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Looking Ahead

TO PREPARE FOR THE NEW YEAR, we've collected opinions and insights from many of our Editorial Advisory Board members and contributors to this issue's features on what the coming year and decade might bring in lighting.

European/American relations, daylighting advances, improvements in light sources, interest in ergonomics, new education scholarships, growth in residential exterior lighting, and fixture refinements are some of the topics you'll read about in boxes bearing the 1990 Forecast logo scattered throughout the issue.

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Preview of Events—1990

AAAMA Expo '90, building exterior products exposition and conference, Rosemont-O'Hare Exposition Center, Rosemont, Ill. February 8-10 Contact: American Architectural Manufacturers Association, 2700 River Road, Suite 118, Des Plaines, IL 60018, (312) 699-7310.

EuroShop 90, international trade fair for the store environment, Dusseldorf, West Germany. February 17-21 Contact: Dusseldorf Trade Shows, The Empire State Building, Suite 4621, New York, NY 10018, (212) 239-3750.


Southwest Builds '90, trade show, Phoenix Civic Plaza, Phoenix, AZ. Building products and services for design and construction industries in southwestern states. April 11-12 Contact: Carroll A. Askew, Southwest Builds, 1516 Poinis Ave., Los Angeles, CA 90025, (213) 477-8521.


Lighting World/Chicago, McCormick Place, Chicago, IL. June 14-16 Contact: Denise Bigo, show director, National Expositions Co., Inc., 15 W. 39th St., New York, NY 10018, (212) 391-9111.


American Society of Interior Designers (ASID) Conference, Atlanta, GA. August 8-11 Contact: Andrea Perlman, ASID, 1430 Broadway, 22nd Floor, New York, NY 10018, (212) 944-9220.

Firsts: RPI's M.A.; Parry Moon Scholarships

THE NEW YEAR will bring several important developments in lighting education. The most important will be the inauguration of the master's degree program at Rensselaer Polytechnic Institute (RPI). Targeted for the long term, "high-end" intellectual requirements of the lighting industry, this program will be headed by Dr. Mark Rea, director of the Lighting Research Center at RPI.

Additionally, the Parry Moon Scholarships for Illuminating Engineering will be established. Two $5,000 graduate, and three $1,500 undergraduate scholarships for study in illuminating engineering will be awarded in 1990. Funded by Lighting Technologies, Inc., and established both as a tribute to one of this century's greatest illuminating engineers, and as an investment in the lighting industry's future, these scholarships will be awarded on the basis of merit, without regard to the institution the students will attend. (More details in upcoming issues.)

DAVID L. DILAURA, FIES • ASSOCIATE PROFESSOR • UNIVERSITY OF COLORADO, AND DIRECTOR OF ENGINEERING LIGHTING TECHNOLOGIES, INC. • BOULDER, CO
The beautiful grounds of this Southwest home are illuminated by Hydrel Series 6000 Well Lights using mercury vapor lamps to help create a "moonlight" effect. In the background, Hydrel 4000 Series Underwater Incandescent lights illuminate a Hydrel Aquahue fountain.

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EDITORIAL

A Home For The Holidays

Michael Smith used the same festive lighting techniques to illuminate the exterior of his own home for the holidays that he used on a larger scale for Houston's Decorative Center (see page 20). Here's how it's done:

The door, frame, and surrounding exterior wall are covered with ½-inch plywood sheets painted dark green. Holes, ¾-inch in diameter, have been drilled in a diagonal grid to receive 300 0.5-watt incandescent lamps. Openings have been cut in the door panel for the door knob and dead bolt. The panels have been anchored to the door and wall with wood blocking to allow room for the wires to run behind the wood.

The design has low energy consumption, and can be reused year after year. Labor and materials cost less than $600, and include a dimmer to extend lamp life, and to allow for fine tuning of the light level. The entire assembly is anchored with five long wood screws that minimize blemishes to the existing structure.

Thanks to Michael Smith for allowing us to wish you all a happy holiday season with light!

WANDA JANKOWSKI
EDITOR

Lighting Centers Explosion

ACROSS THE COUNTRY, architecture schools are intensifying their efforts in architectural lighting, particularly daylighting. In 1990, look for:

- Intriguing developments from the lighting research centers at the University of Minnesota, Rensselaer Polytechnic Institute, and the University of Washington,
- The debut of handsome, utility-sponsored, lighting design centers in several cities on the West Coast, and
- From Lawrence Berkeley Laboratory, innovative efforts toward an advanced design tool that combines the best of videodisc and microcomputer technology.

CHARLES C. BENTON • ASSOCIATE PROFESSOR OF ARCHITECTURE • UNIVERSITY OF CALIFORNIA AT BERKELEY, AND FACULTY RESEARCH ASSOCIATE • LAWRENCE BERKELEY LABORATORY • BERKELEY, CA
Fixture selection is usually a process of compromise between appearance, performance and design. The result is having to settle for less than you want. It is time to get what you want, not just what you can get.

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An oversized reflector and vertical lamp give Supra-Lyte exceptional performance, even when spaced six mounting heights apart. Type V square distribution and a high peak beam angle result in extremely efficient layouts that eliminate wasteful circular overlap. And the superb cutoff characteristics always provide comfortable, glare free illumination.

**CREATIVE FLEXIBILITY**

Supra-Lyte's dual lamp option can be used to mix high pressure sodium and metal halide to give the warmth and appeal of incandescent color... without sacrificing HID efficiency and long life. An internal reflector can also be used to provide Type IV medium distribution for exceptional performance along perimeters and walls.

**SAVINGS THROUGH CONTROL**

The dual lamp option allows one lamp operation during off-peak periods for reduction of unnecessary light levels and substantial energy savings. Significant savings can also be obtained with single lamp luminaires by switching from high to low levels using Wide-Lite's exclusive Bi-Level system. Either way, operating costs can be effectively controlled without compromise to design criteria, system integrity or component life.

*With Supra-Lyte, the design decision is yours, but the performance burden is ours.* Expect the quality and performance that can only come from Wide-Lite, the leader in HID innovation.
Evoking Emotions

James Callahan
‘chisels darkness’ to create light illusions

CATHARINE SCHETTING SALFINO
MANAGING EDITOR

Everybody knows what they like, but they only like what they know, says lighting/interior designer James Callahan.

“I walk a thin line sometimes in my lighting and design—some people say it’s a little ostentatious or a little theatrical,” says Callahan, who was involved with theater before becoming a designer. “But they’re only comparing it to what they know.”

In the early ’70s, when Callahan had a design firm in Ohio, he says he was considered to be a very flamboyant designer.

“I would use magenta streaks of neon across white walls and have light come
CONTINUED ON PAGE 10

CREDITS/SOURCES
PROJECT: CALLAHAN RESIDENCE
LOCATION: PALM SPRINGS, CA
OWNER: JAMES CALLAHAN
LIGHTING DESIGNER: JAMES CALLAHAN
INTERIOR DESIGNER: JAMES CALLAHAN
PHOTOGRAPHER: TOM RUSSO, TOM RUSSO PHOTOGRAPHY
CUSTOM tuner, space/plan lights, dining room accents, NOVA, bedroom accents

Personal, Emotional Light

THERE WILL BE A TREMENDOUS emphasis on exterior residential lighting. People are just beginning to understand the importance of it—color’s ability to enhance, coordinate with an exterior theme, or highlight lawn sculpture.

People are spending more time at home, so we are seeing an emergence of varied home environments. Homeowners are looking for their own identities—they realize their home doesn’t have to look like everyone else’s.

I think lighting will gain more importance in residential applications, also, if designers recognize that they need to stimulate people emotionally, instead of technically. Designers need to stimulate clients’ emotional responses with light.

JAMES CALLAHAN • LIGHTING/INTERIOR DESIGNER • PALM SPRINGS, CA
Inspired by the magnificent architecture of Rome, Scalini creates equally striking shapes with pyramiding steps of clear glass stacked one upon the other. The edges of the steps are polished smooth, but the sides are untouched so that thousands of facets remain to disperse the light and simulate sparkling sheets of ice. The effect is absolutely stunning. Ask for THE INTERNATIONAL COLLECTION, our new brochure brimming with other unique designs that celebrate glass and light.
Small Is "In"; Substance Is "Out"???

FOR THE BETTER, I see the fixture manufacturers catching up with the variety of new and improved light sources. We shall see the emergence of the T8 and BIDX lamps as more popular fluorescent sources, as new fixtures are designed to exploit these inherently superior lamps. I expect whole new types of fixtures to emerge, such as linear wall-washers, and adjustable accent/wall-washers. Smaller fluorescent fixtures should become more popular with architects and interior designers, and a new family of wall-mounted fluorescents should also be developed soon.

The newer, high-efficiency, tight-beam incandescent sources will be housed in more compact fixtures, and will effectively challenge the MR series of lamps. Interestingly enough, the low-watt, low-voltage, single-ended quartz lamps will invite the development of an entirely new family of fixtures, which will grow in popularity.

The European influence on the American market will grow, with its emphasis on quality at a price. This is one challenge that American manufacturers are simply not prepared to deal with effectively. The European manufacturers will open their own factories to exploit a market that they may not have invented, but have certainly developed, and are prepared to exploit.

On the down side, I see increasing emphasis placed by architects and interior designers on physical appearance, and less emphasis on light as a tangible element of architectural design—more focus on surface, and less on substance. This attitude is more common in Europe and the Orient, and represents a backward step for the United States.

Substance Is "Out"???

"There are a lot of designers who are engineers or architects. And when they refer to lighting, it's something they have calculated," he says. "They don't take into account lighting's ability to evoke emotional responses from people."
Introducing LyteJacks:
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Concrete Bollard

Cat. No. ALN441

Classic Lantern

Cat. No. ALC805DW

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CLASSIC LANTERN
Cat. No. ALN441

WEDGE LUMINAIRE
Cat. No. ALC805DW

Evoking Emotions
CONTINUED FROM PAGE 10

complements the brown colors and enhances the coolness of the grays.

To capture the look of candlelight in the bar area, Callahan used 6-watt incandescent pilot lights that are also hooked up to the dimming system.

"Amber candlelight is the most flattering light for the complexion," he says. "And here, we have that type from pilot lights counteracting the ceiling light—it comes up under your face and it is very flattering.

"The bar lights can be turned up and can also pulsate with the music. When you're in that happy frame of mind after the third cocktail, it makes it very exciting. Of course, you have to do something like that at the right time. But being able to make people feel different through lighting is what makes our profession so exciting."

Out on the patio, Callahan used halogen PAR 20 spotlights. The luminaires have on incandescent receptacle with a halogen lamp inside that gives off a very strong light. The same fixtures were used in the bedrooms with 50-watt narrow spots.

Another bit of dramatic lighting is in the Jacuzzi area, which is located just off the master bedroom. Callahan created a very mystical, ethereal setting by placing 75-watt colored outdoor floodlights at the base of the tub. The mist from the jacuzzi swirls around a butane torch that is placed at the top of a sculptured stallion's head from Greece.

"It says drama. It draws guests out there. Again, it evokes emotion. As lighting designers, I think that this is an area we should be deeply concerned about because I don't see that much concern going on right now in this area and there needs to be more of this happening.

"I think probably the most important thing I can do is take a client and make their environment look and feel like them," Callahan says. "I don't mean in art or furniture. But make it resemble them in personality and emotions. A designer should not ask what a client wants in their house. They should ask how a client wants to feel."

Quality Research, Better Products

1 BELIEVE NEXT year will bring an increase in:

- Parabolic troffers using specular aluminum reflectors, and high-efficiency complex reflector forms, including many specifically for compact fluorescents
- Use of compact fluorescent systems
- Sophistication of dimming systems, due to microchip technology advancements.

I see a greater emphasis on the quality of light in the work environment by facility managers. Many large corporations are competing for highly qualified employees, and seek to offer them more comfortable and productive environments.

In the past, lighting design for laboratory and pilot plant areas was principally concerned with the quantity of light delivered, and the mechanical strength and gasketing of the fixtures. In the future, the concern for construction quality will be enhanced by an emphasis on improved visibility standards. This will lead to increased use of parabolics, low-lightness lensing and care in future placement.

Also, there will be less use of low-voltage, halogen lamps in standard wall wash or downlight applications, except in retail or display situations. These sources are precise, but not as good for general lighting applications as originally thought.

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Circle No. 11 on product card.
THE ZEFIRO PENDANT LAMP FROM ATELIER INTERNATIONAL LIGHTING provides direct and diffused lighting effects using a 150-watt incandescent lamp. The fixture is available in three styles offering different sizes and color combinations. Atelier International Lighting, Long Island City, NY. Circle No. 60 on product card.

BECKER LIGHTING'S FIXTURES ARE made from polished or French solid brass and solid triplex opal glass, and are supplied with incandescent lamp holders. Models 650 and 651 are 8 inches high and 16 inches wide, and use three 60-watt bulbs. Models 652, and 653 are 17 inches × 19 inches, and use 150-watt bulbs. Models 770 and 702 measure 16 inches high, 14 inches wide, and also use 150-watt bulbs. Becker Manufacturing Co., Inc., City of Industry, CA. Circle No. 61 on product card.

GOTHAM DESIGN'S CERAMIC, WHITE-FINISH WALL SCONCE measures 14 inches × 7 inches. The fixture uses a 100-watt halogen bulb. Gotham Design, Malibu, CA. Circle No. 62 on product card.

LAMP ONE, A HANGING HALOGEN LAMP FROM DOG ON A COLD STONE FLOOR DESIGN, is made from milled aluminum, punched aluminum sheet, brass, braided cable, and rubber tubing and uses a standard 12-volt, 50-watt, MB 16 narrow flood halogen source. The fixture is available in clear or black anodized finishes. Dog On A Cold Stone Floor Design, Genoa, NY. Circle No. 63 on product card.

THE COBALT TABLE LAMP FROM KOCH & LOWY has a cobalt blue glass shade, polished chrome stems, and a base with a black neotek, flat aluminum finish. The maximum wattage the 15-inch high lamp can utilize is a 12-volt, 50-watt halogen. Koch & Lowy, Long Island City, NY. Circle No. 64 on product card.

BEGA'S LIMBURG GLASS OCTAGONAL CONE is available for wall mounting, ceiling mounting, and as a pendant fixture. The handcrafted, blown-glass fixture allows high transmission of light and is available with incandescent or compact fluorescent light sources. BEGA/FS, Santa Barbara, CA. Circle No. 65 on product card.

DENNIS MILLER ASSOCIATES' WALL SCONCES, designed by Brian Donovan, are available in lavender, blue-green, peach, or clear with either a clear or brass finish. Using incandescent or halogen bulbs, the light shines upwards, downwards, and outwards as a result of the housed reflector panels. Dennis Miller Associates, New York, NY. Circle No. 66 on product card.

NORBERT BELFER'S WEDGE LENS SERIES is a wall-mounted uplight that provides wide light distribution. The fixture offers single or twin halogen lamp sources and can be mounted on either round or square backplates. Norbert Belfer Lighting, a division of Lighting World, Inc., Ocean, NJ. Circle No. 67 on product card.

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TIVOLI INDUSTRIES' GUIDELIGHT EXTRUSION LINE provides low-voltage decorative floor lighting. The extrusions are available in six channel configurations. Tivoli Industries, Inc., Santa Ana, CA. Circle No. 68 on product card.

SUSPENDERS, A LOW-VOLTAGE HALOGEN LIGHTING SYSTEM, designed by Robert Sonnenman, and manufactured by George Kovacs, consists of a variety of canopies, horizontal bars, and vertical suspenders. Blue glass shades and an assortment of six white shades are available to be hung from the ceiling or suspended from a wall bracket. George Kovacs, New York, NY. Circle No. 70 on product card.

ARA, DESIGNED BY PHILIPPE STARCK, IS AN ADDITION TO THE FLOS COLLECTION of original design lamps. This table and task lamp provides direct lighting using a low-voltage, 35-watt, tungsten halogen lamp. The fixture has a 7-inch base, a tapered lamp stem with a horn-shaped lamphead, and is finished in mirror-polished nickel or black chrome. Flos Inc., Huntington Station, NY. Circle No. 69 on product card.

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TECHNOLOGY BROUGHT TO LIGHT

Circle No. 16 on product card.
The traditional approach to lighting buildings for the winter holidays has its limitations. Strings of lights that are beautiful by night may appear as unsightly masses of wiring by day. Anchoring, accurately positioning, and aiming individual lamps are tricky, too. Often the difficulties of dealing with those considerations leads to adopting a lighting scheme that merely outlines the form of the building with strings of lights.

Michael John Smith, AIA, IES, IALD, of Houston, TX, used his talents as an architect and a lighting designer to go far beyond the ordinary when creating festive holiday lighting for the Decorative Center of Houston. His concept for the main facade and two flanking colonnades required that approximately 8,000 red, green, and white lamps be positioned precisely to create an intricate geometrical design compatible with the existing architecture.

Smith fulfilled each of the client's requirements and dealt with anticipated weather conditions:

PEASING APPEARANCE BY DAY; NO EXPOSED WIRING.

Smith designed a temporary, false skin for the building to conceal the wiring, and to hold the inexpensive, off-the-shelf strings of Christmas lights in position. The skin was constructed of 5-foot x 8-foot x 1/8-inch thick exterior-grade plywood painted to match the building's stucco finish.

Each panel was splined to adjacent panels on all four sides to create a finish close to seamless, and hung from aircraft cable anchored to the building's parapet wall. A 1/8-inch hole was pre-drilled for each of the 0.5-watt lamps.

FACADE REMAINS UNMARKED WHEN LIGHTING IS REMOVED.

Wiring and lamps were installed panel by panel, as each panel was suspended. Rubber bumpers placed at each cable stress point, as well as at the corners of every panel, prevented the panels from marking the building.

SECOND SKIN STANDS UP TO WINDY WEATHER.

After the faux facade was suspended, more aircraft cable was used to tie it back to the building to prevent the panels from swaying in the winter wind. Temporary wiring was run over the roof to power the lighting, and a time clock was installed to turn the electricity on and off automatically.

FOLKS FooLED BY FAUX FACADE: "By day," designer Michael Smith says, "most people didn't have any inkling we'd done anything to the building. The holes for the lamps were so tiny, passersby didn't notice them until they were lit."

CREDITS/SOURCES:

PROJECT: DECORATIVE CENTER HOLIDAY LIGHTING
LOCATION: HOUSTON, TX
CLIENT: DECORATIVE CENTER
ARCHITECT AND LIGHTING DESIGNER: MICHAEL JOHN SMITH, AIA, IES, IALD
PHOTOGRAPHER: ROBERT GARCIA

HOUSTON DECORATIVE CENTER'S
Gift Wrap

A plywood, second skin holds the 8,000 red, green, and white lamps that transform this building exterior into a holiday celebration of light.
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Thomas Industries' Adjustable Well Light utilizes a 50-watt MR 16 lamp and features aluminum castings, a polyurethane powder-coat, hydraulic compression swivel fittings, stainless steel fittings, teflon-coated wiring, and silicone lubricated threading. These features make the well light resistant to corrosion, moisture, lawn chemicals, and salt spray. Thomas Industries, Inc., Louisville, KY. Circle No. 85 on product card.

Hanover Lantern's HID Ballast/Junction Burial Box includes a floodlight housing and features cast aluminum components including one piece ballast/junction box housing, watertight gasketed lids, two-piece gasketed adjustable swivel, and a sealed heat-resistant lens with cover. The fixture uses light sources of 50- to 100-watt mercury vapor, 35- to 200-watt HPS or 70-watt metal halide and is available in a brown finish. Hanover Lantern, a division of Hoffman Products, Inc., Hanover, PA. Circle No. 86 on product card.

MagniFlood's 8-inch x 7-inch x 7-inch Compact Wall Light features cast aluminum housing and a polycarbonate lens that permits 180-degree light distribution. All units operate at 120 volts and are available in HPS 35-watt, 50-watt, and 70-watt, or with twin 7-watt fluorescent. MagniFlood, Inc., West Babylon, NY. Circle No. 87 on product card.
Another example of innovation by Targetti: a spotlight, distinctive for its sophisticated reflector design incorporating injection-moulded ULTEM® from GE, the newest addition to Targetti's state-of-the-art Minitondo miniature low voltage track collection.
SPAULDING LIGHTING'S CATALINA FAMILY of luminaires includes poles and fixtures available in 10 color finishes with illuminated color glow rings or opaque accent bands. Spaulding Lighting, Inc., Cincinnati, OH. Circle No. 88 on product card.

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LITEFORM DESIGNS OFFERS SEVEN SERIES of California redwood outdoor lighting fixtures. Available in wall, path, post, and bollard styles, heights range to 72 inches tall. Light sources include incandescent, fluorescent, and high-pressure sodium. Liteform Designs, Portland, OR. Circle No. 90 on product card.
With the advent of this new product, Strand Electro Controls pierces the technological ceiling to fulfill dreams that have, until now, been only dreams. Yet the welcome surprise lies not in the development of the technology itself...it has long been known that someone would develop limitless lighting control...but in the fact that it is available now. It is exciting! It is beyond imagination! It is PREMIERE!

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Our new display lamp is such a big breakthrough, we feel confident promising you the moon.

Philips White SON lamp is the first and only High Intensity Discharge light source of its kind. It produces a brilliant, warm, full-spectrum light that lets you see color and texture the way no other HID lamp can.

No less remarkable is its longevity. The White SON lasts an incredible 10,000 hours. And it does so with outstanding color stability.

In addition, the White SON is efficient with up to 47 lumens per watt.

All of which makes it excellent for use in retail environments, boutiques, museums, atriums and landscaping. Anywhere, in fact, where directional light with true-to-life color is essential. For a full range of display applications, the White SON is available in 35, 50 and 100 watts.

To learn more about the exciting White SON lamp take one small step to the nearest phone. Once there, call Philips Lighting Team at 1-800-631-1259.

It's time to change your bulb.™

PHILIPS
AUDIENCE PARTICIPATION: The ceiling in the Education Theater (left) houses varied luminaires, and allows the audience to experience directly selected lighting effects. Application Theater full-scale rooms include a living room (right) and bar/lounge (below).

Light Theater

Philips Lighting Center offers the chance to experience light in full-scale rooms

WANDA JANKOWSKI
EDITOR

Attendees actually experience effects they’ve previously only heard, read, or talked about, and gain a whole new perspective, regardless of the number of years they’ve spent in lighting,” says Mark Roush, manager of the Philips Lighting Center in Somerset, NJ. “I’m proud of how and what we teach,” Roush continues. “We don’t just throw out information, but instead help attendees to reach an understanding and appreciation of lighting. We like to think of ourselves as educators in the quality of lighting.”

Philips Lighting Center, which opened in June 1988, offers seminars and conferences for groups up to 25. “We reach out to all individuals who desire knowledge in lighting,” Roush says. Conferences are offered for designers, architects, engineers, contractors, developers, owners, utility personnel, distributors, and others.

The two main areas of the facility are the Education Theater and the Application Theater.

LIGHT, COLOR, VISION EXPLORED IN EDUCATION THEATER.

Seated seminar participants are moved into position for viewing the ap-
propriate demonstration area in the room by a rotating floor. The Education Theater room includes:

- a stage for discussion of fundamentals on light, color, and vision
- a light sources stage, with color boxes, and slide-out panels for the demonstration of lamps, optical effects, controls, ballasts, and other system hardware
- two side-by-side rooms that can be furnished to depict any application, depending upon the seminar for comparisons of lighting systems
- a white cube that allows for the demonstration of 117 lamp and luminaire combinations which rotate into view from six-sided drums, and is the focal point for discussion of beam characteristics, luminance, and the psychological aspects of lighting.

THE APPLICATION THEATER HAS FULL-SCALE ROOMS.

A wide range of effects can be shown in each of the theater's rooms, which include the following application areas:

- residential/hotel
- bar/lounge
- retail
- outdoor

At the lighting center, there is a full-time staff of four, two of whom are directly involved with establishing programs. The approximately 20 speakers and instructors used are drawn from Philips professionals in the application, product, training, and marketing groups. Feedback from attendees via an evaluation form sent out after each course keeps the center's program planners in touch with practicing professionals. The most common response according to Roush, is that "people are surprised it isn't a product presentation. They leave here excited about lighting."

**Lighting Center To Expand**

Two additions will be made next year to the Philips Lighting Center:

- An industrial application demonstration area featuring 40 different lighting systems, and
- Conference rooms, holding up to 40 people each, where highly technical aspects of lighting engineering and equipment will be examined.

**MARK ROUSH • MANAGER • PHILIPS LIGHTING CENTER • SOMERSET, NJ**

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**To Learn More About Lighting**

FOR MORE INFORMATION contact: Philips Lighting Center, 200 Franklin Square Drive, Somerset, NJ 08875-6800, 201-563-3600.

**JANUARY**

22-26 Lighting Design and Application Workshop—$320

**FEBRUARY**

5-7 Lighting Application Workshop for Distributor Sales Representatives—$250

**MARCH**

7-9 Lighting Conference for Utility Representatives—$250

19-21 Office Lighting Seminar—$250

**APRIL**

2-4 Retail Lighting Seminar—$250

18-20 Lighting Conference for Consultants—$250

**MAY**

7-11 Lighting Design and Application Workshop—$320

**SEPTEMBER**

10-14 Lighting Design and Application Workshop—$320

17-19 Industrial Lighting Seminar—$250

**OCTOBER**

3-5 Lighting Conference for Utility Representatives—$250

15-17 Lighting Conference for Consultants—$250

**NOVEMBER**

7-9 Lighting Conference for Hotel/Motel & Conferencing Facilities—$250

29-30 Light Sources for Luminaire Sales Representatives—$220

**DECEMBER**

10-14 Lighting Design and Application Workshop—$320

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**THE LOUISIANA LIGHT AWARDs**

**HERE'S YOUR CHANCE TO SHINE.**

It's the first Louisiana Light competition—a statewide program to spotlight the best exterior lighting work of our state's lighting engineers and architects.

The program, sponsored by Louisiana's Investor-Owned Electric Companies, will select winners in outstanding technical achievement, enhancement of architectural lines and impact on the nighttime environment. Commercial buildings may be entered by owners, architects, designers or admirers in four categories—single story, two to five stories, six stories and above, and specialty lighting, including fountains, monuments and landscape design.

For complete information and entry forms, call (504) 529-3161. Deadline for entry is March 31. Call today! It may be your only chance all year to see your name up in lights.

Circle No. 23 on product cord.
THE MIKADO LIGHT SYSTEM, designed by F.A. Porsche and manufactured by Artemide Litech, Inc., uses two or more aluminum rods supplied with a 12-volt transformer creating a positive and negative power supply. Each spotlight projector is fixed to two aluminum rods. The rods can be arranged in any way once the principle conductors are mounted in position. The spotlight projectors, made from pure aluminum, can be equipped with an antidazzle or a directional accessory screen. Artemide Litech, Inc., a division of Artemide, Inc., Farmingdale, NY. Circle No. 91 on product card.

THE LIGHTDANCE SERIES FROM LAZIN LIGHTING consists of four different track and surface-mounted fixtures. In place of wires, telescopic and bendable arms carry the 12-volt current required for MR 16 lamps. The fixture is made of nickel-plated brass and molded plastic and comes in matte white or black. Lazin Lighting, NY. Circle No. 92 on product card.

Ergonomic Lighting Born

MY MAGIC MIRROR (reflector) tells me that the most significant lighting event in 1990 will be the birth of the ergonomic lighting industry.

Most lighting manufacturers, with maybe one or two exceptions, are completely stuck in the electric illumination business (born in 1879). They sell footcandles when they are not selling strictly decorative Old World and Euro-style lighting equipment.

These manufacturers devoutly believe that the obvious end purpose of electric illumination equipment is to provide illumination of adequate quantity and “quality.” Even that is tough enough to sell.

However, the true, but unfortunately less simplistic, end purpose of ergonomic lighting is to ensure that the complex patterns of luminance (not illuminance) seen by the worker are adequate in level, and relativistically correct for optimal visual comfort and acuity.

JOHN R. BRASS • PRESIDENT • LIGHTING RESEARCH & DEVELOPMENT, INC. • NOVATO, CA

THE SB-16 SPACEBIRD IS PART OF THE LOW-VOLTAGE SERIES FROM LIGHTING SERVICES. The fixture is adjustable throughout all horizontal and vertical planes, and is made of extruded aluminum. The SB-16 Spacebird is powered by an electronic transformer for all MR 16 lamps from 20 watts to 75 watts in a range of beamspreads. Available in LSI black, white, or silver aluminum, its accessory holder can accommodate any combination of LSI attachments. Lighting Services, Inc., Stony Point, NY. Circle No. 93 on product card.
Unlimited creative possibilities...
Curved, mitred or straight continuous runs...
The choice is yours.
Incandescent, halogen or fluorescent, low voltage or line voltage...
The choice is yours.
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Circle No. 24 on product card.
The Schonbek family invites you to join us January 13-17 in our new showroom, Room 3230 on the third floor of the Dallas Trade Mart, on the occasion of our company's 120th anniversary.
THE EXPANSION OF HALO LIGHTING’S POWER-TRACK geometric line of track lighting fixtures features two Soft Square Continental Lampholders. The smaller unit measures 5½ inches x 3¼ inches with a 6½-inch extension and can be used with 50-watt R 20, PAR 20, and 60-watt A 19 lamps. The larger unit can use 75-watt R 30, PAR 30, and A 19 lamps, or 100-watt R 25 lamps. It measures 6½ inches x 4½ inches and has an 8-inch extension. Halo Lighting, a division of Cooper Lighting, Elk Grove Village, IL. Circle No. 94 on product card.

BARO LAMPS’ PORTABLE LIGHTING FIXTURE is 3 feet high, and equipped with a 9-foot cord for immediate use. Its two halogen lamps cover a space of 6 feet. This accent lighting fixture can be mounted to any table. Baro Lamps USA, Inc., San Jose, CA. Circle No. 95 on product card.

MOONS, DESIGNED BY LAWRENCE C. OLIN FOR CHRISTOPHER LLOYD, is a system of individual fixtures that use low-voltage MR 11 halogen lamps, mounted on a cable suspended frame. The system is available in white and matte black. Christopher Lloyd, Inc., Hamden, CT. Circle No. 96 on product card.

Zumtobel. A company known by the company it keeps.

For further information and the name of your local Zumtobel Sales Representative, please contact us at: Zumtobel Lighting, 141 Lanza Avenue, Garfield, NJ 07026. FAX 201.340.9898. Circle No. 26 on product card.
GTE Sylvania’s Lighting Center serves as a support system for company engineers and industry professionals

CATHARINE SCHETTING SALFINO
MANAGING EDITOR

The GTE Sylvania Education and Training Center is filled with rooms that display various forms and sources of lighting. But, says center spokesperson Peter Brown, visitors should not misconstrue this as meaning the center is a lighting showroom. Rather, he says, the center, which is located at GTE’s U.S. Lighting Division headquarters in Danvers, MA, focuses on lighting education. “Each room is dedicated to promoting a better understanding of lighting,” Brown says. “When we built the center, we were looking to create a classroom environment for distributors, architects, engineers, and lighting designers, as well as for utility and professional association use.”

The new, one-story training center, designed to accommodate groups of up to 75 people, is an update of the previous facility operated by the U.S. Lighting Division.

Bob Davis, the company’s lighting designer, says his technical support group not only assists GTE Sylvania’s engineers, but they also educate visitors about lighting in general and the company’s products.

“We don’t charge high fees for our courses—we’re not looking to make money with our training,” Davis says. “The center is a marketing tool,” Brown adds. “But it’s not a hard sell. It doesn’t have to be. People these days want to know about lighting—both its design and efficiency aspects.”

Here’s a quick tour of the GTE Sylvania center.

BETTER COLOR, SMALLER LAMPS

LAMP DEVELOPMENT TRENDS will emerge in three areas:

• Size—light sources are getting smaller, and it’s most popular in the low-voltage area. This will be the most popular trend in coming years.

• Color—the end user is interested in color and how lighting affects it. Whether fluorescent or metal halide, designers are looking to improvements in important color characteristics, such as rendition and temperature.

• Energy—energy-saving products will continue to have an important place in the market.

The biggest change in lighting will be the emphasis on its effects on people. The focus will shift towards aspects such as lighting and health—how a person’s biological clock responds to general office lighting. It will also focus on how lighting affects a viewer’s perception of a room.

BOB DAVIS • LIGHTING DESIGNER • GTE SYLVANIA LIGHTING CENTER • DANVERS, MA
A LIGHT TOUCH: The living room vignette in the lab area is another mock-up that gives visitors the chance to see the GTE lighting products in "real life" applications. The lighting in each vignette can also be adapted to demonstrate different lighting products and techniques.

BREAK-OUT ROOMS SERVE DUAL PURPOSE.
The two break-out rooms are used for:
- small conferences involving a maximum of 15 people
- application research projects

The flexible wiring installed in each of these rooms allows a variety of different lighting fixtures to be plugged in quickly for demonstration. For example, the lighting color temperature in a room can be changed from warm to cool by pushing a button on the dimmer system.

APPLICATION LAB HAS MOCK UPS.
The lighting lab is broken into four areas for demonstrating how lighting can be applied to various real life situations. The mock ups include:
- business office
- retail displays, including grocery, clothing, and jewelry
- residential setting
- outdoor setting

The central portion of the lab contains the product demonstration area. A variety of lamps displayed on two walls are tied into a digital wattmeter for wattage readings.

"We can bring five or six people into the lab," says Brown, "and talk specifics or show slides pertinent to the products we're discussing."

Four of the mock-up areas are each 12 feet × 12 feet. There is an approximate 20-foot clearance above the entire area. The finished walls extend only about 10 feet high. Above that, everything is painted black. Above each mock-up there is a 4-foot black grid of pipework from which the fixtures hang. All of the wiring is flexible and is affixed above the grid. This way, Davis says, an electrician isn't needed every time a fixture has to be changed.

The office vignette has a different ceiling plan. A standard suspended ceiling is used to show the effects of pendant-mounted, indirect fixtures.

"We also have the capability to compare recessed lensed fluorescent lamps with recessed parabolic fluorescent lamps, all in separate fixtures," Davis says.

FINE ARCHITECTURAL LIGHTING

Our huntington series features a dining room fixture, shown above, and also includes flush ceiling and wall mounts.

ZIGGURAT WALL SCONCES
Our romantically-deco sconces of reinforced porcelain come in 19 styles and 10 high-fire matte colors. Custom designs and colors are also available.

Send for our color brochure.

To Learn More About Lighting

GTE SYLVANIA'S STANDARD course offerings include: "Understanding Lighting," a lighting application seminar, and an energy efficiency seminar. These courses are open only to attendees who are handpicked by GTE Sylvania field salespeople or district engineers. If an outside group is interested in a lighting topic, the center can arrange a one-, two-, or three-day course on the subject.

For more information, contact Peter Brown at 508-777-1900 or write to the GTE Products Corporation, Sylvanian Lighting Center, 100 Endicott St., Danvers, MA 01923.
AMBIENT

SPI LIGHTING'S SFO SERIES of single-stem pendant luminaires can accommodate horizontal metal halide, high-pressure sodium, or incandescent lamps from 100 to 400 watts. To allow 5 percent downlighting, a black 45-degree cut-off baffle is integrated in the optical assembly. SPI Lighting, Inc., Mequon, WI. Circle No. 71 on product card.

NEW EDITIONS

Gross Chandelier
Enhance any decor with exciting new additions in eloquent lighting from Gross Chandelier. Enjoy large fixture selection, design flexibility, and quality craftsmanship that will exceed even the most critical of standards. Send for your FREE literature. Dealer Inquiries Invited

Classic Cafe Collection
Unique fitter and hanger options enrich the elegance of traditional styled fluted glass.

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Timeless classics create the feeling of old-fashioned coziness and warmth.

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Distinctive glass shapes, rich color and unique styling allow wide design flexibility.

Tempo Collection
Distinctive trim accents and hangers enhance the look and styling of traditional RLMs.

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Send for your FREE literature.

STAFF LIGHTING'S POLY QUAD SERIES eliminates the rainbow or iridescent effect from compact fluorescent luminaires. Each reflector is made from vacuum metalized polycarbonate and has a highly polished mirror-like reflective surface. The luminaire produces low brightness and broad light distribution. Staff Lighting, Highland, NY. Circle No. 74 on product card.

THE COLLUMATOR FROM LAZARUS LIGHTING DESIGN illuminates strands of polymer optical fibers or Lumenyte brand optical fiber. Lumenyte produces a neon-like effect and changes color with the rotation of the Collumator color wheel. Lazarus Lighting Design, Glendale, CA. Circle No. 72 on product card.

THE LC-90 INDIRECT/DIRECT LUMINAIRE from Litecontrol offers 60 percent indirect, 40 percent direct components. The system produces candlepower at 30 degrees above horizontal. The 3-3/8-inch x 9-5/8-inch units can be suspended 9 inches from the ceiling and they are available in two-lamp T8 or 1-12, and three-lamp T8. Litecontrol Corp., Hanson, MA. Circle No. 73 on product card.
CIE and the World Meteorological Organization (WMO) have recently approved the establishment of an International Program of Daylight Availability Measurement and Education, beginning in 1990 with an International Daylight Measurement Year (IDMY), and extending into the last decade of the century.

During the past International Daylighting Conference (IDC), the need was recognized for daylighting data in several areas, including building design, research, and environmental impact. This perception led to wide participation of many countries in preparation of a CIE guide to recommended practice of daylight measurement, in which the daylighting quantities to be measured are described.

Currently, the following countries have established research, or a general class station within their research or educational institutions: Great Britain, France, Italy, Japan, USSR, Canada, Czechoslovakia, Singapore, and Australia. Facility locations in the U.S. include: Colorado, Florida, Michigan, New York, New Hampshire, and California.

In view of the above responses, there is clearly considerable interest and effort being made to make 1990 the IDMY. We can expect to obtain more information about daylight prediction techniques, where matters of energy conservation, and economic aspects of human productivity are to be considered.

MOJTAHA NAVVAB • ASSISTANT PROFESSOR • COLLEGE OF ARCHITECTURE AND URBAN PLANNING, UNIVERSITY OF MICHIGAN • ANN ARBOR, MI
Five top lighting designers share in the remodeling of GE's Lighting Institute

GARETH FENLEY
CONTRIBUTING EDITOR

When initiating the renovation of its Lighting Institute in Nela Park, OH, General Electric Co. (GE) looked to lighting experts to design an elegant, professional conference center where specifiers, users, and sales reps could experience real-world environments.

Five independent designers, all principals of top lighting design firms, were retained for the project. Gary Steffy, IALD, president of both Gary Steffy Lighting Design, Inc., Ann Arbor, MI, and the International Association of Lighting Designers, was designated as the coordinator for the design team. He helped select the remaining designers and "run interference" throughout the project, in addition to designing several areas of the building.

"We made sure that we blended a variety of lighting designers' thoughts and ideas," Steffy says, "and at the same time maintained a thread of continuity. Because of the purpose of this facility, the architecture needed to respond to the requirements of the lighting."

GE gave the designers a virtually blank canvas, a raw space, with no limitations except for budget. The interior designers and architects worked around the lighting designers' concepts. The emphasis in the remodeled center is on lighting techniques and effects, rather than lamps per se; all GE product displays on the main level have been removed.

Previous renovations had blocked out the original mullioned windows, creating a maze of rooms lit exclusively by electric light. This time, the designers were encouraged to reopen the windows. "It shows a clear realization that if you want to compete in the real world, you've got to have an environment like CONTINUED ON PAGE 43

"White" HPS, Small Fluorescent

WILL 1990 BE THE BEGINNING of a "new age of incandescent" Lighting?—Perhaps. The highly-efficient halogen IR sources introduced as PAR lamps in 1989 are now in the marketplace. What's next in this exciting technical area?

"White" high-pressure sodium (HPS)—more types and sizes will be introduced. The technology is brand new and the push is on. There are several different ways to do the job.

Fluorescent—systems which combine compact fluorescent lamps, electronic ballasts, sophisticated optics and energy management controls into a neat package are expected.

Overall—trends of compactness, higher system efficacy, improved color in fluorescent, and high-intensity discharge, will continue, with more types and sizes than ever before. Continuing U.S./International activity will keep things lively.

TERRY MCGOWAN • MANAGER OF LIGHTING TECHNICAL SUPPORT • GE LIGHTING • CLEVELAND, OH
GE IS THE LIGHT THAT DELIVERS BIGGER LIGHTING PUNCH FROM A SMALLER LAMP.

GE Performance Plus™ Halogen PAR lamps put design flexibility into the spotlight. And the flood.

GE Halogen PAR lamps are now appreciably smaller. So your number of display lighting options is now appreciably bigger.

One such option: Specify GE Performance Plus™ Halogen PAR20 narrow spots instead of 75R30 reflector spots and deliver three times the display light on a third less energy from smaller, less obtrusive fixtures. Flicker-free light that's whiter and crisper for dramatically enhanced colors.

More light, less energy, better colors, smaller fixtures, original design or retrofit. With GE's family of diode-free Performance Plus™ Halogen PAR spots and floods, your options keep adding up.

For more information, call GE's SpecLine toll-free at 800-523-5520.

GE is Light.

GE Lighting

Circle No. 32 on product card.
PAN-A-LUX: Four different standard reflectors providing unlimited custom lighting solutions.

The PAN-A-LUX indirect lighting series. Unusually precise, powerful and efficient lighting for important public spaces. The four Rambusch fixtures utilize different asymmetric reflectors, each engineered to project a controlled, even wash of light over a large surface. Each uses a variety of tungsten halogen, HQI or metal halide lamp sources (70W to 1500W), to provide an optimum lighting solution for a wide range of applications. Their inherent efficiency permits the use of fewer fixtures... without sacrificing photometric integrity. Pan-A-Lux, the standard uplite series that provides custom lighting solutions. Contact your Rambusch representative.

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Circle No. 33 on product card.
Expert Advice
CONTINUED FROM PAGE 40

"...the real world," Steffy says. "So we integrated views and daylighting with the electric lighting system. We worked with the architect on selecting appropriate window coverings, so we didn't have to change glass."

Following are highlights of some of the remodeled areas.

**LOBBY IS SUBLTED AND RELAXING.**
The current main entrance is actually a side door. "We had problems with the entry," says the lobby's lighting designer, Raymond Grenald, FAIA, IALD, Raymond Grenald Associates Ltd., Philadelphia, PA. "Ultimately, the architect altered it, which made a phenomenal difference."

Partially in response to Grenald's urging, a porte cochere was added and a large, obstructive column removed. GE insisted on retaining the spectacular view of the pool and fountain that faces on entering visitor. Grenald brightly lit the reception desk and the wall behind it, so it holds its own visually against the view from the window wall.

There are no lights in the middle of the reception room. At night, the center of the lobby is relatively dark, and even during the day it is subdued. "A lobby should be a place where you feel relaxed," Grenald explains, "not on stage with a light over your head. The activities are clearly identified, the paths of circulation are unambiguous, and the space is comfortable, and unthreatening. You get that feeling by lighting the walls."

**VERTICAL POINTS OF LIGHT BEDECK DINING ROOM.**
Lesley Wheel, IALD, and Robert Friedman, IALD, Wheel Gersztoff Friedman Shankar Associates Inc., New York and Los Angeles, collaborated on the dining room which overlooks the pool. Mirrored strips, dotted with small incandescent lamps, run alongside the windows and continue onto the room's columns.

"My concept here," says Wheel, "was that people would come into the room and see mirrored panels, and they wouldn't think very much about it. But they'd come back at night for dinner and see lighted elements they didn't know were there."

The designers worked out a configuration of beams and coffers as well as a design for the custom luminaires. The fixtures combine two light sources: compact fluorescent to provide bright, "cool" light, and incandescent for a dimmable "warm" light.

**EDISON HALL COMBINES MODERN AND TRADITIONAL.**
Lighting by Howard Brondston, IALD, Howard Brondston Lighting Design, New York, for the multi-functional Edison Hall includes two custom, Empire-style crystal chandeliers and 14 crystal sconces positioned around the perimeter of the room. With the help of mirror backplates, the sconces echo the draped basket shape of... CONTINUED ON PAGE 44
Expert Advice
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the large chandeliers. The rings of glitter­
ing candelabra lamps are dimmed sepa­
rate from the clustered lamps inside the
basket-shaped portion.
For audiovisual presentations, the cler­
estory windows are covered with a
motorized curtain. The only downlights
in the room are located over the podium,
aimed to light the speaker.
"The design shows respect for historic
architecture," Brandston says, "and still
has modern-day theater excitement."

"Because it is built for longevity, the
store interior is plain and generic," Mintz
explains. "We didn't want a decor pack­
age that would be out of style in a year or
two. It's the geometry that is important:
the relationship of accent lights to show­
cases, feature walls, or hang rods."
Working with GE's Frank LaGiusa,
Mintz laid out five independent systems
on realistic spacings, so the light levels
delivered are very close to those of an
actual installation. The room can now
demonstrate direct ambient lighting with
incandescent, metal halide, and three
different types of fluorescent lamps.

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Expert Advice
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With Specular+ you could light the building on the left for half the cost of the building on the right.

Nearly half of America's commercial lighting energy is lost through aging and inefficient fluorescent light fixtures. But now there's a reflective material so efficient, you can use half the number of lamps and ballasts in a light fixture—and enjoy virtually the same illumination levels.

It's called Specular+, and it's a marriage of pure silver, the most reflective element known to man—and a manufacturing technology so advanced, it's patented.

The good news is, Specular+ is a simple matter to install, whether you convert the lights you have now, or replace them with new lights.

And with the energy savings and lower maintenance costs Specular+ can give you, it can pay for itself in as little as six months!

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If you’re not specifying MagneTek energy-efficient ballasts can help your company save money by reducing lighting energy costs by up to $2 per fixture per month typically less than two years. And that’s just for starters.

The average life of MagneTek energy-efficient ballasts is double that of conventional ballasts, so ballast replacement costs are cut in half. Cooler operation reduces airflow requirements. And since less energy is needed, more power is available for adding computers, copiers, machinery and other equipment, particularly with energy consumption limits.
MagneTek lets you give clients the widest choice of energy-efficient ballasts, all complying with the new Federal energy law. You can specify the right one for your clients' capital and operating requirements. Depending on lamp type and kilowatt hour rate, they can save up to:

- 28% with low cost Universal™ CBM certified energy-efficient electromagnetic ballasts.
- 35% with our Universal Plus™ ballasts which combine electromagnetic and electronic technology.
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MagneTek energy-efficient ballasts offer optional performance features like multi-level dimming for even greater energy savings and parallel circuitry for single-lamp replacement convenience. We back them with a full 3-year warranty covering ballast and replacement labor.

Call us at 1-800-BALLAST, or write MagneTek, PO. Box 3028, Paterson, NJ 07509 for information. Unless your clients don't mind burning their money every time they burn their lights.

MagneTek means energy-saving ballasts.
Growth In Educational Interest Rate

DEVELOPMENTS IN EDUCATION will include:

• More research in vision, lighting systems and architecture, as evidenced by programs being developed at Rensselaer Polytechnic Institute, and the University of California at Berkeley.

• New and expanded lighting courses and demonstration labs in universities, including Clemson University, and the University of North Carolina at Charlotte.

• Greater interest in lighting and architecture among students. The growth in number and popularity of grants, and design competitions, such as The Howard Brandston Student Lighting Design Education Grant, not only benefits students, but lends credibility to, and increases interest in, lighting among faculty in architecture and design schools.

• Increased faculty interest in, and coordination of, light and architecture courses, influenced by the growth of opportunities to learn about the importance of lighting to architecture via courses offered by manufacturers and the IES, and information from periodicals.

M. DAVID ECAN, PE, FASA, MIES • ASSOCIATE PROFESSOR OF ARCHITECTURE • CLEMSON UNIVERSITY • CLEMSON, SC

THE BI-MAX AND FORTY-MAX SERIES FROM KENALL offers strong, corrosion-resistant, 14-gauge C.R.S. housing with tamper-resistant screws. This correctional detention product line for both surface and recessed applications features a specially developed lens for optimum illumination. Kenell, Gurnee, IL. Circle No. 77 on product card.

COOKE'S MODEL ECT1 CALIBRATED, DIGITAL ILLUMINANCE METER measures ambient light in ranges from .1 to 19,900 footcandles and displays the measurement on a high-contrast LCD display. This device uses a single 9-volt battery. The Cooke Corporation, Buffalo, NY. Circle No. 78 on product card.

THE DIMMER LINE FROM PASS & SEYMOUR/LEGRAND includes slide, toggle, touch, and rotary styles. The dimmers are rated from 600 to 2,000 watts, and most are available in specification grade, heavy- and extra-heavy use versions. Pass & Seymour/Legrand, Syracuse, NY. Circle No. 79 on product card.

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JOSLYN Brings the Fixture to You!

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Wherever fixture height creates problems, Joslyn Lowering Systems (Thompson Hangers®) are your solution. Available for surface mounted, flush mounted, hanging or bracketed fixtures. No expensive manpower required. Economical to install, inexpensive to maintain. Eliminate scaffolding, ladders, catwalks, special equipment. Write or call today!

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Circle No. 40 on product card.

DUAL-LITE'S METROPOLITAN SERIES OF EXIT SIGNS has expanded with the addition of a three-headed self-contained combination emergency lighting unit/exit sign. Designed to meet special codes in New York City, this device features 20-gauge steel construction, red or green 8-inch lettering on a white translucent field, and a white or black finish. Standard AC illumination is supplied by two 15T6-145 VAC incandescent lamps derated to 12 watts at 120 VAC operation. Dual-Lite, Emergency Lighting Division, Newtown, CT. Circle No. 80 on product card.
BRYANT ELECTRIC'S MOTION SWITCH OCCUPANCY SENSORS use infrared light to turn lights on and off upon entering and leaving a room. This device uses a pyro-electric detector and a multi-element optical lens to monitor occupancy and can be easily replaced with a standard toggle switch. Wide view sensors have a 40-foot x 110-degree field of view, and hallway sensors have a field view of up to 130 feet. Sensors are available in 120 and 277 VAC 60 HZ rating. Bryant Electric, a division of Westinghouse Electric Corp., Milford, CT. Circle No. 81 on product card.

THE VANDAL-RESISTANT CANOPY LIGHT FROM STONCO LIGHTING can be used on canopies over entrances to malls, apartment buildings, motels, and garages. The Twilighter TLC Series Canopy Light fits over most recess boxes and provides smooth Type V distribution by way of a prismatic refractor. Featured in a dark bronze finish, the canopy light can use 35- or 50-watt HPS lamps. Stonco Lighting, a Genlyte Co., Union, N.J. Circle No. 83 on product card.

THE P7000 SERIES, AN ADDITION TO PARAGON ELECTRIC'S family of non-metallic time controls, combines an electromechanical design with non-metallic components. The series includes seven sets of tripkers, 40-amp contacts, a choice of voltages, manual override and can control indoor and outdoor lighting. A NEMA type 3R enclosure or bracket mount is available. Paragon Electric Co., Two Rivers, WI. Circle No. 82 on product card.

Unique Bollard Landscaping with Lighting!
The "Junior Jefferson" enhances any low level lighting site. Custom selected Western Red Cedar is kiln dried and fabricated with care. Direct burial or wall mounted. Wide selection of globes for incandescent to 60 watt. Write on letterhead for catalog of wood lighting standards and accessories. Ryther-Purdy Lumber Company, Inc., 174 Elm Street P.O. Box 622 Old Saybrook, CT 06475 Phone: (203) 388-4405 Circle No. 42 on product card.

THE VANDAL-RESISTANT CANOPY LIGHT FROM STONCO LIGHTING can be used on canopies over entrances to malls, apartment buildings, motels, and garages. The Twilighter TLC Series Canopy Light fits over most recess boxes and provides smooth Type V distribution by way of a prismatic refractor. Featured in a dark bronze finish, the canopy light can use 35- or 50-watt HPS lamps. Stonco Lighting, a Genlyte Co., Union, N.J. Circle No. 83 on product card.

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From The Original Cast Series of Directional Fixtures

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St. Louis, Mo. 63127
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Circle No. 41 on product card.

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Williams ... A New Light

With the acquisition of Globe Illumination, Williams now offers the ultimate in parabolic design.

H.E. Williams, your best specification-grade source for fluorescent lighting, has just expanded to bring you a more complete line of quality products than ever before.

Acquisition of the assets of Globe Illumination Company of Garden, California has enabled Williams to add to its line the complete series of Ultrapar parabolic fixtures originally developed by Globe.

Ultrapar units, in popular sizes, will now be manufactured at Williams' Carthage, Missouri plant. For more information on these or any of Williams' full line of high-quality, energy-efficient, specification-grade lighting products, contact:

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Dedicated to Excellence in Lighting
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Circle No. 43 on product card.
Visa quality runs rings around the competition, from design and engineering performance to the craftsmanship of the solid brass ring which graces each fixture in this series.

This Visa family of fixtures offers metal halide, tungsten-halogen, compact fluorescent and incandescent lamping. The portable torchiere can be permanently mounted to a floor outlet and is often used with this option in public lobbies and reception areas.

Call Visa at 354-6600 for your local representative who can assist you with details on these and hundreds of other products.
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Circle No. 46 on product card.

New Packaged Debuzzing Chokes
Offer No Noise In No Time . . .
Extremely quick and easy to install for both new and retrofit applications, Amecon’s new line of architectural chokes essentially eliminate noise in dimmers, lamps, and fixtures. The chokes are professionally packaged to dramatically reduce installation time as they mount to standard recessed fixtures, remote areas and wall boxes. They’re built with high temperature, high-impact, fire-retardant UL recognized materials. Attractively priced, they’re rated at 50 and 75 watts at 12 volts, and 400 to 750 watts at 120 volts.

CON-TECH’S FIXTURE EXTENSION SIONS and stem kits are designed to bring light fixtures closer to the desired area of focus. The LA-1018-LV is used for 12-volt fixtures and has an 18-inch stem. The LA-1018 is a line voltage track fixture extension with an 18-inch stem. Both models are available in black or white. The LA-5018 18-inch pendant stem kit and the LA-5018A pendant stem kit, which can be used with 6-inch, 12-inch and 24-inch stems, are also available in black or white. Con-Tech Lighting, Dearfield, N. Circle No. 101 on product card.

ROXTER’S MINI-TRUSS comes in 4-foot lengths with a base plate for vertical use or an end cap for horizontal use. Standard-voltage halogen lamp fixtures are mounted on the mini-truss. Low-voltage models are also available. Roxter Manufacturing Corp., Long Island City, NY Circle No. 100 on product card.

PHILIPS’ WHITE SON is available in 35, 50 and 100 watts, with respective initial lumen outputs of 1250, 2300 and 4700. Philips Lighting Co., a division of North American Philips Corp., Somerset, N.J. Circle No. 102 on product card.

TARGETTI’S MINITONDO SYSTEM, a low-voltage, 12-volt, 32-amp track system features a range of miniature 30-watt halogen bipin and MR 16 spotlights.

APPLETON LAMPLIGHTER’S WALL SCONCE is 14 inches square with a 3½-inch projection. The fixture is illuminated by using a wall-recessed compact fluorescent lamp and is made from aluminum steel. The smaller disc is clear with a laser-cut pattern and the larger disc is etched and tinted. Appleton Lamplighter, Appleton, WI. Circle No. 103 on product card.

CON VISION Quality Magnetics & Electronics
Amacor, Inc., 1900 Chris Lane, Anaheim, CA 92805
Tel: (714) 634-2220, Fax: (714) 634-0905

Circle No. 47 on product card.