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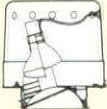
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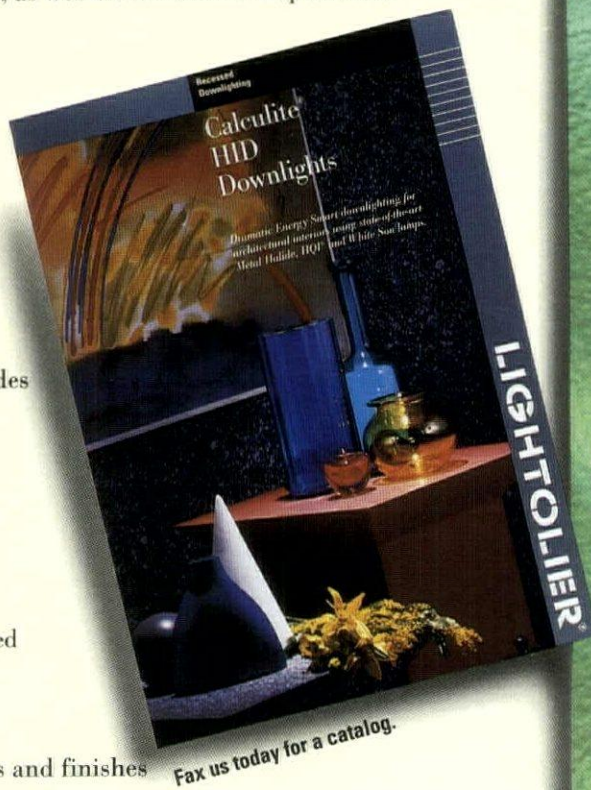
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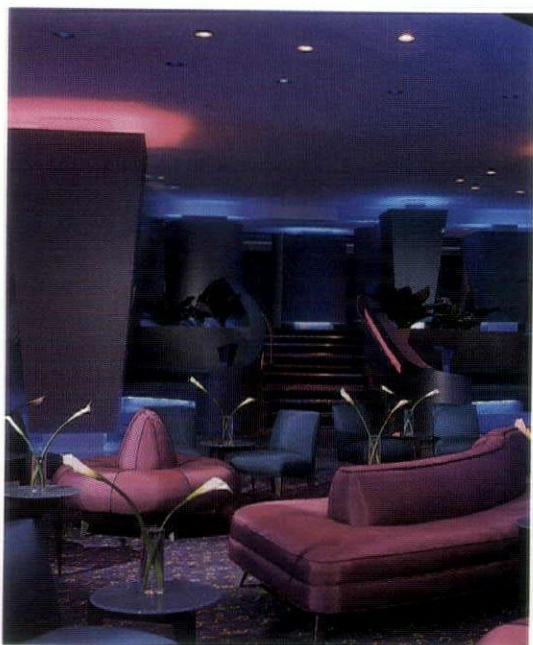
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LIGHTOLIER

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LIGHTING

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Cover Photo By Carlos Domenech



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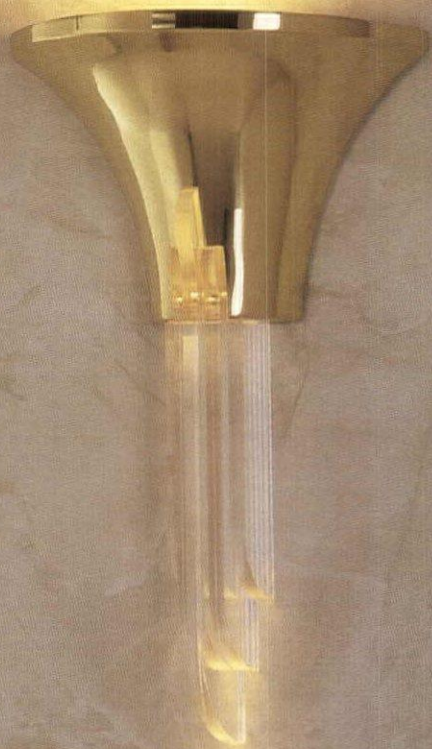
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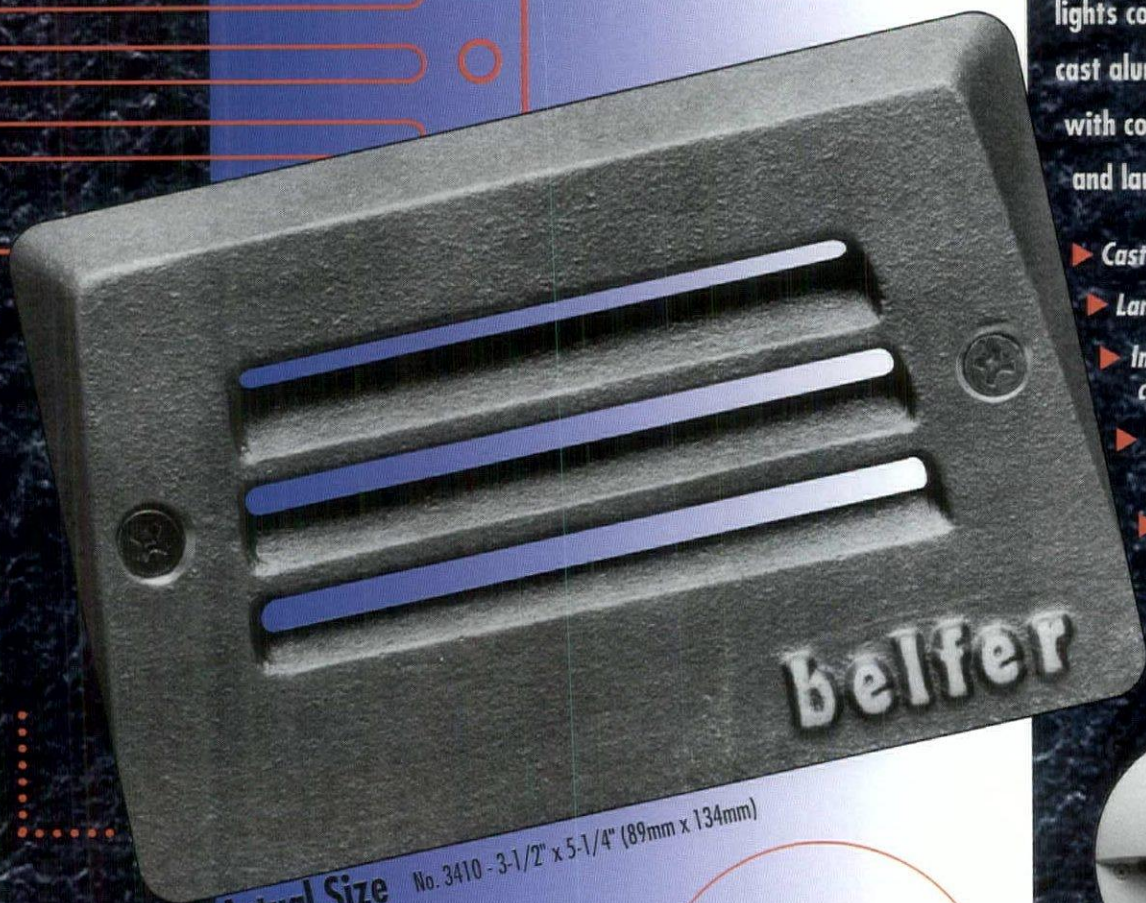
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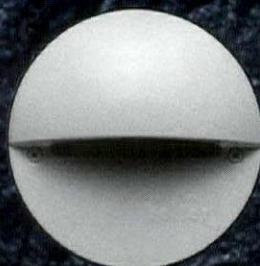
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HOT STUFF & HOT SPOTS

We were going to be very neat and tidy, and begin a new column called "Points of Departure" in January 1994. However, since the first installment deals with a timely political issue, we've decided to toss the calendar aside and let you read what lighting professionals in Mexico have to say about the North American Free Trade Agreement (NAFTA) right now--on pages 14-21 in this issue--before the debates and discussion begin in Congress on this issue later this year.

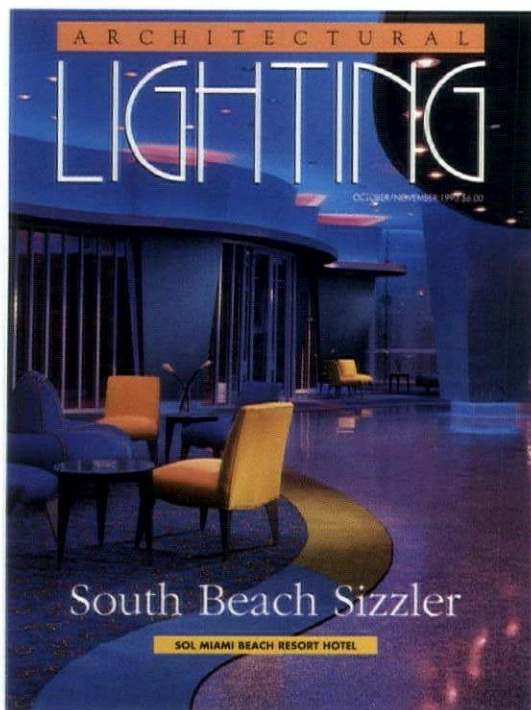
The monicker "Points of Departure" was chosen to reflect the fact that the column will be covering a fresh and different topic in each issue. Our new "Points of Departure" columnist, Mark D. Kruger, Mark D. Kruger Designs Light, is a lighting consultant and master educator whose by-line has graced the pages of *Architectural Lighting* in the past. We welcome him as a new member of our Editorial Advisory Board, in addition to his well-crafted written efforts, and hope you will, too.

With the onset of Fall and Winter, we thought we'd give you something warm and toasty to think about, and so the Sol Miami Beach Resort Hotel adorns the cover, with details on this latest hot spot in South Beach, dubbed "the new American Riviera," on pages 26-29.

For those who love the outdoors--and lighting them--a Special Section on "Outdoor Lighting," beginning on page 38, includes some striking landscaping projects and an in-depth look at high-intensity discharge luminaires from an energy

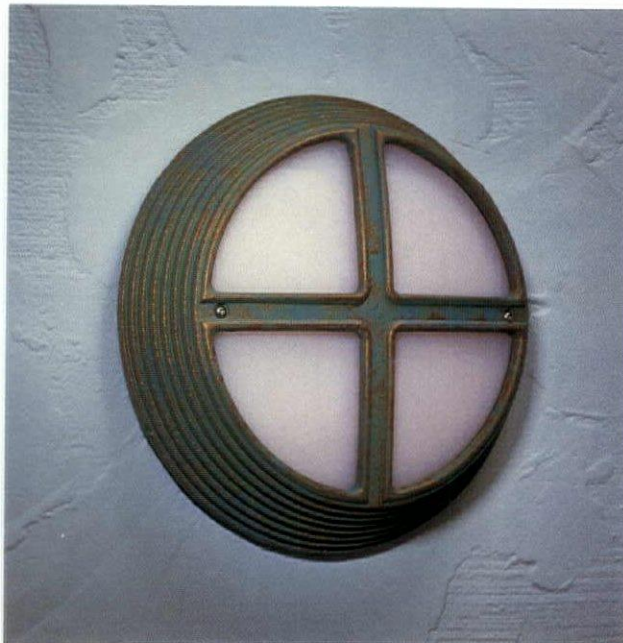
point of view by regular contributor and our resident energy expert, Gary Markowitz.

Though this issue brings another year of *Architectural Lighting* to a close, we leave you with the promise that we are hard at work planning some interesting surprises for you in 1994, and hope you'll be back with us then, happy and healthy, once again.



WANDA JANKOWSKI
EDITOR-IN-CHIEF

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design: richard klapper

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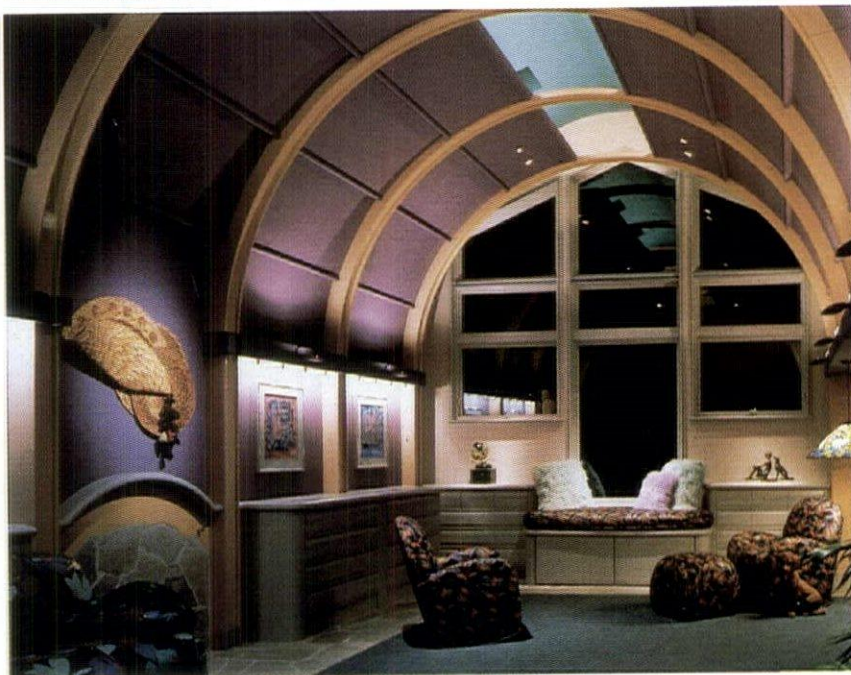
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UPDATES

CSL ANNOUNCES APPLIE AWARDS

First Place Applie Award winner is a barrel vaulted family room.

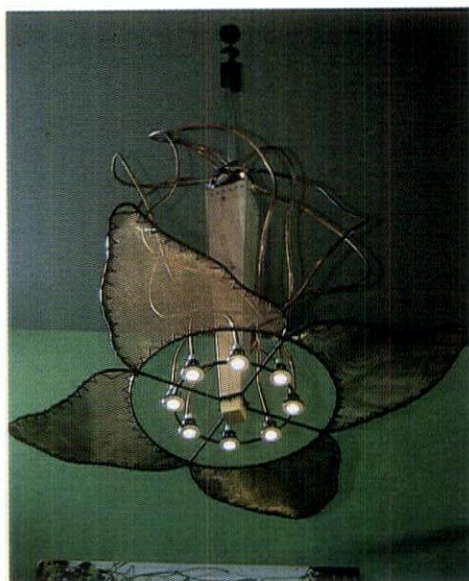


The Applie Awards have been created by CSL Lighting to recognize outstanding achievements by specifiers and designers in applying CSL's products in both the contract and residential fields. The second annual CSL Applie Awards were judged by representatives of the

lighting design firms of Wheel, Gerztoff, Friedman and Shankar, with offices in Los Angeles, New York, Sausalito and Singapore, and Lighting Design Alliance in Los Angeles.

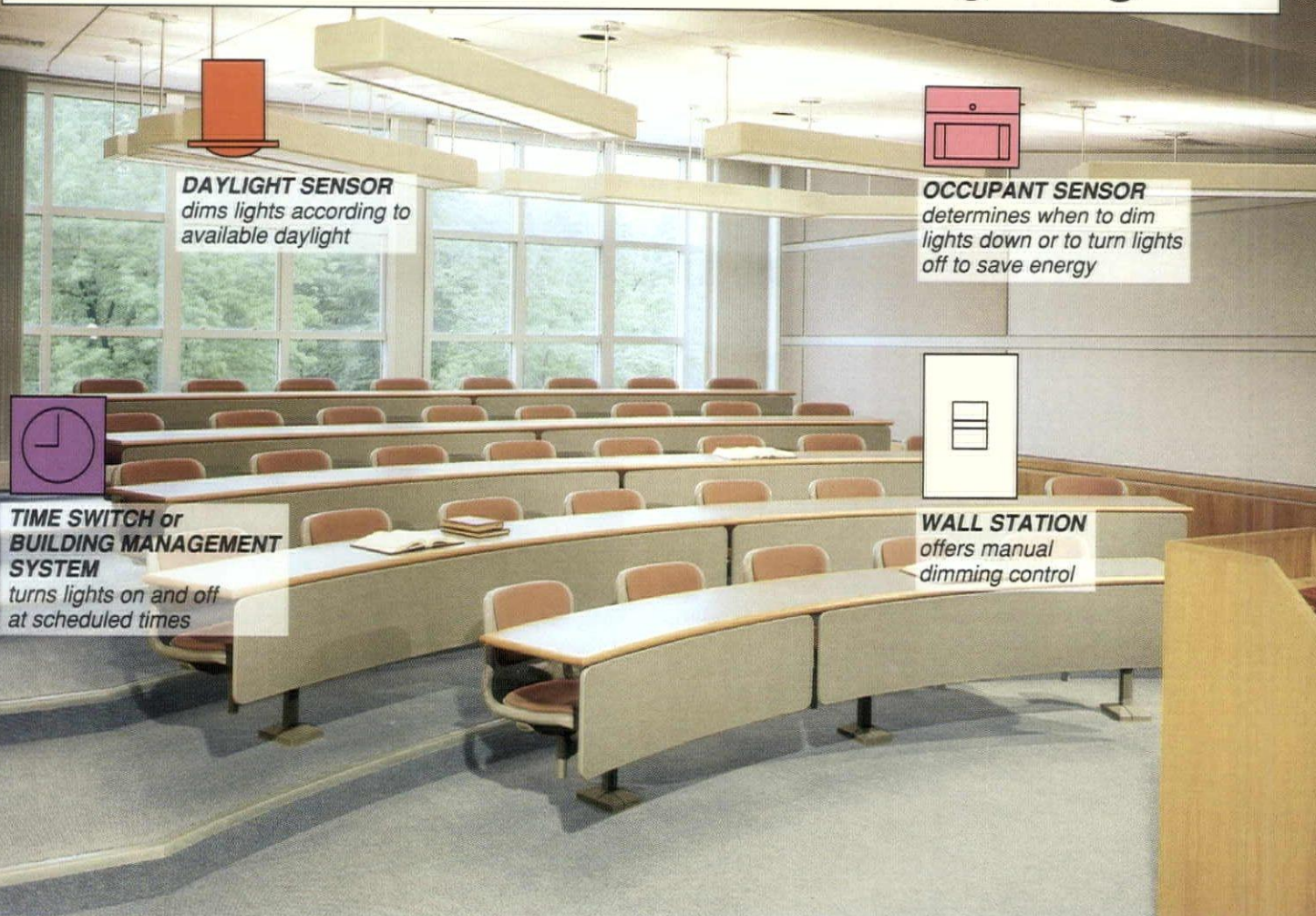
The winners have been ranked in First, Second, Third Place and Honorable Mention designations, with an additional tier of specific product category winners.

Leif Johnson of Luminae Souter, San Francisco, CA is the First Place winner. The entry, the addition of a barrel vaulted family room to the Luongo Residence, was honored by the judges for "the smoothly balanced illumination of important internal design features and finishes, creating an aesthetically pleasing environment for family recreation." To minimize ceiling penetrations typically required for downlighting, CSL's Invizilite fit easily into an architectural shelf below the skylight slot running the length of the room. This uplift the secondary skylight ceiling plane and provided indirect, ambient illumination for the space. In



Second Place Applie Award winner is the Mariposa de Oro chandelier.

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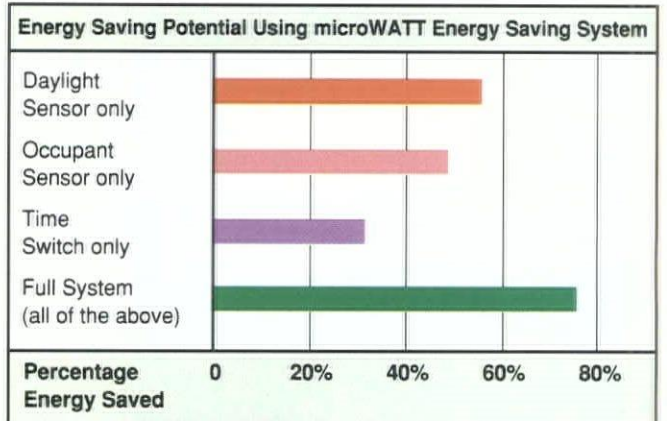
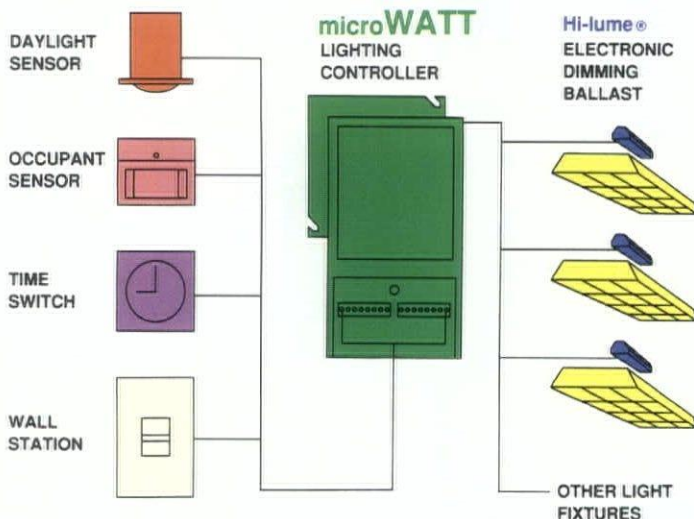
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Invizilite Product Category Applie
Award winner is the Southern California
Gas Company Tower.



in addition, a projecting wall valance just above eye level was utilized to house Halogena miniature wallwashers mounted evenly for picture lighting.

Second Place was awarded to Hector Alfaro Bejar and Mirros Brown of Dimensions in Architecture of El Paso, TX, for a custom chandelier, Mariposa de Oro, using the 2001 Jewel Light Series. The

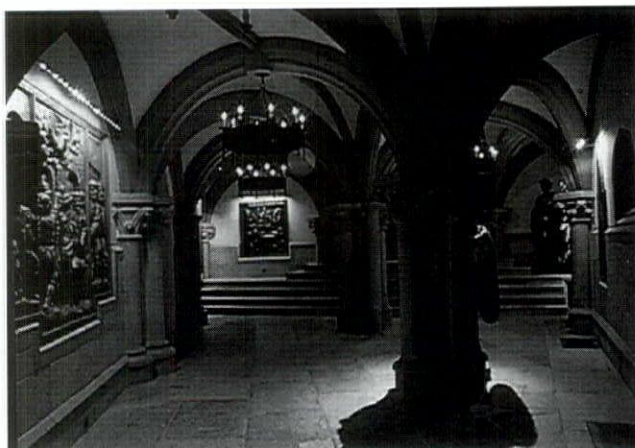
combination of eight tiny downlights using 20-watt, MR 11 spotlights unfolding from the wings of the handmade golden mesh butterfly was judged to be an outstanding juxtaposition of yesterday's materials and tomorrow's lighting."

The Third Place winner is Mark Knauer of Knauer, Inc. of Highland Park, IL, for his Betise Restaurant in Chicago, IL. Mr. Knauer stated that "Betise means silly, and with the name as a

UPDATES

guide, we set out to design a fun-filled, colorful restaurant." The jade green and cobalt blue Jewel Light trims provided the high-impact accent lighting. The ambient lighting is provided by almost 1,000 feet of Invizilite in the ceiling coves and beams.

Honorable Mention goes to Michael Souter and Cynthia Bolton-Karasik of Luminae Souter, San Francisco, CA, for the illumination of the artwork in a Neo-Gothic mansion located



Miniatura Product Category Applie Award winner is St. James Church Bapistry.

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Jewel Light Product Category Applie Award winner is Kansas State University's Vanier Complex, Big 8 Room.



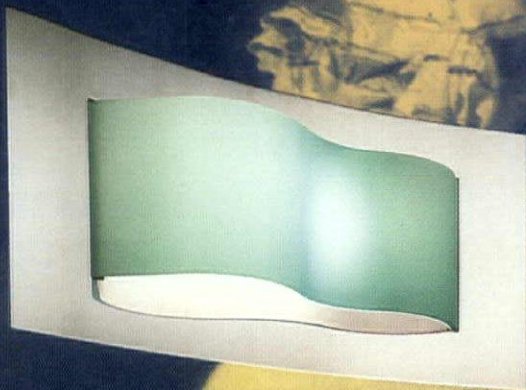
in Hillsborough, CA with a custom version of CSL's Pictura.

Product category winners include: *Invizilite* (exterior)—Phoenix Preparatory Academy, Phoenix, AZ; Garbor Lorant, Garbor Lorant Architects, Inc., Phoenix, AZ; *Invizilite* (interior)—Southern California Gas Company Tower, Los Angeles, CA; Al Scholze, Lighting Designer, Los Angeles, CA; *Tiny Track* (conversion)—Lamonts Department Stores, Bellevue, WA; Dave Cooper, AIA, Lamonts Department Stores, Bellevue, WA and John Forman, Abacus Resource Management, Seattle, WA; *Miniatura*—St. James Church Baptistry, New York, NY; Charles Cosler, Charles Cosler Theatre Design, New York, NY; *Halogena*—Residence, Columbia, MD; Sherry Utterbuck, Lighting Design, Rockville, MD; *Sorbe*—Kitchen, Oklahoma City, OK; Karen Black, C.K.D., Kitchen Showcase & Design, Oklahoma City, OK; *Jewel Light*—Kansas State University, Vanier Complex, Big 8 Room, Manhattan, KS; Steve Hauck, Andra Design Associates, Wichita, KS; *Product Combination*—Luxury Yacht "Proforma" owned by Faber Tau, Palo Alto, CA; Ed Cansino, Edward C. Cansino & Associates, Moraga, CA.



Product Combination Category Applie Award winner is the Proforma luxury yacht.

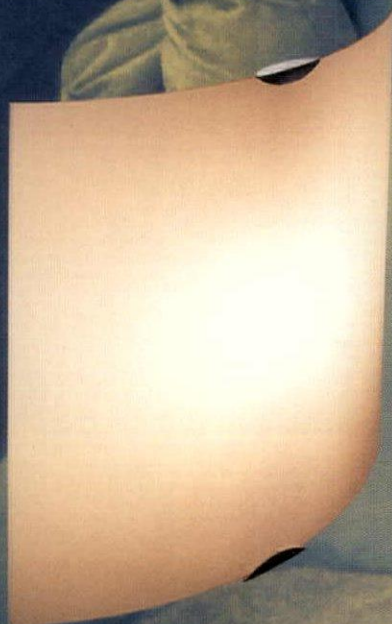
Jara wall lamp Design Roberto Pamio



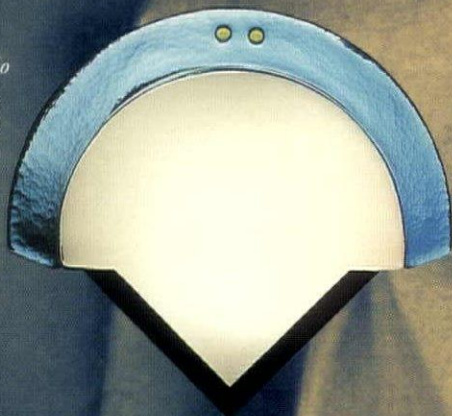
Istria wall lamp Design Paolo Nava



Selis
wall and ceiling lamp
Design
R. Toso and
N. Massari



Luna wall lamp Design Roberto Pamio



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NAFTA AND THE LIGHTING INDUSTRY: A VIEW FROM SOUTH OF THE BORDER

BY MARK D. KRUGER, IES

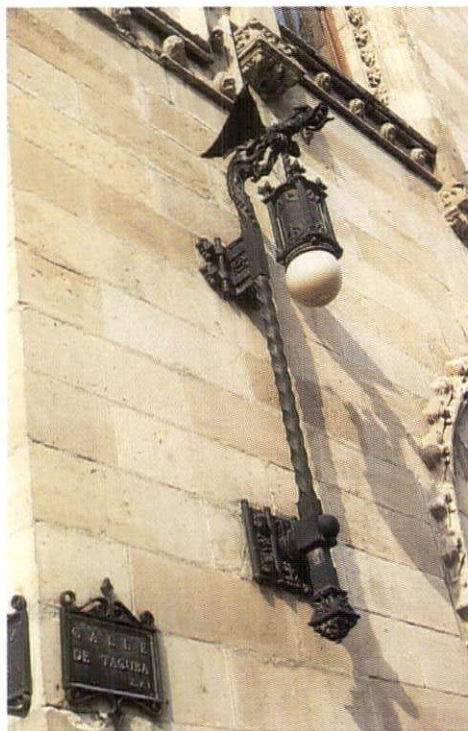
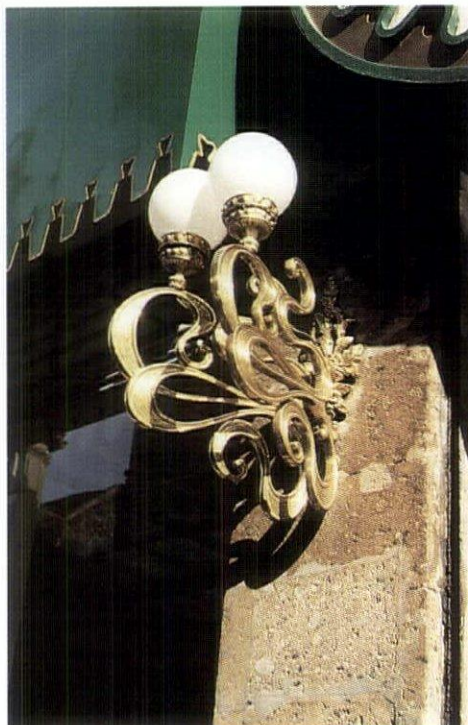
It was more than coincidental that on the very morning I boarded an AeroMexico flight to Mexico City, a front page headline of *The New York Times* boldly declared "Free Trade Pact Is Still A Mystery To Many In U.S." According to the July 12th article, 51 percent of the respondents to a CBS survey said that they "had heard something about the recent proposal....," while 49 percent said that they "had not heard or seen anything..." regarding the North American Free Trade Agreement (NAFTA).

This was so, despite the most aggressive and costly lobbying campaign ever undertaken by the Mexican government here in America, and the intense efforts in support of this enormous economic undertaking on the part of both the Bush and Clinton administrations. All the while, a coalition of opponents, including environmental groups, much of organized labor, and neo-isolationists in both of the major political parties have been increasingly strident in their objections to the pact.

The proposed NAFTA would create a single economic market out of Canada, the U.S., and Mexico, producing and consuming some six trillion dollars in goods and services. It would forge a collective response to the global trend towards collaborative trade and commerce, such as the emerging European Economic Community.

Its proponents claim that the NAFTA will foster new American technologies and serve as a linchpin in our long-term economic growth, while detractors rail against massive dislocation of American jobs lost to "cheap" labor, and to the terrible toll it will supposedly take on the environment.

For all of the political wrangling, lobbying efforts, and courtroom dramas swirling around the NAFTA, it would seem odd that so many would have so vague an understanding about the issues that will most certainly touch their lives and livelihoods. It was against this backdrop



that I set out to explore the impact of a landmark economic agreement, and how we and our Mexican neighbors in the lighting industry will be affected by it.

This article deals with the perspective of a people whose social and political culture, whose centuries-old history, and modern view of the world are distinctly different in many ways from our own. The following excerpts from a number of interviews present an understanding of the NAFTA from the Mexican point of view.

SR. PEDRO BOKER, owner of Boker, S.A., an import/export firm founded in Mexico City in 1865. His company deals in tools, construction materials and products, employs 70 people, and generates 10 million dollars (U.S.) of business yearly.

Q Do you envision that the implementation of the NAFTA will have a strong and positive impact on the construction trades, and in real estate and commercial development here in Mexico?

A Yes, certainly. But don't forget that land here is much more expensive than in most areas of the U.S. Real estate in this city is as costly as in New York. The NAFTA will have both positive and negative effects. We will have 500 percent more choices of products available to us, but, then, construction processes and techniques are currently so different from yours.

Here is something you will encounter very often...our ways are not immediately compatible. An American comes in, and says, "Well, this is the way I do my business, and this is the way I live." In history and mentality, that is not the way Mexico is.

Q Given our current differences in technology and construction techniques, do you believe that the NAFTA will pro-

Photos accompanying this article, taken by Mark D. Kruger while in Mexico City, capture only a small sampling of the cultural and architectural richness of Mexico.

mote the harmonization of building and product standards?

A You touch on a very sensitive point. NAFTA has not specifically addressed the changes that Mexico must make to adapt to UL, or OSHA, for example. We have our standards, which are different, and which will be difficult to change. These [Mexican] regulations will take 10 or 15 years to change.

Q Does that imply that the reluctance of Mexican bureaucracy, and others, will be counterproductive to the daily implementation of a ratified NAFTA?

A It will take much longer than anyone expects. After all, who is really pushing for the NAFTA? It is the highest levels of our government, not our unproductive bureaucracy. This is for both political and personal economic gain.

Don't forget, also, that there are many European companies which manufacture products here in Mexico. They are not interested in UL, for example, but in other European and worldwide standards like DIN. So, then, don't look at Mexico as an open recipient [for your goods]. Here, you will face competition with European products on the same level, and with the same quality.

Q Does the NAFTA cover such services as design and consultation?

A Yes it does, but it is much more difficult to establish the ground rules for these issues. For example, I am currently in charge of construction for a sporting club, where we hired an American architect to develop our Master Plan. We are now having a big problem in getting their invoice to be accepted by the Mexican Internal Revenue Department as a deductible expense. It would be deductible, if they [architects] were a Mexican firm. Here is a case where the government talks about really wanting



to have the NAFTA, but hasn't changed internal Mexican laws [to facilitate it]. These changes will, I'm sure, be implemented by our next elected government...so that by 1996, probably, we will have equivalent tax deductibility.

Q American opponents of the NAFTA often call up strenuous arguments about destruction of the environment. How do you respond to that issue?

A Who owns all of these "maquiladoras" [component parts plants] on this side of the border? They are 95 percent American owned. Our standards and regulations exist, but with bribery and such, they can get around that [problem]. It's very easy to blame Mexico solely for the pollution, but these plants are owned by your countrymen, and the highest level of [their] management live right across the border in Texas or California. These things have to change. That is why I am very much in favor of the supplementary [environmental] agreements.

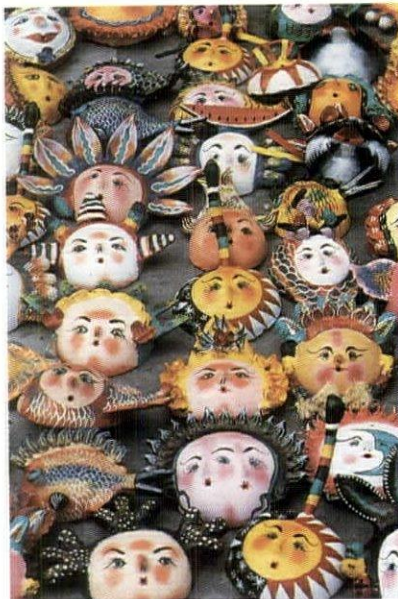
M.D.K. (MARK D. KRUGER)

The pride and sense of national identity that Sr. Boker expresses often surfaced in the interviews done for this article. It is clearly in our best interest to remain keenly aware of the cultural and historical differences between our two societies, and of our own unfortunate propensity to "throw our weight around" when dealing with our neighbors to the South.

The harmonization of standards in cable, electronics, electrical products, lighting products, etc., is proceeding apace with the NAFTA under the aegis of a trilateral committee called CANENA (Council for Harmonization of Electromechanical Standardization for North America). It is anchored by a consortium of private industries in all three countries, and will likely effect some positive change in codes

and standards, over time, regardless of the outcome of the NAFTA.

SR. JAVIER AVILES, president of APREC, S.A., Mexico City D.F., markets, distributes, and sells both American and Mexican-made lighting products directly to contractors, end-users, and others. APREC, S.A. has been in this business of import and distribution of lighting equipment since 1987.



Q How do you think the Mexican lighting manufacturers are going to respond to the influx of new American products?

A This Mexican market is about 20 years behind the one in the United States. Our Mexican factories were nurtured by a closed market for too many years. They didn't develop new products during those years. Now, they are not prepared in the technical areas to compete with many of their American counterparts. They are very scared, and scaling back operations. Their cost structures and technologies are obsolete. They are retiring from, rather than attacking, the threat of competition.

Q Do you think that some of the Mexican manufacturers will merge with their American counterparts in order to survive?

A No, I don't think that they have any strategy for survival. Right now, we have a 20 percent duty on imports. Even with that import duty, prices for American products are often lower than those produced in Mexican factories. What will happen when we sign the NAFTA? Those duties will drop to zero, perhaps over the next 10 years, and these manufacturers will be erased from the marketplace.

Q Do you have a feeling for the Mexican marketplace in respect to lighting design and consultancy services?

A Well-prepared people here, including architects and engineers, have no practical experience in lighting design. If, however, these [new] consultants are not located in Mexico, there will be problems. This kind of service cannot be done by fax and long distance phone calls.

Q Do you personally welcome the NAFTA?

A Before APREC, I had a factory employing 150 people. For 15 years, I utilized Mexican technology to produce

acoustical ceilings and parts. When, in 1988, President Salinas opened the borders (to the current level of trade), all of the big American manufacturers came in, and within a year they wiped us out. Some of my former employees are still without work. My best engineer is now driving a taxi. He hasn't been able to find a job since that time. Mexican industry will be hurt by the NAFTA. However, general commerce and the Mexican consumer will benefit from more options and better prices.

M.D.K. Dislocation and the loss of jobs on either side of the border is of real concern to both countries. The NAFTA does not seem to be as potentially lopsided as some here would suggest.

SR. EDUARDO MORFIN, Dir. General of Hubbell de Mexico, S.A. of Mexico City, D. F. Hubbell, a Fortune 500 company over 100 years old, opened a Mexican office in 1989.

Q Do you manufacture here in Mexico?

A Originally, we decided to limit the manufacturing operations, and to wait for Hubbell to bring the technology into the country. As of 1993, we decided to invest in the country, and begin a much more ambitious project here in Mexico. This will include a serious manufacturing operation...a marketing and sales organization that will contain all of Hubbell's 10 to 12 divisions under one roof.

Q Where will Hubbell build its manufacturing facility?

A We are looking at the state of Aguascalientes, which has a strategic position in the country, stable labor conditions and good infrastructure to support our manufacturing efforts.


Q One of the brickbats that the opponents of the NAFTA have been using is the issue of "cheap" labor, and the exportation of American jobs to Mexico. What is your response?

A First of all, we do not like the qualifier "cheap"! We think that Mexico has a tremendous potential for labor. Right now, the difference between labor costs in Mexico and the U.S. is huge. There can be, at some times, a 10-fold difference. Eventually, this will become smaller. As years pass, it will emerge as a "competitive" labor force.

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Q Has the advent of the NAFTA helped to propel Hubbell's decision to locate in Mexico, and will any American facilities be shut down to make this move to Mexico?

A I think that NAFTA definitely helped Hubbell to move ambitiously into our country. In my opinion, the NAFTA will benefit all three countries. It is simplistic to think that the NAFTA will only cost jobs in the U.S.

Q When Hubbell begins to produce here in Mexico, will it be for domestic consumption, or for export?

A It will be a two-way street. The idea is to use Mexico as a platform to produce parts, components and finished products, not only for export to other Latin American countries, but also to the U.S. market.

Q In the U.S., there is an increasing level of concern about the disposal of toxic wastes from ballasts, fluorescent lamps, and the like. Is this an issue here, and, if so, how is it being addressed?

A It is definitely an issue that Mexico is addressing. It is part of the package that both of our countries are negotiating. Ecological concerns can, in fact, become a critical issue in the ratification of the NAFTA.

Q Any closing thoughts about the NAFTA, and its impact upon the lighting industry here in Mexico?

A We think that the impact will be huge. We have to remember, though, that we are talking about two different worlds...two different concepts, two different sizes, and two different cultures. Only upon ratification will we become more aware of these differences. I can tell you that Mexico is currently 20 to 30 years behind. This gap will not become small overnight. Mexican companies will have to become efficient and competitive, or else they will not survive.

Q Do you think that the influx of larger American manufacturing companies will affect the formation of private Mexican capital in support of Mexican manufacturing? Are wealthy Mexicans waiting to see how things "shake out" before investing their money?

A Yes, but I also think that some are looking for alliances with both American and European companies. Others are

certainly "holding their horses in check," but, then again, this group is always cautious.

M.D.K. Regarding baseline labor costs, the minimum wage in Mexico is \$5.00 (U.S.) per day. The average American factory worker makes \$8.67 per hour, exclusive of benefits.

SR. JORGE' BALLINA GARZA, Director of the Department of Architecture, at Universidad Iberoamericana, Santa Fe de Ciudad de Mexico City, D.F. This private university has 12,000 students, of which 700 are in the Department of Architecture.

Q In the current architectural curriculum, how much specific focus is given to lighting design and illuminating engineering?

A In the design studios...and in the classes in construction techniques our students are given individual lectures on these topics, but we don't have a good program in lighting.

Q What problems do you encounter as an architect trying to integrate light into your work?

A For example, we recently designed three important buildings and had many problems with the lighting. We have only a few major [Mexican manufacturing] firms like Lightolier, Starcos and Iluminacion Technica y Fabrica. We talked with them, and specified [certain] special equipment, but then they told us it would take over three months to bring it in from the United States. We couldn't wait that long, and were forced, therefore, to use older Mexican technology. If the NAFTA brings in better technical support and products, it would be an enormous contribution to our architecture.

Q Does the architectural community see the NAFTA as a benefit to their profession, and to Mexico?

A I think that we are expecting good things, but we don't really know what's in NAFTA! As professionals, we hope that the NAFTA will lead to a more sane competition between products, and that it will put an end to the protectionist stance of Mexican industry, which compromises quality and service.

M.D.K. If "God is in the details," then it would seem that there are many, on both sides of the border, waiting to be converted!

ARQ. GUSTAVO AVILES, architect and owner of Iluminotecnia, a lighting consultancy firm located in San Angel, Mexico City D. F.

Q With your particular background as an architect, would you please articulate the basic relationship between the Mexican architect and the medium of light?

A In Mexico, architecture is more a way of living and a philosophy than a profession. It comes from our deep cultural roots.....pre-Hispanic, colonial, and modern. This influences our management of light. We are especially sensitive to natural light, to siting and orientation, shading, and control of light with architectural elements. But we have less sensitivity and mastery of electric light. As a result, our architecture disappears at 6:00 p.m., and reappears at 7:00 a.m. The buildings have no night-time personality.

Q How will the NAFTA impact your own work, in terms of changes in the availability or accessibility of the tools of your trade?

A We were a closed border country until 10 years ago. We were even farther from the world than Mars...we were "Extra-Terricolos"! Now, in this historic moment, we have a better relationship to the world. Now, I will not have to go to the United States personally to buy any type of lamp or fixture. I can order it by phone or by fax.

Q What problems will American consultants face in gaining a toe-hold in the Mexican marketplace?

A First, they will have to know the difference in the ways that we build. We do much pre-fab and pre-cast construction. We work more in concrete. The entire process of building is different.

Then, any consultation must incorporate Spanish into their work. Many Mexicans do speak a little English, and have a desire to learn more, but our first language is Spanish.

It will be necessary to have the metric system as the clear language of measurement. Besides it's easier and more economical.

Above all, any consultation will have to provide good service. This country is big, and its demands are big.

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M.D.K. Arq. Gustavo Aviles touches upon the deep and meaningful relationship that Mexicans have with their rich architectural heritage. Their underdeveloped mastery of electric light has been the result of a forced isolation, which has left them, literally, in the dark. Once a generation of young Mexican architects are exposed to the techniques and technology of real lighting design, they will surely absorb it, and use it fluently, thereafter, in creating their world class designs.

It is clear that American lighting manufacturers will have a long-term and highly profitable relationship with our Mexican neighbors.

MR. LARRY POWERS, President of U.S. Operations for the Genlyte Group Inc., a \$425 million dollar per year company, whose Lightolier division is manufacturing and distributing in both Mexico and Canada. They are manufacturing in over 100,000 square feet of factory space south of the border, and have approximately five percent of the market share in Mexico.

Q Would you give us an evaluation of the range and quality differential between fixtures and components manufactured for the Mexican and the U.S. markets?

A All of the products that we assemble or produce in Mexico that are brought back into the U.S. for sale in this market meet UL requirements. We choose to assemble only a limited number of products in Mexico for distribution here.

We manufacture a much smaller range of products, of limit-

ed styles, for the Mexican marketplace. The market is not that sophisticated, and the demand for a broad range of products just isn't there at this time. We see [the demand] continuing to grow, however. It's really just a "learning curve." As the Mexican consumers become more aware of the existence of better quality products...you will see the demand grow.

Q Do you think that this "learning curve" is driven predominantly by the choices that manufacturers make?

A There's no question about it.

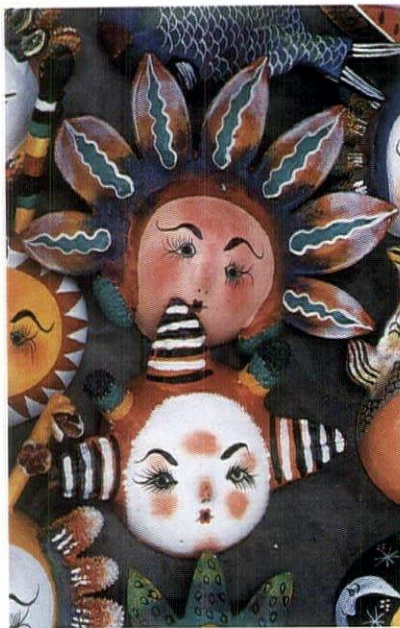
Q Opponents of the NAFTA make much of the issue of "massive" job flight to Mexico. What is your response?

A I believe that if the United States teams with Mexico, it offers us an opportunity to both save and grow jobs here in our own country. Look, we've already lost many jobs to the Far East. With China coming "on-stream" we're going to lose a lot more if we don't figure out how to compete in North America. [With the implementation of the NAFTA] we can salvage a lot of the engineering, product development and manufacturing jobs. We can manufacture here on the North American continent, rather than seeing all of that work [being generated] overseas.

Q Proponents of the NAFTA argue that, if implemented, it will go far in equalizing the differential in labor costs between Mexico and the U.S. Do you agree?

A I definitely agree that it will help to equalize the costs of labor. If you look at the cost of living in certain parts of Mexico, it's much lower. As their economy matures, demands for better wages will come along.

Q Regarding that very point, Representative Richard Gephardt, the Democratic majority leader in the House, complains that the Mexican economy is not mature enough now for either their people or ours to truly profit from this agreement. Others counter that this maturation process will



take many decades longer if the NAFTA is not implemented, and that without it, equalization may come about inversely, as our own economy stagnates or sinks even lower. Is the NAFTA an engine to promote a more positive and timely equalization?

A I would agree [with the latter position] whole-heartedly. I believe that without NAFTA [the Mexicans] will continue to have a struggling economy. If we sit around, doing as we have, jobs are going to continue to erode here, and we're not going to be able to help Mexico in any way. I don't see how anyone can believe that our country is going to benefit if NAFTA doesn't pass.

M.D.K. I've included these comments from Larry Powers because of Genlyte's unique position astride both of the borders with our proposed partners in the NAFTA. His ringing endorsement of this multilateral accord needs little in the way of interpretation. It is a viewpoint which has been echoed by other executives in our industry in similar conversations over the past few weeks. If the NAFTA becomes a reality, their comments will form the basis of a future article for this column.

SUMMARY

The proposed NAFTA will certainly generate enormous changes in the scope and ways in which we do business with our southern neighbor. The current gulf that separates us will be bridged over time, with or without this formal agreement, to the obvious benefit of both economies. Should the NAFTA be ratified, the process will be expedited, perhaps seeing completion in a decade, or so. This would apply to the established mechanisms of a formal agreement only.

There remain many practical obstacles to the successful implementation of the NAFTA, on a day-to-day basis. Some of those have been well identified by the contributors to this article. Others remain to be defined and resolved, in the courts of law and public opinion, on both sides of the border.

It is important to restate a basic premise. Our Mexican friends will not be taken for granted in the NAFTA, or any other sphere of multilateral relations. They are justifiably proud of their wonderful heritage and vibrant society. They are buoyant and opti-

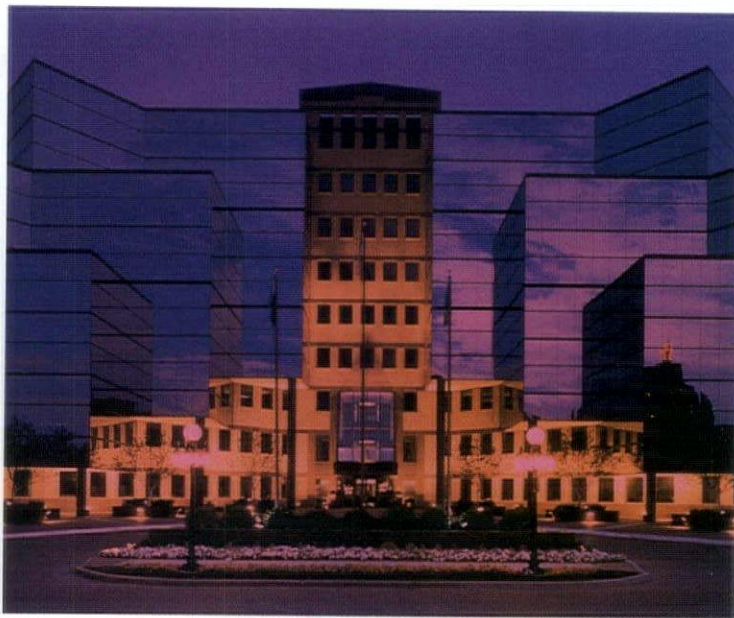
mistic in the face of the current economic downturn, which has taken a toll there as it has here. Above all, the Mexican people can be counted upon to act "Por el progreso de Mexico," in their personal, corporate and international dealings.

For us, it may be that the NAFTA is more than just a trade agreement. As "first amongst equals" in this Post-Cold War era, we are faced with many stark challenges in the commercial, the ecological and the political arenas. Other players on this world stage, in both leading and cameo roles, are looking to us not for "New Age" isolationism, but for true enterprise and partnership. As the global population expands and its resources dwindle, agreements like the NAFTA set a precedent for broad-based cooperation between nations at a time when this strategy is clearly for the social and economic benefit of all.

As of the publication date for this initial "Points of Departure" column, the Clinton administration has been pressing for a vote on the NAFTA by November or December of this year. The forces arrayed against this historic trade agreement are well-entrenched and agitating hotly on behalf of their constituencies. From the single-issue myopia of the environmental lobby to the simple-minded mantra of the Perot-nistas, many factions are misshaping the public debate. Perhaps the single most truculent adversary is organized labor, which appears to have little insight into the changing nature of industry and the American work force in the new global marketplace. This lack of vision, combined with their historic stranglehold on the Democratic Party, makes them a force to be reckoned with in getting this accord through the House of Representatives. Timing is also a problem for the pro-NAFTA forces, what with health care and government reform sharing the political and public spotlight.

The NAFTA, with its recently negotiated side agreements, is neither perfect nor our only hope and salvation in these difficult economic times. It is, however, the product of years of bi-partisan effort to hone America's competitive edge in international trade. With the defeat of the Clinton "Jobs Stimulus Package" earlier this year, the NAFTA takes on additional importance, both politically and economically. When the "pros and cons" are thoughtfully weighed, it is clear that there is

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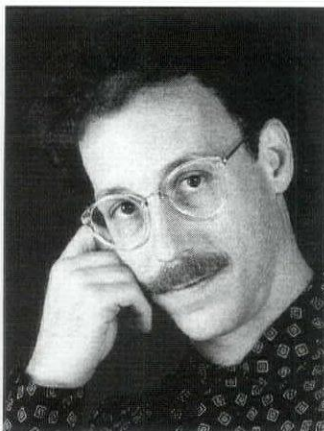
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no better vehicle at this time for improving the lot of millions of workers and consumers, and literally thousands of industries, including our own, here in America, in Mexico and in Canada.

It's hoped that this timely article advances the constructive dialogue about the importance of the North American Free Trade Agreement, "Por el progreso de todos."

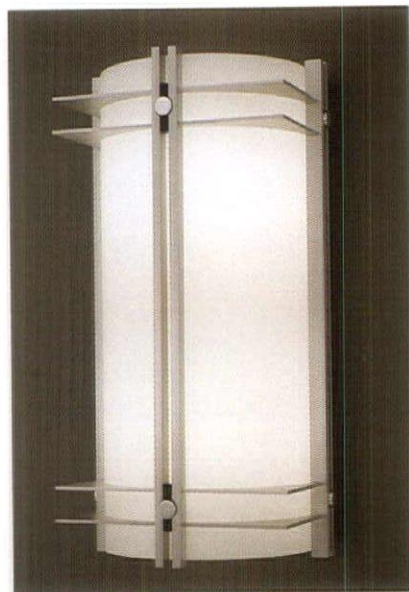
**KRUGER JOINS EDITORIAL
ADVISORY BOARD**

ARCHITECTURAL LIGHTING is pleased to announce that Mark D. Kruger, president of the firm Mark D. Kruger Designs Light, in New York City, will not only be anchoring the "Points of Departure" column in 1994, but is welcomed as a member of the Editorial Advisory Board. In addition to his lighting consultancy, Mr. Kruger is an experienced educator and a member of the faculties of the Master of Fine Arts Architectural Lighting Program at the Parsons School of Design, and the New York School of Interior Design. He is a member of the Board of Directors, and Education Chairperson of the New York Section of the Illuminating Engineering Society of North America, and founder and Chairperson of the Children With AIDS Committee, Ltd., a non-profit organization which supports pediatric AIDS causes. He is a frequent speaker and author on lighting topics.



(Below, left) Using a base standard product with the general shape and scale of the desired final product is the key to cost effective customization. In this case, the half cylinder shape was selected along with the overall scale desired.

(Below, right) This modification included deleting the front trim, knobs, fins, and side trim reveals; adding a top copper patina trim band; and painting the side bars metallic bronze. This fixture provides a unique appearance, and its finished cost was 25 percent less than the base standard product.



BY KEVIN L. WILLMORTH

In lighting fixture selection, a compromise must be struck among aesthetic, performance, cost, and delivery concerns. Though custom fabrication offers opportunities to reach aesthetic goals, cost may interfere with more moderate budgeting. Standard manufacturer products offer improvements in price and availability, but may fall short of image requirements.

There is an alternative available, in the use of modified standard products. While not a new idea, it is often overlooked as an option. Location of a manufacturer who has a wide range of standard designs, willing to accomplish the desired modifications, requires an understanding of the differences of lighting hardware makers.

CUSTOM VERSUS STANDARD

Decorative fixture manufacturers can be divided into two broad categories: custom and standard. Custom makers offer a wide range of fabrication-to-specification services. Custom fabrication is usually labor intensive, in facilities with highly flexible capacities. This insures that a single entity is able to meet widely diverse needs. These manufacturers employ craftsmen skilled in several fabrication techniques, and who are more costly to retain.

Standard producers offer pre-designed, ready-to-order products. Within standard manufacturing, three basic differences exist. Many fabricators are assembly houses, with either little in-house fabrication capability, or limited to very minor tooling. Others are structured to building fixtures on scheduled to-inventory levels, and do not consider individual orders outside of their impact on stocking levels. These are generally

GUIDELINES FOR SPECIFYING CUSTOMIZED STANDARD PRODUCTS

large scale companies, or corporations, with a focus on quantity manufacturing.

A third, and by far the smallest category is the made-to-order, short-run fabricators. They function much like custom makers, except they offer pre-designed, cataloged, standard products. Rather than tie up large investments in finished goods inventories, these smaller firms stock basic raw materials and components more deeply than completed products. A few of these manufacturers have grown out of the custom market, if not offering these services as well.

In the pursuit of customized standard products, the type of standard manufacturer will play the biggest role. Assembly level makers are generally unable to provide the required hand fabrications required, without the extensive use of costly vendors or out-of-house fabricators. While the production-to-inventory manufacturers offer

products at reduced cost, they are usually unwilling to get involved with individual, single-run orders. The smaller made-to-order fabricators offer the best solution. Product offerings will be more design directed, and their "make to order" philosophy is well-suited to incorporating modifications.

An added benefit occurs when the standard fabricator also actively pursues custom work. These companies have organizational structures that already thrive on the special needs of clientele. Engineering, purchasing, and manufacturing are all geared to handle projects on an individual level. Many times these manufacturers see modified standard products as "simpler than custom." Standard only fabricators will often view customization as "harder than standard."

TOOLING & MATERIALS

Beyond the selection of an appropriate manufacturer, consideration must be given to what can be readily accomplished as a modification. Items such as increasing a pendant's stem length, or changing a painted finish are easily accomplished. Even changes in the basic metals used can often be done readily. These types of revisions can usually be included in an order with little or no time delay over standard items, and are generally inexpensive.

Changing from a base fixture in polished metal to a painted finish will usually reduce the end product's price. The buffing process takes much longer than painting, so brushed metal finishes will also reduce cost.

Consideration must be given to the investments required to develop standard products. Tooling is costly, as well as inventoried components. Stampings, castings, and extrusions are

(Below) Restyling of the decorative trim in this modification is extensive. The base metal change from aluminum to brass, combined with mixed polished and brushed finishes departs drastically from the base fixture. Even with revisions this extensive, the final cost premium was only 25 percent more than the base fixture.

widely used to reduce a component's cost, but require an investment up front. Revisions to these types of components will demand a higher premium to reflect tool modifications.

Forming of acrylic and glass also carry the burden of invested tooling, and will require a premium if affected by a specified modification. Bent metal shapes, flat glass or acrylic, bar stocks, tubing, and machined components are fabricated using simple manufacturing techniques, and will be the least difficult to revise.

Secondary finishing, such as plating, painting, polishing or brushing are easy to accomplish. Basic materials used, such as brass, steel and aluminum, can be interchanged with some constraint.

Materials used can be limiting in several ways. Metals, such as brass, copper, bronze and steel are readily soldered and welded to create complex forms. Fabrication methods for these metals are easily interchanged. Stainless steel and aluminum, however, require specialized techniques for welding, and may present problems in fabrication not easily accomplished.

Availability of the raw shapes used for fabrication can also be limiting in the selection of metals. While aluminum and bronze can be extruded, stainless steel cannot. Brass offers the greatest latitude, with availability of stock extruded, sheets, bars, tubing and plate forms. Aluminum is a close second, yet can be problematic in its widely diverse alloying, which affects its surface appearance. For example, all aluminum alloys anodize differently, and seldom match if mixed. This may cause a problem if the raw forms required are only available in mixed alloys. Regardless of the smaller quirks of these metals, they are the most preferred for general decorative fabrication.

Stainless steel, bronze and copper are the least flexible. These metals are available in limited raw forms, or of questionable integrity. Copper is a poor structural material. Stainless steel is a difficult material to work with; being very hard it is destructive to shop tools. The extensive use of these metals will come at a premium over brass and aluminum.

Steel, while widely used, is also limited in shape availability. While it can be painted or plated for decorative use, it is

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generally used as a structural or foundation material. Castings can be purchased in brass, bronze, iron, steel, aluminum, glass, plastics and various resins. Unfortunately, tooling expenses may make these forms cost prohibitive.

For translucent materials, the use of glass and acrylic is most common. These materials can be cast, bent, slumped, rolled, blown and formed into virtually any shape, but will require tooling. Further costs of set up to produce glass components also affect cost. Short runs of acrylic forms require less investment and set-up, and offer greater design flexibility.

Other methods for creating shapes, such as machining, or hand forming, can be modified with moderate cost. The use of hydro or laser cutting can also provide the opportunity to create unique shapes at minimal cost. Spinings are also inexpensive to accomplish within reasonable budget constraints.

The primary expenses incurred with metalwork center on the labor time required to accomplish a form, rather than on the actual materials cost. While steel is the least expensive, its limited shape availability may require labor costs beyond any material base cost. Again, brass offers the advantages of wide shape availability, and is easily formed and welded into shape, saving the small premium in cost of the base metal.

Revisions to lamping and ballast com-



ponents can be accomplished readily, provided the requested combination will physically fit into the fixture considered. Many compact fluorescent sources use ballasts that out-size the lamps they drive. For example, a two-lamp PL-13 ballast is less than half the size of a single 18-watt ballast. The fixture manufacturer can provide information on component sizing to simplify specification.

The first step in creating a customized product is to locate the base fixture to be modified from the manufacturer's catalog. If this isn't possible, the manufacturer may be able to provide a recommendation based on a broader description of the design needs.

In many cases all that is required to initiate communications with the manufacturer is to simply mark up the desired modifi-

MATERIALS COST TABLE

Material	Cost Factor	Workability Factor	Limits/Advantages
Brass	3.00	1.25	Limits: Poor structural material, difficult welding Advantages: Wide shape availability, ease of fabrication
Steel (Base)	1.00	1.00	Limits: Limited shape availability Advantages: Good structure, can be finished, plated, easily formed
Aluminum	2.00	1.10	Limits: Specialized welding required Advantages: Easy to work, can be formed, cast extruded, lightweight
Copper	2.70	1.40	Limits: Poor structure, limited shapes Advantages: Fair fabrication
Bronze	3.00	1.25	Limits: Limited shapes availability Advantages: Can be formed, cast or extruded
Stainless	3.00	1.25	Limits: Difficult workability Advantages: Corrosion resistance, good weldability
Glass (Opal)	1.50	1.40	Limits: Fragile, heavy, costly tooling Advantages: Can be formed, colored, or textured
Acrylic (Opal, Base)	1.00	1.00	Limits: Poor heat resistance Advantages: Easily formed, dimensionally stable, ease in workability
Stone (Alabaster)	3.00	1.50	Limits: Raw material availability, difficult to shape, must be cut or machined, fragile Advantages: Tough finish, good structural material

cations on a catalog cut sheet. Because the basic product already exists, the need to create complete design drawings is not required. If the desired modifications are more complex, the use of a scaled drawing might be much more effective. Whichever the case, once the manufacturer has received the preliminary request, the engineering staff members will usually provide an abbreviated drawing for approval.

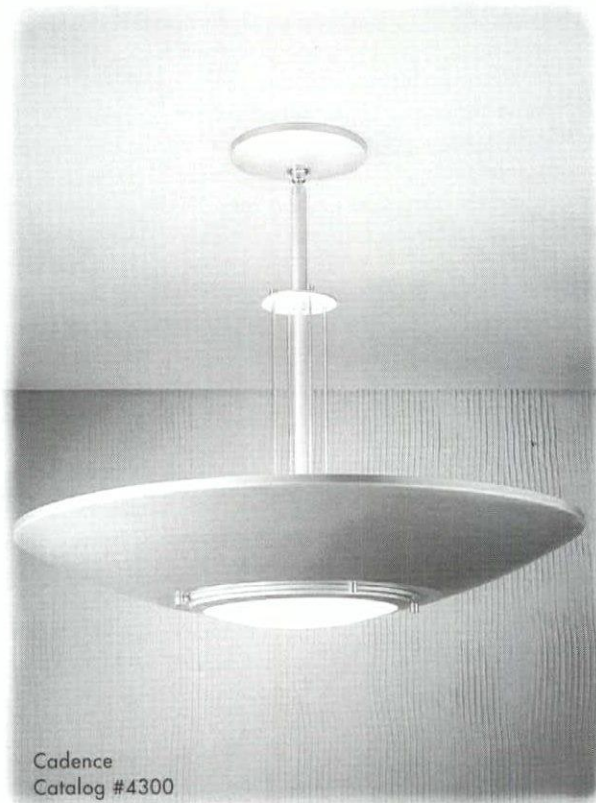
In the case of modifications to a standard product, manufacturers may be reluctant to provide fully detailed shop drawings. This is to protect the investments they have made, not to conceal any detailing. Submittal drawings will always include the specific detail modifications as requested, but may not show the standard componentry as completely as custom approval drawings.

In the initial stages of requesting modifications, a cost expectation should be provided as well. The manufacturer may offer alternative suggestions. The input provided will reflect the fabricator's own experience with the base fixture, as well as knowledge gained from other modifications.

Delivery time must also be established. In most cases, made-to-order manufacturers operate on a two to four week delivery schedule for standard products, and from three to six weeks for modified standard orders.

If a specific design requested requires that the modified product be UL tested beyond the base standard product, or outside of existing UL procedures of the manufacturer, then a delay of between four and twelve weeks can be expected. Additional costs of UL testing may also include the cost of fabricating a sample of the fixture to be tested, beyond those eventually provided once the order is completed.

Kevin L. Willmorth is director of design for Winona Lighting, a custom/standard manufacturer of decorative and functional lighting. Fixtures in illustrations designed and provided by Winona Lighting.



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South Beach's Sol

VIA CUSTOM DESIGNS FROM PM STUDIO, A FORMER RUN-DOWN RETIREMENT HOTEL HAS JOINED THE RANKS OF THE HOT SPOTS IN THE SOUTH BEACH SECTION OF MIAMI

BY WANDA JANKOWSKI EDITOR-IN-CHIEF

"The up and coming, new American Riviera," is how the design team of Charles Pereira III and Jose T. Martinez, principals of PM Design Studio, describe the South Beach section of Miami. "The U.S. film industry is shooting here, the European film industry is producing their television commercials and shows here, and the fashion print media has taken a



liking to the area. It's quite an urban fabric, very fashion and design conscious."

And so the owners of the Sol Miami Beach Resort Hotel sought to capture the excitement of the trend-setting area in the renovation of their property, which used to be a run-down retirement hotel. They wanted the reincarnated Sol Miami to attract a mixed tourist clientele with bold, colorful, comfort-



MAIN LOBBY: (Opposite page) Irregularly shaped columns in the main lobby have been reincarnated into freestanding trapezoidal luminaires, glowing at top and bottom with concealed neon.

NORTH LOBBY: (This page) Banks of pink and blue neon mark the dramatically dropped ceiling.

able interiors and moderate rates. The hotel is actually composed of two buildings, and the existing style was "a mish-mash," says Pereira. The north building, constructed in the 1930s, contained elements of true Deco style. The south building, an addition completed in the 1950s, "had a kidney-shaped space in the center of the lobby, which was filled with structural columns randomly placed in irregular sizes," says Martinez. "One column was 12 feet by 12 feet, one was 16 feet by 16 feet, another was 24 feet by 24 feet."

The designers dealt with the columns by transforming them into giant, freestanding, trapezoid-shaped luminaires. Drywall covers the original columns, which emanate light at both ends from concealed neon—blue at the toekicks, and a pocket of concealed pink neon at the top that casts uplight onto the ceiling and makes it glow.

The very tight budget also led to the specification of simple, inexpensive downlights, explains Pereira, that accomplish what needs to be done,

brows and are capped with brushes of pink neon.

The downlight lamp wattages have been varied. "In areas where we wanted to play with perspective and chiaroscuro, 75-watt lamps have been used," says Pereira, "and in spaces we wanted 'punched out' with more intense light, 150-watt lamps have been installed. There were energy constraints, because we had to work with the existing panels of the building from the 1950s and the existing power loads, so we had to calculate carefully."

Making a grand entrance in this lobby is enhanced by the gently curved staircase handrail sidelighted from a recessed pocket of concealed pink neon, and step lights that illuminate the stairs and chrome rods used to hold the runners in place.

The lobby bar countertop is underlit and richly layered with a variety of materials. A mirror base is overlaid with "squiggly lines" of neon. On top of that is a layer of broken tempered glass, overlaid with a clear glass countertop. "So all these reflections interplay in the bar top, and everybody looks

**COLORFUL
CUSTOM:** (Below)
All furnishings, like
the Whitelaw chair
and Sombbrero
pouf, are custom
designed by
PM Studio.

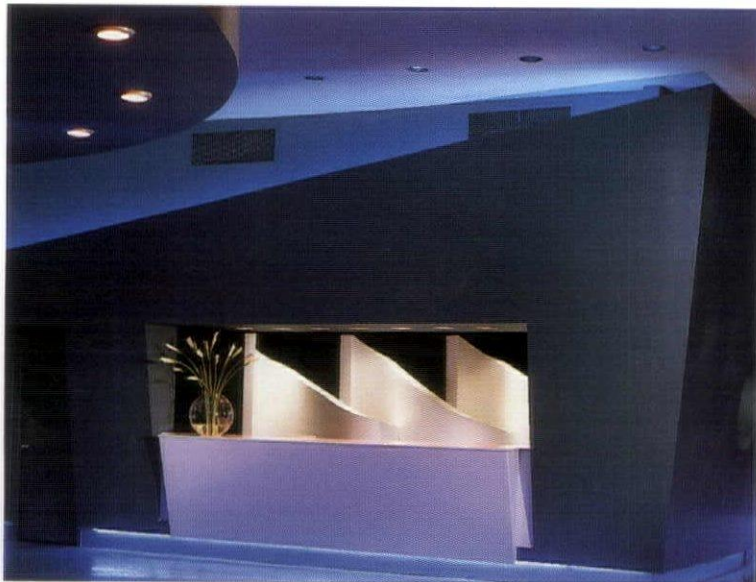


nonetheless. Color is used to delineate different lobby areas. The winding walkways of the circulation spaces are illuminated with PAR 38 blue filtered downlights. All of the intimate seating clusters are lit with pink colortone PAR 38 downlights to complement flesh tones.

New construction in the south lobby includes retail space. The winding row of vertical glass wall panels that serve as storefronts are intersected by the trapezoid columns that penetrate the soffit eye-

fabulous," says Pereira. The neon is on a dimmer to produce a gentle, flattering glow during the cocktail hour and beyond. Overhead, sealed beam and unfiltered PAR 30, very narrow spot downlights highlight the draperies and floral arrangements with pristine white light.

The north lobby in the older building is marked by circular columns, each of which is surrounded by a ring of blue-filtered PAR 38 downlights. As in the south lobby, the seating areas are downlit



RECEPTION DESK:
(Above) The marble front desk is tilted forward 35 degrees with a backdrop of scroll sculptured walls.

LOBBY BAR:
(Below right) The bar countertop is underlit with squiggles of pink neon.

with pink-filtered PAR 38 lamps.

A band of neo-blue neon marks the point at which the ceiling drops down dramatically. Parallel to this is a band of red-violet neon at the lower perimeter of the overhang. Three white portholes of sandblasted glass backlit with fluorescents adorn the doorway to the executive offices.

The colorful pink and blue themes are reinforced by the finishes used on the walls and columns. The specially formulated finish contains silver reflective aluminum particles that catch and reflect the colored light.

The ceilings have been painted white with small bits of silver particles integrated as well, so

although it reads white, the silver particles pick up the glow from the neon coves to emphasize the colors.

In spite of the stringent budget, all the furnishings are custom designed (see Sidelights), from the patterns in the carpets to the custom-dyed fabrics and the furniture finishes.

The uncarpeted portions of the floor are covered with existing terrazzo tile. "The terrazzo has been regrinded to remove the film and the dirt from many years' wear, and resealed and rebuffed," says Martinez. "Terrazzo is very popular here. All the hotels in South Beach are done with terrazzo, and some have exquisite or interesting patterns, like the pattern in the north lobby."

The hotel's transformation, from initial design to finished installation, took about nine months. The room rates range from about \$75-250 per night. Its bold new look and bright colors have attracted the media—it's been used for fashion shoots, television commercials and as a backdrop for a primetime network fall television show. And Pereira and Martinez are hard at work redesigning another hotel in South Beach.

DETAILS

PROJECT: SOL MIAMI BEACH RESORT HOTEL

LOCATION: SOUTH MIAMI BEACH, FL

CLIENT: SOL MIAMI BEACH RESORT HOTEL

INTERIOR AND LIGHTING DESIGNERS: CHARLES

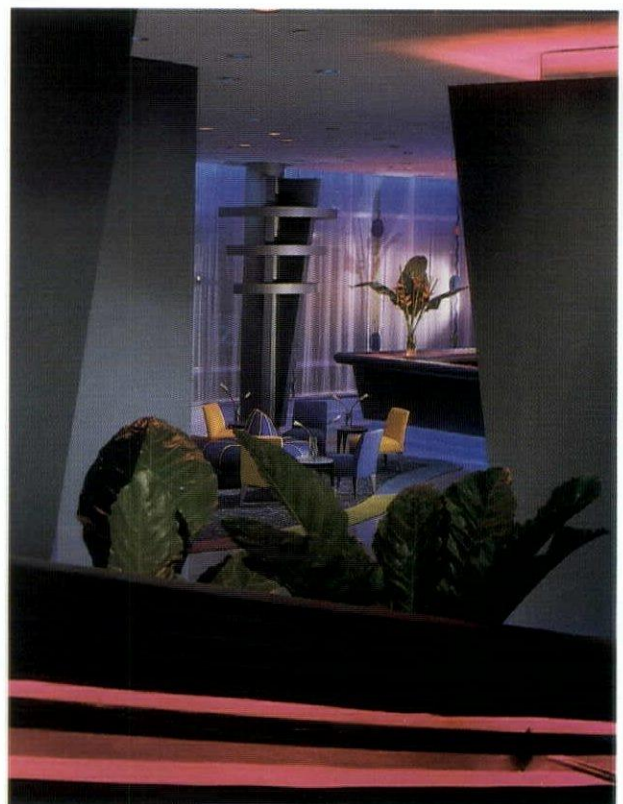
PEREIRA III, and JOSE T. MARTINEZ, principals, PM STUDIO, MIAMI, FL

PHOTOGRAPHER: CARLOS DOMENECH

LIGHTING MANUFACTURERS: HALO LIGHTING

SIDELIGHTS FINDING THE BEAUTY IN BALLISTICS

Since both lobbies have a direct relationship with the pool and the ocean, the furnishings had to be covered with a fabric that would resist staining and wear from water and sand tracked in by the guests. The designers contacted the division of Dupont that produces ballistic nylons, and worked with them to create a fabric called Nylotex. "It is 100 percent nylon—a very durable weave, with one Teflon fiber every four warps, so that the tensile strength of the fabric is 150 pounds per square foot. It has 5 years of lightfastness in the sun, is completely stain resistant and flame retardant," says Martinez. "We wanted to keep the colors as brilliant as our neon so we would maintain continuity between the thematic and fantasy designs, and no natural fabric would produce these colorations—only synthetics would. The braiding in the Sombrero poufs is made of the same material. The furniture legs are constructed of wood sprayed with a finish that contains metallic elements similar to the finish used on the columns in the lobbies.



Persian Palette

DELICATE ARABESQUES FOUND IN PERSIAN CARPETS AND METAL CRAFTS INSPIRED THE LAVISH INTERIORS AND LIGHTING TREATMENT FOR WOODBURY JEWISH CENTER

BY MARK D. KRUGER, IES



SALON & BAR:
(Below) Con-
cealed striplights
delineate the
multi-planar
ceilings.

DANCE FLOOR: (Opposite
page) Intellabeams, nine-
light MR 16 striplights, four
circuits of MR 16 spotlights,
and animated neon get
folks dancing.



Adam Tihany, Adam Tihany International, New York, was contracted to provide the interior design for a major new addition to the Woodbury Jewish Center in Woodbury, NY. This expansive and expensive ballroom is tailor-made for the synagogue's upscale Persian congregants, who celebrate the bar-mitzvahs and bas-mitzvahs of their children in fine style.

Many of Tihany's designs express great opulence through their use of rich palettes of color, textured and patterned materials, and fine detailing of forms, finishes and furniture. Notwithstanding this visual banquet, the project had to be executed with an eye towards absolute adherence to a very strict budget. A separate codicil was attached to the basic contract to provide for "value re-engineering," at no charge, if the lighting budget was initially exceeded.

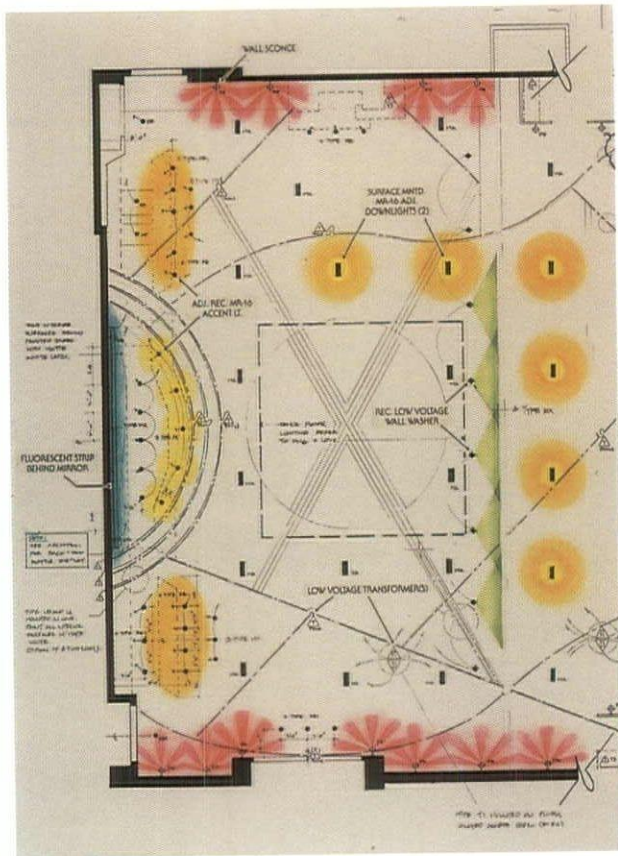
There were structural limitations in some areas of the multi-planar ceiling. Large HVAC ductwork, flat trusses, and other mechanical systems subdivided the plenum space above the curvilinear sheetrock forms below. The distribution of lighting equipment, electrical power, and

signal cable had to accommodate these obstacles.

My own interpretation of the interior design rationale comes from the delicate arabesques of indigenous Persian carpets and metal crafts. In reality, the multiple and richly hued colors of the interior palette, the gold and silver leaf treatments of large surfaces, and the broad and dramatic sweeps of the ceiling geometry all lent themselves to this vision. The lighting program I designed is anchored in the use of small-scale tungsten halogen sources throughout, which helps establish an intimate, crystalline and golden quality in the space.

This basic approach is not really in keeping with the current and pressing realities of energy conservation. A wide range of existing products, sources, and strategies for "Green Lighting" were explored, but they were, in this particular case, unsuitable due to increased initial cost, larger physical size and aperture width, incompatibility with dimming and animation, etc. When all was said and done, we were driven, inexorably, towards the use of tungsten halogen sources to craft this space.

Of the many applications found for this familiar fami-



Partial Reflected Ceiling Plan: (Above) shows low-voltage downlights, wall washers and accent lights, and incandescent decorative sconces.

Partial Reflected Ceiling Plan: (Right) shows linear light sources including various colors of neon and low-voltage accent strips in coves and architectural structures.

ly of lamps, one of the most important is in the sinuous delineation of the overlapping ceiling panels. Flexible low-voltage striplighting is used in each setback, as well as in the floating spars and circular domes that anchor either end of the room. These strips are lamped with 5-watt frosted sources on 6-inch centers.

Both dance floors have special lighting effects concealed within the dome structures above. These include high-powered computerized effects projectors, nine-lite MR-16 color-wash striplights, four circuits of MR 16 adjustable spotlights connected to a music-advanced control system. Custom, 12-millimeter neon, in various colors selected to complement the ceiling colors above, is integrated into the spars and domes, cohabitating the same niches as the tungsten halogen striplights. When powered by 300ma/6000-volt transformers, the animated neon draws approximately 11 watts per linear foot. Large 50-joule strobe lights add "freeze frame" firepower.

The mainstay of the architectural lighting program is a surface-mounted MR 16 adjustable fixture lamped with either a 50-watt, 38-inch wideflood MR 16, or a 50-watt, 12-inch narrow spot MR 16. The wide flood unit casts light on each of the large tables, from lap to lap, while the narrow beam unit accents the floral arrangement in the center. This particular solution has been adopted to enable the maintenance personnel to refocus these fixtures

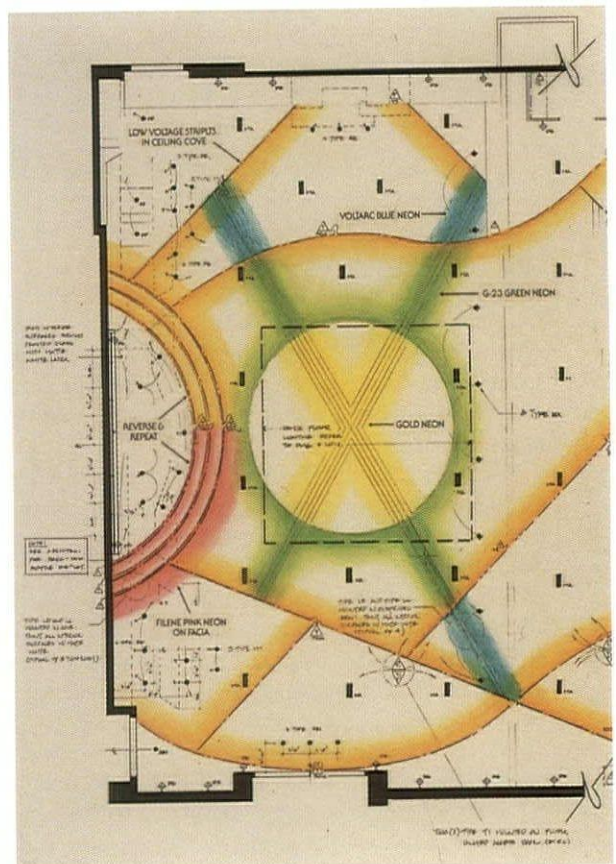
as the tables are reorganized below, without the complication of accessing fully recessed hardware, or leaving unsightly fingerprints and smudges on the custom-painted ceiling.

Recessed MR 16 adjustable accent lights are utilized for fixed focus applications, such as the buffet tables and bar downlights. These units are fitted with 50-watt lamps that have beam angles selected to achieve appropriate throw distances to hit target objects. Semi-recessed MR 16 fixtures with adjustable projecting mirrors are used to wash the retractable dividing walls that separate the Salon from the larger area of the Main Ballroom during some special events.

The primary decorative luminaire used is a reduced scale take-off of a sconce that Tihany had designed for a previous project. This finely detailed brass and acrylic fixture mounts on each panel of the surrounding walls, and utilizes a 60-watt A-19 lamp.

Linear fluorescent has been specified behind the enormous etched glass mirror in the Salon area. Given the other sources in the design program, this was not my first choice for the task. Still, difficult access for relamping and heat generation were real concerns eliminated by choosing that source.

As in all projects, a fluid collaboration paved the way for the successful evolution of the lighting program in conjunction with the interior design, and the minor modifications that happened along the way were easy for everybody concerned. The





final product is as intricately woven and ornately finished as any Persian magic carpet of old.

Mr. Kruger is principal of Mark D. Kruger Designs Light, New York, NY, and on the faculties of the M.F.A. Architectural Lighting Program at Parsons School of Design, and the New York School of Interior Design.

DETAILS

PROJECT: WOODBURY JEWISH CENTER

LOCATION: WOODBURY, NEW YORK

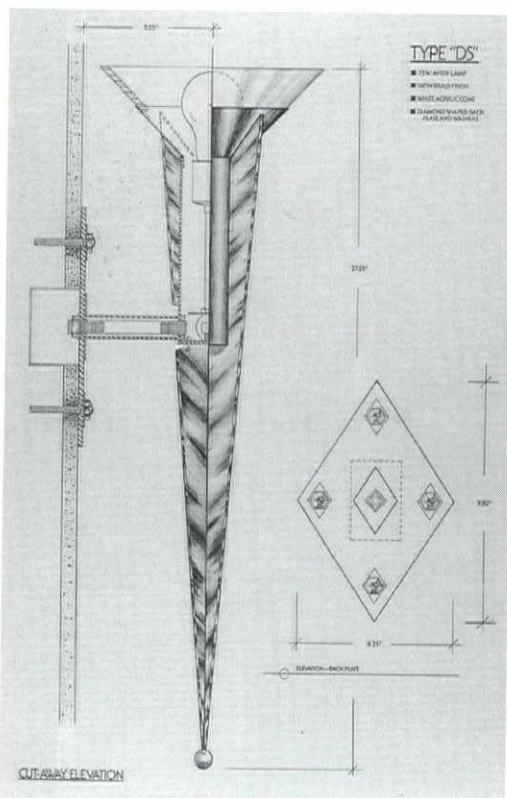
CLIENTS/DEVELOPERS: BRUCE AND ROSALIE MORRELL, GEM/PRESTIGE CATERERS, AND WOODBURY JEWISH CENTER

INTERIOR DESIGNER: ADAM TIHANY, and DON LANGWORTHY, project manager, ADAM TIHANY INTERNATIONAL

LIGHTING DESIGNER: MARK D. KRUGER, IES, MARK D. KRUGER DESIGNS LIGHT

PHOTOGRAPHER: PETER PAIGE

LIGHTING MANUFACTURERS: C.J. LIGHTING: industrial fluorescent fixtures, EDISON PRICE LIGHTING: MR 16 downlights, CAPRI LIGHTING: semi-recessed wall washers, LOUIS BALDINGER & SONS: decorative sconce fabrication, MODULAR INTERNATIONAL INC.—flood and spot MR 16 units, HIGH END SYSTEMS INC.—Intellabeams, PHOEBUS INC.—MR 16 striplights, DIVERSITRONICS INC.—strobe lights, HALO LIGHTING INC.—MR 16 spot fixtures, CSL LIGHTING—tungsten halogen striplights, LITELAB CORP.—control system, UNIVERSE STAGE LIGHTING CO.—theatrical fixtures, GE LIGHTING—lamps, USHIO INC.—lamps, and THORN LIGHTING LTD.—lamps



MAIN BALLROOM:
(Above) Recessed, custom 12-milimeter neon complements the ceiling colors.

SCONCE SKETCH:
(Left) Custom decorative wall sconce of brass and acrylic, with incandescent source.



World Foot Locker

THIS PROTOTYPE STORE IN FREEHOLD, NJ, USES SIX KINDS OF LIGHT SOURCES TO CREATE A STADIUM-LIKE ENVIRONMENT WELL-SUITED TO THE SPORTS CLOTHING SOLD THERE

BY WANDA JANKOWSKI EDITOR-IN-CHIEF

The shoppers at the Freehold Raceway Mall in Freehold, NJ, can enjoy the experience of stepping from the shopping center interior into an exciting stadium-like environment arrayed with sports related clothing and memorabilia for sale. "We chose to manipulate the physical space aesthetically and functionally, using design as both a creative process and a technical format," says Norwood Oliver, president of Norwood Oliver Design Associates, Inc., the firm who worked closely with the Creative Services Division of the client, Kinney Shoe Corporation, to create this next-generation retail prototype for the World Foot Locker franchise.

Attention-getting props are used to draw the curious shopper inside. The entertainment/shopping experience begins for the mall visitor long before he or

she enters the store. There are two highly visible nine-screen video walls in constant use on each side of the entrance facing into the mall.

"The typical facade that includes the storefront windows and doors has been eliminated," says Oliver. The controlled, but open entryway is flanked on either side by two, 10-foot tall silver mannequins holding globes aloft. Behind each figure is a gently curving ramp that gradually ascends from 2 feet to 6 feet, and on which mannequins attired in sportswear are frozen in mid-run up the ramps. Plexiglass columns filled with white tennis balls on one side, and yellow on the other, contribute to the sports message. The store logo is vibrantly displayed in red signage backlit with neon.

The floor plan for the store is based on three intersecting circles. The store interior is marked by circular traffic patterns,

ATLAS' RIVAL:
(Opposite page)
Mall shoppers' attention is attracted by the globe-holding mannequins, and the racers frozen in mid-run up the ramp.

DAPPLING:
(Right) Cable-suspended clear shelving allows light from above to cast shoe-shadows on the stone and polymer flooring.



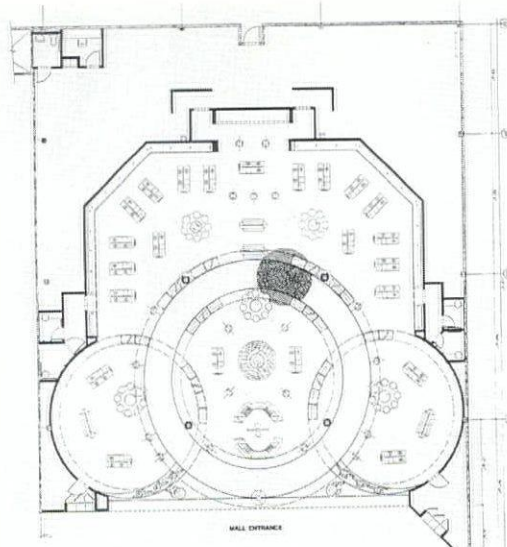
defined by grey stone and polymer flooring, originally designed for use around swimming pools and loading docks, and used here to mimic the look of an indoor track run.

Overhead are dropped, suspended ceiling rings that interconnect and only partially conceal HVAC ducts. The ducts are wrapped like the padded stadium surfaces.

The lighting contributes to the feeling of an outdoor stadium indoors. Metal halide track fixtures that hold 70- and 150-watt lamps are installed in the unfinished blue-painted, sky-like ceiling above the dropped circles. Although metal halide lamps can color shift with age, the distortion goes unnoticed because of the mix of light sources (six different kinds in all) throughout the space.

The floating sheetrock portions of the ceiling hold incandescent downlights to provide the space with a more human scale. The downlighting from both metal halide and incandescent units casts interesting patterns on the floor because of the intriguing suspended, clear acrylic shelving that holds a staggering array of sports shoes.

Incandescent and metal halide track fixtures are also interspersed above and between stretch fabric scrims suspended from the ceiling like hori-



zontal sails to create a tent-like environment.

The perimeter walls contain merchandise and large rectangular sports-photo murals. Fluorescent uplights fitted with green filters to evoke thoughts of grass-covered ballfields are concealed in 6-inch high black bases positioned at the base of the walls behind the merchandise, so as not to interfere with the color perceptions of the clothing.

Coves containing unfiltered recessed fluorescents are mounted above the merchandise to provide even illumination.

Color and motion come into play via fiberoptic lighting concealed on the ledge near the ceiling around the perimeter of the store. Three bundles of fibers are twisted around each other, each bundle glowing a different color to create a gradual color change along the ledge.

The 12-foot diameter cash wrap is cleverly designed to be reminiscent of a concession stand at a stadium. The store logo is highlighted by neon in a 6-inch high, 32-inch long niche recessed 3 1/2 inches around the circumference.

For shoppers' convenience, two versions of raised platforms 6 feet, 2 inches in diameter contain circles of day-glo colored acrylic seating have been incorporated. The freestanding platforms contain eight seats, and the platforms anchored by conical columns contain seven seats. In all cases, the illumination from downlights above inspire the illusion that the brightly colored round seats are edgelit with bands of neon, when they are not.

The use of boldly colored acrylic is continued throughout store displays. The T-stands are topped with 18-inch circular disks of 3/4-inch acrylic plastic.

The cap tower, 8 feet in diameter and 9 feet, 6 inches high, includes three rotating upper tiers that contain 24 hats on translucent heads illuminated from with-

**DAY-GLO ILLU-
SION: (Below)
Acrylic seating
looks neon
edgelit, but isn't.**



in. The four lower tiers display an additional 97 hats. Lower bins stock multiples of each style.

World Foot Locker represents the next generation of retail in that it has succeeded in skillfully blending aspects of the worlds of style, fashion, technology, sports and entertainment for the benefit of the consumer. The store has been designed to maximize the accessibility of the largest volume of merchandise possible in the space. Not only are apparel, shoes and accessories for most sports sold here, but memorabilia, and limited edition and signature merchandise are integrated throughout the store as well. A careful and creative use of varied lighting types also helps imbue the interior with a sense of excitement and visual appeal, in addition to serving functional requirements of good color rendering and adequate illumination levels.

This prototype design is targeted for locations in enclosed malls. The 10,000 square foot Freehold Raceway Mall store opened on November 1992. A 19,000 square foot store opened at the Northpark Mall in Dallas, TX in December 1992.



FACADE-FREE:
(Above) Graphics backlit with neon mark the open entrance.

INDOOR SAILS:
(Below, left) Incandescent halogen fixtures poke between the horizontal sails to highlight merchandise.

FILTER FINESSE:
(Left) Green-filtered fluorescents are mounted behind the merchandise so as not to detract from colors.

DETAILS

PROJECT: WORLD FOOT LOCKER

LOCATION: FREEHOLD MALL, FREEHOLD, NJ

CLIENT: ED PETERSEN, vice president/Creative Services, KINNEY SHOE CORPORATION

INTERIOR DESIGNER: NORWOOD OLIVER, president; STEPHEN YOUNG, executive vice president; and KAREN WENZEL-MURPHY, vice president/design director, NORWOOD OLIVER DESIGN ASSOCIATES, INC.

LIGHTING CONSULTANT: MIKE CASTELLI, JDA LIGHTING DESIGN, INC.

GENERAL CONTRACTOR & FIXTURE INSTALLER:

MIDDLESEX CUSTOM INTERIOR & GENERAL CONTRACTORS, INC.

SPECIAL EFFECTS LIGHTING & SOUND: AEI MUSIC

VIDEO WALL: IMTECH INTERNATIONAL, INC.

PHOTOGRAPHER: PETER PAIGE, PETER PAIGE PHOTOGRAPHY

LIGHTING MANUFACTURERS: AMERLUX INC., FIBERSTARS, LIDO LIGHTING, MERCURY LIGHTING PRODUCTS, BRITE LITE NEON CORP.



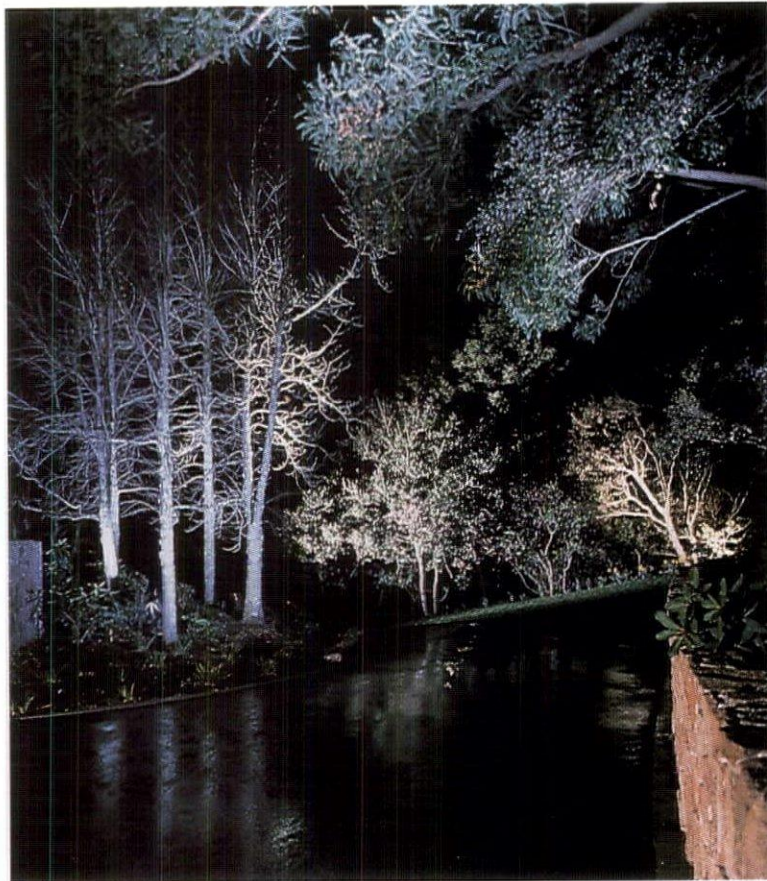
Focus On Foliage

As guests drive up the winding hillside road to this renovated residence overlooking Mill Valley, CA, they are greeted by lush foliage that draws them into a fantasy landscape. The grounds surrounding the home include an in-ground pool beyond the outdoor deck, a manicured lawn, a play area for the children including swings, and a flower garden.

To enhance the nighttime enjoyment of the grounds, Randall Whitehead, IALD, ASID, Light Source, was commissioned by the client to provide exterior lighting.

The lighting scheme includes a variety of fixtures and placements. At the front of the house, soldier-like eucalyptus trees are grazed with ground-mounted 50-watt, MR 16 fixtures and transformed, as Whitehead says, into "living sculptures." Taller trees are illuminated with tree-mounted MR 16 fixtures.

The designer used changes in color temperature to create a sense of depth and drama by fitting some fixtures with daylight blue filters, that change the colors of the incandescent sources to



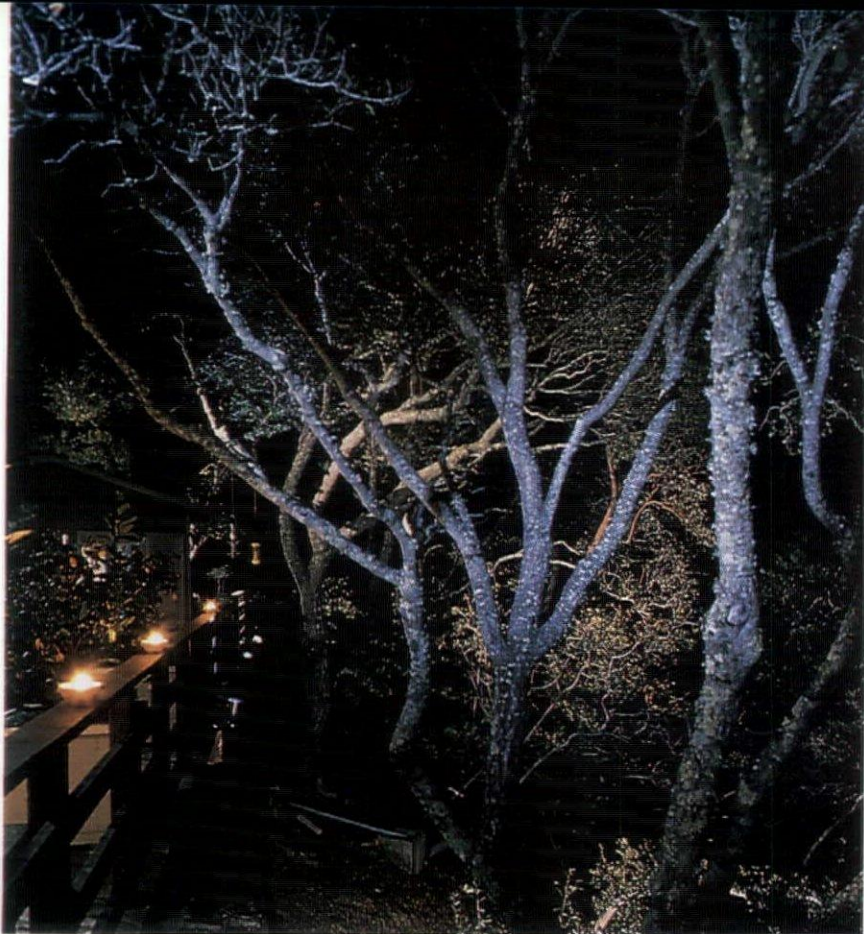
cool, silvery blues and frosty greens. The green of leaves is enhanced and imbued with a clean, crisp appearance.

The deck at the rear of the house has been built around a full-bloomed live oak that pokes through its center. The deck is also surrounded by full-foliaged trees. Miniature low-voltage fixtures are used to project azure light out onto the upper tree branches, while line voltage (120-volt) tree-mounted, 90-watt quartz PAR 38 units

LIVING SCULPTURES: (Left) A combination of filtered and unfiltered MR 16 fixtures lend added depth and dimension to driveway foliage.

CANDELES & CANDELAS: (Opposite page, top) Candlelight enhances the nightscapes made luminous with tree- and deck-mounted fixtures.

AZURE AURA: (Opposite page, below) Miniature low-voltage luminaires cast azure light onto upper tree branches.



mounted below the deck line illuminate the trees reaching up from the valley floor.

The interplay of color from 50-watt, MR 16 fixtures mounted on the fascia of another deck weaves a tapestry of warm amber and icy blues. Votives along the railing create little islands of illumination, showing that candlelight can still be a strong element in an overall design.

This low-wattage lighting scheme demonstrates that in a dark environment, high wattages aren't needed to produce striking visual impact. In fact, high wattage sources can produce unpleasant "glare balls" of light. By illuminating the exterior environment, the interior spaces visually expand out into the night, turning the windows that were once black mirrors into portals of fantasy.

DETAILS

PROJECT LOCATION: RESIDENCE LOCATED IN MILL VALLEY, CA

LIGHTING DESIGNER: RANDALL WHITEHEAD, IALD, ASID, LIGHT SOURCE

PHOTOGRAPHER: KEN RICE

LIGHTING MANUFACTURERS: HADCO, HUBBELL, LUMA

WHITEHEAD AUTHORS RESIDENTIAL LIGHTING BOOK

The AIA Press has published *Residential Lighting: Creating Dynamic Living Spaces* by Randall Whitehead, IALD, ASID, a 191-page book filled with 300 color photographs. The book is divided into chapters by room: Entrances, Living Rooms, Dining Rooms, Kitchens, Bedrooms, Bathrooms, Exterior Rooms, and Open Plan Homes. Each photo is accompanied by an informative caption and credit listing. The chapters are regularly punctuated by line-drawn fixture placement details.

Mr. Whitehead concludes the book with "Answers to Often-Asked Lighting Questions" that covers topics ranging from rules of thumb on installing track or recessed fixtures, and tips for energy-efficient and good color rendering lighting, to fixture placement to avoid glare on shiny surfaces. There is also a glossary of terms, and a directory of designers and photographers whose work is included in the book.

The extensive photographic examples of fine indoor and outdoor residential lighting serve as a valuable reference for the design professional. The book is also easily accessible for the consumer, and would make an ideal Christmas gift for the residential or commercial client!

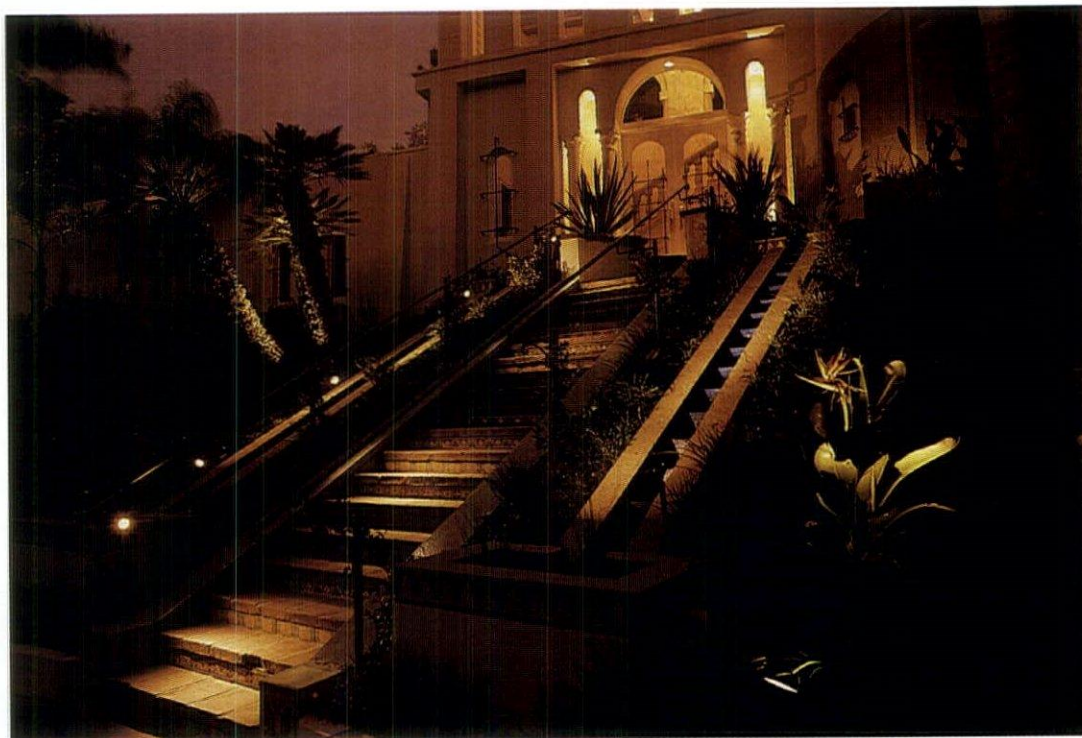
To order *Residential Lighting: Creating Dynamic Living Spaces* call 1-800-365-2724, or fax 800-678-7102. The book is \$39.95 (\$36.95 for AIA members). Please add \$5.00 for shipping and handling. Sales tax is added for Maryland and District of Columbia orders.





Outdoor Lighting

Stairway To Paradise



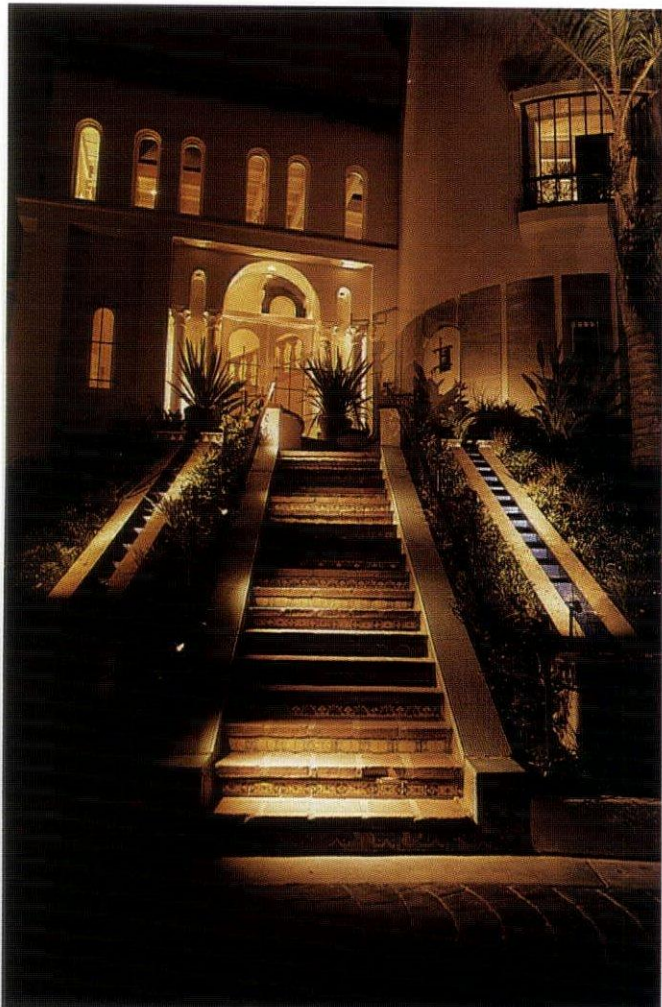
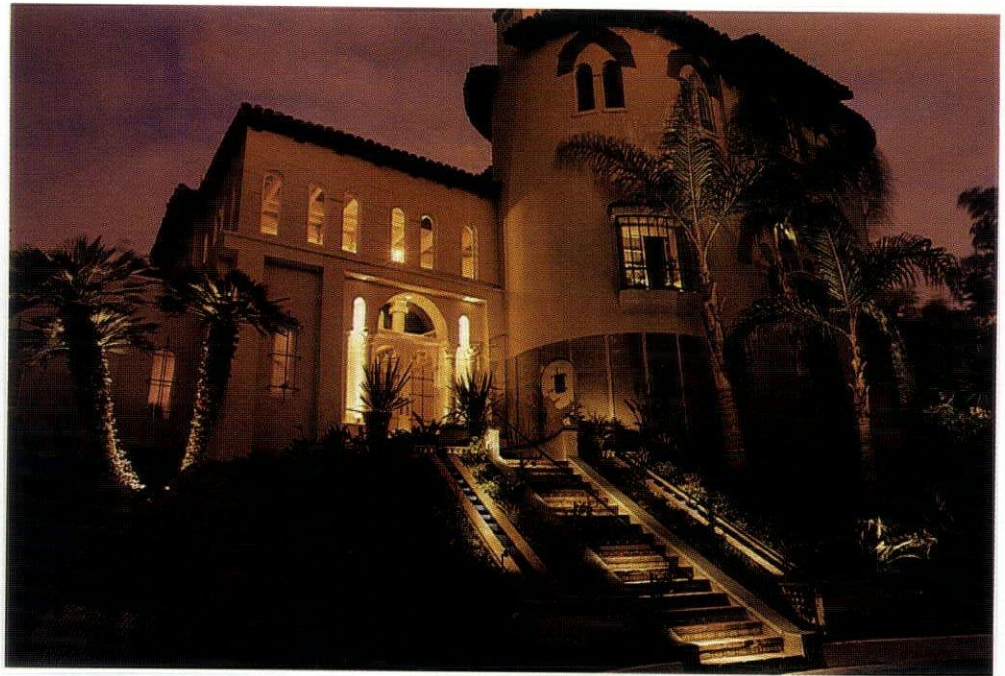
The Venice Family Clinic is the largest free clinic in the country. It provides not only free medical care, but social services to the homeless and others who can't afford it, accommodating approximately 50,000 patient visits a year. So adorning an opulent mansion in Beverly Hills, CA, as a showcase house to benefit the clinic became a labor of charity, as well as a creative opportunity for the dozens of landscape architects and interior designers who volunteered their time and efforts to the project.

Though the showhouse installation was temporary, the owners of the home opted to keep permanently the landscaping designed by Buel Hensley, Howard Olsen Landscape Inc., and the accompanying landscape lighting, designed by Allan Leibow, Wheel Gersztstoff Friedman Shankar, Culver City, CA.

Leibow has intentionally created an interplay of light and shadow on the long staircase at the front of the house. Since

HIDDEN TREASURES:
(Above) The well-concealed stairway fixtures are mounted in the curlicues of the handrail.

TROUGH STREAKS: (Right and below) Only one fixture was needed to graze the surface of each water trough on the sides of the long stairway.



this approach renders the stairway more dramatically and attention-getting than if it had been evenly illuminated, Leibow feels that it works to make residents and guests more aware of the steps and cautious in mounting them.

The fixtures used to light the stairs are only about 2 inches long by 1 1/2 inches in diameter, and one is mounted unobtrusively in the curlicue at the top of each of the four metal handrail posts to provide sufficient pools of light on the stairs.

The water troughs, designed by the landscape architect, are clad inside with blue tiles stepped to mimic the stairway. Each trough is lit with one stake-mounted, 12-watt pinspot positioned at the base and aimed to cast a streak of light up the length of the trough. The MR 11 narrowspots were too bright, so Leibow has added a neutral density filter to each fixture.

Palm trees are grazed and highlighted with 50-watt MR 16 fixtures, also stake-mounted.

At the top of the stairs behind the planters are two columns that flank the main entry. Each column is silhouetted with an MR 11 narrow flood spotlight placed behind it. A downlight above the entry throws a soft glow on the doors and a pool of light on the floor.

"It's amazing how much you can do with a small amount of light when there's little ambient light. If there was one post light stuck in the driveway, none of this would work," says Leibow.

DETAILS

PROJECT: VENICE FAMILY CLINIC SHOWHOUSE

LOCATION: BEVERLY HILLS, CA

LANDSCAPE ARCHITECT: BUEL HENSLEY, HOWARD OLSEN LANDSCAPE INC.

LIGHTING DESIGNER: ALLAN LEIBOW, WHEEL GERSZTOFF FRIEDMAN SHANKAR

PHOTOGRAPHER: ALAN SHAFFER

LIGHTING MANUFACTURERS: LUMA, LUMIERE

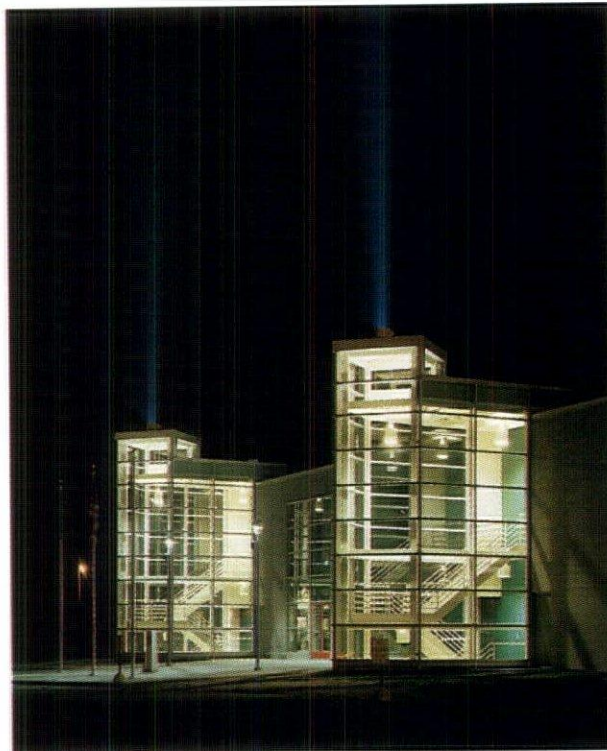
Pettit National Ice Center

LONG BEAMS: (Right) The lights were selected to draw attention to the large skating center, located along a busy interstate highway 10 minutes from downtown Milwaukee.

A new national ice center that's the only facility of its kind in the U.S. and one of only five in the world warrants calling attention to itself. The 200,000 square foot Pettit National Ice Center houses a 155,000 square foot arena with 97,000 square feet of ice for hockey, figure skating and speedskating. It is located on the Wisconsin State Fairgrounds along Interstate 94, 10 minutes from downtown Milwaukee.

While the inside is the main attraction, the clients wanted the exterior to have some hoopla as well. Two glass enclosed stairwells, already brightly lit at night by interior lighting, make the structure readily visible from the busy highway. But the designers of the center, Venture Architects (a joint venture of Kahler Slater Architects and the Zimmerman Design group) of Milwaukee, wanted something extra to add to the festivity of the place, and create excitement.

Carbon-arc searchlights are often used at shopping center and other grand openings to attract attention at night. Their long beams of light penetrate the sky and catch the eye. However, a tight budget made such lights cost prohibitive.



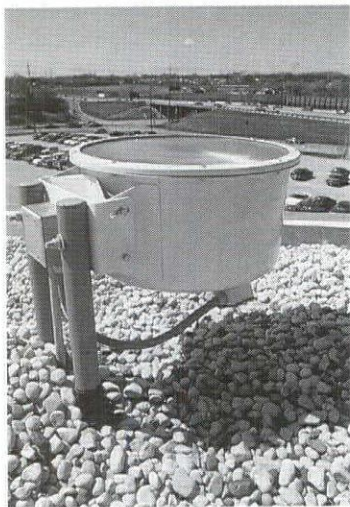
CLOSE-UP: (Below) One of two 1,500-watt metal halide fixtures rooftop-installed. The units are designed for both architectural and marine use.

Casting about for a less expensive light, the specifiers explored options and settled on two 1,500-watt metal halide long-beam floodlights.

The floodlights, designed for architectural and marine use, have both UL 1572 outdoor wet location and UL 595 marine outside listings. Each compact fixture emits a long light throw in a tight beam pattern, intended to permit fishermen to find crab buoys more than a mile away, or allow building owners to highlight

architectural building features.

At Pettit Center, fixtures are mounted on the roof above each stairwell.



DETAILS

PROJECT: PETTIT NATIONAL ICE CENTER

LOCATION: MILWAUKEE, WI

ARCHITECTS: VENTURE ARCHITECTS (a joint venture of KAHLER SLATER ARCHITECTS and the ZIMMERMAN DESIGN GROUP)

ENGINEER/ELECTRICAL CONTRACTOR: DAVID HILL, project manager, STAFF ELECTRIC

LIGHTING SALES REPRESENTATIVE: J.E. CULLEN CO.

LIGHTING MANUFACTURER: PHOENIX PRODUCTS CO., INC.

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PHILIPS

Circle No. 1 on product service card



HID LUMINAIRES: AN OVERVIEW

BY GARY K. MARKOWITZ, MIES

Over the past 20 years, there has been an exponential growth in the application of the high-intensity discharge (HID) luminaires in both exterior and interior spaces. Whether we choose to expound on the virtues of the seemingly immortal mercury vapor (MV) systems, or marvel at the more recent developments in high-pressure sodium (HPS), metal halide (MH), and low-pressure sodium (LPS) lamps, HID technology is seemingly ubiquitous.

The reasons for the prevalence of HID lighting systems are quite basic: while the visual environment is improved to foster safety and bolster security, the operational costs are trimmed through reductions in connected electrical loads, and maintenance costs are limited by the characteristic operational longevity of the lamps. However, not all HID systems are created equal. Factors such as lumen maintenance, efficacy, color temperature stability, and electrical component reliability, enter into the equation of system preferences. This article addresses these issues, and suggests some new technologies.

HISTORICAL PERSPECTIVE

Since the introduction of the first MV systems in the 1930s, HID lamps were teamed with appropriate ballasting (or self-ballasting) to illuminate a wide array of visual environments from interior low-bay locations (such as corridors, gymnasiums, garages, warehousing and storage) to areas where relamping was difficult and/or cost-prohibitive (high-bay locations, such as aircraft hangars, and atrium-type installations). Exterior applications ranged from the illumination of parking lots (for security and safety), to outdoor sporting arena illumination.

The initiative to improve upon the MV technology was fed by several factors including: the unfavorable maintenance factor of the lamp/ballast system, dramatic color-shifts, and electrical inefficiencies within the lamp/ballast system, dramatic color-shifts, and electrical inefficiencies within the lamp/ballast combinations:

The system consumed increasing amounts of wattage over the life of the lamp to maintain maximum possible light output. A 400-watt lamp/ballast combination would consume as much as 500 watts at end of rated life (with the lamp still operating at a greatly diminished lumen output).

Despite the shortfalls of mercury vapor systems, they are still utilized today. However, the faults of the MV system led to eventual intolerance for inconsistencies. Expanded research eventually spawned the development of MH, HPS, and LPS lamps.

Current renditions of these lamps take on many forms: double-ended Edison-base, mogul-base, reflector-floods, etc. Manufacturers that currently excel in the production of quality HID lamps include General Electric, Osram/Sylvania, and Iwasaki. Ballasts have been developed into several shapes and

electrical configurations to optimize the application of this technology into the mainstream of design. Ballast manufacturers include Advance, Magnetek, etc. Some manufacturers of luminaires (General Electric and Holophane) produce proprietary ballasts for their luminaires due to the special design features incorporated for electronic controls applications.

Regardless of which HID system you choose or have chosen to incorporate into your facility's interior/exterior illumination systems, your design should include features which limit and even eliminate some expensive mistakes that many manufacturers don't tell you about. While the economic advantages for applications of HPS and MH technologies are indisputable, there are subtle costs associated with these systems:

- Lumen maintenance programs versus spot relamping costs
- Energy utilization/efficacy economics
- Failed component replacement costs

SOME OF THE ESSENTIALS

1. The loss of light due to sporadic lamp failures can be costly in terms of maintenance costs. Each time a lamp burns out, an electrician is required to make the repair. There is the cost of summoning the electrician, then there is the time it takes him to retrieve his ladder. Once he has the ladder, he must climb the ladder and assess that the lamp has indeed burned out. After he acknowledges these few facts, he discovers (after much contemplation and expletives) that the lamp he brought with him is not the correct wattage or type of lamp. After returning to the maintenance shop to retrieve the correct lamp, he eventually finds that the lamp is on back-order with the electrical supply house. After the third or fourth time this occurs, you suddenly realize where your profits are going and that the electrical foreman was correct in his assessment: the area should be group relamped and luminaires cleaned on a regular schedule. This situation worsens with the need for scaffolding or a lift-truck rental each time a lamp burns out.

HID systems should be group relamped once every three years so as to maintain consistent illumination levels and maximize the economics of system operation. Luminaires should be thoroughly cleaned at this time to ensure designed output and light distribution. Cleansing with vacuum cleaners, wash tanks and/or ultrasonic devices guarantees the maintenance of designed luminaire distribution.

2. The voltage at the point of connection to the distribution circuit should be tested and recorded to ensure that the system is operating within design parameters for luminaire output. Operating in an over-voltage condition increases wattage consumption and reduces the service life of the ballast and lamp.

Authors D. Smith and D. Zhu in their article, "Properties of High-Intensity Discharge Lamps Operating on Reduced Power Lighting Systems" (*Journal of IES*, Vol. 22, No. 2, Summer 1993), state: "Lamps exposed to under-voltage conditions may

experience longer lamp life (at voltage within 5 percent of rating). For further reductions accomplished through standard dimming auto transformer systems, may produce an unacceptable result in some MH systems (400 and 1000-watt). A 40 percent reduction in the wattage relates to a minimum of a 60 percent reduction in the measured light output. The color shift in most MH lamps can be unacceptable at this point. Greater reductions in wattage to the MH system can result in arc tube darkening due to sputtering of the electrode. Similar properties may be displayed within some HPS systems. Specialized control circuitry can be incorporated into the ballast design to assure optimal lamp operation at all lamp output levels."

3. Luminaires that incorporate position-specific lamps, i.e. horizontal/vertical, require special attention during relamping. Utilization of universal position lamps may allow your facility to stock one lamp type versus two or three. However, this savings will be short-lived. As explained in GE Lighting catalog 9200, performance of lamps designed for particular operational positions can produce 10 to 25 percent more light and last as much as 60 percent longer than the equivalent universal position lamps.

4. The special design features of some manufacturers include the ballast assembly in a drawer or removable plate where the ballast component is no longer repaired. Rather, it is thrown away or sent back to the factory. In some cases, this may be advantageous where labor costs are exceedingly high. But, overall, this limits your options in terms of upgrading luminaires at a later date. It is better to buy standard design systems where high efficiency improvements can be retrofit in the existing fixture.

Electronic ballast retrofits to existing luminaires or alterations in the type of lamp utilized, can be accomplished easily where standard mounting configurations are present. Situations with specialized drawers, or plates for ballast mounting with integral quick-snap connectors, do not allow for simple retrofits.

5. The recent innovative development of multi-level output HID ballast systems by companies, such as General Electric and Holophane, are definitely headed in the right direction. The ballast incorporates control circuitry allowing for the attachment of a motion sensor or energy management system. Savings for periods of no occupancy or custodial/maintenance work can exceed 70 percent (depending upon the type of lamp incorporated within the system). These systems are effective for both HPS and MH classes.

6. LPS systems have the advantage of being the most efficient (highest efficacy) sources of illumination. But this is about the only positive aspect of this source. The mono-chromatic properties of the lamp make it suitable for security applications, tunnel/roadway lighting, construction sites, and warehousing/shipping areas where color rendition is not essential. The disposal of the lamps can also be difficult as the filament can be a hazardous material if not handled correctly. Without specifically skilled electrical tradesmen, this author recommends that this light source should not be utilized as a first

choice unless the application is within one of the aforementioned locations.

CONCLUSIONS

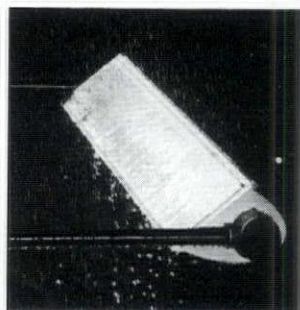
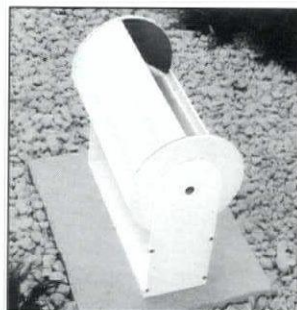
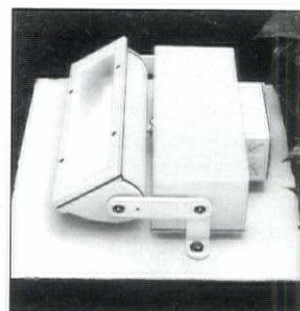
The development of higher efficiency lamps and ballasts is an inevitability in the future as energy becomes more expensive to produce. Optimal control of existing illumination systems utilizing the strategies of General Electric (GE System 2 Bi-Level Controls), or Holophane, indicates a promising trend for the future of current HID technologies.

The application of smart electronics to a solid-state ballasting system (such as in 32-watt MH systems, and recently added white HPS systems) would be a welcome addition to the HID family of luminaires, and would certainly promote the expansion of HID applications in all luminous environments.

Gary Markowitz is with Raytheon Company, Missile Systems Laboratories, Tewksbury, MA, and is a member of the ARCHITECTURAL LIGHTING Editorial Advisory Board.

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NON-REFLECTIVE GLASS

(Below, left) Here's a common problem: multiple reflections from light fixtures and furnishings in windows.

(Below, right & bottom) Non-reflective glass opens up options for more creative lighting designs in interiors that require nighttime views out and daytime views in.



When the architects at the firm of Louis Owen, Inc., began designing the Palisade Restaurant at Elliott Bay Marina near Seattle, WA, they had a rare opportunity to capitalize on the restaurant's scenic bay location. The 13,000 square-foot elliptical structure offers a sweeping 180-degree view that includes the Seattle cityscape, Harbor Island, Mount Ranier and the Olympic Peninsula across Puget Sound.

Palisade's view might easily be lost on the 300 or so restaurant patrons were it not for a new type of window glass that reduces reflected light to less than one percent. (Normal glass reflects from 8 to 15 percent of incident light, depending on whether it is single or double glazed.)

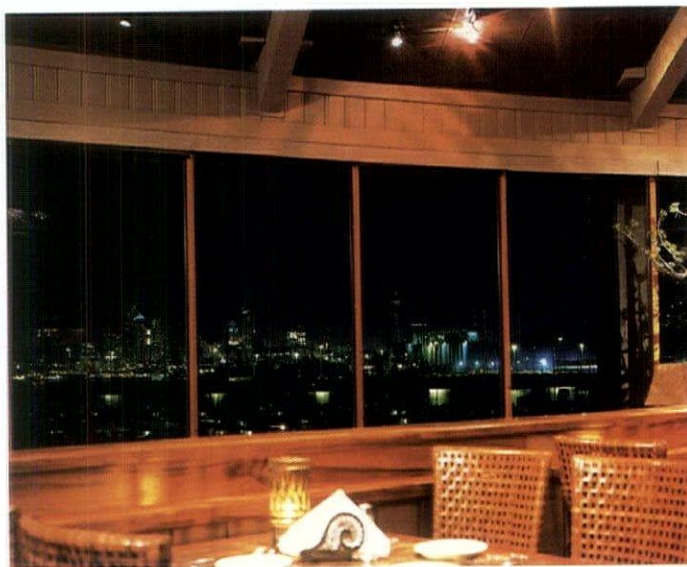
Enough light had to be provided to dramatize the rich wood and stone interior, but this might have resulted in so much reflection from perimeter windows that the view would have been ruined. To solve the dilemma, the architect chose to install 36 4-foot by 9-foot Amiran non-reflective glass, produced by Schott Corporation, Yonkers, NY, specifically for installations where glare can be a problem. The panels were installed completely around the 175-foot perimeter of the dining area.

The non-reflective glass has enhanced the daytime appearance of the restaurant, as well as the evening view. Sitting adjacent to a 1,200-slip marina, the finest view of the restaurant for many visitors is from the water outside. With ordinary glass, reflected glare would completely obscure any view into the restaurant, but the non-reflective glass allows the interior view of the restaurant to be opened up to those on the outside.

The non-reflective glass is produced by applying a multiple-layer interference system to flat glass. Ordinarily, the coating is applied to both sides of the glass; Schott also offers one-side coating for the manufacture of lami-

nated safety glass. It is weather resistant and offered in single- or double-glazed versions in sizes up to 10.14 feet by 6.1 feet, and in thicknesses of 5/32-, 3/16-, 1/4-, 5/16-, and 3/8-inches. Each of the 18 insulating windows for the Palisade restaurant was fabricated by Northwestern Industries of Seattle using Amiran glass.

This non-reflective glass is well-suited to retail and showroom applications, museums, and hotels as well. Reduced glare can also mean lower light levels in a display space, with savings on lighting fixtures, electrical costs and heat dissipation concerns. The glass' high uv absorption offers increased protection against fading of displayed goods. A 5/16 inch sheet of ordinary glass allows 49 percent of uv energy to be transmitted; Amiran allows only 35 percent. *Circle 100*





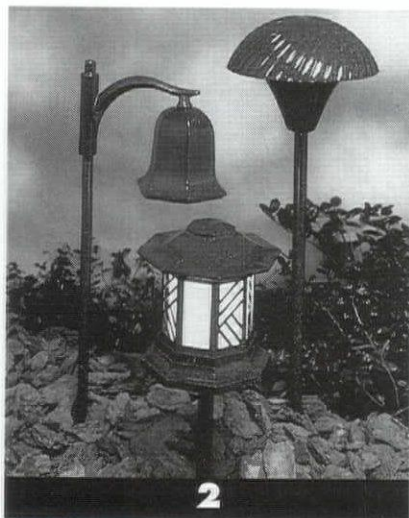
1. Outdoor Luminaire Family

Staff Lighting's Saturn luminaires are built on a graceful, human scale and style to fill the lighting design needs of town and country alike. All Saturns are available as single-pole top, wall brackets or clusters, and with mirror or white louvers, MTR (Multi-prisms for Total Refraction) refractors or borosilicate refractors. A broad range of lamp types can be used, with fluorescent, metal halide, mercury or high-pressure sodium options available. Each luminaire has uv-stabilized polycarbonate shielding and countersunk stainless steel screws for increased vandal-resistance, and is gasketed for weatherproofing, dust and insect control. Staff Lighting, Highland, NY.

Circle 50

2. Garden Fixtures

The Garden Series from Greenlee includes fixtures in a variety of shapes, sizes, stem lengths and mounting arrangements. All fixture heads are cast aluminum. Each unit is finished with durable, powder-coat, polyester



paint in a new interpretation of verde green. The reflective surfaces on the inside of each unit are painted white for enhanced per-

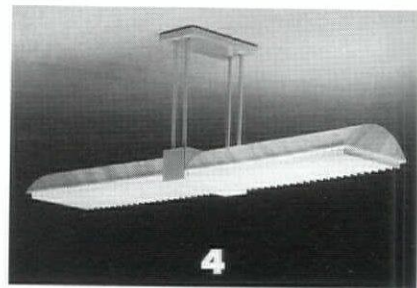
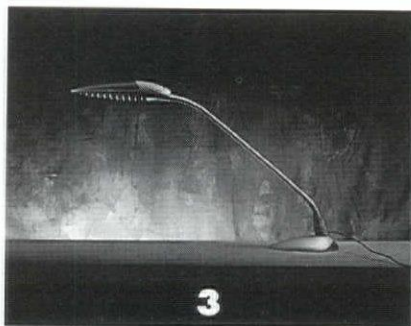
formance. Incandescent lampholders are 4KV pulse rated, glazed porcelain with spring center contact. Fluorescent lampholders are high-temperature thermoplastic. Greenlee Lighting Inc., Carrollton, TX.

Circle 51

3. Portable Task Light

The Birdy task light from J.O.L.T. Lighting Ltd. has a sleek design from the Elixir Design Group of France. Five translucent shade choices (red, blue, yellow, white, or green) or two solid shade choices (black or grey) are offered. The direct/indirect light distribution ratios

while preventing unwanted glare on the computer screen or in the user's eyes. The arm offers 26-inch length. A 13-watt compact fluorescent lamp is included. Mounting is by desk clamp, portable table base,



wall bracket, or panel bracket. J.O.L.T. Lighting Ltd., Capron, IL. Circle 52

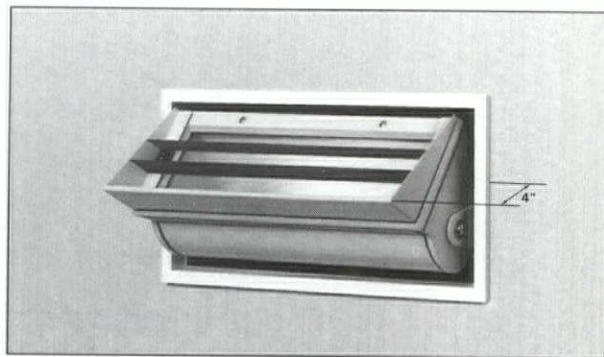
4. Direct/Indirect Luminaire

Excelite, Inc.'s Lunos has luminescent diffusers that transmit and reflect light from twin-tube or Octron fluorescent light sources. The unit projects light 360 degrees, with an emphasis on downlighting to create a low-contrast balance between luminaire

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ment with exceptional performance. With tungsten halogen or H.I.D. lamps from 70 to 150 watts, the unique **elliptipar** asymmetric reflector creates uniform, glare-free illumination. Designed for easy installation into most stud frame walls.

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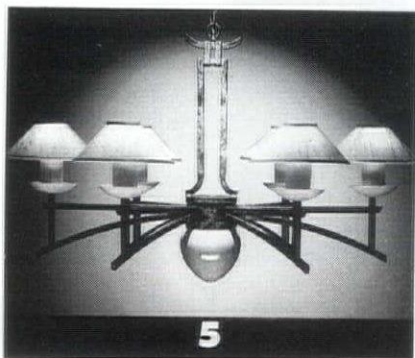
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Los Angeles  Department of Water and Power

and ceiling. Compact housing mounts with extra slender stems to ceiling pan and floating canopy. A variety of baffle styles, metal finishes and faux alabaster diffuser colors are available. Excelite, Inc., Altoona, PA.

Circle 54

Colortran, Inc., is a unit that controls up to four circuits of Advanced Transformer Co. Mark VII electronic controllable ballasts. The unit has digital circuitry with user selectable address and dimming curves. It is available in wall-mount or custom aux



5

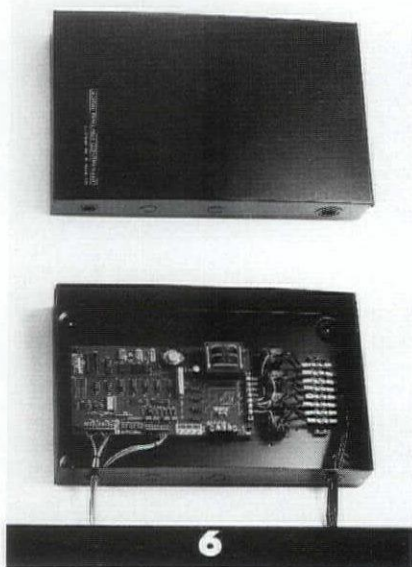
5. Decorative Chandelier

East-West Passage chandelier #354540 from Fine Art Lamps is fashioned of square iron in weathered patina. It has a ceramic amphora of earthenware in antique pale crackled glaze. It is 42 inches wide and 25 1/2 inches high. It uses 60-watt maximum incandescents. The design expresses the dual Occidental/Oriental heritage of its designer, Mark McDowell. Fine Art Lamps, Hialeah, FL.

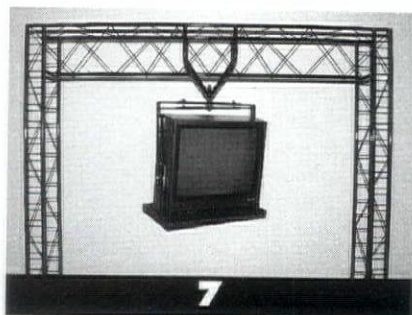
Circle 55

6. Fluorescent Dimming

The Digital Ballast Controller from



6



7

truss system which incorporates unique internal connections. Trussworks is available in two-, three-, or four-sided configurations and in sizes ranging from 3 inches to 36 inches per side. Trussworks is an ideal support for lighting systems and graphics, or can be used to define a space. The company also makes a line of television mounts which can be incorporated into the Trussworks system. BGB Enterprises, South San Francisco, CA.

Circle 58

panel enclosures. Colortran, Inc., Burbank, CA.

Circle 56

7. Truss System

BGB Enterprises presents a modular

spread for optimum spacing and uniform illumination. Designed to fit any standard 4-inch octagon electrical box, the unit has a quick-fit integral mounting plate that

requires no loose hardware to install. Instant response to power failure, maintenance-free sealed batteries and precision charger are among the features. Yorklite



8

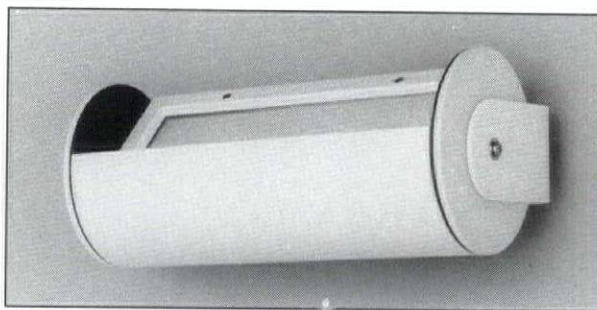
8. Emergency Luminaire

Yorklite's Mini Metro rivals the performance of larger units as a result of a super-bright halogen lamp and precision optics that combine to insure the necessary elongated beam-

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orescent. Features include rugged extruded aluminum construction in lengths up to 10 feet, baked powder paint, stainless hardware, aiming set screws, light-proof gaskets, and optional emergency battery systems. Call for the name of your local rep who can demonstrate in your office.

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Electronics Inc.,
Bensalem, PA.
Circle 59

9. Track Fixtures

Prescolite introduces the Line-Form series of track fixtures. The units capture the simplicity of a single "line" element

to create its form. The understated style is suitable for both high-end residential and retail applications. The LineForm series is offered in both black and white finishes, and comes in PAR 20, PAR 30, and PAR 38 sizes. Prescolite, San

Leandro, CA.
Circle 60

10. Pendant Fixtures

D'Lights' new line of acrylic-shade fixtures includes the pendant shown which is made of solid brass and sealed with clear coat for easy maintenance. The fixture is offered in polished aluminum, as well as painted or custom finishes. The clear, prismatic acrylic shade is 18 inches in diameter and can be tinted. The standard fixture height is 36 inches, however, custom

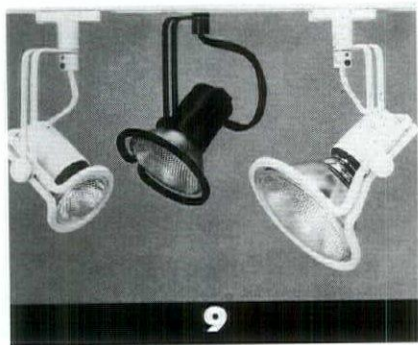
heights are available. D'Lights,
Glendale, CA.
Circle 61

11. Outdoor Surface Mount

Noral Lighting has expanded the

Roulette line of outdoor fixtures with a surface-mounted sibling, the Provence wall lantern. Provence is constructed of cast aluminum protected with a polyester-based coating chemically bonded to the base metal to withstand wear and resist harsh environments. The units use either smoked or opalescent shatterproof polycarbonate lenses and are available in white, black or patina green finishes. Noral Lighting, Inc., Cleveland, OH.

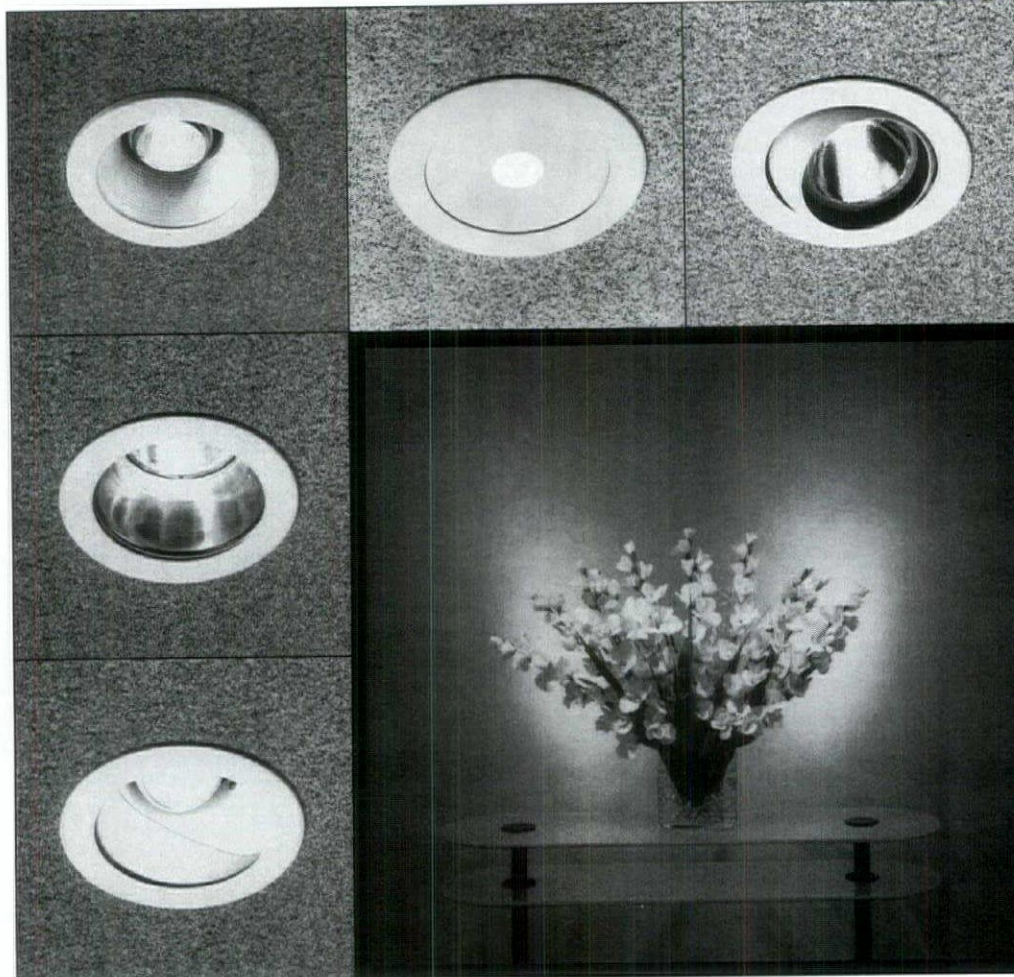
Circle 62



9



10



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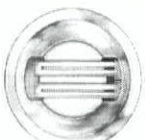
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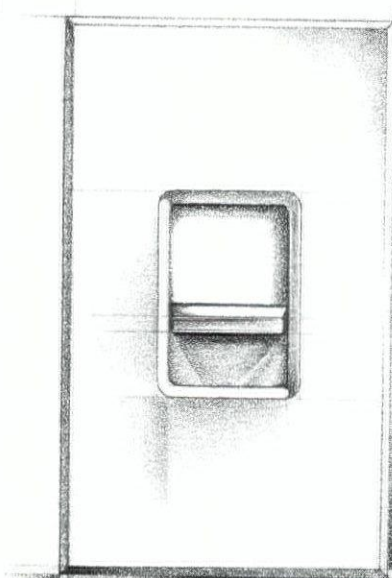
DUPLUX



SUPER DUPLUX



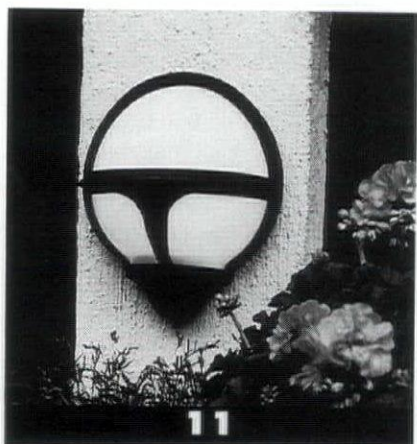
WASHLUX



EDISON PRICE LIGHTING

ARCHITECTURAL LIGHTING AT ITS BEST

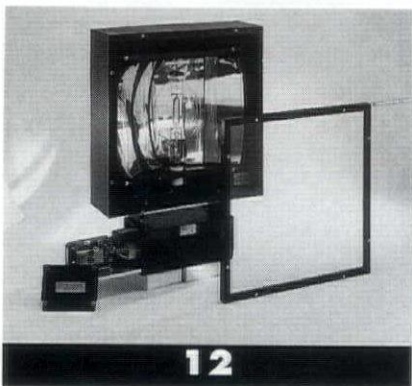
Circle No. 24 on product service card



12. Precision Floodlight

The Infranor 895 from Sterner Lighting is a high-power

and vertical position options. Sterner Lighting Systems, Inc., Winsted, MN. **Circle 63**



12

ered, precision floodlight that utilizes the Infranor Segmented Optical System for clean beam illumination of high-rise structures, particularly when lighting uniformity is critical. Virtually all light spill is eliminated. The unit, designed for 1,000-watt metal halide or high-pressure sodium lamps, offers tremendous illumination flexibility with the capability of producing a 9- by 24-degree, up to a 40- by 100-degree beam, with horizon-

13. Victorian Gas Light

The Dorchester from Holophane's Unique Solutions Division is styled in the fashion of a 19th century gas light. The luminaire uses one of several borosilicate glass refractors to maximize efficiency. The luminous top allow just enough uplight to provide the pleasant open environment that encourages pedestrian activity. The fixture is available for lamping with high-pressure sodium,

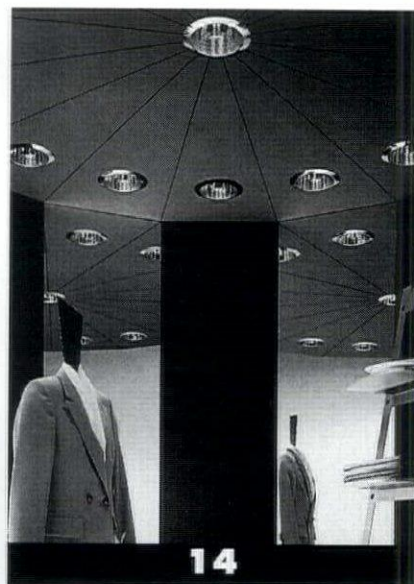
metal halide, mercury vapor and incandescent lamps up to 200 watts. The Dorchester is shown mounted on an 8-foot Hamilton cast aluminum post. Holophane Company, Inc., Unique Solutions Division, Newark, OH. **Circle 64**



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14. Faceted Reflector Downlights

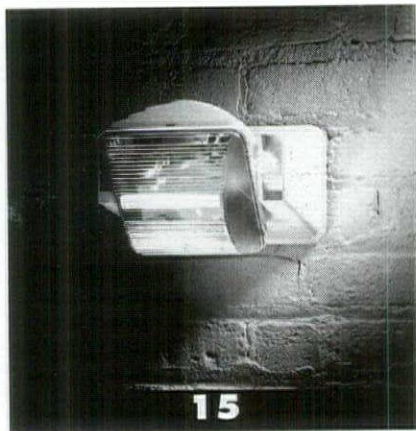
The specular hexagonal faceted reflector in Litecontrol's Trilux Downlights provide for precise photometric performance. The downlights use either one or two 13- or 18-watt compact fluo-



14

rescent quad lamps. Two lamp positions are available to achieve the photometric distribution required. The downlights are offered with an open reflector or a unique crystal frosted conical lens for

high-design interiors. The lens is held in position by three decorative conical fasteners. An 8-inch diameter beveled ceiling ring is available in white or chrome. Litecontrol, Hanson, MA. **Circle 65**



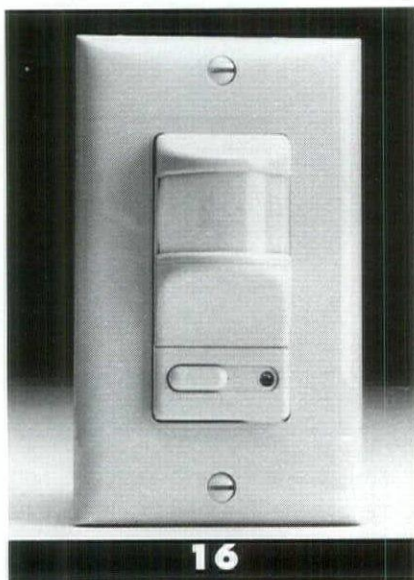
15. HID Security Light

Lumark Lighting introduces the Caretaker, a low-voltage high-intensity discharge (HID) outdoor security lighting fixture designed to be used in both commercial and residential environments in either a ceiling or wall mount application. The unit is available in white or architectural bronze with a choice of 35-watt or 50-watt high-pressure sodium lamps.

Lumark Lighting, brand of Cooper Lighting, Vicksburg, MS. **Circle 66**

16. Occupancy Sensor

Pass & Seymour/Legrand's Switchplan OSC3020 occupancy sensor combines low profile with contemporary styling in three colors. It offers maximum load-handling in a three-wire passive infrared switch, with easy installa-



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tion in new and retrofit construction. Pass & Seymour/Legrand, Syracuse, NY. **Circle 53**

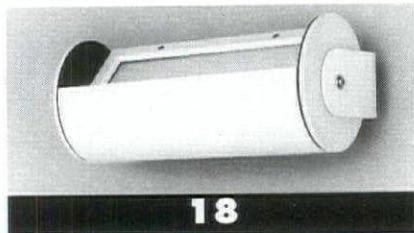
17. Automated Light Fixture

High End Systems' new version of the Trackspot automated moving light fixture has a number of engineering improvements including higher



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light output, wider beam angle, lighter weight, smaller dimensions, and easier lamp replacement. The unit uses a quartz-tungsten light source. The fixture has a 12 degree beam angle. Besides pan and tilt, the automated moving light fixture has ten dichroic colors, ten gobos, dimming and strobe effects. It can operate as a complete system with synchronized choreographed programs without a controller, or with other controllers. High End Systems, Austin, TX. **Circle 57**



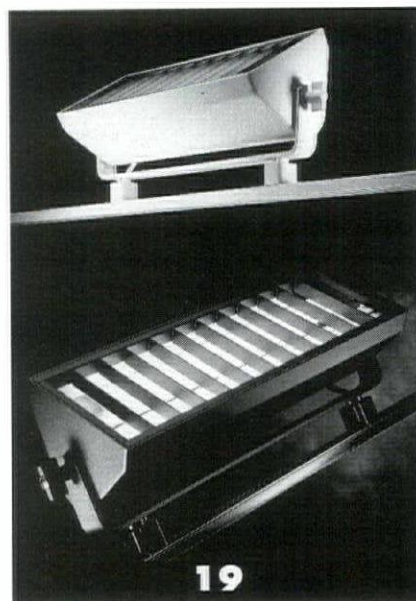
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18. Cylindrical Luminaire

Elliptipar introduces Cylinder luminaires for surface mounting with tungsten halogen lamps; and with remote ballast, HID,

brown (textured), dark bronze, silver or black. The trademark Elliptipar asymmetric reflector is incorporated. Elliptipar, Inc., West Haven CN. **Circle 67**

rescent lamps. The Biax lampholder, combining reflector design, lamp source, and an optional high power factor electronic ballast has 0 to 90 degrees adjustment from the vertical. The lampholder is available in both black and white. Halo Lighting is a brand of Cooper Lighting, Elk Grove Village, IL. **Circle 68**



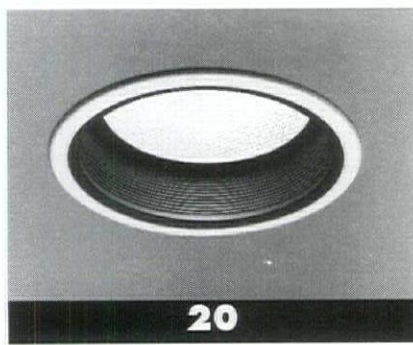
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19. Track Fixtures

Halo Lighting track lighting fixtures accommodate fluo-

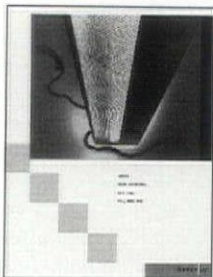
20. Lensed Fluorescent Downlights

Capri offers 6- and 8-inch diameter downlights with a regressed clear prismatic acrylic lens for even distribution. All have two lamps, independently operated by encapsulated ballasts. Capri Lighting, Los Angeles, CA. **Circle 69**



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BASIC TASK LIGHTING



The 12-page brochure presents details on Garcy's radius-cornered, slim-line, thin, under-counter, and PL task lights. The brochure includes photographs, and photometric, dimensional, electrical, labelling, mounting, and lamp/ballast combination data. Garcy, Systems Lighting Products, Portland, TN (factory), Chicago, IL (showroom).

Circle 77

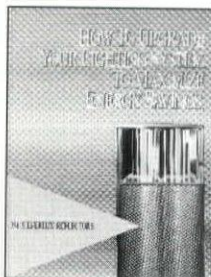
BRASS FINISHES



Literature from B-K Lighting, Inc. details brass finishes available on low-voltage landscape lighting fixtures. The Natural Brass finish provides fixtures with a "solid, will-last-forever look"; the Mitique Brass finish has an antique look; and the Polished Brass finish has the look of fine jewelry. B-K Lighting, Inc., Fresno, CA.

Circle 80

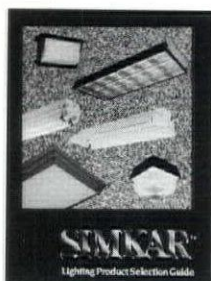
FLUORESCENT REFLECTORS



3M introduces three brochures on Silverlux fluorescent reflectors. The gold brochure discusses combining Silverlux with high-performance lamps and ballasts; the cranberry one explains benefits of installing reflectors in existing fixtures; the teal one details the reflector as alternative to upgrade. 3M Construction Markets Department, St. Paul, MN.

Circle 81

FLUORESCENT DECORATIVES PLUS



The industry's broadest line of fluorescent decorative lighting and more than 30 new product categories are shown in Simkar Lighting's full-line catalog. A colorful, expanded edition of the "red" catalog, it has 36 pages of lighting products for commercial, industrial and residential installations. Simkar Lighting, Philadelphia, PA.

Circle 82

The ultimate in functional design.

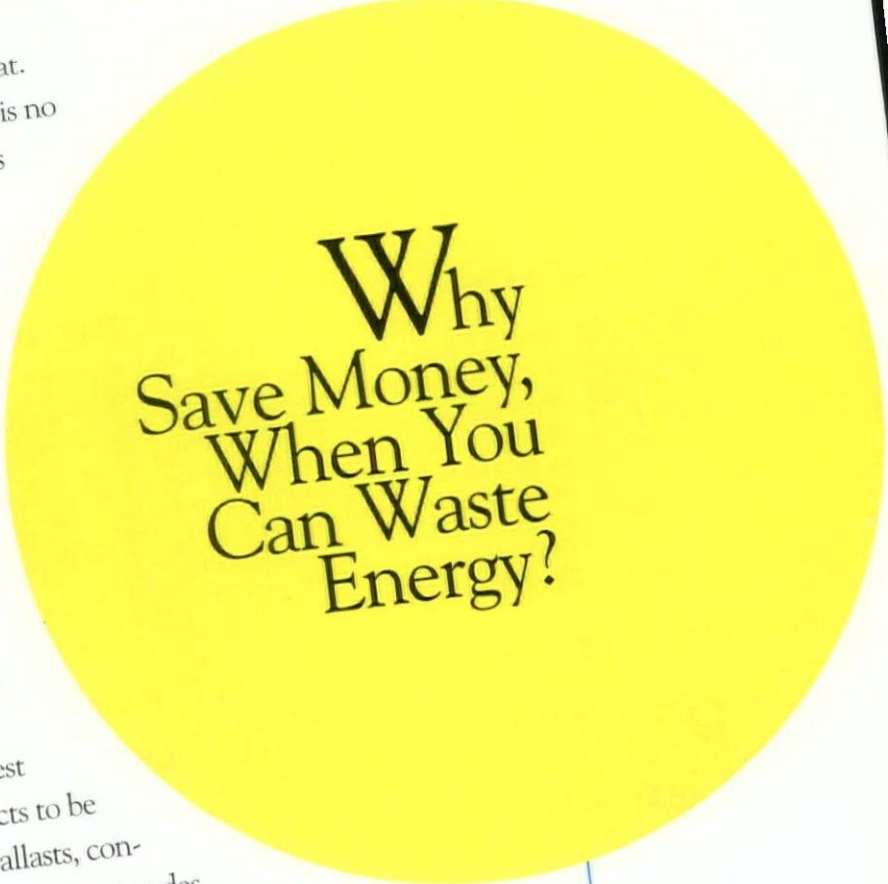
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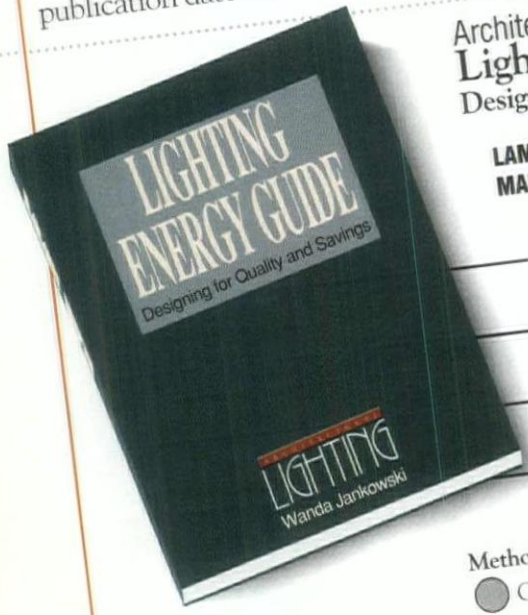
Waldmann Lighting **W**

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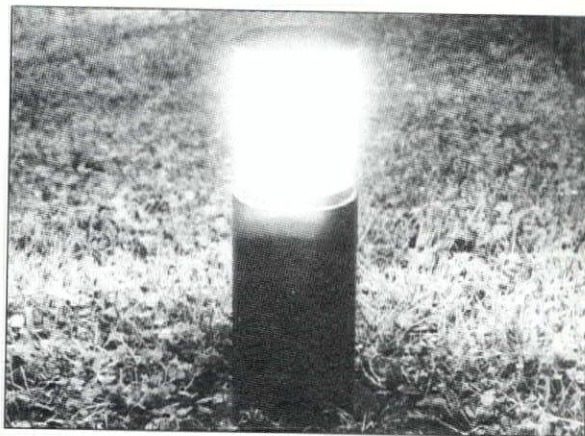
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