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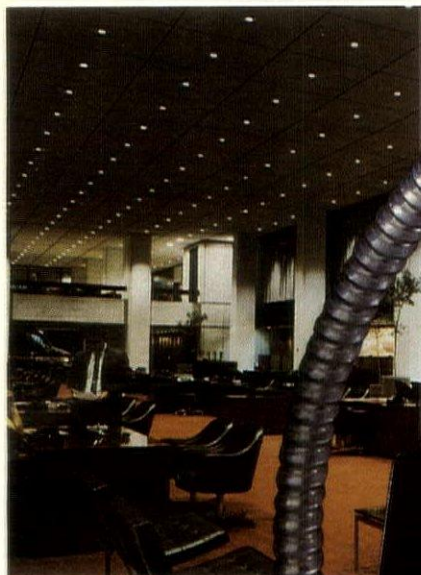


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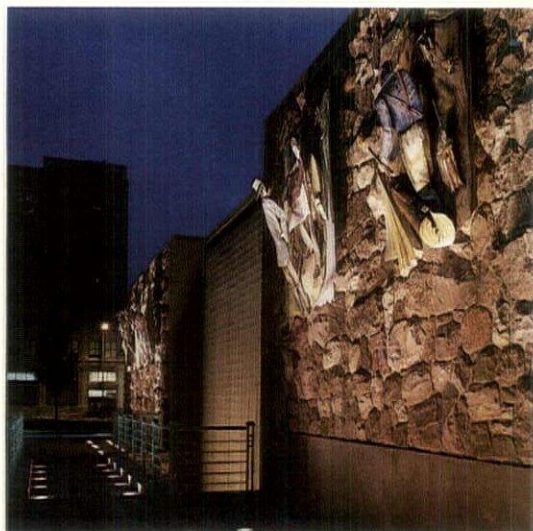
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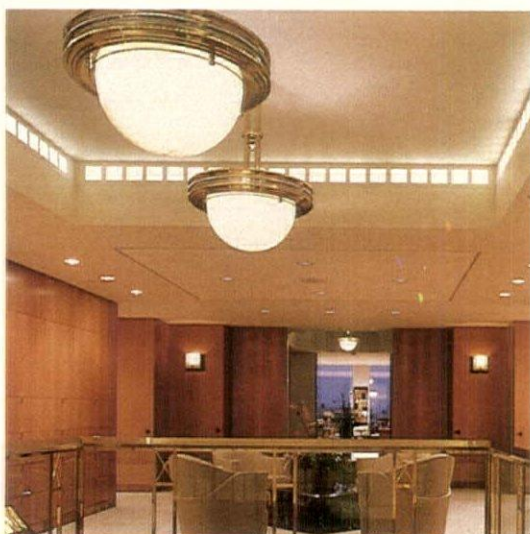
## LIGHTING

JANUARY 1992

VOLUME 6, NUMBER 1



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Cover By Robert Eovaldi



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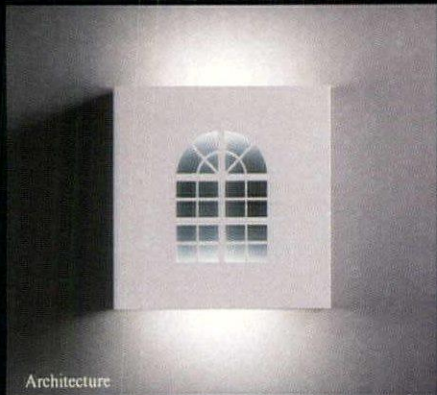
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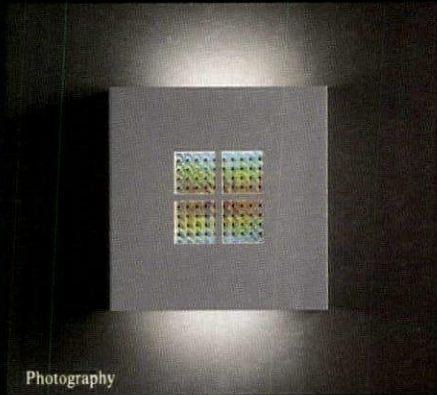
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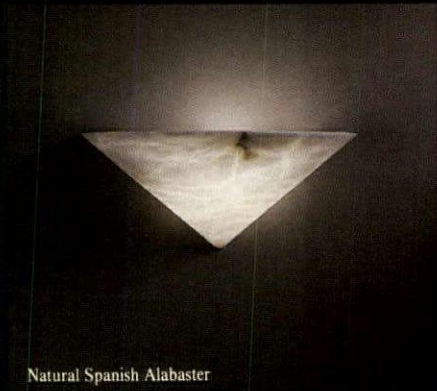
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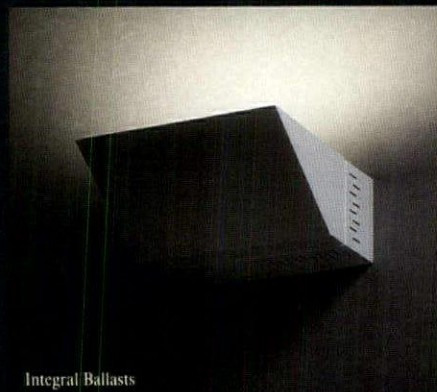
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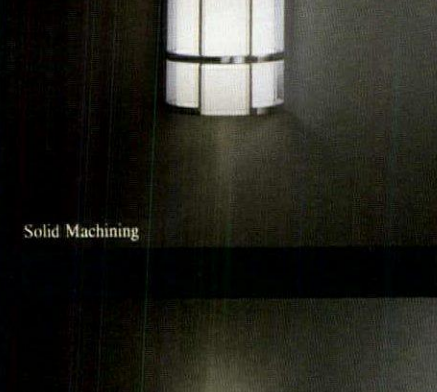
Honest Materials



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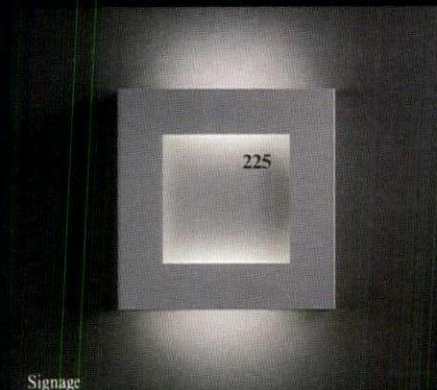
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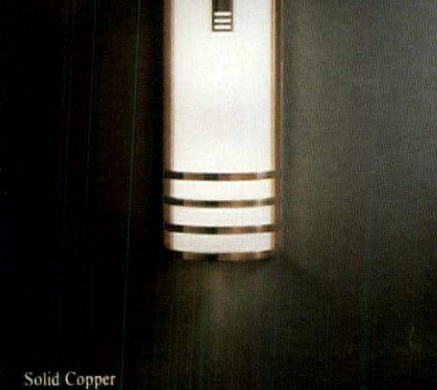
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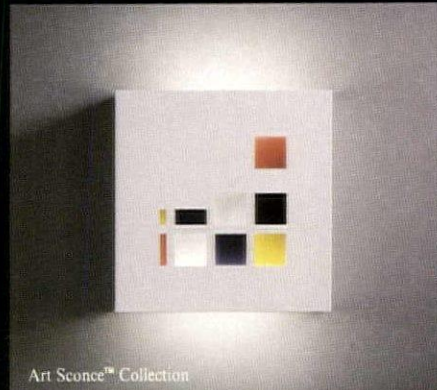
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**Wanda P. Jankowski**

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## BREAKING AWAY

**T**hough it is the wise professional that learns from past experience and uses proven techniques to solve the problems of the present, too much adherence to the routine can lead to designs that are predictable, uninventive and mundane. Magazines can become mundane, too, if a formula or single, overriding viewpoint is merely repeated.

To start off this new year, we have made a concerted effort to keep ARCHITECTURAL LIGHTING fresh and alive by bringing to you a wide range of viewpoints from industry professionals, and information on a variety of topics.

Ron Harwood is not afraid to write what he thinks. I don't think I've ever read such a broad overview of the development and damage implications of the "specify Type A or equal" issue than Harwood's "Specify Type A Or Better" article beginning on page 16. Mr. Harwood, by the way, is the most recent addition to our Editorial Advisory Board, and details on his background and experience are included on page 17.

Gerry Zekowski is right when he says that the most successful printed item in the United States—even more so than the Bible!—is the Underwriters Laboratories (UL) label. Yet he is also right in citing the magnitude of misinformation and misunderstanding abounding about it. His straightforward explanations, peppered with examples from his own experience, make "Understanding UL" both enjoyable and informative reading.

Did you know that only 20 percent of school system administrators rely on consultants, primarily architects and engineers (A&E), for their energy information, and approximately 25 percent of those A&E recommendations are never implemented? Those statistics are from a recent survey sponsored by the American Association of School Administrators. The survey provides the basis for our look in "Energy Watch" at an energy efficiency expert's goldmine—the aging and poorly maintained public school system.

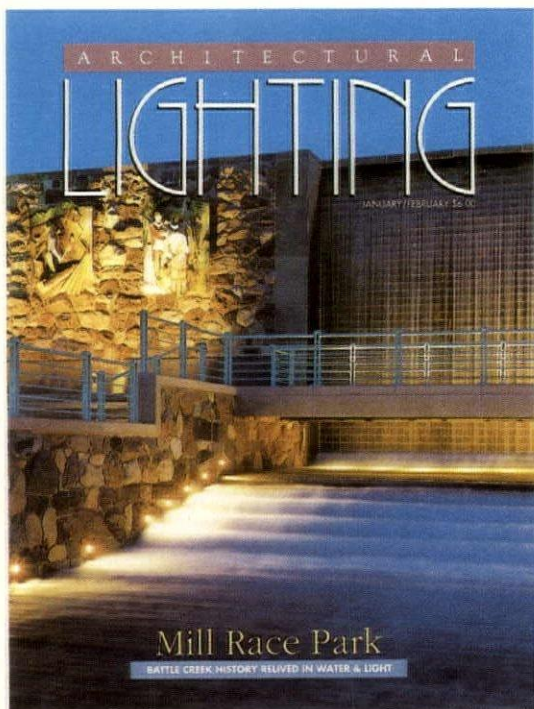
Reference-quality articles are not easy to come by, but 1991 Kelly Grant winner, Clara Drevon, has provided us with a rare opportunity to learn about light in the abstract. No trick photography in "Light & Objects: A Metamorphosis"—just the power and variety of light captured in 16 examples created simply with a couple of lamps and one crevice-ridden stone.

Our design features have both a geographical and application range: a stunning outdoor pocket park—Mill Race Plaza in Battle Creek, MI—the result of combined efforts from Gary Steffy Lighting Design and landscape architects, Johnson, Johnson & Roy/inc.; the new headquarters for ACMAT in New Britain, CT with lighting by Mesh & Juul, Inc.; and Paul's Place, a Denver, CO gourmet fast food restaurant with interiors and architecture by the team at Victor Huff Partnership.

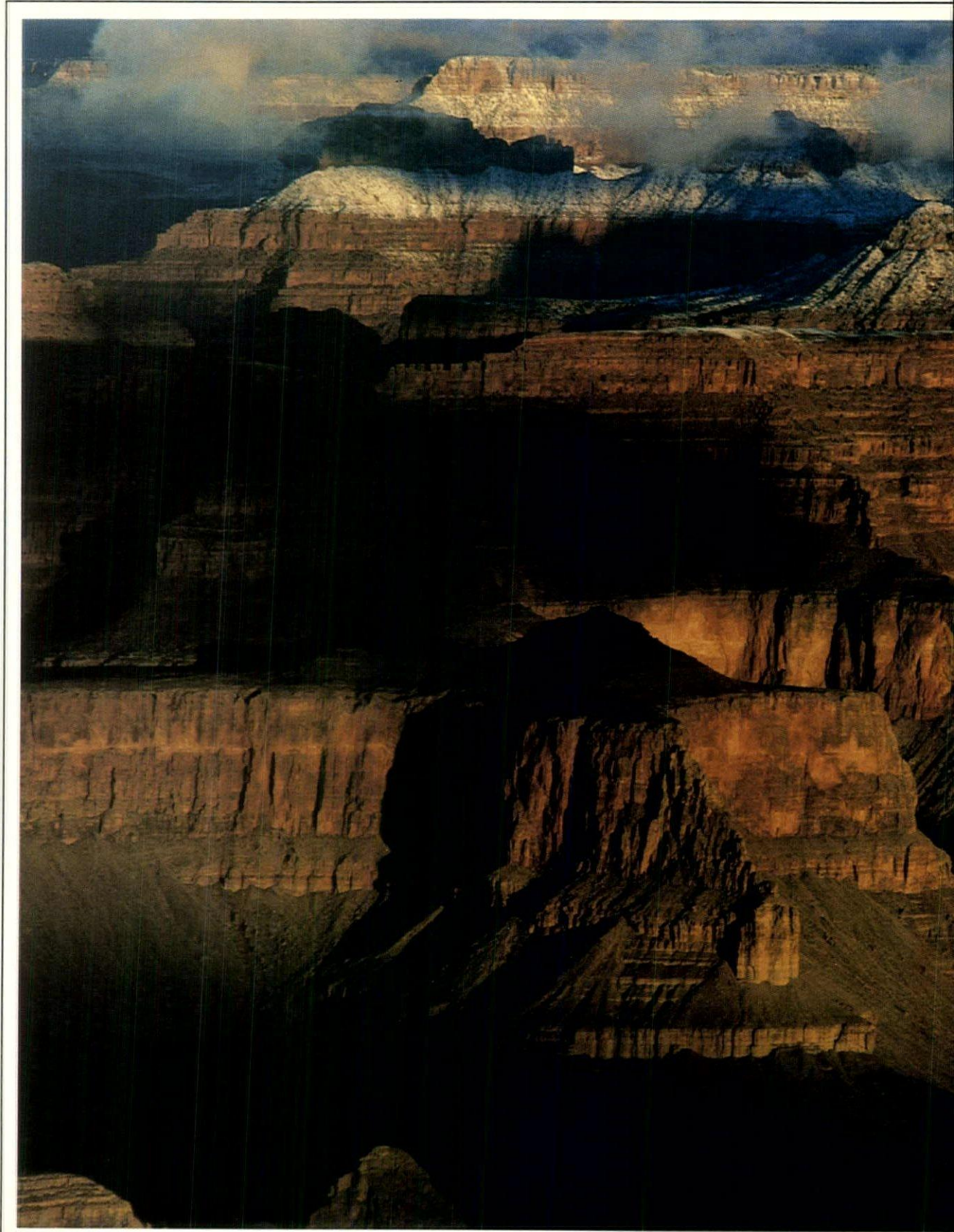
ARCHITECTURAL LIGHTING is the official publication of 1992 LightFair, the international trade show and exposition of the lighting industry. This year, LightFair will be held May 6-8 at New York's Jacob Javits Convention Center. We begin our coverage of the show with a preview in this issue of scheduled seminars and events.

Our resolution for this new year is to keep ARCHITECTURAL LIGHTING as open to different points of view, article types and innovative techniques as possible, so we can lead you on the road to change and growth in 1992.

**WANDA JANKOWSKI**  
EDITOR-IN-CHIEF



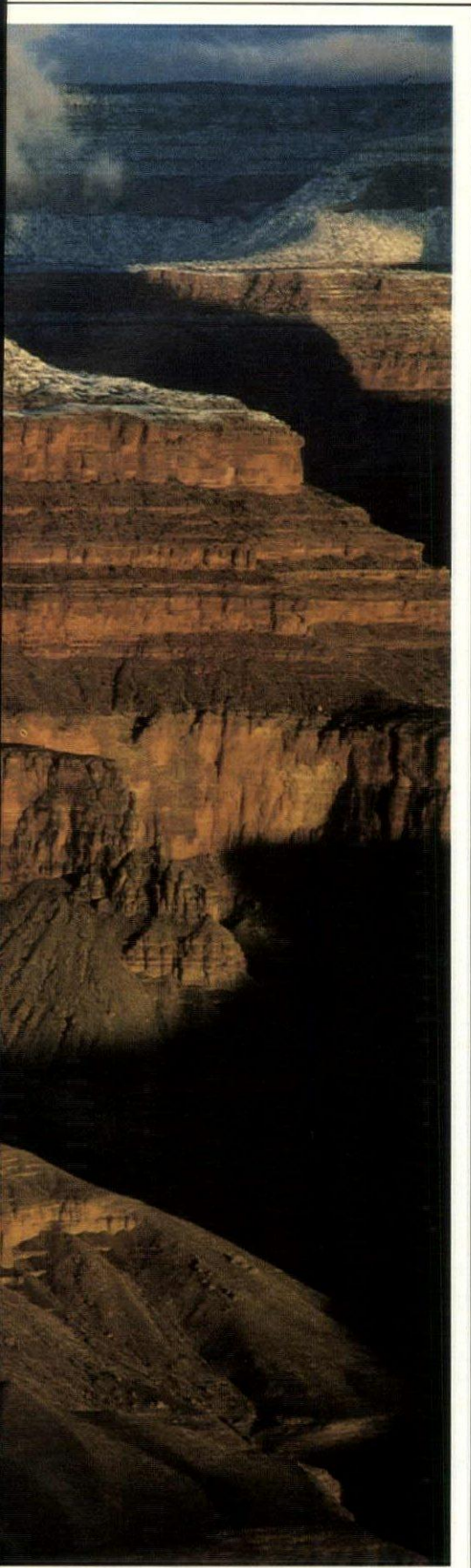
Sure, It's A Great Display. But It



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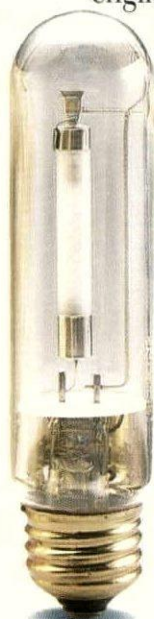
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## LIGHTFAIR PREVIEW

**L**ightFair will be held May 6-8, 1992 at the Jacob Javits Convention Center in New York City. The program of this international lighting trade show and conference is being geared to fulfill the needs of the thousands of expected lighting designer, interior designer, architect, engineer, landscape architect, facility manager, developer and contractor attendees.

LightFair International is sponsored by the Illuminating Engineering Society of North America (IESNA) and the International Association of Lighting Designers (IALD). It is produced and managed by A MC Trade Shows, a division of the Portman Companies. The Official Show Publication is ARCHITECTURAL LIGHTING.

For more information on the conference and exhibiting, contact Carole Carley at (404) 220-2115, Fax: (404) 220-2136, AMC Tradeshow, 240 Peachtree St., NW, Suite 2200, Atlanta, GA 30303.

The conference program will operate on four tracks: Professional Development, Residential and Commercial Design, Energy Issues, and Globalization. Following is a listing of confirmed seminars:

**Review of Outstanding Lighting Projects in the Last Five Years—**This keynote address will highlight methods of lighting, sources and fixtures used, controls, and their relevance within an historical context using representative lighting projects.

**How to Make Downlights and Accent Lights Work for You—**

Randy Burkett, Randy Burkett Lighting Design will present a basic understanding of these alternatives in lighting, and address the design and selection of the right product for any given situation.

**From Beverly Hills to the Big Apple: Residential Lighting Techniques—**

Lee Waldron, from the Philadelphia office of Grenald Associates Ltd., and Julia Poppen Rezek, from Grenald Associates' Los Angeles office, will discuss influences and trends, energy concerns, use of sources in differing architectural styles, and the lighting consultant's role as viewed by practitioners who work in opposite ends of the country.

**How to Market Your Design Services—**

Joan Capelin, Capelin Communications will share her conviction that business in the 1990s, while difficult to obtain, is still out there. Her strategies for finding it and keeping it can become the keystone of any designer's marketing plan.

**Keeping Bright Lights from Turning into Dim Reality—**

Gary Gordon, Gary Gordon Architectural Lighting, Inc. will explain exactly how to detect and avoid potential disasters when selecting lighting equipment that must be integrated with architecture.

**What Do You Mean by "Or Equal"??—**

A panel including Mary Ann Hay, Syska & Hennessy; Ernest Claire, Forest Electric; and Jim Willey, Speclite; and moderated by Gary Dulanski, Warshaw Electric Company, will tackle interpreting the thorny "or equal" qualifier from lighting designer and distributor points of view.

**The Carrot, the Stick & the Flag—**

Robert Davis, Ph.D., Rensselaer Polytechnic Institute, will reveal how to make the best of what the rebate programs are offering. He will touch on "the carrot" (financial incentives), "the stick" (legislation), and "the flag" (the Environmental Protection Agency).

**Uses and Abuses of Utility Rebate Dollars—**

Moderator Robert Davis, Ph.D., Rensselaer Polytechnic Institute, will build on information from the previously listed session to present via panel discussion the points of view of a lighting designer, a utility executive, and a retrofitting expert.

**Lighting Kitchens and Baths—**

Jane Grosslight, Florida State University, will address lighting kitchen tasks, creating kitchen scenes with programmable dimmers, lighting bath tasks, and creating bath scenes. Registrants will be invited to try her easy-to-use approach to revealing light.

**Using Drama in Architectural Lighting—**

Craig A. Roeder, Craig A. Roeder Associates, Inc. will challenge the designer who hesitates to create dramatic lighting by discussing how it can work, what kind of fixtures to use, psychological advantages, and how to generate sales.

**The Artistry of Decorative Lighting—**

Mark Kruger, Kruger Associates will include in his focus on the historical form as a "light giver" decoratives in religion, thematic concepts, the gaslight era, new visions, current artists, the painted shade, and style versus substance.

**Lighting Help Wanted: Partners in Design—**

Barbara L. Cianci, Horton-Lees Lighting Design, and Karen Goldstick, Flack + Kurtz Consulting Engineers will discuss what an owner/architect should expect vis-a-vis aesthetics, communication, support structure, schematic through completion, fee structure, and prestige offered to the project.

**Museum Lighting Techniques Applied to Commercial & Residential Projects—**

William Riegel, William Riegel Lighting Design will identify the different concepts applied to the task of properly lighting fine art in any setting to avoid distortion and damage, as well as the techniques and materials specific to museum lighting.

#### Off-Track Seminars

The regular conference program will be enhanced by Continuing Education Unit (CEU) courses for those wishing to accumulate education credits. They include "Illumination Specifying for the Interior Designer" to be presented by Nancy Clanton, Clanton Engineering, Inc. Ms. Clanton will offer fresh insights into innovative lighting concepts. Designers will learn how to integrate the most sophisticated illumination into even the smallest projects.

A special five hour tutorial examining "How to Market Your Design Firm's Services Abroad" will be another departure from seminar tracks. The instructor, June E. Schoenfeld, an international marketing consultant, will address feasibility, finances, risks, cross-cultural bloopers, and breaking into new markets.

The popular New Product Showcase will be expanded to kick off two separate days of the show. Exhibitors continue to welcome the opportunity the showcase affords to put the spotlight on new product introductions occurring during the year. Attendees benefit from this summary of new tools of the trade

being made available to them and their clients.

In addition, the Designers Lighting Forum and the New York Chapter of ASID are planning their own workshops to be held in conjunction with the show.

#### Special Event

A gala cruise around New York harbor is planned, with proceeds to benefit pediatric AIDS victims. The formal dinner cruise around Manhattan island aboard the ship "New Yorker" will provide attendees plenty of time to socialize, while contributing to a worthy cause and honoring colleagues whose achievements have stretched the limits of the imagination. The Design & Interior Furnishing Foundation for AIDS (DIFFA) and The Children with AIDS Committee have joined forces to create an evening of infinite possibilities, with open bar, dinner, dancing, entertainment, and raffle.

The annual IALD Awards Dinner is also scheduled as a special evening event. The recipients of the IALD Lighting Design Awards will be announced for the first time, accompanied by a visual presentation of the award-winning installations

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**ISID CALLS FOR EDUCATOR, STUDENT GRANT SUBMISSIONS**

The International Society of Interior Designers (ISID) College of Fellows Interior Design Educator's Grant Competition is now accepting applications. The annual \$2,500 cash grant is presented to the applicant best meeting the criteria for a research project. The two primary qualifications are a furthering of the professionalism of the interior design field, and the development of educational course materials for undergraduate and graduate college curricula in interior design.

Entry forms are also available for the annual Student Scholarship Competition. This \$2,500 cash award is made to the applicant whose residential or commercial design is deemed most innovative, creative and original. In addition to the cash amount, the winner receives expense-paid roundtrip airfare and two nights' hotel lodging at the presentation site. Merit of Award Certificates will be mailed to each of the four runner-up students. ISID promotes the Scholarship and Merit of Awards winners to international, national and local media.

Students applying do not have to be members of ISID Student Chapters or other professional interior design organizations.

Deadline for both the Educator's Grant and the Student Scholarship Competitions is May 1, 1992. For more information, rules and entry forms, contact: ISID International Office, 433 South Spring Street, Suite 1014, Los Angeles, CA 90013, phone: (213) 680-4240.

**IESNA CUTLER RESIDENTIAL AWARD ESTABLISHED**

Also, the IESNA Board of Directors recently approved the establishment of the Aileen Page Cutler Memorial Award for Residential Lighting Design as part of the IIDA program. The award, intended to recognize exceptional interior lighting projects, is funded by Monte Cutler and named in memory of his late wife.

The IIDA committee is actively seeking new members to help in the numerous program and coordination tasks it faces, including

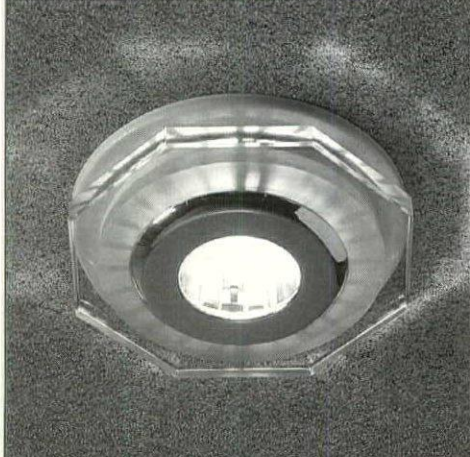
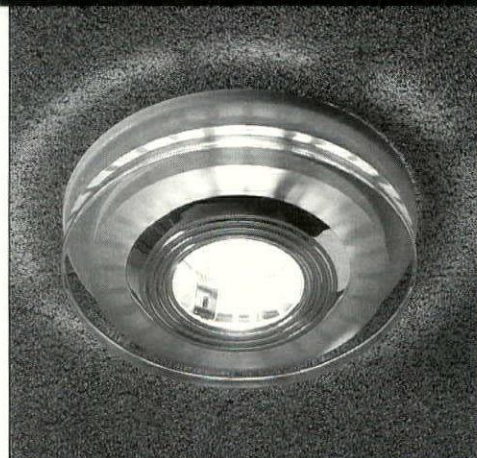
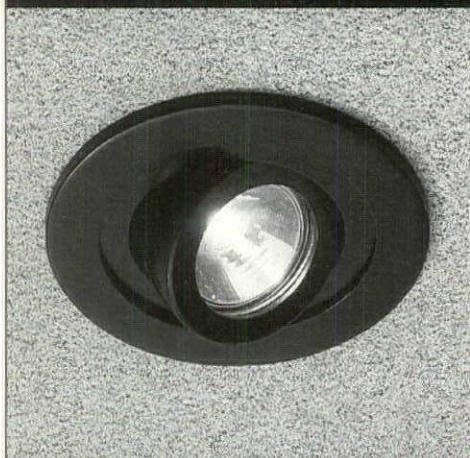
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implementation of the new Cutler Award. Committee meetings are held three times a year. Applications for committee membership, as well as forms for project entries for all IIDA awards may be obtained from the IESNA, 345 East 47th Street, New York, NY 10017-2377. Submissions for the IIDA program awards are welcome from all professionals in the lighting community without limitation to professional affiliation.

#### **BRANDSTON GRANT DEADLINE MAY '92**

The Howard Brandston Student Lighting Design Education Grant was established to encourage and recognize students who have evidenced high professional promise through the presentation of an original and ingenious solution to a supplied lighting design problem.

The award consists of a plaque and complementary registration for the 1992 Illuminating Engineering Society of North America (IESNA) Annual Conference, valid for all technical

sessions and seminars, the exhibit area, education workshops, Welcome Reception, President's Banquet, and the International Illumination Design Awards Luncheon. The winner can attend other events at his or her own expense. A check for \$1,000 will be presented to defray the costs of attending and participating in the education programs at the conference.

Group entries will be accepted. However, should a group entry be selected to receive the award, the group would be asked to designate two of its members who would each receive complementary conference registrations. The \$1,000 check and plaque would be presented to the group as a whole.

To be eligible to enter a solution in this competition, an applicant must be enrolled as a full-time student in an approved academic degree program. The deadline for receipt of completed entries in the New York office of the IESNA is May 1, 1992. Judging of entries will take place in New York in mid-May. For application and entry materials, contact the Howard Brandston Student Lighting Design Education Grant, IESNA, 345 East 47 Street, New York, NY 10017, 212-705-7923.

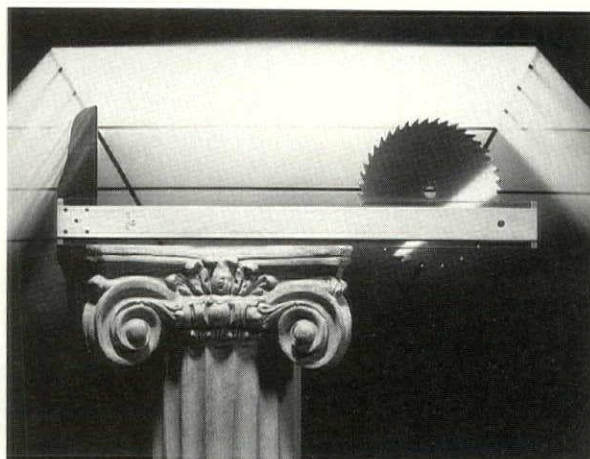
# THE BEST PLACE TO CUT YOUR OVERHEAD IS, WELL, OVERHEAD.

Take a good look at your building's light fixtures.

You can easily save up to 50% on your light bill — or \$30\* on every fixture every year — by replacing or retrofitting your traditional fluorescent light fixtures.

Simply switch to energy-efficient fixtures made with Specular+, a super reflective silver film laminate with a mirror-like surface.

These fixtures maintain virtually the same light levels as ordinary fluorescent light fixtures — with half the number of ballasts and bulbs. So you'll save



energy, a plus for the environmentally conscious, and have fewer components to clean and replace.

In addition, Specular+ efficiently reflects light into the work area, reducing heat buildup — and decreasing your HVAC costs.

Join the many building managers who have cut

their light bill up to 50%. Call 1-800-346-PLUS.

We'll send you a Specular+ brochure, a commercial

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\*1991 national average. The savings are up to \$70 in many high-usage areas with high utility rates. © 1991, Pre Finish Metals Inc. Subsidiary of Material Sciences Corporation

**LEUCOS ENTERS U.S. MARKET**

Leucos Lighting, best known for its handcrafted Murano glass products, has recently opened its own 9,000 square foot U.S. distribution facility in Edison, NJ. Leucos SRL has named Josie Anthony executive vice president of Leucos USA. Ms. Anthony was formerly with IPI Inc., an importer and distributor of Italian lighting fixtures. Leucos Lighting, though fairly new to the U.S. market, has been in operation almost 30 years.

**LITHONIA ENTERS MEXICO**

Lithonia Lighting and Philmex have entered into an agreement that will bring Lithonia Lighting products into Mexico. Under the terms of this partnership agreement, Philmex will provide marketing and sales management functions, while Lithonia Lighting will provide manufacturing, and research and development.

Philmex, a North American Philips company, currently provides lamps and ballasts through 200 electrical wholesalers. A majority of these wholesalers will have access to

Lithonia Lighting products through the Philmex organization beginning in January 1992.

According to Jim H. McClung, Lithonia president and CEO, existing Lithonia Lighting accounts in Mexico will be serviced in the future by Philmex. Domestic Lithonia agencies currently doing export business to Mexico will be allowed to continue.

**K-S-H CHANGES NAME TO ICI ACRYLICS**

Effective November 15, 1991, K-S-H, Inc., a designer and manufacturer of lenses and louvers for commercial lighting fixtures since 1953, will be known as ICI Acrylics, Inc. Under the ICI Acrylics name, the K-Lite Division will continue to produce its KSH Series of specification grade lighting products.

"As one of the world's major producers and OEM suppliers to the lighting industry, ICI Acrylics will enable the K-Lite Division to strengthen its leadership position in the marketplace," says Marv Pilgrim, K-Lite vice president. The K-Lite Division of ICI Acrylics, Inc. is located in St. Louis, MO.

**XENERGY LAUNCHES NEW CANADIAN COMPANY**

Xenergy Inc. of Burlington, MA, a provider of energy management products and services, has announced the establishment of a new company, Xenergy Canada, headquartered in Montreal. Xenergy Canada is committed to serving Canada's largest utilities, Ontario-Hydro and Hydro-Quebec. It plans further expansion to provide a local presence in every region to serve customers. Xenergy has offices in Toronto and Montreal.

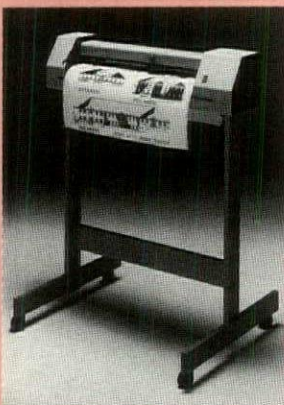
Ovide Poitras has been named president of Xenergy Canada. He has over 20 years experience in the energy industry, including 12 years at Hydro-Quebec.

Stanley S. Kolodkin, president of Xenergy Inc., explains, "We formed Xenergy Canada Inc. in response to the Canadians' strong commitment to energy management. Establishing a strong foothold in Canada also enables us to continue with our acquisition and investment plans, as well as accelerate our entry into new markets."

Xenergy Inc. was established in 1975.

**DINAPOLI HEADS FLOS, ABBATINALI TAKES "FLIGHT"**

Thomas J. DiNapoli, executive vice president of Atelier International, Ltd., has been named by Flos S.p.A. as president of Flos Incorporated lighting operations in this country. Fausto Abbatinali, executive vice president of Flos Incorporated, who headed U.S. operations since 1984, will return to Flos S.p.A. headquarters in Brescia, Italy, to head a newly created Flos systems-lighting subsidiary called Flight. Flight is expected to be brought to the U.S. in 1992.



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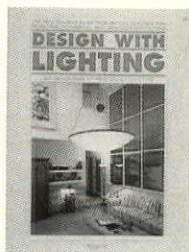
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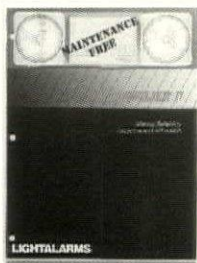
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**LIGHTING TECHNIQUE  
PRIMER**

"Design with Lighting" is a 52-page lighting design guide and mail-order catalog written to inform consumers about professional lighting techniques. The guide has 14 pages of full-color illustrations showing how-to tips on indoor and outdoor lighting

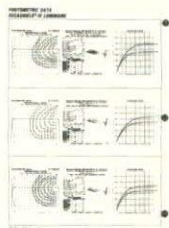
options for both home and office. The information is written in layman's language. Track and recessed lighting receive in-depth treatment. In the fixture section of the book, over 200 lighting designs from American and Italian companies are included. The guide, published by San Francisco's Bay Commercial Lighting, is \$5.00 per copy. **Circle 93**



**EMERGENCY LIGHT**

A four-page, full color brochure is available describing the Cavalier II, a contemporary styled emergency light. The brochure also illustrates the three-step, labor-saving installation made possible by ac and battery quick-connect plugs. Other features detailed include the 6-volt maintenance-free battery; 120/277-volt dual input transformer; automatic, temperature compensated SCR charger; ac line latch; brownout circuit; and low-voltage disconnect. Lightalarms Electronics Corporation, Baldwin, NY. **Circle 91**

Lightalarms Electronics Corporation, Baldwin, NY. **Circle 91**



**DECORATIVE AREA  
LUMINAIRE**

Decashield III decorative area luminaire is detailed in a brochure that includes suggested applications, product features and benefits, ordering information, dimensions, and ballast and photometric data. Decashield uses high-pressure sodium and

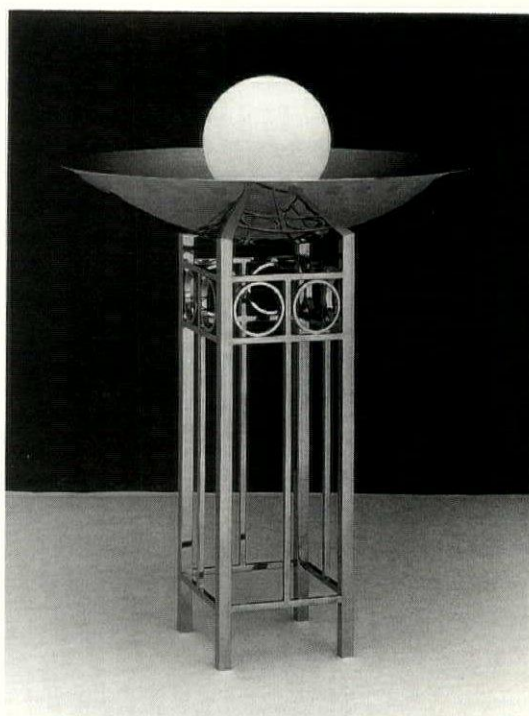
metal halide lamps in a wide range of wattages, and features a heavy-duty die-cast aluminum housing. GE Lighting Systems, Hendersonville, NC. **Circle 92**

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## TIME TO EDUCATE THE EDUCATORS

In this time of recession, when work has become increasingly difficult to find, perhaps there is an overlooked source—the U.S. public school system. A survey recently sponsored by the American Association of School Administrators (AASA) points up how poorly informed superintendents and administrators are on how to save energy, how to use rebates to their advantage, how to save money through proper maintenance, etc. Here is an opportunity for lighting professionals to not only get work, but to help the school system conserve energy and create a better learning environment for students at the same time.

Following are details on the AASA survey, a brief look at solving a lighting problem in Naaman Forest High School, and what one company is doing to promote a win-win situation in upgrading schools' energy systems.

Nearly five million American public school students go to class in buildings that are inadequate. The survey found that 13,200 U.S. schools—one in eight—provide poor environments for learning.

Administrators cited the old age of buildings as the primary reason for inadequate schools. Nearly one-third of the nation's 110,000 public schools were built before World War II, and only 11 percent have been constructed since 1980, according to the survey. The problem is the most severe in the Southeast, where administrators reported that 83 percent of the substandard schools were too old to provide a good place for learning.

Besides the age of buildings, the administrators also cited overcrowding, structural and environmental hazards and poor or non-existent heating, air-conditioning, and electrical and mechanical systems as major factors in making their schools inadequate.

The nationwide survey, the first such survey in nearly 30 years to examine the physical condition of America's schools, also provided the first report card on energy practices and conservation in the nation's schools since 1979. The survey was conducted by the AASA, an organization representing 18,500 of the nation's school superintendents and other top administrators. The AASA study is supported by a grant from Honeywell, with data augmented from a survey conducted by Educational Research Service.

The findings show that less than half the U.S. school districts have effective energy programs at a time when energy costs for heating, cooling and lighting buildings have shown a steady increase, especially over the last three years. While school authorities confront deeper and deeper budget cuts, the nation's public schools will face an energy bill that will increase by about \$490 million in 1991, according to the survey.

To pay the rising energy bill, the survey found, school administrators are increasingly dipping into their building maintenance budgets, further hastening the decline of their physical plant, increasing energy and other costs, and causing deterioration of air quality in the schools.

Research conducted for the AASA found that the energy management programs could reduce the schools' \$7.4 billion energy bill by 25 percent or \$1.85 billion. The survey found that more than one-third of the nation's school districts have not conducted energy audits and most audits (67 percent) are outdated because they are at least four years old.

Nearly half the districts in the Northeast and West reported they have not conducted any energy audits of their buildings. The best records were in the Central and Southeast, where at least 72 percent of the districts said they had conducted audits on some of their buildings.

The administrators responding to the survey identified three major barriers to improving school energy efficiency: lack of money, the financial demands of educational programs, and the need to meet federal environmental mandates, such as those dealing with asbestos.

In spite of the barriers, some schools are coping with and overcoming these challenges with the help of energy experts and the private sector.

### CASE STUDY

Naaman Forest High School, the newest of five high schools in Garland and a showcase for the district, had a "glaring" problem. Its long halls are lined with white tiles that reflect the light from 4-foot by 4-foot, eight-lamp fluorescent fixtures. To save energy and reduce glare, alternate fixtures were turned off, but the white tiles left the hallways with alter-

### THE PLAIN TRUTH FROM AASA SURVEY

- At the federal level and in most states, there is a serious leadership void in providing schools with facility guidance.
- No one source dominates as a source of energy information for the nation's schools.
- No more than 20 percent of the districts rely on any given source of energy information.
- More districts rely on utility companies and outside consultants than any other source, except in the Southeast where only 4 percent of the districts rely on architects/engineers. Southeastern districts rely mostly on professional conferences and literature, which is the third most popular source for all districts.
- Only 16 percent of the districts rely primarily on their state energy offices for energy information. Administrators are getting virtually no facility or energy guidance from universities.
- Only 20.3 percent of the school systems rely on consultants, primarily architects and engineers, for their energy information; yet, approximately 25 percent of the A&E recommendations are never implemented because of factors A&E's neglected to consider.
- School administrators do not view equipment vendors as a primary source of information.



nating and unacceptable areas of glare and darkness.

Under the leadership of assistant superintendent, Robert Sewell, Ph.D., the Garland Independent School District (GISD) had implemented an aggressive energy conservation program that reduced overall energy usage by 30 percent in 10 years. James Moss, GISD energy conservationist, has direct responsibility for the program.

To solve the hallway problem at Naaman Forest, Moss decided to test a fluorescent lighting control system, where the halls are lit about 12 hours a day. Moss had already installed energy-saving 34-watt lamps instead of the original 40-watt lamps. The control test involved six 9-amp lighting branch circuits, each using 2,493 watts. Using a lighting control system reduced light output by about 30 percent, resulting in energy savings of 738 watts or 29.6 percent. Six output modules and four control modules were required.

To maintain lamp life, the lights were turned on to full strength when maintenance crews arrived, but the energy management system automatically dimmed them a few minutes later by 30 percent—a large percentage because of the white tiles.

The test was successful and Moss calculated the actual payback period was about six months. Now the Naaman Forest High School halls are lit evenly, with the light at a comfortable level, and with an efficient use of energy. Though Naaman Forest installed a Honeywell control system, Honeywell has organized a broader program of products and services designed to help schools save money and energy.

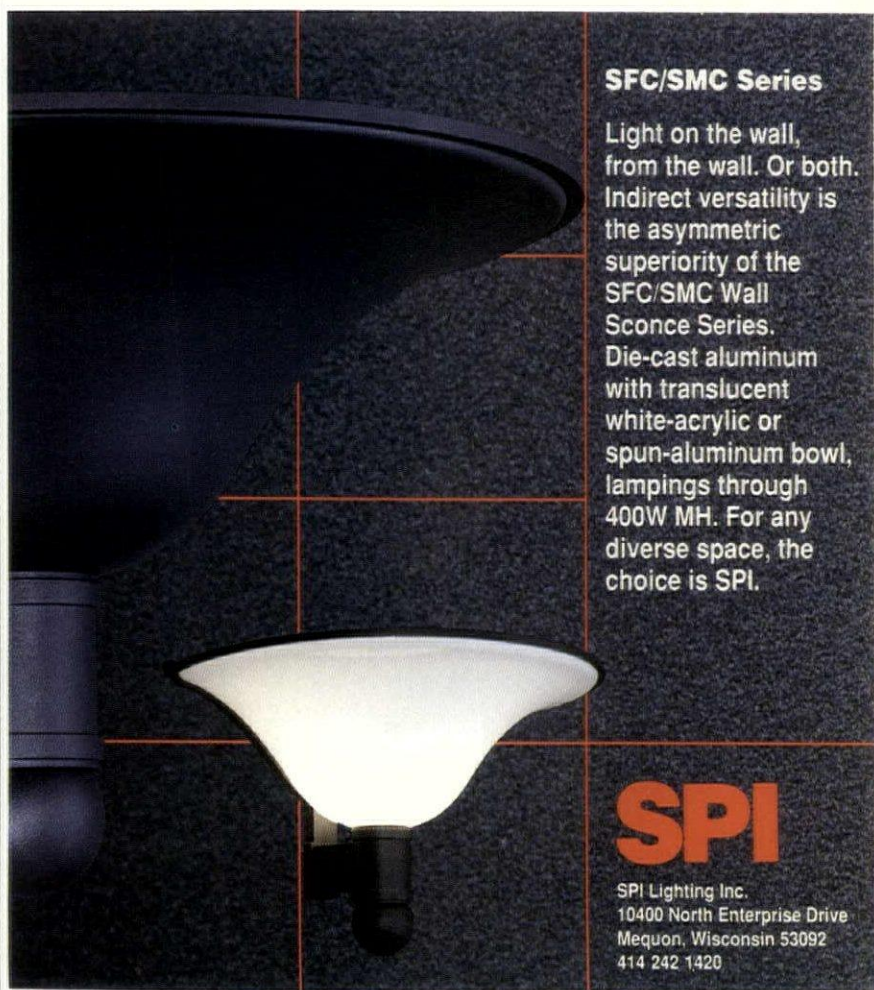
#### **HONEYWELL SCHOOL PROGRAM**

The Honeywell School Services Program, created by Honeywell's Commercial Buildings Group, is currently helping more than 750 school districts across America. The School Services Program is a selection of flexible products and services that are customized to meet each school district's unique needs.

School districts enter into a partnership with Honeywell—an exchange of information so the program's energy experts learn about the school district's specific problems. Out of this comes a list of solutions, which might include repairing and updating HVAC and lighting systems, and customized staff training.

Honeywell guarantees that the upgrades will be paid for out of the savings realized by improved operating efficiency and conserved energy. The School Services Program is self-funding, therefore, school districts will have adequate cash flow to meet project payments as they come due. If savings fall short at any time, Honeywell will make up the difference.

James Moss, and Honeywell School Services Program are just two examples of how the professional, manufacturing, and institutional communities are working together for everyone's benefit. The need for energy conservation techniques in schools is there. It's up to the lighting community to use its expertise to transform them into success stories that will benefit themselves, the children, and the environment



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BY RONALD HARWOOD

The news and financial reports constantly relay the American industries' slipping position against foreign competition. Beaten in every market, relegated to second or third position internationally, American manufacturers have truly taken a blow to their image as well as their pocketbooks. We Americans look down at our own ability to compete in the arena of high technology and blame the big conglomerates for being fat cats during the 1960s and 1970s, and allowing more aggressive nations to surpass ours in both quality and performance.

It is our responsibility to realize that the American lighting industry, as we know it, is on the endangered species list. Lighting designers, architects, engineers and contractors have had an unwitting hand in putting our industry on the brink of destruction. Through a complex set of circumstances, we have allowed the erosion of technological advancements to resonate through the industry and escalate to a self-destructing position. How, with such a head start, could we have gone so wrong?

The United States' lighting industry, spared from the ravages of foreign marketers for the last 20 years by Underwriters Laboratories requirements, has finally taken a severe hit. European and Asian lamp manufacturers find it easier to compete in America than in their homelands. Now fixture manufacturers are following suit.

We have responded to these offshore competitors in a very strange way. The other major players, the "Pacmen" of illumination, have gobbled up little regional lighting companies, drawn off the profits and discarded design and marketing personnel assuming that packaging all lighting needs under one corporate sales force is the key to long-term success.

As you read this today, these same Pacmen are shaking their heads wondering where they went wrong. Profits are either down or non-existent. Plants that manufacture two by fours are taking orders at prices that are based on keeping their doors open. Ironically, a few specialty shops have survived, with some even prospering, during this downward cycle. As more and more lighting companies float to the surface, those left over offer us a glimpse into the past and an insight for the future. Their reasons for survival, coupled with American manufacturing know-how are the keys to the future of the American lighting industry.

Our electric lighting industry began in full swing by the

1890s. It was at this point that technologies merged, along with corporations, to form General Electric. By the turn of the century, lighting fixture manufacturers began to emerge, finding all the business they needed just by creating lampholders or integrating the new incandescent source into their decorative chandeliers and wall sconces.

Thousands of patents issued to hundreds of inventors insured most companies a head start into any endeavor they chose. Names like Edison, Steinmetz and Bell filled the United States Patent office dockets on behalf of their prospering corporations. Continuing through the 1950s, each lighting manufacturer created its niche in the marketplace by designing something new, painting it a different color or building a special application product. Many fixtures today are still referred to by names indicative of the manufacturer's trademark rather than their generic description.

Around the time of the oil crisis in the early 1970s, the lighting industry began to divide itself into two distinct categories. The "me-too" group that specialized in making it cheaper and faster, and the performance group that made it perform better or install easier. Both approaches seemed appropriate at the time. Labor costs were rising and the ability to build a cheaper fixture helped control inflation. More light for less money, and more light for less energy became the anthem of the masses. On the other hand, competition in the real estate market fueled an interest in using creative lighting design, coupled with dramatic architecture and

decor, to offer owners and developers a better-looking building. This pushed the small custom shops to produce larger quantities of specialty fixtures to the point that many created standard products from once custom luminaires. It is this custom "job shop" that seems to be winning out in the long run.

Awareness in good lighting design is growing stronger each year. Witness the almost logarithmic rise in young lighting design firms as well as the proliferation of foreign design-oriented product to serve their needs. Why are the foreign competitors gaining an advantage and possibly a stranglehold over our continental manufacturers? Let us review.

At the point when the "me-too" group was knocking off everyone else's product, the cost of filing patents and defending them in the courts was astronomical. Unfortunately, it seems as though the patent office was totally unprepared to uphold newly

**With each  
substitution,  
specifiers  
may be  
directly  
responsible  
for  
destroying  
the goals we  
are trying to  
attain.**

filed lighting patents. Perhaps many of the old ones were expiring too, creating even more confusion. At nearly the speed of light, the larger companies dropped their strong desire to patent and market unique and innovative products in view of their inability to justify the research and development costs. As soon as something new entered the market, after two years of research and patent applications, someone copied the product bend for bend, confident that the high costs of patent defenses (coupled with the lack of court muscle) would keep them out of harm's way. To compound the problem, we specifiers allowed substitutions based on cost or availability. Yes, we are part of the problem too—a big part.

Specifiers began an elaborate debate over the allowance of substitutions and the loosening of "one name spec" criteria. Some say that in order to forward the use of creative lighting design, we should allow, and in fact even invite, substitutions. Others say that good lighting design practices should inherently include the practice of specifying the exact product that fits the price/performance ratio the job requires; allowing substitutions only for well-examined reasons.

If both arguments have their merits, the deciding vote should include the understanding that with each substitution, we may be directly responsible for destroying the very goals we are trying to attain.

If we expect American manufacturers to give us a heightened "state of the art" with each new catalog, and provide us with improved tools to enhance our luminous environment, we also need to do our share to reward them for their efforts. Lighting design is here to stay. No longer tenuous, more and more major corporations, architects and interior designers are depending upon professional lighting designers to be part of the team. Now, we need to pay our dues.

The United States Patent Office and the federal courts are now doing a fine job of protecting the mental property and licensing interests of inventors. The manufacturers that have been responsible for helping us get started in lighting design need our support. By using the best tools for the job and not allowing knock-offs without serious patent scrutiny, perfor-

mance testing and construction quality, we assure the resuscitation of the American lighting industry. Specify type "A" OR BETTER.

## HARWOOD JOINS ADVISORY BOARD

ARCHITECTURAL LIGHTING is pleased to welcome Ronald Harwood as the most recent addition to the Editorial Advisory Board. Mr. Harwood is the principal and senior designer of Illuminating Concepts, Farmington Hills, MI. As an IES member and leading designer in the field, Harwood has authored numerous articles on topics ranging from new design and installation techniques to industry developments. He is also a regular speaker at industry conferences, seminars and college classes. From 1964 to the present, Harwood has divided his time between music and lighting design. His background comes from an unusual mix of live stage and roadshow performances and 20 years in the design-build contracting business. Harwood formed his lighting design firm by blending the underlying principles of these two areas. Illuminating Concepts recently celebrated its 10-year anniversary by forming the Inner Light Group, a team responsible for product research and the development of new lighting tools.

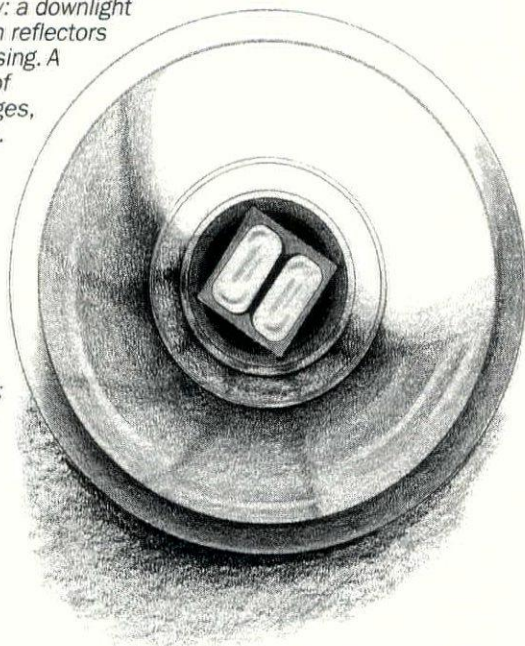


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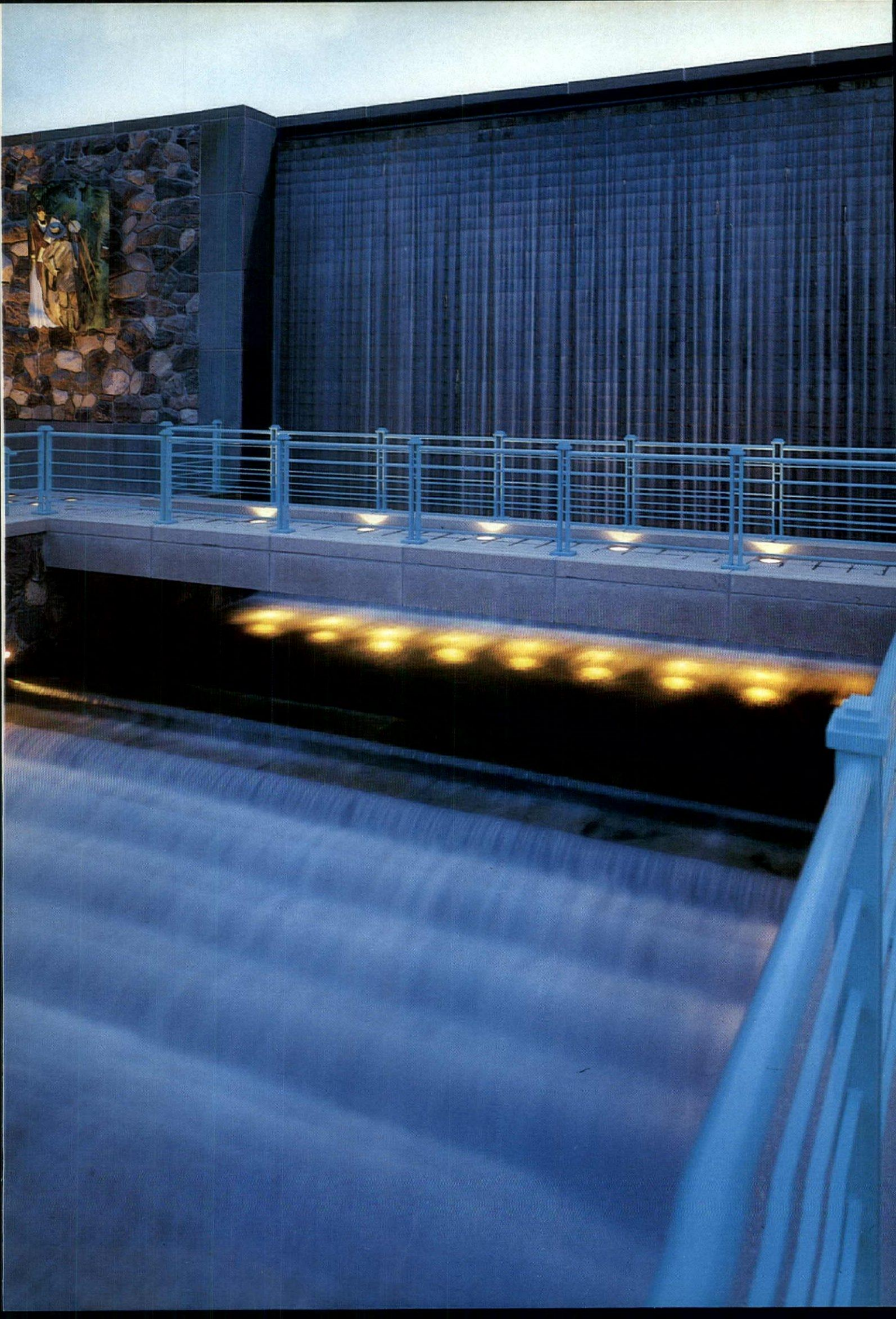
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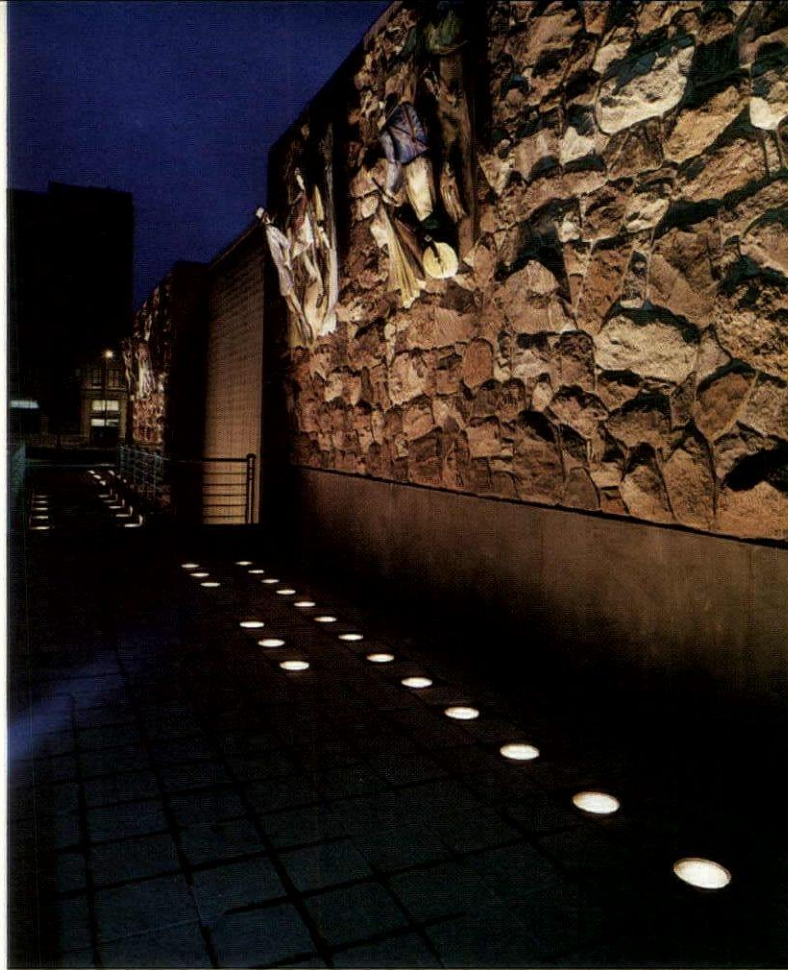
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**SHAKES & SHIMMERS:**  
(Opposite page) As the water moves down the wall and through the ridged channel, the uplights and sidelighting create a shimmering effect.



**WARMING THE WALL:**  
(Left) Incandescent was chosen to make the wall appear warm and inviting, as well as for its dimming capabilities.

# Mill Race Park

**KELLOGG'S GIFT TO BATTLE CREEK IS ARCHITECTURE AND ART ENHANCED WITH LIGHT**

BY WANDA JANKOWSKI EDITOR-IN-CHIEF

**B**efore the concrete structures were built in downtown Battle Creek, there had existed a Mill Race, constructed in the middle of the past century between two rivers to provide a waterway for milling operations, and so promote industry. The Kellogg Foundation, which is constructing an office building near the former site of the Mill Race, decided to give something back to the city of Battle Creek, and so has created a pocket park—Mill Race Park—across the street from the office building, that recognizes and preserves this one aspect of important local history.

"The original Mill Race actually ran through the site where the Kellogg Foundation is constructing their building," says George Sass, principal in charge of design and engineering, Johnson, Johnson & Roy/inc. "It was covered over years ago with structures, but what Kellogg wanted to do was to commemorate the fact that the Mill Race had been at that location. And so the plaza is dedicated to the history of the Mill Race and

the person who had it built, Sans McCamly."

Consequently, the main feature of the park is a water wall and run, reminiscent of the original Mill Race.

"The water pours over the top of the wall, and then down through the run, which is about the same width as the original Mill Race," says Sass. "The side walls are built of fieldstone, as were the walls of the race. The bed of the original Mill Race would have been dirt. But without using a great depth of water, we wanted to create some ripple action in the water itself, so we installed a surface that would do that." A bed of dark grey stones that are set at an angle make the water ripple as it flows.

The water used in the run is recycled continuously. When the pumps are turned off in the winter, the water is stored in a holding tank below ground.

The vertical stone wall behind the water stretches out, water-free, on the left and right of the run, and serves as the backdrop for a series of three-dimensional sculptures by Timothy Wood-

man. The artworks depict the story of the Mill Race from the clearing of the woodland in the sculpture placed at the far left of the wall, to the opening of the water channel depicted at the far right. On either side of the water run are open walkways and planting beds for the enjoyment of day and nighttime strollers.

The wall is intended to block out the surrounding environment to give the park a relaxing, quiet atmosphere all its own. The decision to opt for recessed rather than pole-mounted lighting fixtures was an intentional one as well.

"That was something that we and the landscape architects felt very strongly about," says Gary Woodall, project designer, at Gary Steffy Lighting Design, Inc. "We wanted the main feature of the park to be the water wall. Any sort of vertical element in the park would detract from the wall and be distracting."

Original plans for the park had included a free-standing sculpture, but as Woodall explains, there was no need for it after all.

"Once we found Timothy Woodman's work and concluded that his was the most animated art we had seen and would work well within the overall context of the park, we just decided that any freestanding sculpture would compete with his pieces, so we decided not to add any additional sculpture and relied on his works to carry it," Woodall says.

Though all the lighting is recessed, the units and light sources used vary. Burial units fitted with 250-watt, PAR 38 quartz incandescent reflector lamps, are placed single file in front of the walls to highlight the artworks. On the bridge over the water run, integrated into the handrailing detail are 90-watt incandescent A-lamp uplights with etched glass lenses that provide a soft glow and highlight the pathway across the bridge.

To illuminate the water wall, underwater-rated quartz 250-watt, PAR38 fixtures are installed in the stone bed beneath the water run. The rippling water run is made to shimmer with 50-watt, PAR 20 units in 4-inch diameter housings recessed in the side stone walls.

The plantings are lighted with the same 4-inch diameter lights, but instead of a lens, a cast louver is fitted onto the fixtures in the path areas. And instead of incandescent sources, the tree uplights use deluxe white mercury vapor lamps.

Easy access is gained to all units by unscrewing the lenses and louvers from the top for relamping.

To allay concerns about water leakage, the design team visited the manufacturer for demonstrations of the specified units. The fixtures used, according to Woodall, combine underwater pool lighting technology with in-ground uplight housings.

Upon first consideration, high-intensity discharge sources might seem to be a more appropri-

**ART & LIGHT: (Below)**  
The three-dimensional works of art depicting the creation of the Mill Race are illuminated with in-ground, 250-watt, PAR 38 units.



ate choice for an outdoor lighting project, particularly given the need for energy efficiency in design today. However, there were good reasons why the lighting team chose to make this a primarily incandescent project.

"For time-of-day control (dimming lights up and down depending on time and/or expected functions with a time-machine), for candlepower versus wattage and luminaire size, and for maintenance, the incandescent sources made a lot of sense for this particular project. Also, the park is a public amenity provided by the Kellogg Foundation, and as such it should embody a universal appeal—something incandescent does quite well," says Gary Steffy.

"We wanted to have a dynamic dimming system, so the wall could change appearance during the evening. Each group of lights is on its own independent control channel, so we can dim the left side of the wall separately from the right side, for example, and the water wall itself underneath the bridge," says Woodall.

"Regarding energy efficiency, the nearest equivalent light source we could have used to produce the same intensity of light on the wall would have been the 175-watt metal halide lamp. Given the fact that we have dimmed back the incandescent units, our input watts would be about the same for metal halide as they are for the incandescent," says Woodall.

"We also wanted to tell a color story. The mercury vapor fixtures were chosen to highlight the trees because they enhance the blue-green quality of the plantings. And the incandescent lighting cast on the wall allows the stone to take on a warm, inviting appearance."

The project began with the land purchase in August 1989. Mill Race Park was opened to the public in October 1991. The 180,000 square foot office building will be completed in 1992.

#### DETAILS

**PROJECT:** MILL RACE PARK

**LOCATION:** BATTLE CREEK, MI

**OWNERS:** W.K. KELLOGG FOUNDATION, and the CITY OF BATTLE CREEK

**LIGHTING DESIGNER:** GARY STEFFY LIGHTING DESIGN INC.

**LANDSCAPE ARCHITECT:** JOHNSON, JOHNSON & ROY/INC.

**ELECTRICAL ENGINEER:** NEIL ADAMS, INC.

**CONTRACTOR:** GRANGER CORPORATION

**CONSTRUCTION MANAGER:** WALBRIDGE-ALDINGER

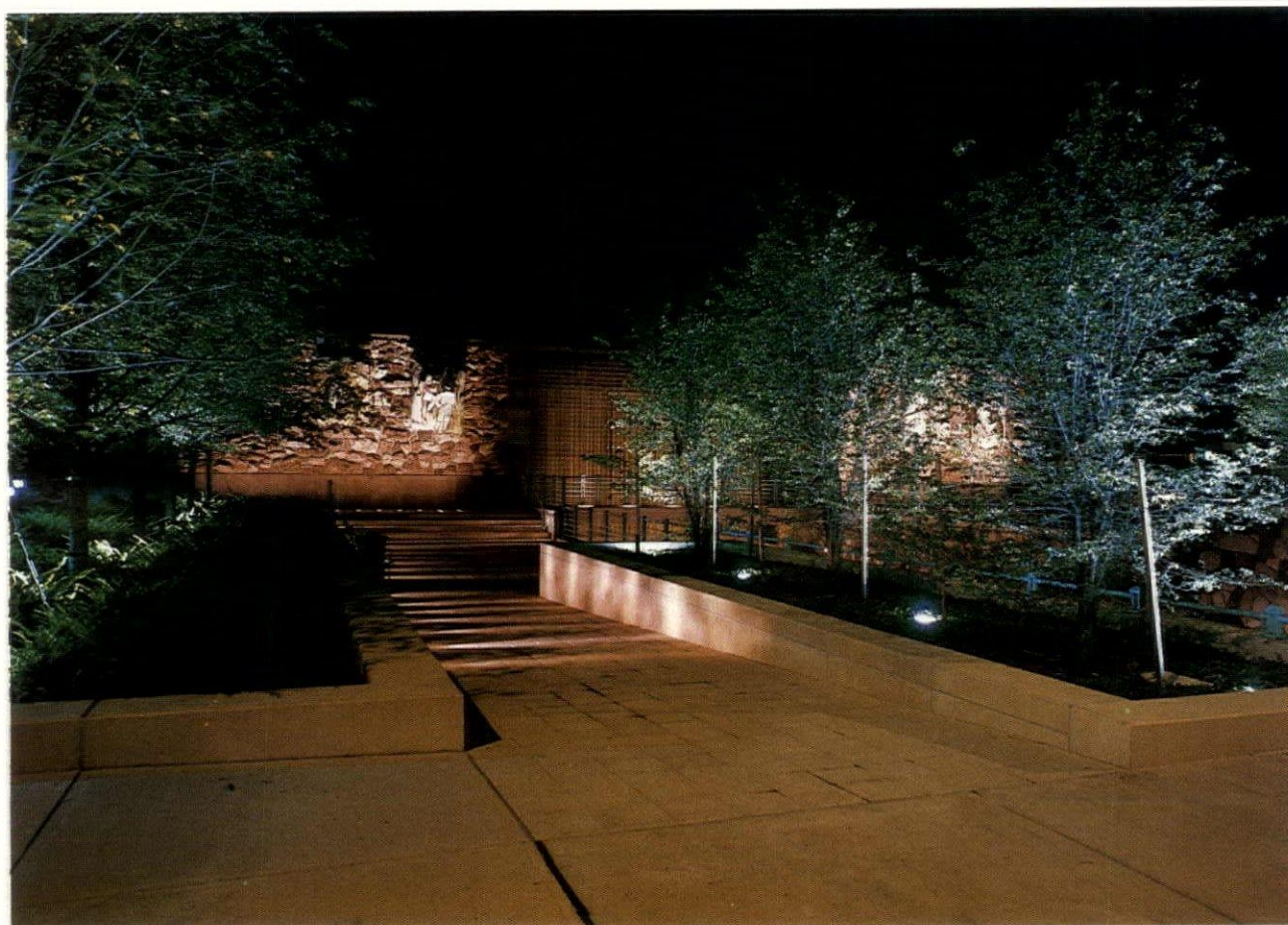
**ARTIST:** TIM WOODMAN

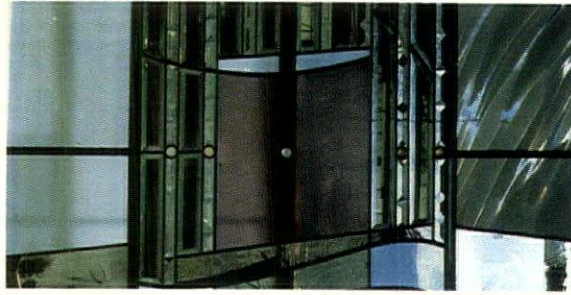
**PHOTOGRAPHER:** ROBERT EOVALDI

**LIGHTING MANUFACTURERS:** HYDREL: in-pavement and tree uplights; and STERNER: step lighting

#### BLUE & GREEN:

(Below) To enhance the blue/green coloring of the plantings, deluxe white mercury vapor fixtures have been installed to uplight the trees.





# Visual Expanse

**ACMAT HEADQUARTERS IS A HAVEN OF RELAXED OPENNESS  
ENHANCED BY THE LIGHTING OF MESH & JUUL, INC.**

BY WANDA JANKOWSKI EDITOR-IN-CHIEF





**T**hey can have their cake and eat it--a luxurious look that's easy to maintain," says lighting designer Diana Juul, Mesh & Juul Inc., about the custom fluorescent system designed for the new headquarters of the ACMAT Corporation. The system not only provides comfortable light for the interior spaces, but establishes a clean, linear image for the building when viewed from the outside.

ACMAT Corporation consists of five major divisions: ACMAT Corp. construction contractors; ACSTAR Insurance Company; United Coastal Insurance; AMINS personal and commercial line insurance agency; and Geremia Electric Company. The ACMAT Corporation purchased a 70,000 square foot office building in New Britain, CT with the intention of unifying its subsidiaries in one corporate headquarters.

Though the building is seven stories high, making it the tallest building in New Britain, the headquarters is located on the top two floors--approximately 20,000 gross square feet. The corporation required that the interior renovation achieve "AAA" construction rated office space (ACMAT was the contractor for the new offices), and that the space embody a sophistication and elegance that

would showcase ACMAT's construction and design implementation expertise.

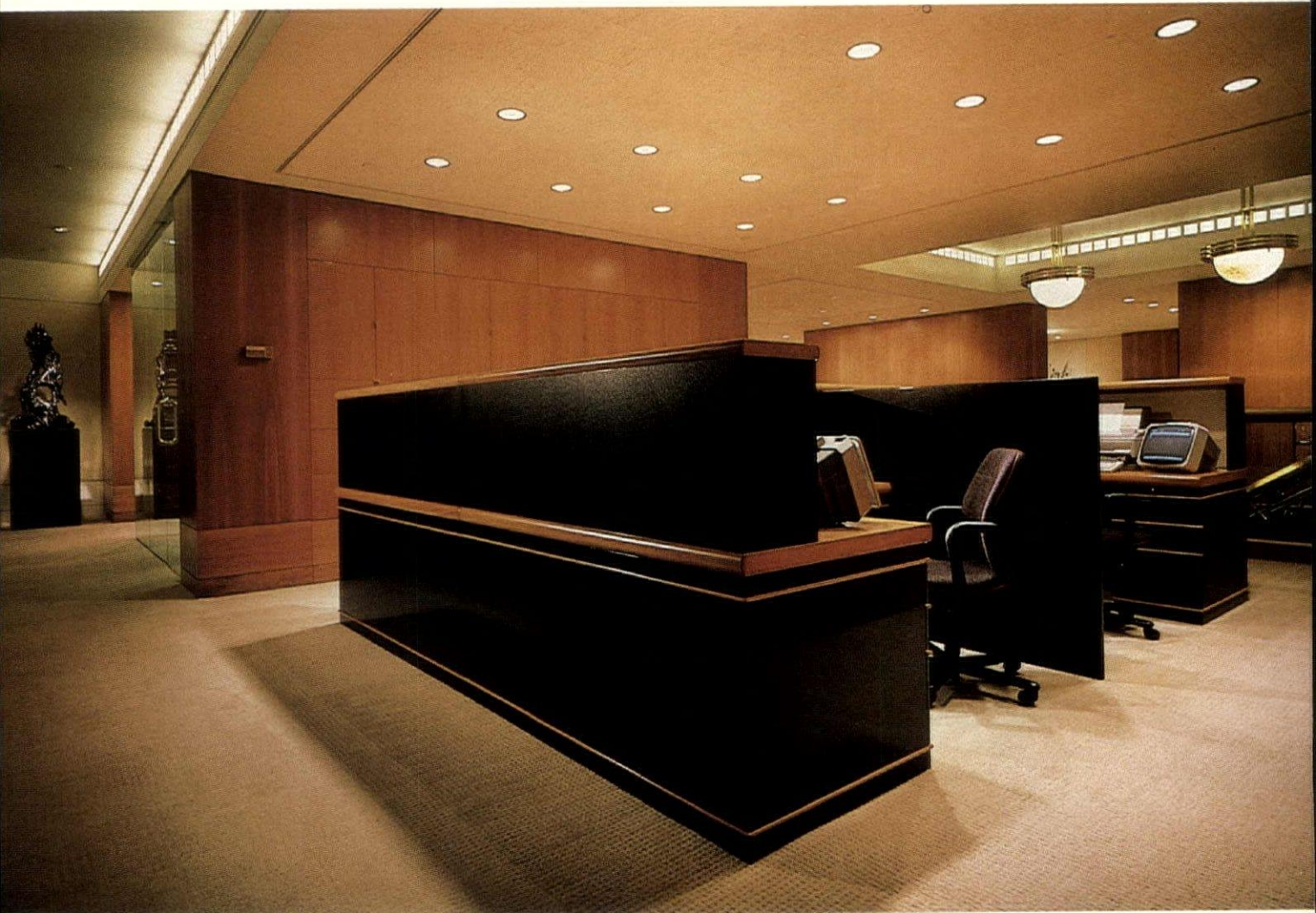
The views from the offices seemed contradictory: long-range, beautiful vistas of the Connecticut countryside; and the short-range hodgepodge of old industrial building rooftops, and tarred flat roofs of strip shopping centers. One of the design goals, then, was to emphasize the lovely long-range view, while deemphasizing the immediate surroundings.

The existing windows, typical of buildings designed in the 1960s, were large and unencumbered, and extended above the finished ceiling. The architect, Russell Gibson Von Dohlen, Inc., opted to capitalize on this and exposed the full exterior windows by raising the ceilings in the perimeter of the office space. (The floor-to-deck space was not enough to maintain a higher ceiling throughout the floors.)

Then instead of installing rows of executive window offices, the private offices have been set away from the windows, off a corridor that encircles the perimeter of each floor. The walls of the offices facing the windows have full-glass fronts and doors. The double window view to the exterior cuts down on the noticeability of the immediate cluttered rooftop scene.

**STAINED GLASS:** The building lobby and ACMAT offices are filled with rich materials like the stained glass wall in the lobby (detail, opposite page, top).

**STEP BY STEP:** The custom fluorescent system borders the soffit over the internal stairwell (opposite page, bottom). Secretarial areas (below) are lit with A-lamp downlight units.



**SENIOR OFFICE:**  
 (Right) Incandescent recessed fixtures highlight artwork and bring out the richness of materials and finishes.

**MAKING AN ENTRANCE:** The refurbished building lobby (below) is replete with variations of the ACMAT triangle logo.



“And everybody gets to walk around the corridor and enjoy the views,” says Juul. “That also means corporate executives have slightly smaller offices, but because they have glass office walls and the expansive view through to the exterior past the perimeter corridor, everybody feels it's very spacious and light.

“The finishes are all very expensive, and since we were also charged with the task of making these spaces home to a deluxe, high-quality corporate headquarters, we knew that to some extent we would have to use incandescent lighting,” says Juul. “But given the state of the environment and current energy restrictions, the question for us became, ‘How can we get fluorescent to look and behave as high-end as incandescent?’”

The solution found was to light the window wall corridor with a custom perimeter fluorescent lighting system designed by Mesh & Juul Inc. “The linear system is backed up above the line of the offices' glass walls to provide corridor lighting. Light also shines out through the glass windows and passers-by outside the building can see two lit bands at

night on the top two floors. The linear system uses T8 fluorescent lamps. So it's energy efficient, has a high-end look and serves as the visual signature of the building.

“The fluorescent custom fixture actually consists of a bare strip with a punched metal housing and a white lens. It was not expensive, and it is easy to maintain--the system will last four to five years before it requires relamping. If we had installed expensive sconces with halogen lamps, the client would have been upset, because the lamps would have burned out by now,” says Juul.

“What we try to do at Mesh & Juul Inc., is to provide some source of ambient light in office situations. We don't want to rely solely on downlighting, which is contained and rather energy-inefficient, and can lead to problems with shadowing and scalloping. So in this project we used a combination of both ambient illumination and direct downlighting,” says Juul.

The linear character of the corridor illumination is repeated in private offices, via the use of pendant-mounted fluorescent fixtures.

A benefit gained by not creating window offices is the reduced HVAC load. The need to provide air conditioning in individual offices on four exposures was minimized.

Another lighting design criterion involved enhancing the many rich and luxurious materials and artworks adorning the offices. Swiss pearwood has a warm hue and consistent grain. Used in panelling, millwork, and custom filing and storage units, it visually unifies the spaces. The simple detailing of the millwork is complemented by integrating silk and linen upholstered walls. A quiet background is provided by the off-white custom wool carpet.



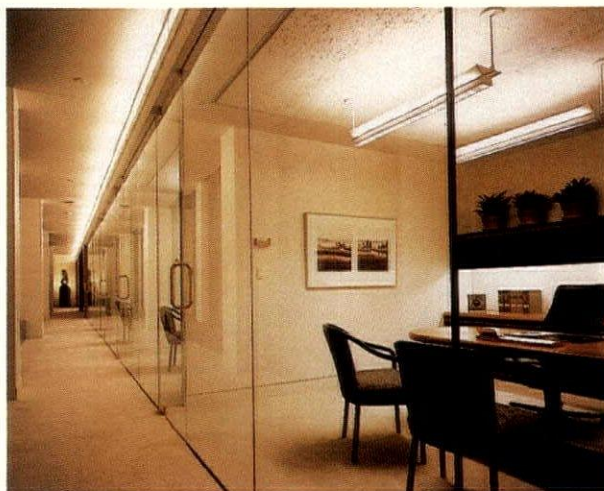
The ACMAT logo, originally designed by Raymond Lowy, has been simplified and incorporated as the leitmotif of the project. The updated logo depicts touching triangles that represent the precision required for successful interior space construction--the basis of ACMAT's business. The triangle became the visual cue leading visitors to the building. It appears frequently--for example, above the glass entrance doors in the mullions of the vestibules leading to the main lobby, in the patterning of the marble floor, and in the motif on the brass, bronze and copper elevator doors of the building lobby. Proceeding to the executive suite, ebony triangles are inlaid in the pearwood walls to denote the entrance to the main reception area and the executive chambers.

Susan Daniel, art consultant, worked with Carolle Jenkins, project designer for Russell Gibson Von Dohlen, and with the client to refurbish and augment ACMAT's existing art collection. Stained glass art, for example, was commissioned especially for the offices.

Michael Pillars' glass screen was commissioned for the executive waiting area. The translucent glass screens the executive ante room from direct sight.

Downlights are used in the secretarial workstation areas, in conference rooms, senior executive offices, and in the reception area to provide task and ambient illumination and to highlight art-works. Most of the downlights are fitted with A-lamps because of the low ceiling height.

"There's such a preconception that hiring a lighting designer means that the designer will create something that looks great, but is impractical and costly. This project was not a cheap job, but



the approach is very practical. The T8 fluorescent lamp is still one of the most efficient ways to go and it guarantees good color rendering," says Juul.

#### DETAILS

**PROJECT:** ACMAT OFFICES, NEW BRITAIN, CT

**OWNER & GENERAL CONTRACTOR:** AMCAT CORP.

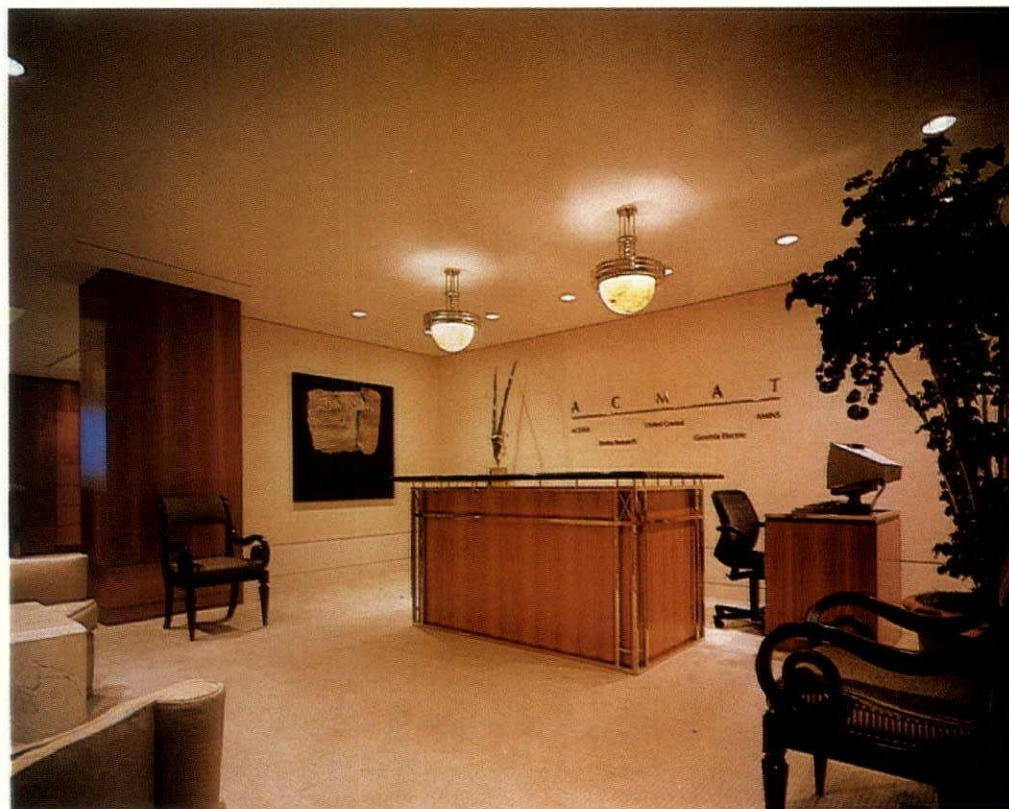
**ARCHITECT:** CHARLES BELLINGRATH, ROBERT POWELL, JANICE LINTNER, CAROLLE JENKINS, DINU PATEL, project design team, RUSSELL GIBSON VON DOHLEN

**LIGHTING DESIGNER:** STEVEN MESH and DIANA JUUL, MESH & JUUL, INC.

**CONSULTANTS:** SUSAN DANIEL, art; KENNETH VON ROENN, STUDIO GROUP and MICHAEL PILAR, MONARCH STUDIO, stained glass

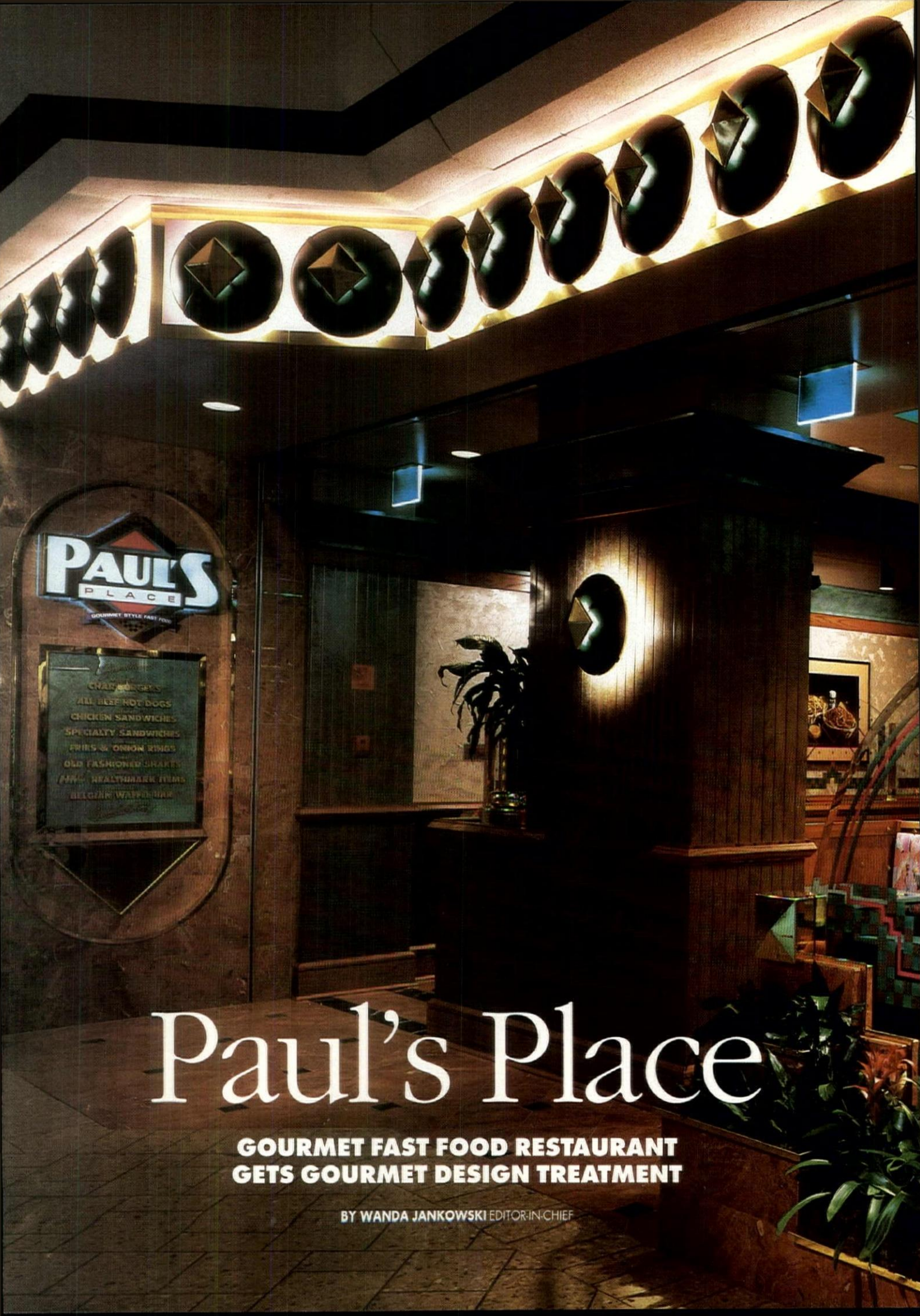
**PHOTOGRAPHERS:** MARK ROSS PHOTOGRAPHY, and RUSSELL GIBSON VON DOHLEN

**LIGHTING MANUFACTURERS:** ART DIRECTIONS, ZUMTOBEL, IPI, BOYD, and EDISON PRICE



**PRIVATE OFFICE:**  
(Above) Pendant fixtures in offices mimic the fluorescent band in the corridor.

**RECEPTION:** (Left) Incandescent downlights and pendants highlight artwork and pearwood surfaces in the reception area.



**PAUL'S**  
PLACE

GOURMET STYLE FAST FOOD

- CHAR BURGERS
- ALL BEEF HOT DOGS
- CHICKEN SANDWICHES
- SPECIALTY SANDWICHES
- FRIES & ONION RINGS
- OLD FASHIONED SHAKES
- 100% HEALTHYMARK ITEMS
- BELGIAN WAFLES

# Paul's Place

**GOURMET FAST FOOD RESTAURANT  
GETS GOURMET DESIGN TREATMENT**

BY WANDA JANKOWSKI EDITOR-IN-CHIEF

**LIGHT SHIELDS:** The shield-like custom sconces adorning the exterior frontage and interior columns are made of spun aluminum with pyramid-shaped brass caps.



**BALANCED BAYS:**  
Bevelled glass panels divide the restaurant into bays unified by repeated design elements, including symmetrical placement of pendants, sconces, and downlights.

First impressions are important—at least they are for fast food establishments in shopping malls. Shoppers make decisions on where to eat based largely on visual information they take in in moments. At a glance, they answer for themselves questions like: Is the eating area clean and congenial? Is the food appealing? Is the price right? Is the service efficient?, and ultimately, Should we eat here? Getting visitors to Cherry Creek Shopping Center in Denver, CO to eat at Paul's Place was the job of the design team at Victor Huff Partnership.

Paul's Place is a chain of gourmet fast food restaurants featuring Healthmark items. The Cherry Creek franchise is intentionally designed to be more upscale than its predecessors.

"For example, previous stores have ceramic tile flooring in the queuing line. The Cherry Creek store has marble tile flooring," says David Sprague, project designer. "Previously, 2 foot by 4 foot fluorescent troffers had been part of the lighting scheme. At Cherry Creek, we've used a combination of quartz wall washers, recessed downlights, low-voltage lighting, neon, and custom sconces."

Though a wide ranging palette of design elements is used, it is the sophisticated integration and repetition of them that gives the space its "class," as well as fulfilling practical food service considerations.

"Part of the design program called for us to create as much attention as possible at the entrance to lure in potential customers during the eight or so seconds a pedestrian takes to walk by. We wanted it to sparkle, almost like Las Vegas. In another situation, we might have used a source like neon. But the mall management strictly specified that we could not use neon exposed tubing on any of the frontage—it was part of their design criteria. So we created a band of sconces to catch the eye and then draw attention into the space," Sprague says.

The round "shield" part of the sconce is made of spun aluminum finished with a green lacquer. Black-painted aluminum bands radiate from the center and are held on with purple screws. Set on top of the shield's center is a brass pyramid. Light is thrown out from behind the pyramid and from behind the circular shield by a concealed A-lamp.

The sconces, wall-mounted on columns in the



interior that incorporate busing stations, provide decoration and some ambient light. The brass pyramid motif is repeated at the base of arched glass panels that divide the space into three bays and terminate visually in the food pickup area in the rear. The first glass panel displays the name of the restaurant.

How to maintain the impression of fast, efficient service, even when the restaurant is busy, was a challenge resolved by placing the queuing line on the side wall of the restaurant and running it back to the order counter.

"The restaurant becomes so busy that if the line didn't recede into the order area at the back of the space, the customers would be standing out in the mall corridor, which is a turn-off. People would think they had to wait a long time to be served, which is not the case," says Sprague. "But by stacking those people along the inside wall, the line appears to be shorter than it actually is when viewed from the mall corridor."

Though there is a printed menu at the start of the queuing line, photographs of menu items hung along the wall and highlighted with T4 minican pendant-mounted fixtures give customers a mouth-watering idea of what's in store for them at the end of the line.

The seating areas are more sophisticated in layout and in the materials used than those in previous Paul's Places. The solid-surfaced tabletops, for example, are inlaid with a multi-colored geometric pattern that includes brass squares and brass perimeter banding.

"Their program called for two seatings at every lunch period. We have incorporated a lot of deuces—tables for two—into the design so they can be ganged together. The tendency is for a single customer, or for two people to come in and sit at an empty table for four even if tables for two are empty. So we've tried to incorporate as many deuces as we can, that can be moved together to create seating for four if needed, to accommodate as many people comfortably as possible," Sprague says.

"In the seating areas, most of the ambient lighting comes from pendant fixtures fitted with G lamps," says Sprague. The high ceilings above the central eating areas are painted black above bands of pink and blue neon which run along the perimeters. This creates a feeling of spaciousness. The pendants within the high-ceilinged areas are hung low enough to create a feeling of intimacy for diners, yet high enough so the tables can be moved around and ganged without creating pools of hotspots.

The dual-colored neon banding in the eating areas is also repeated at the back of the space in the food pickup area.

"Actually the mall design criteria specified that only white neon can be used inside the space, but we were able to install colored neon because it was an integral part of the design scheme," Sprague explains.

Low-voltage downlights pinspot plantings, and in other areas standard incandescent downlights are used.



Instead of hanging the typical framed photo or painting on the windowless wall adjacent to tables, bands of color used in a shadow-box application are illuminated from within with incandescent tubelights to create visual interest.

The salad bar is illuminated with low-voltage fixtures. Each lighting system in the restaurant is capable of being switched separately and dimmed.

Because of the great height of the space, the designers were able to incorporate a mezzanine level mechanical room above the kitchen to house the HVAC, water heaters and air handling units. These air and cooling systems prevent the kitchen from becoming too hot, and affecting not only the kitchen workers, but customers ordering and eating near the kitchen.

**SPACEY:** The black-painted ceiling extends up above the bands of pink and blue neon to create a feeling of spaciousness.

#### DETAILS

**PROJECT:** PAUL'S PLACE

**LOCATION:** DENVER, CO

**CLIENT/OWNER:** MARC2SIX, INC.

**ARCHITECT, AND LIGHTING AND INTERIOR DESIGNER:**

VICTOR HUFF, principal and DAVID SPRAGUE, project designer, VICTOR HUFF PARTNERSHIP

**ELECTRICIAN:** CONTEMPORARY ELECTRIC

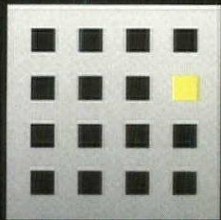
**PHOTOGRAPHER:** KARL FRANCETIC, FRANCETIC PHOTOGRAPHY

**LIGHTING MANUFACTURERS:** HALO LIGHTING, NEOSOURCE, TREND LIGHTING, CREATIVE LIGHTING

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*Randy Burkett, Randy Burkett Lighting Design*

• Do's and Don't's of Smart Lighting

*Gary Dulanski, Warshaw Electric Company  
Denis Darragh, MicroLite Corporation*

• What Do You Mean by OR EQUAL!!!

*Gary Dulanski, (Moderator) Warshaw Electric Company  
Mary Ann Hay, Syska & Hennessy  
Ernest Claire, Forest Electric  
Jim Willey, Speclite*



• From Beverly Hills to the Big Apple: Residential Lighting Techniques

*Lee Waldron, Grenald Associates, Ltd.  
Julia Poppen Rezak, Grenald Associates, Ltd.*

• How to Market Your Design Services

*Joan Capelin, Capelin Communications*

• The European Community: Standardization in Lighting

(Presented by the International Commission on Illumination)

*Philip Wychorski, Eastman Kodak  
Al Gough, Lighting Research Institute*

• Museum Lighting Techniques in Commercial and Residential Settings

*William Riegel, William Riegel Lighting Design*

• Everything You Wanted to Know About HID Systems for Outdoor Applications

*John Kennedy, GE Nela Park*

• Energy Conservation in Europe and its Effects on Lighting Design

*Janet Turner, Concord Lighting Limited*

• Lighting Help Wanted: 5 Ways to Get it

*Barbara Cianci, Horton-Lees Lighting Design, Inc.  
Karen Goldstick, Flack + Kurtz Consulting Engineers*

• The Artistry of Decorative Lighting

*Mark Kruger, Mark Kruger Lighting Design*

• Design Considerations in the Lighting of Outdoor Sports Facilities

*John Frier, J.P. Frier Lighting Design, Inc.*

• The Carrot, The Stick, and The Flag: Promoting Energy Conservation in Lighting

*Robert Davis, Rensselaer Polytechnic Institute*

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*Robert Dupuy, RDS, Inc.*

• Uses and Abuses of Utility Rebate Dollars

*Robert Davis, (Moderator) Rensselaer Polytechnic Inst.  
Hayden McKay, Hayden McKay Lighting Design  
Charles Occhino, NALMCO  
Kevin Cress, New England Power Service Company*

• Lighting Kitchens and Baths

*Jane Grosslight, Florida State University*

• Keeping Bright Lights From Turning into Dim Realities

*Gary Gordon, Gary Gordon Architectural Lighting, Inc.*

• Using Drama in Architectural Lighting

*Craig Roeder, Craig A. Roeder Associates, Inc.*

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*June Schoenfeld, June Schoenfeld Associates*

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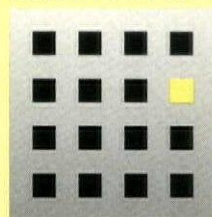
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## LIGHT & OBJECTS: A METAMORPHOSIS

BY CLARA DREVON

Understanding light involves being able to capture or create an interaction, an encounter, a tender embrace, a separation, a rip. Brutal contrasts, tenderness of a dim evening; a grazing ray along a wall, sliding away; revelation of a rough textured surface, of the grain of a skin; landmark in the black night...all this is light.

However, light is nothing by itself, but a phenomenon of physics. For man, it is an enigmatic halo in the sky, suggesting fire or ice. Indeed, light exists only through associations. Light comes to life at the same time as it starts playing with surfaces, volumes, straight or curved lines.

From the notion of "light," we evolve to that of "lights": white, colored; natural or artificial; cool or warm; material or spiritual. This variety inspires the idea of a tour along which light interferes with elements that can be surfaces or volumes—objects stating themselves as points of reference in a spatial or historic context.

In this article, the challenge of lighting objects to be presented to a public, as in a museum or exhibit space—objects

that have something to reveal—is explored visually.

Light itself is revealing. Natural light emphasizes the character of a site, suggests a season or a moment of the day. Whether natural or artificial, filtered, directed, dimmed or bounced, light reflects an intention and provokes different reactions. This is the reason why making choices for the duo of light/objects requires diligence and skill.

The dual relationship starts with the qualities of the object to be presented. Those qualities will expose themselves to light, at the same time as light either imposes itself on the objects or becomes discrete as to almost disappear. The lighting options used depend on the semantic, plastic or poetic relationship one decides to establish.

Architects have always taken daylight into consideration and some architectures reflect a real celebration of daylight. In spite of this, significant amounts of exhibition spaces cannot use the daylight provided by the building openings, either because of their inadequate locations (particularly in renovation cases), or for conservation reasons (ultraviolet rays causing the deterioration of certain materials).

To intervene with light in a space, one needs to know of both physical qualities of light and the existing light sources available.

### ILLUSTRATED GLOSSARY OF LIGHTING EFFECTS

Included are visual examples of how the qualities of a natural stone can be manipulated by light. The lighting effects were achieved using two halogen photographic lamps, one low-voltage lamp (MR 16), and a few colored theatrical gels. No other professional lighting equipment was used. All photographs were taken with a 50mm lens, with no camera filters or special photographic effects or retouching.



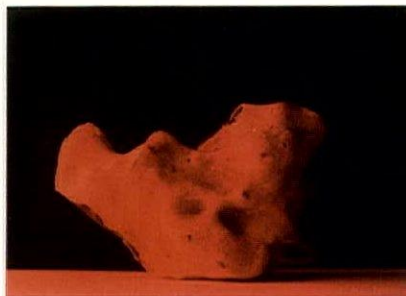
**"ORDINARY" OVERALL LIGHTING:** The stone is set on matte white paper that curves up behind it. The light reflected by a white board from a tungsten halogen reflector lamp is aimed at the stone and background.



**VOLUME/CONTOUR:** It looks as if there is no visible support, but the stone is actually suspended in a fine net, with a horizontal white board placed far below it. Light from a halogen lamp is reflected by the white board, and aimed at the stone from the top.



**MULTI-COLOR:** The stone is set on a black acrylic plane. Light from one halogen lamp fitted with a yellow gel filter grazes the plane. Light from one halogen lamp fitted with a daylight blue filter highlights the stone from the top, and slightly behind.



**SATURATED COLOR:** The stone is set on a white horizontal plane with a black vertical background. Light from a tungsten halogen reflector lamp fitted with a red gel filter is reflected by a white board onto the stone and horizontal plane.

But the ability to locate light sources requires also the study of phenomena such as reflection, transmission and shadows.

Reflection concerns all surfaces, matte or glossy. The surface of an object is composed of material particles that react to light individually. Those particles reflect in all directions (sometimes in specific directions) the light beams that correspond to their color; and absorb the others.

A light beam can be compared to a ball that would be projected with strength within a room. Some light beams would touch the walls, bounce on the ceiling and eventually on the object before entering our eye. Therefore, we do not only see through the beams received directly from the source, but also through those bouncing from the walls and the ceiling, which participate in lighting objects. Besides, the principle of reflection has been used for a long time to purposely light some spaces with indirect sources.

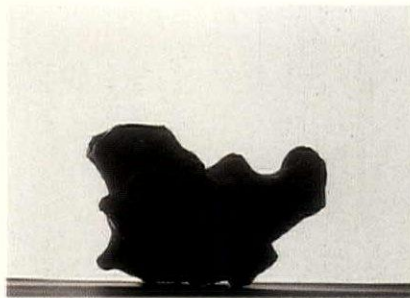
It is possible to determine the location of light sources, and the position of screens susceptible to direct light into specific directions. But one can also use transmitting screens to modify light. The transmission of transparent or translucent materials can be of three generic types: even transmission (without diffu-

sion), diffuse transmission and mixed transmission. So, through the use of lenses, most light (specifically point sources) can be altered to become diffuse, textured or colored.

How does light react when it meets a volume, as opposed to a screen? It projects a shadow on the background. As light travels in a rectilinear way (though a slight diffraction can be observed), the shape of the shadow projected on the screen is similar to the shape of the object, if the screen is perpendicular to the light beams. But as soon as those "perfect" conditions disappear, one finds a deformation in the shadow. There are many ways to play with this deformation and accentuate it if necessary. Incandescent point sources create usually stronger and more sharply cast shadows than fluorescent sources. Therefore, they are more suitable for enhancing relief qualities.

It turns out that light does not only enliven space, but it also has an active effect on objects it meets. Thus, we should wonder how the lighting of a volume/object conditions our vision of it, and to what extent light fits in with a more general environmental context.

We recognize and react to objects based on our perception of their qualities: is it large or small; dark or light; smooth or rough, light or heavy, wet or dry, edible, wearable, decorative



**SILHOUETTE:** The stone rests on a grey horizontal plane, and in front of a white vertical background. Halogen lamps—one on the right, one on the left—placed in front of the stone, are aimed at the background.



**THE HOLE:** The object and its background seem to disappear. Grey vertical and horizontal planes are set beneath and behind the stone. An MR 16 is placed behind the stone and casts light through the hole.



**TEXTURE:** The stone is set in front of and on grey planes. An MR 16 casts light through the hole from behind, and a reflector board bounces light back towards the front of the stone.



**PARTIAL COLOR:** The stone is set on a black acrylic horizontal plane with a grey vertical background. A halogen lamp is placed behind the stone, and an MR 16 fitted with a red gel filter grazes the horizontal plane.



**LEVITATION:** The object seems to be lifted and suspended in space. The stone is actually resting on a black acrylic horizontal plane, lit by a tungsten halogen reflector lamp placed above and slightly behind the stone.



**SOFTNESS:** The stone appears to be soft and spongy. It is set on a white plane, with a white background. Two halogen lamps—at right and left in front—cast light through a diffuser (heavy tracing paper).

or functional, etc. The example used here—a stone—is chosen deliberately because of its abstract shape, which allows viewers to see “anything” in it. At the same time, it has texture and volume qualities that come to life when appropriately lighted.

An object does not always evoke similar images and impressions or reactions for everybody. The same object in different settings and situations, will suggest different things. Indeed, the principle of perception is part of a complex psychological and physical context.

Cultural reference is probably the first element that affects the relationship between a person and an object.

The process of attribution calls on previous experience to detect shapes that are stored in our memory, and to identify an object. And what happens when we see a group of items? Consciousness can only perceive one “stimulus” at a time. So, several objects clearly related to each other will compose a unique message. This is why both the visual environment and the link that ties several objects are extremely important. They demonstrate an intention of organizing, or purposely breaking off.

One reads an object according to the way it is presented. Indeed, depending on its position, its lighting, etc., the same

object can acquire different significance.

After qualifying an object, one has to determine what characteristics to emphasize, and which to tone down. Only then can one consider lighting solutions. For the use of light alone can give an object a different visual perception by: indicating something on the object, around it, at the surface of it, inside it, informing, revealing or dazzling, skimming or insisting, magnifying or reducing, underlining, distorting, coloring, darkening or lightening, crushing, lifting up, isolating, etc.

Exhibiting an object is inevitably proposing a particular meaning for what is shown. The goal here is to let the observer dream, in front of objects that seem to transmit messages through simple evocations.

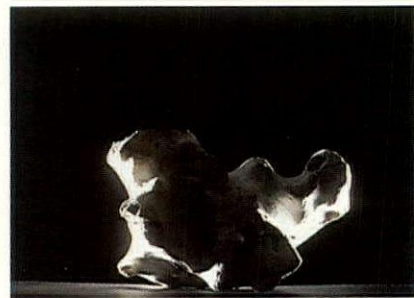
*Clara Drevon is currently with Synergy Consultants, New York, NY. Though she graduated in 1990 from Pratt Institute, this article is derived from a study she conducted while a student at the Ecole Nationale Supérieure Des Arts Appliqués Et Des Métiers D'Art in Paris, France. All photographs are by Clara Drevon. The study received the 1991 Richard Kelly Grant bestowed by the New York Section of the Illuminating Engineering Society.*



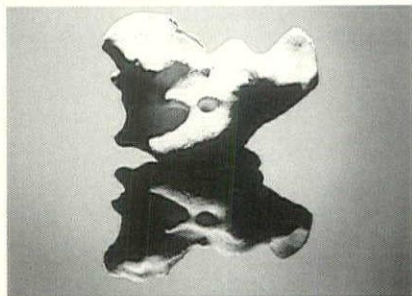
**FEATHERWEIGHT:** The stone is suspended in fine netting and lit from below by two tungsten halogen reflector lamps placed on the right and left of it. Though the stone is heavy, it appears lightweight.



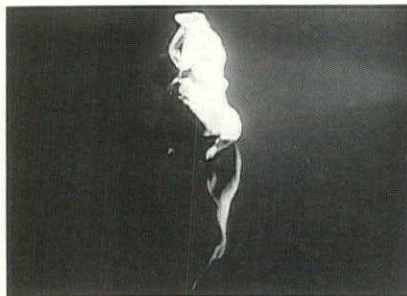
**ANGLED SURFACES:** Like angles are emphasized. The stone is set on a black plane. A halogen lamp with beam shaper cylinder is placed above and behind. One MR 16 with blue gel casts light from below and left.



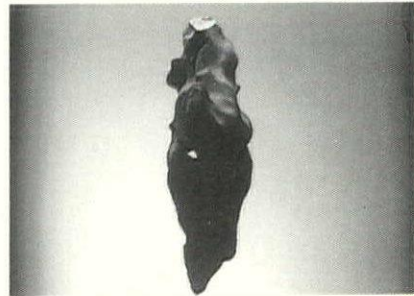
**DEPTH & DARKNESS:** The stone is on a black plane, with a black background. One halogen lamp placed on the right, and one on the left are aimed at the stone. White paper cones reduce the beam angles.



**REFLECTION:** The stone is set on black acrylic horizontal plane. One halogen lamp, located at the height of the horizontal plane, grazes it. Another located slightly to the left and slightly behind is aimed at the stone.



**ORIENTATION 1:** The stone is sideways on a black acrylic plane. One halogen lamp in front and slightly to the right casts light on the stone, but not on the horizontal plane.



**ORIENTATION 2:** The stone is sideways on a black acrylic plane. One halogen lamp behind the stone casts light that grazes the plane and the stone from the back.

## UNDERSTANDING UL

BY GERRY ZEKOWSKI

**W**hat is the most successful printed item in the United States? The Bible? No. Dollar bills? No. It's the Underwriters Laboratories (UL) label. Six billion UL labels are printed and affixed each year to products all over the world.

UL is in homes and businesses many times over, so how come we know so little about something that is so pervasive? The misinformation abounds, we hear people talk about having "UL approval," but there is no such thing as "UL approval." We hear talk about THE UL LABEL, but there is no such thing as ONE LABEL—there are several labels, some with very different meanings. Not only are there different meanings, but there is a UL label that appears as an RU with the "R" written backwards. We hear of products that are UL Listed, Certified, Approved, and Recognized as if these terms meant the same thing. They do not, and for those of us in the lighting profession, it is important to know the differences.

## HOW UL CAME TO BE

First, however, some brief history. UL was established in 1894 in Chicago after the great Columbian Exposition saw the world's first mammoth display of electricity. The public witnessed not only the new Edison light bulb, but a rash of fires. The need for testing to insure fire safety became apparent and UL had its birth with start-up costs of \$350. The great San Francisco earthquake and subsequent fires that destroyed 90 percent of the city provided a major boost for UL. The insurance companies paid off their obligations, but lost 46 years of profits. In 1907, the insurance companies helped enact revised building codes and by so doing broadened UL's role for the country. As time passed and technology expanded, the need for safety testing in many other areas became apparent. UL tested for the airline industry, for boat safety, non-slip floor waxes, explosives, etc., etc. Technology brings many benefits, but always with the risk of new hazards.

To me a UL label is an insurance policy. In many situations I cannot visually determine if a product is safe. Recently, I became aware of a floor lamp that did not have a UL label. The lamp appeared well-made and was produced by a major manufacturer, but it did not have a UL label. I was asked to research the lamp regarding safety and ran some heat tests on it and found that the temperature on the exterior of the bowl exceeded 170 degrees centigrade, 338 F. That's dangerous! Ninety degrees centigrade is the maximum for safety of portable lamps, but how could a consumer or professional determine that condition by visual means? We turned the product back to the manufacturer for redesign

and Listing by UL. The UL label means to me that someone, more qualified than I, evaluated samples of a product for safety and, therefore, both my client and I should feel safe, and secure in knowing we did our best.

To say that a product is "UL approved" is incorrect. UL does not approve anything; the word "approval" implies a wide range of acceptance, and UL only tests for safety—not quality, durability, application, etc.

## LISTING VERSUS CLASSIFIED

The classic UL label indicates that UL tested samples of a complete and total product and LISTED the product because it passed their safety tests. The presence of the listing label, what the UL calls the listing mark, also means that the individual product was manufactured under the UL's follow-up services program. Therefore, the correct terminology is to say that the product is listed. UL avoids saying a product is "approved," as they know that is the responsibility of the local governmental inspection authorities.

A complete listing mark consists of four elements: the UL Mark, the word "Listed," the product identity, and the control number. The UL Mark can be separated from the other parts: it can be printed on the manufacturer's label, or stamped into the product. However, all four label components are required.

There is another type of label that has the UL Mark with the word "classified" over it. That label indicates that samples of the product were evaluated for certain types of uses only. The UL Mark, along with a statement on the hazards or conditions tested for, must be permanently affixed to the product. The statement allows the field inspection authorities to determine if the product is going to be put to the use for which the product was evaluated.

The RU, with the backwards "R," is what UL calls a Component Recognition Mark. It is used only on components that later will be included in a complete product that will subsequently be tested by UL. Such a recognition limits the use to certain conditions only. Plastics are Recognized Components, as certain uses would be safe and some not safe. The UL Component Recognition Mark, RU, limits the use to what is safe.

Transformers also could fall into that category. I recently spoke with a manufacturer who tried to tell me that the Component Recognition Mark on his transformer meant the whole product was "UL approved." P.S., it was not!

There is another label known as the Field Evaluated Product Mark. If for some reason a product gets into the field that does not have a UL Listing Mark, UL can send an engineer to test a product in the field and that may even include heat testing. For a field testing



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(Top) An optional logo that may be used in conjunction with the complete UL Classification Marking. (Bottom) A common UL logo for Type "L" Listing Marks.

label, each individual product must be inspected by the UL investigator and so labeled.

Not all new products have to be performance tested at UL to get a label. There is a category called "test exempt." When incandescent, fluorescent, and portable lamps are constructed in ways specified by UL, the manufacturer can label the product without having to send it off to the UL labs.

Through its long involvement in testing fixtures, UL has determined which fixture geometries and constructions pass the temperature tests. As such, UL has defined a test exempt portion of the incandescent, fluorescent, and portable lamp standards. This portion outlines the critical wattages, dimensions, and spacings needed to pass the temperature test. As such, performance of a temperature test is not necessary by either the manufacturer or UL. When a manufacturer agrees to the test example procedure, they then have to agree to allow the UL Local Field Representative to enter their premises at any time to determine conformance with the standards. Certain fixtures are not accepted within the test exempt category, for example, high-intensity discharge (HID) and wet label.

## UL PROCEDURES

What are the procedures to get a UL Listing Mark for a product? Step one would be for a manufacturer to get the specifications from UL. They are called "Standards" and are available in lighting product categories: UL 1570 for fluorescent, UL 1571 for incandescent, and UL 1572 for HID. These Standards are highly detailed and inclusive. If, for instance, you wish to design a fixture to meet wet label requirements, the Standards provide the details explaining the test which simulates rain striking a fixture. The test procedure is very precise and calls for the fixture to be tested under a specific type of sprayhead which can be purchased from UL. The position of the sprayhead, the pressure, and all pertinent details are spelled out exactly. Therefore, a manufacturer may first test a product in their own factory for conformity before contacting UL.

When UL receives a fixture, it is first analyzed for physical construction. Parts of the fixture must be of specific dimensions and rigidity. Then performance tests must be conducted such as for temperature. UL must insure that portions of the fixture do not get dangerously hot. Recessed incandescent fixtures that are designed for installation without contact of insulation must also be tested for the possibility that insulation might accidentally cover it and trap heat causing a potential fire. A detailed testing procedure is required wherein a box is built of plywood that encloses the fixture so that the walls are 8 1/2 inches from the sides of the fixture. Then insulation is spilled into the box to a height of 4 inches. A sensing device that is part of the fixture must be able to turn the fixture on and off to signal that it is in contact with insulation. According to the National Electrical Code, insulation must not come within 3 inches of a recessed incandescent fixture that is not specifically designed for coverage by insulation. The specifics of the cycling times and temperatures are made very clear in the Standards.

Other tests are conducted on the fixture as well, in order to thoroughly confirm safety. For example, floor lamps must go through the tilt test. If the floor lamp is tilted 8 degrees, it should not fall over. If it does fall over, there is the risk that the hot components could start a fire. UL is thorough.

For a product to comply with UL Standards, it may also have to carry warning labels in addition to the UL Listing Mark. As an example, there are prescribed labels limiting a fixture's use with specific lamps and wattages. My own opinion here is that lamp limitations are an area where the safety warnings may fail. Warnings often limit lamping to exact lamps, such as the A19, A21, or R40. How can anyone who is not experienced know the meaning of those lamp designations? They refer to lamp shape and size, but that information may not be printed on a lamp or the box they come in! This is not a UL problem as they have no influence on lamp manufacturers in this matter. It is up to lamp manufacturers to voluntarily put the necessary information on the lamp. That matter will not only help in safety, but it will also help those that maintain the

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lamps. As a lighting consultant, I can tell you that proper maintenance is our greatest lighting hazard. (Perhaps manufacturers will read this and decide to help.)

There has been much concern about low-voltage lighting. Presently, UL has the ability to investigate low-voltage fixtures. In the case of a cord-connected portable lamp, if that assembly contains a UL Listed Class 2 transformer, that would not mean that the total lamp would receive the UL Mark for Portable Lamps. For compliance, the total lamp assembly, not just some parts, would have to meet the requirements in UL153. Fixtures that are provided with transformers can be investigated under UL1571. Although there is currently no UL Standard related specifically to low-voltage products, one is being developed. UL always emphasizes that the local authorities, such as city inspectors, have the last word as to what is allowed. UL evaluates for safety, but the local authorities handle the approval for the product and the way it is installed.

#### STANDARD DEVELOPMENT

To establish Standards, UL works with industry advisory councils for each product category. Representatives from insurance, inspection authorities, government, industry, and consumers come together to advise UL. Sometimes Standards change, and products that at one time met the Standards have to meet new requirements. In that case, UL reviews all products in its massive files and sends a bulletin to all manufacturers alerting them to the revised requirements as well as their effective dates. UL has international arrangements. For certain products, they can certify products simultaneously for both Canada (CSA) and UL requirements. UL has agreements with many of the world's major testing organizations for testing American products to meet their requirements: VDE in Germany, MITI in Japan, Cenelec in parts of Europe, and more. UL has subsidiary laboratories in Hong Kong and Taiwan, and they offer a service to all manufacturers to advise of the standards in any country. Safety is a concern worldwide.

That is a brief look at UL. Now you know the four basic markings: Listed, Classified, Recognized, and Field Evaluated Product. When I, as a member of the lighting profession and the public, think of what could go wrong with the thousands of complex products I use in my home, office, and work, I must emphatically state I am glad we have UL.

For more information, contact Underwriters Laboratories at 333 Pfingsten Road, Northbrook, IL 60062, or phone (708) 272-8800.

*Gerry Zekowski, Gerry Zekowski Lighting Consultants, Skokie, IL, is a lighting consultant, perceptionist, frequent speaker, author, and educator. His speaking credits include every major lighting trade show/conference in the U.S. and Canada. He has taught at many universities and, most recently, has given full-day seminars for the Illuminating Engineering Society (IES), Illinois Power Company, and the American Lighting Institute. He is President of the IES Chicago Section, has served as National Chairman of the International Illumination Design Awards Committee, and IES Regional Conference Chairman, and has received the IES Distinguished Service Award.*

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## **PALM OF HAND TECHNOLOGY**

**A** popular technique for putting light beneath shallow planes to illuminate objects below is to install carefully placed strip or linear incandescent lighting. That can produce a nice wash of warm light that evenly highlights objects placed on the shelf.

But now there is an alternative to uniform illumination in shallow spaces. The Puklight from Lucifer Lighting is a palm-sized, inch-deep fixture that accommodates a 10-watt halogen lamp to produce a crisp, white focused beam of light on objects displayed below it.

Though it is in the downlight family, the fixture differs from a standard residential or commercial downlight in that there is no bulky, recessed housing. According to Lucifer's president, Gilbert Lang Mathews, "Most downlights are designed for mounting in ceilings. In order to comply with electrical codes, you have to have housings which complement the trim that you see in the ceiling. The Puklight fixture takes a 10-watt lamp and does not require housing.

"It's for use principally in cabinets and shelving where there is a shallow depth and lighting is required for display purposes. The mounting depth is slightly over one inch, so if you have a cabinet or shelf that is 3/4 inch deep, the Puklight will recess and extend only slightly beyond the shelf," Mathews says.

The fixture can be recess mounted in a hole 2 1/4 inches in diameter and 5/8 inch deep using three screws through the mounting holes provided, as well as surface mounted.

The housing and trim are made of high temperature injection-molded thermoplastic. The reflector is plated die-cast metal. The lens is tempered glass. And the wire is Teflon-coated high-temperature stranded wire.

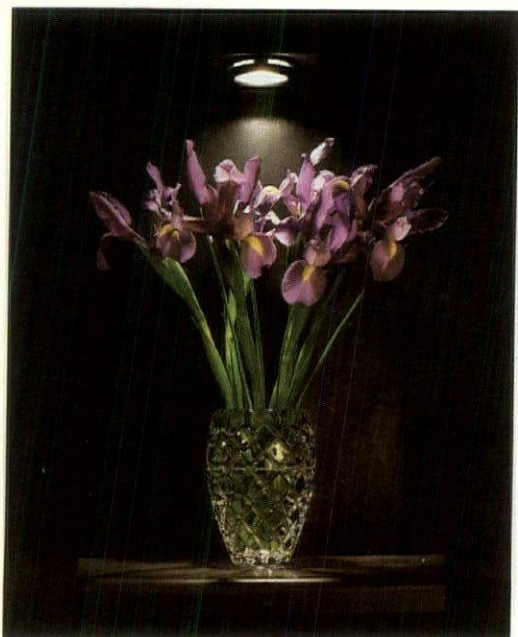
The unit's twist-on glass lens meets all new UL requirements for halogen fixtures. The lenses are offered in clear, frosted and colored versions, so they can be changed to create a different look, or to complement changing art objects displayed. The trim comes in four finishes: matte white, matte black, satin brass and satin chrome.

There is no need to pull out the fixture to change the lamp. Relamping is accomplished from the front of the fixture after a one-quarter turn and removal of the lens.

"There's a small tool that's provided to remove the lamp and set a new lamp in should it be required," says Mathews. The Puklights are available separately or in ready-to-install kits which include one to six fixtures with 12-volt, G4 base bare halogen lamps up to 10 watts, and a 60-watt electronic, Class II UL listed transformer. Accessories also include a black honeycomb louver.

**Puklight lens diameter  
(below) is 2.73 inches.**

**The halogen unit (left) can  
be recess mounted in a  
hole 2 1/4 inches in diam-  
eter and 5/8 inch deep.**





## Furniture-Integrated Ambient Lighting by Peerless: glare-free lighting where it's never been possible before.

A 1989 study (the Steelcase® Office Environment Index) established eyestrain as the number one hazard in America's offices.

A 1990 study by Cornell University established that glare-free lighting from lensed indirect fixtures dramatically reduces employee time loss

from vision-related problems.

Until now, the only lensed indirect lighting you could buy was permanently mounted to the ceiling or walls.

Now there's an alternative for low ceilings, or for when you're planning a move and you want to move the lighting with you.

For the first time, there's furniture-integrated lighting that meets the strictest standards for illuminating a VDT area.

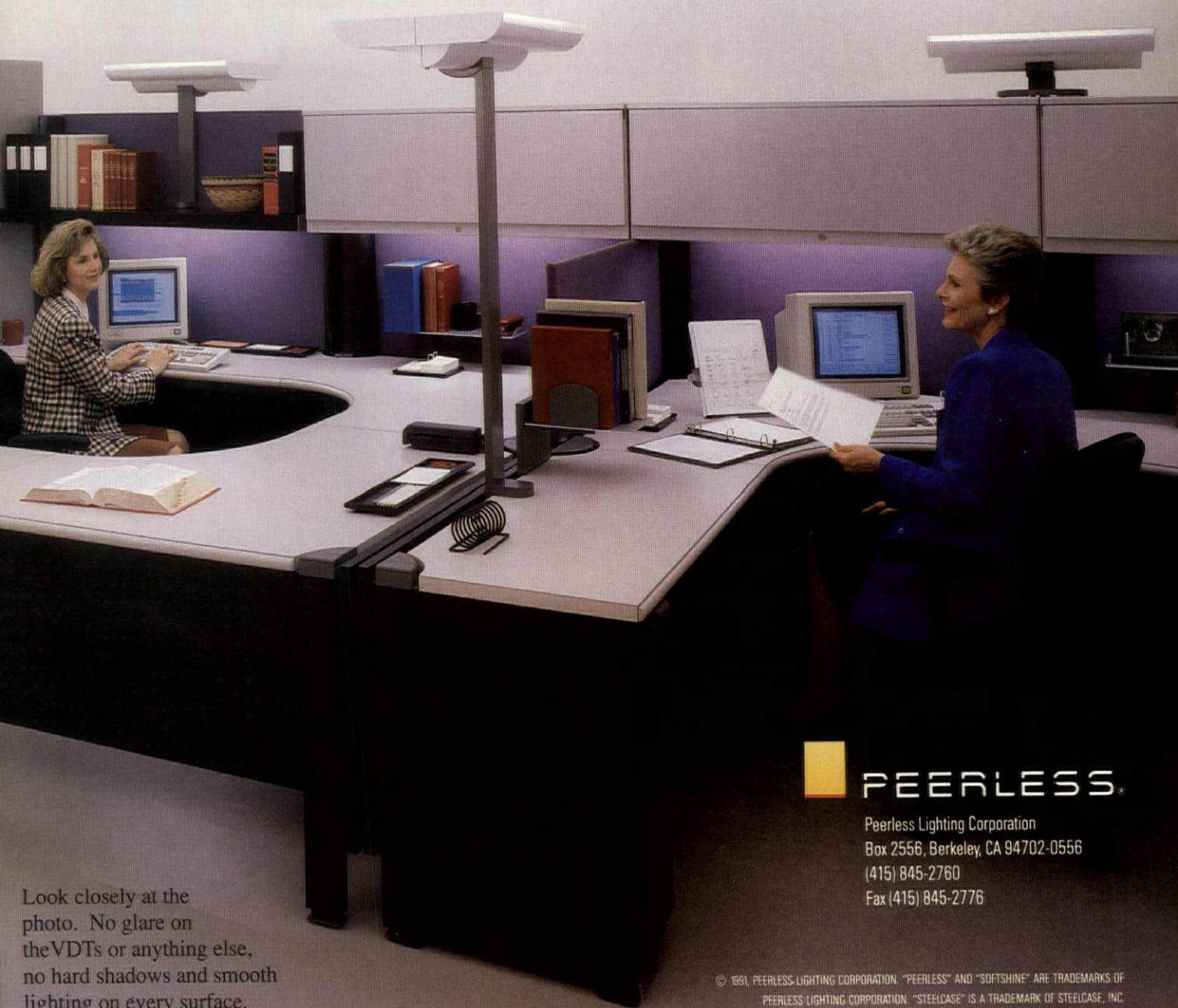
It was designed exclusively for Steelcase® systems furniture, with Softshine Optics as advanced as any Peerless has ever devised.

It combines gracefully with

ceiling or wall-mounted lensed indirect fixtures.

It delivers the right levels of glare-free illumination in a complete luminous environment.

If you need it, call us. Or talk to your lighting professional. Or see it at the Steelcase® showroom in Chicago.



Look closely at the photo. No glare on the VDTs or anything else, no hard shadows and smooth lighting on every surface.

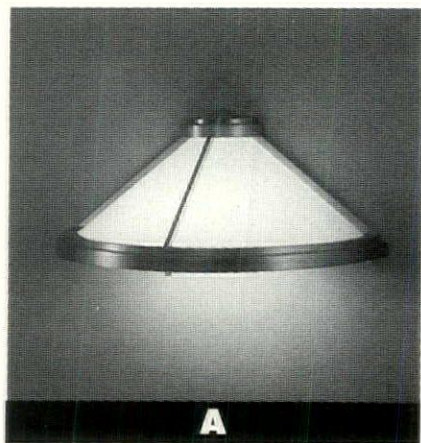


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Circle No. 2 on product card.



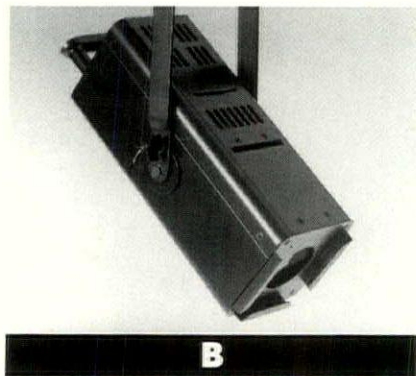
**A. Acrylic Lens Brackets**

The Aaron Series design is based on a conical shaped acrylic lens. This form offers an interesting alternative to bowl-style pendants. Polished or brushed aluminum detailings add a distinctive finish. Series pendants can be used with compact fluorescent or high-intensity discharge (HID) lamps; flush mounts and wall sconces can use compact fluorescent. Both 120 and 277 volt models are available. The Fenton model shown is 21 inches wide, and 8.37 inches high, with a projection of 10.5 inches. Winona Lighting, Winona, MN. **Circle 60**

**B. Pattern Projector**

The 100-250-watt, 110-volt pattern projector #Q250 is

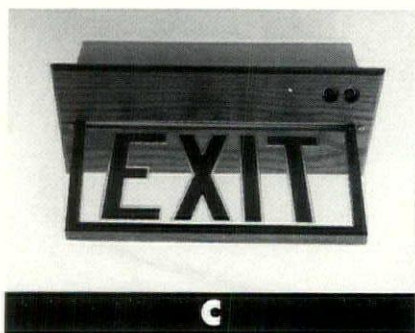
designed to offer more light output than low-voltage MR 16 projectors. The lightweight aluminum body allows the unit to be track, pipe, or canopy mounted. The Q250 comes with two pattern holders (one producing a larger image than the other), and a set of patterns that allows the unit to produce different size beams of light. The projector accepts standard and custom designed patterns. Motorized pat-



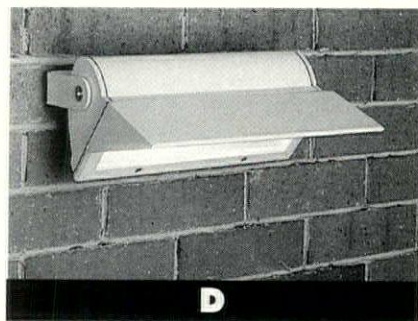
terns are now available that create moving clouds, water and fire effects. Times Square Lighting, Stony Point, NY. **Circle 62**

**C. Oak-Trimmed Exit Sign**

A new option for the RX Series of edge-lit exit signs is a solid oak trim plate. The oak trim, which is available on any recessed edge-lit unit, can be ordered stained or unstained. The



RX Series features contemporary styling and a thin profile. Fluorescent lamps and a maintenance-free,



sealed nickel cadmium battery are standard. Plenum construction is offered as an option. Teledyne Big Beam, Crystal Lake, IL. **Circle 65**

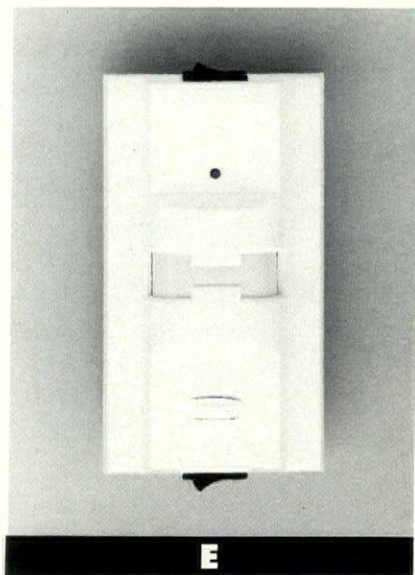
**D. Small H.I.D. Fixtures**

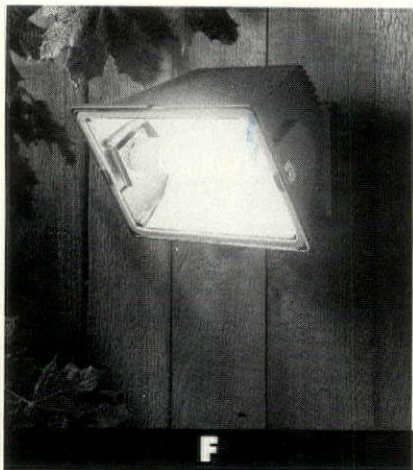
Elliptipar's Small H.I.D. model is equipped with a precisely-extruded, rigid aluminum reflector that projects light out and across a single plane in a highly controlled, uniform pattern. The small H.I.D. fixture uses low-wattage metal halide or high-pressure sodium lamps, and can be ground or building mounted. The

**E. Dual Circuit Switch**

The Switchomat model SOM-1000-A-2-LD (light duty) is an automatic infrared dual circuit switch that replaces the standard wall switch in either a double or triple gang wall box in eight minutes and controls an area up to 1,000 square feet. It has the flexibility of two individual on-off switches for either dual level switching, or HVAC control. It is rated at 120 volt, 1,000-watt ballast, or 600 watt incandescent and 1,800-watt ballast at 277 volts. It is Underwriters Laboratories listed for wet locations and C.S.A. certified. Elliptipar Inc., West Haven, CT. **Circle 50**

Unenco, Inc., San Leandro, CA. **Circle 64**



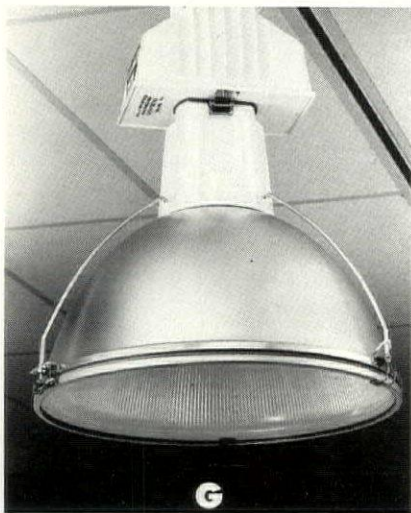


**F. Mini-Flood-light**

The TwiLighter TLX Series Mini-Flood features a lens frame that hinges out for easy lamp access. The fixture is available in 35- to 150-watt high-pressure sodium, or 28-watt compact fluorescent versions. For cold weather starts, the compact fluorescent lamp is rated for -20 degrees Fahrenheit. Other features include a 1/2-inch threaded arm with serrated teeth to lock the fixture in place, and silicone gasketing for long-term weather resistance. A multi-faceted, semi-specular, anodized aluminum reflector insures wide flood distribution. Stonco Lighting, a Genlyte Company, Union, NJ. **Circle 68**

**G. Prismatic Glass Industrial Fixture**

The combination of glass reflector and enclosed optics of



the Enclosed Prism-pack V industrial fixture minimize depreciation. The reflector's smooth inner surface resists dirt build-up, while non-deteriorating fiberglass filter allows the fixture to breathe. The reflec-

tor has a sealed-on metal cover to provide mechanical support. When cleaning is required, simply wiping the inner surface of the reflector, and the inner and outer surfaces of the glass door will restore the luminaire's efficiency to near initial output. The Prism-pack V may be used with high-pressure sodium, metal halide or mercury lamps, ranging from 150 watt to 400 watts. Holograph Company, Inc., Newark, OH. **Circle 69**

**H. Floor/Table/Clamp Lamps**

The nine-piece Studio collection includes Studio/1 (one arm) and Studio/2 (two arms) table, clamp-on, table-mount, and wall lamp models. The floor lamp fea-

tures two arms. Studio units are made with anodized alu-

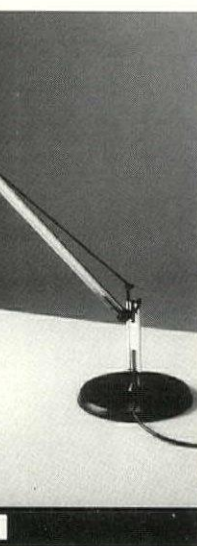


minum arm and shade, and heat-resistant polymer black handle and base. These task lights have jointed, spring-tensioned arms, to allow for adjustment and positioning. Each lamp is shipped with a 75-watt Superlux incandescent bulb. Finishes are offered in aluminum, black or gun metal. PAF USA, Inc., Stratford, CT. **Circle 67**

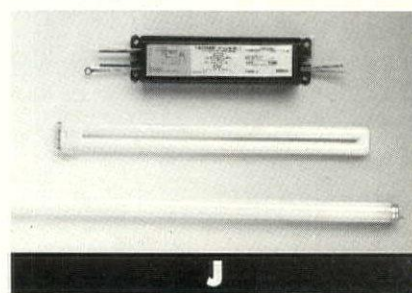
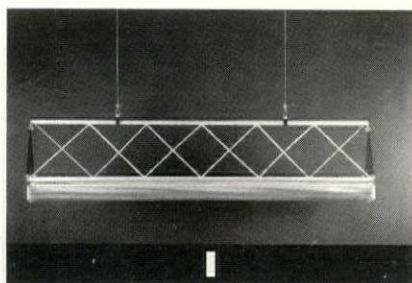
**I. Fluorescent Truss Fixture**

The Trusscent is a UL-approved, low-profile, two-tube fluorescent fixture. The unit is 4 feet long, with a 10-inch triangle truss. The fluorescent

section is 2 inches deep. The Trusscent can be wired in series. The steel



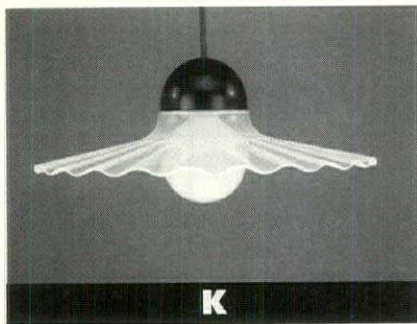
truss comes in standard colors of black, white and clear. Custom colors can be ordered. The fluorescent unit is available in



white. Simplex Truss Systems, Inc., Little Rock, AR. **Circle 56**

**A. Lamp/Ballast System**

Quicktronic energy-saving electronic ballasts are designed for use with Osram's T8 and T5 twin fluorescent lamps. The ballasts are offered in two-, three-, and four-lamp models that will operate two, three, four, and five foot lamps as well as 40-watt T5 twin Dulux L fluorescent lamps. Designed to operate at voltages of 120 and 277, the ballasts are interchangeable with most standard core and coil ballasts. Osram Corporation, Trenton, NJ. **Circle 66**



**K. Decorative Pendant Fixture**

The Abolite Neuveaux line includes the Wave, which is available in vibrant colors including lime, raspberry, tangerine, strawberry, turquoise, lemon and ice blue. Due to the reflective nature of the material, the radial design trim displays a distinctive fluorescent-like glow. Abolite Lighting, West Lafayette, OH. **Circle 55**

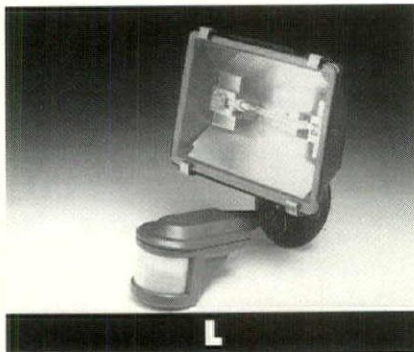
**L. Motion Control Sensor**

The Reflex professional motion sensor light control provides a 190-degree angle of coverage and range of up to 70 feet. Its three overlapping detection zones and downward coverage angle can protect up to 8,100 square feet. The light control also has a photocell shut-off that deactivates the sensor in daylight. The light control is preassembled

and prewired for simple installation; homeowners only need to connect two wires to an electrical junction box. Two models are offered: the SL-5313 has a rectangular quartz halogen light source, the SL-5314 uses two standard floodlights. Heath Zenith, Benton Harbor, MI. **Circle 54**

**M. Bronze/Glass Wall Sconce**

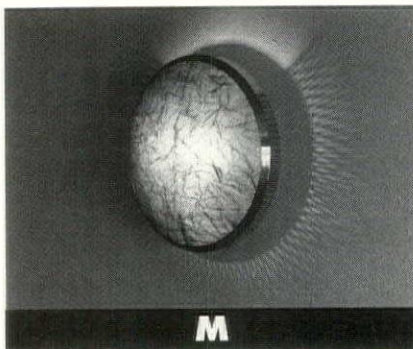
The Sunscape wall sconce, designed by Gary Rubens, is a blend of polished bronze and bronze wire cloth encased in glass bowls. The sconce is 12 inches in diameter and



uses one 60-watt lamp. It is available in wall and ceiling mount styles, with custom models upon request. Standard metals are bronze, copper, stainless and aluminum with custom variations upon request. Architectural Details, Kirkland, WA. **Circle 63**

**N. Glass Ceiling Fan**

Ariel comes standard with interior-

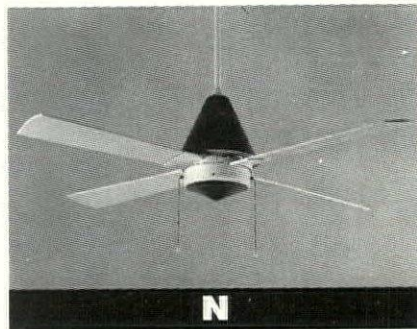


lighted glass housings and downlights. The unit is offered as a four-bladed version and uses a three-speed pull chain for the

fan and an additional two-position pull chain for the light. The Brass model offers oak blades that are reversible with a medium finish on one side and light on the other. An optional matching glass downlight is available for a maximum 60-watt candelabra base bulb. All other bulbs come standard. Beverly Hills Fan Co., North Hollywood, CA. **Circle 58**

**O. Preset Dimming System**

LiteSet is a preset dimming system that works with many lamp types, including compact twin, quad and biaxial fluorescent lamps, as well as linear T8, T10, and T12 lamps—all dimmable to 5 percent of full brightness. Circuits in the standard fluorescent and incandescent/neon dimmer packs can be combined to accommodate various load sizes. LiteSet Control Stations

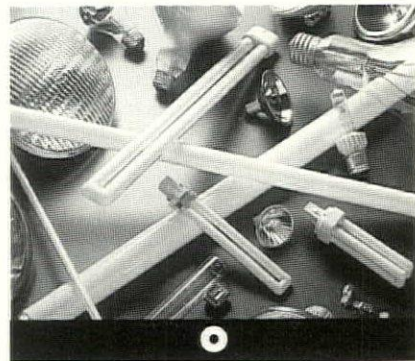


can handle large loads—one channel can control 20 circuits in the Dimmer Pack. One and four-scene models provide preset dimming without the complications of programming in either set-up or operation. Litelab Corp., New York and Buffalo, NY; and Los Angeles, CA. **Circle 61**

**(Not shown) Truss-Integrated Fixture**

A two-lamp fluorescent fixture fits within all sizes of the TransForm and DynaForm lines of trusses. The UL approved fixture is four feet long, and made of a durable 18 gauge steel. Its type I

ballast supports a set of energy saving 34-watt lamps. The fixture is supported within either a triangular or box truss configuration. Brackets at each end of the fixture conform to the truss dimensions of the truss. The light's casing fits within a special section of truss where the crisscross lattice has been modified to accommodate the fixture. The standard colors available are white and black. Custom finishes in baked-on enamel are also available for both fixture and truss. Interlock, Maple Grove, MN. **Circle 59**



# This year's Euroluce is bigger than ever: are we talking more space or more exhibitors?

Both, actually.

More space, since the floor area will be double what it was last time around. But also because Achille Castiglioni and Pierluigi Cerri's great new design creates a free-flowing look for the whole show, and also includes oases where you can take a break if you're feeling light-headed.

All in all, Euroluce will be such a brilliant experience that visitors will remember it, at least for the following two

years because, as we know, it is now a biennial event.

More exhibitors: a better spread, all the way through pavilions 16, 17, 18 and 21 of the Milan Fairgrounds, in fact. This means Euroluce is brighter quality-wise too.

And what's more, visit Euroluce between 10 and 15 April and you won't be able to miss the Salone Internazionale del Mobile.

Will the enlightened be coming to Italy for the sun or for the lights? Both, actually.

## Euroluce, International Lighting Exhibition. Milan Fairgrounds, 10-15 April 1992.

Cosmit, Organizing Committee of the Italian Furniture Exhibition.  
20123 Milano, Corso Magenta 96, Tel. 02/48008716, Fax 02/4813580, Telex 334394 Cosmit I.



Circle No. 18 on product card.

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