in technological innovation. For over 60 years, ERCO has created a unique and recognizable brand identity through original product design and development. We do recognize that often in today's global market, some lighting manufacturers do not share this same business philosophy and exist mostly by copying other existing product lines. In fact, we have actually seen images of ERCO products (including the ERCO logo) in the catalog of another manufacturer.

We see three strategies to combat this "copycat" syndrome:

1. Do our best to protect our innovative technology with patents. (This is easier domestically than internationally.)
2. Be a moving target; by continuing to introduce and develop new designs and technology at a rapid pace, many of these "copycats" are duplicating outdated designs.
3. Ensure that our Specifiers are aware of the quality differences and technical advantages ERCO has over the knock-offs.

In the end, we rely heavily on consultants (especially lighting designers!) to not approve these inferior copies and support the manufacturers, like ERCO, who are spending the research and development money to advance the industry.

GEDRA MERECKIS, VICE PRESIDENT, BRAND MANAGER | ALKCO LIGHTING

The answer to the question posed is that there is no real defense to the growing problem of product copying and knockoffs. Copying is flattery only if it does not cost business. Cheap imports always do (and most knockoffs are imports from Asia.) The only way to stay ahead is for a manufacturer of original product designs and functions to continually innovate and to insist on a level of quality, which some clients will appreciate. Unfortunately, the vast majority will settle for lesser quality in order to achieve lower initial cost. As the originator of modular low-profile undercabinet/undercounter task lighting and other products, Alkco has been forced to manufacture its more mature, lower priced products in the Far East (insisting on strict quality control standards in order to maintain market share of those products.)

PHILIP G. CIALDELLA, REGIONAL VICE PRESIDENT OF SALES | LOUIS POULSEN LIGHTING

When a lighting manufacturer offers a product range they will typically offer products that present original design or interpretational design.

Original Design: Is based on original or proprietary design that will have a significant amount of R&D along with special features or characteristics that make the product unique. These products are usually solution based and incorporate clever ways of servicing, and maintaining the product, along with superior lighting performance. In the specification grade architectural lighting market, these products are made of high quality, durable materials that will last a long time on lighting projects. While most manufactures offer a one-year warranty, these products are designed to last ten years or more. These products usually cost more due to construction, performance and durability.

Interpretational Design: Is based on taking an existing design and offering a look at not always a lower price. These products are not constructed to last or perform like the original design, and miss the original design intent. They should not be confused with specification grade architectural lighting. In lighting projects today, they exist for the purpose of causing confusion in the market place and allowing poor quality products to be used in place of quality products.

It becomes the responsibility of the design professional to be informed and educate their customer on the virtues and the cost of the quality lighting selected for a project. Writing a proper specification and knowing what products cost is a start. The International Association of Lighting Designers (IALD), in conjunction with the Lighting Industry Research Council (LIRC) have a well crafted document on their website, www.iald.org, click LIRC and then Specification Integrity Document.

Be informed, know what products cost, ask for samples from your local manufacturers representatives, compare samples, and demand that you get the quality in the products that you specify and pay for.

SAM GUMINS, PRESIDENT AND CEO | LUXO CORPORATION

As a pioneering manufacturer whose products have long been targeted for "knockoff," our feelings are surprisingly mixed; except of course when it's our own products being copied. We recognize that imitation has the capacity to stifle industry innovation, especially when manufacturers fear they will not generate sufficient returns to justify development. We have also seen end-user animosity toward architects and designers, as quality and value are sacrificed in the name of seemingly better pricing with "substituted" product.

However, imitation also has a positive side. It drives manufacturers to continuously innovate. Since our product development must aggressively outdistance imitators, we have ongoing work for designers. It motivates us to refocus on design as something other than simply outward appearance, ensuring that design is interwoven with unique manufacturing processes and technical excellence. It inspires explosive marketing, as we all strive to maximize the short-term opportunities in a now transitory window. As long as the market continues to recognize innovation, originality will continue to be rewarded. Either way, imitators should remember that today's "knockers" could become tomorrow's "knockees."

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