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Editors in charge: Susan Doubilet and Thomas Fisher

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Cover: House, Sun Valley, Idaho (p. 86) by Arne Bystrom.
Photo: John Fuller.
Inner of the 1986 Gold Nugget Grand Award from the Pacific Coast Builders' Conference, the Villas and Offices at Sweetwater, Sugarland, Texas, present a skyscape of arresting design.

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In the once-scorned "traditional" works of the 1920s and 1930s, we can often find deft solutions to design problems that seem hard for our contemporaries to resolve.

In the course of my recent trips for P/A, the most enlightening works of architecture I have seen have been buildings from the 1920s and 1930s that remained traditional, but show the liberating influence of Modernism. By that I mean the kind of works where liberties have been taken with historical forms, where ornament is often unconventional in distribution, materials, and motifs. Their combination of simplified form with an emphasis on craftsmanship often gives them an archaic look, without linking them to any specific historical period.

There were in those decades several degrees of separation from tradition: More conservative than the kind of design I have in mind was the widespread NeoClassicism, the least ornamented of historical styles one could adopt; at the more liberated end of the spectrum were the modes of Art Deco and Moderne, which used modern technology as a source of ornament, but were nevertheless worlds away from the International School Modernists who were then establishing standards for coming decades.

For most American design professionals of the 1920s and 1930s, the progressive traditionalism I am talking about here may well have seemed the most promising way to be Modern. The majority of AIA Gold Medals of those years went to this group of freer traditionalists—Sir Edwin Lutyens, Bertram Goodhue, Ragnar Ostberg, Paul Cret. None went to those who did Deco or Moderne work (unless one counts as Deco some of Cret's work, as at the Dallas Fair Park). And maybe those judgments were right: Art Deco easily acquired a kind of camp charm for Modernists, but it often lacked the integration of form, ornament, and building fabric found in architecture that was more firmly rooted in tradition.

In the past year I have visited two of Goodhue's buildings for the first time and found the experiences even richer than I had expected. The Nebraska State Capitol in Lincoln combines severe masses with areas of opulent surface decoration (much as does Ostberg's Stockholm Town Hall, widely admired during this period). Stylistically, the capitol mixes elements that look NeoClassical, Byzantine, Egyptian, Romanesque, and Gothic, all remarkably unified, overlaying a plan that is timeless yet unmistakably Beaux-Arts in origin. A comparison of the building to published drawings shows progression toward abstraction, as where certain conventional cornice lines are deleted and little domes on turrets give way to pyramidal caps.

Goodhue's art museum in Honolulu is almost unornamented, with only rudimentary capitals on the columns that surround its gardened courts. Somehow a few incisions on a lintel or a bit of chamfering on a jamb make eloquent events of this building's doorways. This is one of several surviving buildings of this period in Honolulu that seem to present a plausible image of how the oceanic peoples might have built office buildings or art museums if they had never encountered a Westerner.

These architects who modified traditions, but didn't reject them, brought with them from their schooling a sure sense of how to handle elements such as joints, corners, cornices, and parapets—not to mention proportion, balance, shadow, color, and texture—which doctrinaire Modernists would not accept from the past. It is this skill with form and detail that makes such buildings not just period curiosities, but models for architects of today.

It is no accident that on my visit to the Honolulu museum I ran into Charles Moore and William Turnbull examining Goodhue's accomplishment. Moore has expressed his admiration for this phase of architecture in books (such as Dimensions, 1976, with Gerald Allen). If appreciation for this kind of architecture fades with the decline of Post-Modernism—which is reported by some to be under way—that will be a great loss, because such buildings present lessons of value to architects of any persuasion.
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The National Fire Protection Association reports that the majority of fire deaths in this country are in residential occupancies. Such occurrences seldom are front page news, rather they are found as fillers in the middle of the newspaper: "Family of 5 dies as fire sweeps home in . . ." (you fill in the blank).

P/A's first award this year given for housing for needy families is flawed in that the wood stove is proximate to the only exit from the sleeping loft. In the past, P/A has had useful articles relating to fire protection. Regrettably, one has to wonder if they are read by the profession.

William E. Proper, P.E.
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Further Information
I congratulate you on the new direction taken by Progressive Architecture during 1986. The content revisions indicate a great sensitivity to the needs of the architectural community and have served our company well.

I was especially impressed by the listing of information sources in the December issue. This listing is a valuable reference guide that by itself is well worth the price of the entire subscription.

For the list of marketing sources I suggest the addition of the book Getting Back to the Basics of Public Relations and Publicity, Matthew J. Calligan and Dolph Green (Crown Publishers, Inc.). It gives a very good overview for those who are just starting a Public Relations campaign.

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Joint Credit
The VanTeekelenburgh house (Energy Portfolio, April 1986, p. 49) was designed by Raymond L. Caselli, Architect, of Morris-town, N.J., with M. Stephen Zlepiski (who, alone, was credited in our article). Both names appear on the contract with the owners and on the construction documents; Mr. Caselli sealed and filed plans with the municipality.

Codex Credits
Interior design of the Codex Corporation headquarters (Feb. 1987, p. 23–28) was by Carol Fippin, Inc., of Boston, who shares credit for the quality of the interiors with architects Koetter & Kim.

Contents Page Corrections
The Citation-winning research project on Predicting the Acoustical Qualities of Buildings, by Gary Walter Siebein (Jan. 1987, p. 135) was omitted from that issue's contents page.

The P/A Techics article on Industrialized Housing (Feb. 1987, p. 92 ff.) was written by Emanuel Levy, who was not credited on the contents page and whose by-line on the article was misspelled.

Name Change
Edward McCagg of TRA, quoted in the P/A Inquiry on airport terminals (March 1987, pp. 96–103) was incorrectly identified there as Theodore McCagg.
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Building Barcelona: 1873-1926

The Catalan Spirit: Gaudi and his Contemporaries (Cooper-Hewitt Museum, New York, through June 9) represents the most significant attempt to date at placing Antonio Gaudi (1852-1926) in context. The show, curated by Judith Roehr and George R. Collins, of Barcelona and New York respectively, successfully demonstrates that Gaudi was not operating in a vacuum, but was indeed part of the modern movement.

Revised Whitney Unveiled

One month after the Guggenheim Museum in New York unveiled a dramatically revised plan for its addition (P/A, March 1987, p. 40), the Whitney Museum of American Art, also in New York, has followed suit, making public a similarly downsized design by Michael Graves.

The addition, unveiled at the Whitney on March 10, is 24 percent smaller and 47 feet shorter than the original proposal (P/A, July 1985, p. 23 and Sept. 1985, p. 25). Most cuts were made in the superstructure, which has been reduced 60 percent.

... (continued on page 29)

Koolhaas and OMA Win The Hague City Hall Competition

After 80 years and myriad competitions and architectural commissions, the city of The Hague has a design for a new city hall ... or does it? Even as Rem Koolhaas of the Office for Metropolitan Architecture, Rotterdam, has received the jury's vote, word on the street in The Hague holds that the design by Hans Boot of Van den Broek en Bakema was favored by the public and that Richard Meier's design was the known choice of an influential city councilman and competition organizer. Other competitors were Helmut Jahn of Murphy/Jahn, Chicago, and the Cabinet Saubot et Julien, Paris, with the Webb Zerafa Menkes Housden Partnership, Toronto. OMA replaced orig-

Historian, Critic Remembered

It would be tempting and dramatic, but probably misleading, to say that the death of Henry-Russell Hitchcock at the age of 85 on February 19 marked the end of an era, for the scholarly standards that Hitchcock espoused have been passed on to students and admirers who will carry on his tradition of architec-
Koolhaas (continued from page 27) among eleven individuals named to the American Academy and Institute of Arts and Letters.

Aldo Rossi has been commissioned to design a new School of Architecture for the University of Miami.

Thomas S. Monaghan, Domino's Pizza president and architecture buff, has announced the establishment of a $20,000 challenge grant to be awarded annually to nonprofit organizations for the restoration of structures designed by Frank Lloyd Wright.

Bruce Goff's Bavinger House in Norman, Okla., will receive the 1987 Twenty-Five Year Award from the American Institute of Architects.

Ralph Rapson is the 1987 recipient of the Topaz Medallion for excellence in architectural education, awarded jointly by the AIA and the Association of Collegiate Schools of Architecture.

Lisa S. Taylor, director of the Cooper-Hewitt Museum (the Smithsonian Institution's National Museum of Design in New York) for nearly two decades, plans to resign because of ill health.

The Rotterdam Arts Council plans to found a new school of architecture called the Durand Institute. The private school is also intended to stir discussion of architecture in the Netherlands.

The Greyhound Terminal in Washington, D.C., has been designated a local historic landmark. The action is noteworthy because the original 1940, Art Deco structure is now hidden behind a 1976 façade, and the ruling sets an important precedent for other "slipcovered" buildings.

Office rental rates in the U.S. have dropped an average of $1.71 per square foot, according to a new survey by The Office Network. The average vacancy rate is 18.6 percent, up from 16.9 percent a year ago. Worst off is Dallas, with a 30.9 percent vacancy rate, followed closely by Houston with 30.6 percent.

Koolhaas's scheme, a city within a city hall, resembles a miniature Manhattan like that evoked in his famous manifesto Delirious New York. Along the southern edge of the site, a sunken plaza with skating rink, recalling that Koolhaas favorite Rockefeller Center, provides access to the new public library and fronts on the adjacent concert hall and dance theater (the latter also designed by Koolhaas). The bulk of the building forms a bar along the site's northern edge. Here, the Dutch preoccupation with shallow, slab-like office buildings has been both satisfied and subverted: Koolhaas takes a sandwich of three such buildings and carves them in such a way that the otherwise overbearing mass is reduced to a collage of more manageably scaled towers—an approach that Koolhaas compares with Michaelangelo's liberation of slaves from their marble bondage. The slab facades of the old city receive a traditional skin of stone, while a stainless-steel-clad counterpart faces the new city; between the two lies an "abstract horizon of glass." All in all, the scheme is a fanciful, idiosyncratic, yet for Koolhaas unusually subdued response to a difficult site and program.

Richard Meier responds to the asymmetries of the site with a Y-shaped range of institutional L-shaped buildings that hold between them an atrium of monumental proportions. That Meier's building, at ten stories, is shorter than the other four designs does not help lessen its apparent bulk. It is twice the height of its neighbors in the old city, to whom it would present a largely unbroken elevation half a kilometer long.

Both the scheme by Van den Broek en Bakema and that of the Cabinet Saubot et Julien are clearly of the new city. Their tight-skinned, mechanistic forms and reflective glass towers are at home among the decade-old office towers and government ministry buildings that rise to the east of the site. Based on public reaction, this is the glitzy imagery that many feel is most appropriate.

Helmut Jahn's design gets top marks for boldness, but the size of the bite seems to be more than either jury or public could chew. The scheme creates a series of vast indoor and outdoor public spaces at ground level. Floating ten stories above this base, a slab of government offices runs the entire length of the site, while a freestanding, constructivist tower marks the main entrance.

However, it is Ricardo Bofill, a nonparticipant in the city hall competition, who seems to be its uncontested winner. Bofill received the commission to design 850 units of housing, which will replace the current city hall on the Burg, de Monchy square in the residential neighborhood of Archipel. His design, though characteristic, is uncommonly responsive to context, its dark blue metal-slate roofs and the vertically proportioned, divided light windows a refreshingly modern reinterpretation of their 19th-Century counterparts.

Both the city hall competition and Bofill's housing represent an attempt to give new order to one of Europe's most disorganized cities. The Hague literally has no center; the current city hall sits on its own, far from the commercial center, transportation hubs, and both the national and European political districts of the city. These concerns are no surprise to the city fathers—the site of the current competition was first proposed as a new political and cultural center in 1909, and virtually each subsequent decade has seen either a competition or委托 for the site, producing designs by Berlage, Dudok and even Rem Koolhaas's grand-father, D. Roosevelt. If this latest competition comes to fruition, it will be a boon for The Hague and a coup for Koolhaas; but as 80 years of unrealized designs have shown, it's not over until it's over. Graham Wyatt

The author, an associate at Robert A.M. Stern Architects, New York, is working on projects for that office in Holland.

American proposals for The Hague City Hall: Meier (top) and Jahn (bottom).
P/A Wins Neal Award

Progressive Architecture has been awarded a Certificate of Merit in the 33rd annual Jesse H. Neal Editorial Achievement Awards competition, sponsored by the Association of Business Publishers. P/A Senior Editor Thomas Fisher accepted the certificate at a luncheon in New York on March 18.

The certificate recognizes the P/A Technics department, represented in the competition by three articles from the February, July, and August 1986 issues. P/A's entry was one of 32 award-winners, out of 676 entries.

Sharing credit for the submitted articles were art director Richelle J. Huff; associate art director Samuel G. Shelton; copy editor Virginia Chatfield; executive editor David A. Morton; and editor John Morris Dixon.

New at Lighting World

Promising “the latest in lighting today,” the sponsors of Lighting World are planning a new Preview of Products to take place the first afternoon of the three-day expo staged in New York's Jacob K. Javits Convention Center May 11 through 13.

In one 90-minute session starting at 2 P.M., manufacturers will preview their latest products and systems. The featured fixtures and controls will be selected by a panel from show sponsors—the International Association of Lighting Designers, the Illuminating Engineering Society of North America, and the New York Section of the Illuminating Engineering Society.

Also on May 11, Viennese architect Hans Hollein will deliver the keynote address at Lighting World. See special section, pages 129–196.

Barcelona (continued from page 27)

a larger cultural, religious, and political reawakening in Catalonia. Coming soon after exhibitions on Vienna (P/A, Aug. 1986, p. 23) and Berlin (P/A, Jan. 1987, p. 33), this one portrays fin-de-siècle Barcelona similarly as a fertile city for varied and rich conceptions in the fields of architecture, urbanism, and the decorative arts.

Idefons Cerda’s plan of 1859, which gave the city its characteristic chamfered blocks, set the stage for a flourishing movement, in gestation since the 1830s, known as La Renaixensa (renaisance). Medievalist and pluralist in scope, this movement found its greatest expression in the International Exposition of 1888. Notable examples in the show are Josep Vilaseca’s Casa Amatller, Barcelona, 1902, designed by Josep Puig i Cadafalch.

By 1900, another movement, nationalist and synthetic in spirit, began to take form with Gaudí as one of the protagonists. Among exemplary works of this new Modernisme we can find at the Cooper-Hewitt not only Gaudi’s Casa Batllo (1904–1907) and Casa Mila (1906–1910) but also Josep Puig i Cadafalch’s decoratively imperial Casa Amatller (1898–1900).

As the show clearly demonstrates, however, neither movement remained a lofty ideal realized in isolated buildings for the Catalan bourgeoisie on the one hand or the Catholic church on the other. In fact, Modernisme worked its way down to daily activities throughout the city, embellishing urban furniture, such as flower stands, street lamps, and fountains, and mass-produced domestic items. The show emphasizes not only the evolution of a particular style in architecture, but also parallel developments within various interrelated design fields. Josep Maria Jujol, a Gaudí disciple, is an important example, producing completely coherent buildings and interiors, with appropriate furniture, objects, and tiles.

This exhibition concentrates on original drawings, objects, and furniture. The selection of work and its casual chronological arrangement are superb. Most convincing is the entrance and main room at the museum, where dark wood paneling begins to suggest the dark medieval spaces found in Gaudí’s Palau Guell (1885–1889) or the interiors of Domènech i Montaner’s Casa Lleo Morera, without resorting to reproducing period rooms. The rest of the installation design, however, although not obtrusive, is rather bland and unrelated to the show’s flamboyant subject.

A forthcoming catalog accompanies the exhibition with four essays. Tragically enough, as Rohrer points out in her essay, Gaudi’s death in 1926, coupled with Le Corbusier’s visit in 1924 at the invitation of a group of architecture students led by Josep Lluís Sert, brought the era to an abrupt end.

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Hitchcock (continued from page 27)

Hitchcock's failure to recognize the importance of the "New Tradition" in his "Middle-of-the-Road" criticism was a result of his late engagement with the discipline of architectural history. Moreover, the aesthetic values that he supported in contemporary architecture survive today in the work of many practitioners. It would not be an exaggeration to assert, however, that Hitchcock's appearance in 1927—first as a writer with an inimitable, somewhat mannered syntax, then as teacher, curator, and museum director—was the beginning of an era.

To the professional no less than the layperson, Hitchcock brought a new, modernist sense of architecture's significance. His personal acquaintance with many of the most influential practitioners of the 20th Century, such as Frank Lloyd Wright, Le Corbusier, J.J.P. Oud, and Philip Johnson, lent his discussions of contemporary architecture a special urgency, but he was no less committed to revealing the sensual and emotional resonances of buildings from many epochs. Hitchcock's range as an architectural historian is probably unsurpassed.

His love of buildings—the sheer physical look and feel of them—led him to embrace works from apparently incompatible periods. Reluctant to discuss a building that he had not experienced first-hand, he traveled tirelessly in Europe and America, in later years assisted by his long-time companion Robert Schmitt.

Hitchcock donned the critic's mantle far more willingly than most of his fellow historians and curators. Making aesthetic judgments was an integral part of his method when considering buildings of the past no less than the present. Whether discussing architecture, landscape or urban design, he focused on formal elements, and especially enjoyed tracking down the antecedents for motifs that appeared completely original. Although a committed liberal who in his private life was deeply concerned with social issues, Hitchcock concentrated his professional energies on the visual and kinesthetic properties of buildings. His training at Harvard University's Fogg Museum, where connoisseurship was emphasized, doubtless contributed to this preference, but his distrust of self-serving ideologies in architecture surely played a role.

Unwittingly, Hitchcock became a tastemaker, but he was not the single-minded proselytizer for the International Style that he has been painted. His vision of Modernism was never monolithic. As Vincent Scully has reminded us, Hitchcock's identification in 1929 of the "New Tradition" provided the genealogy for an alternative and still progressive, 20th-Century architecture. Hitchcock may have introduced the American public to avant-garde architecture, painting, and music, but he also reintroduced Victorian design and Dutch gables.

Both as historian and critic, Hitchcock preferred architects such as H.H. Richardson and J.J.P. Oud, in whose work could be traced an orderly progression towards mastery. Although he would, at Wright's invitation, publish in 1942 what remains the most comprehensive consideration of that architect's career, ten years earlier in The International Style, he had expressed regret for the "lack of continuity in (Wright's) development."

In his introduction to The Architecture of Skidmore, Owings & Merrill of 1962, Hitchcock contrasted himself to "the liberal critic (who) will respond to the excitement of perpetual novelty," as well as to "the conservative critic (who) will regret that the 'high' period of modern architecture is over." He acknowledged that, on the contrary, "this middle-of-the-road critic...retain(s) the conviction that on balance the massive preparation of SOM is a better omen for success than the impetuousness of those (viz. Alvar Aalto, Louis Kahn, Manoru Yamasaki, and Eero Saarinen) who change their esthetic goals almost from building to building."

Hitchcock's failing health over the last three years forced him to curtail lectures and writings. His influence however has endured, not only through the publications, many consistently reprinted, but also through his continued engagement with the discipline of architectural history and the profession of architecture. Until the last months of his life, this generous scholar remained eager to engage in stimulating dialogue with architects, historians, and critics of all ages. By the many beneficiaries of his incisive intellectual warm hospitality he will be perpetually missed. Helen Searing

The author is professor of architectural history at Smith College.
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Two adjacent projects on the Boston Harbor have been planned by Cesar Pelli and Kallmann McKinnell & Wood, with buildings by a host of other architects.

New Design for Boston Piers

As regularly as the tides, the Boston promoters and designers of the adjacent Fan Pier and Pier 4 projects have evoked "the River Seine," "the Back Bay," "the Piazza San Marco in Venice," and "the Galleria in Milan" when speaking of their plans.

The pair of projects together total a billion dollars and five million square feet of development on Boston’s Inner Harbor. Five times the size of the Prudential complex, which started this city’s building boom two decades ago, the combined 35-acre plan is the biggest project since the building of the Back Bay.

Now undergoing intense review from the Boston Redevelopment Agency and various citizens’ groups after a conditional okay from the state secretary of environmental affairs in mid-February, the project also covers the last major waterfront lot in the city’s densely developed downtown.

The Fan Pier plan, for residences and offices, a hotel, a cultural center, and assorted parks and lagoons occupying piers 1, 2, and 3 at the mouth of Boston’s Fort Point Channel, comes bearing the tags of six major architects. The 18.5-acre site features an urban plan by Cesar Pelli & Associates, New Haven, and buildings by Frank Gehry, Venice, Calif.; Hammond Beeby Babka, Chicago; Koetter, Kim & Associates, Boston; Rafael Moneo, Cambridge; Pelli; Robert A.M. Stern Architects, New York; and Venturi, Rauch & Scott Brown, Philadelphia.

The other 16.5-acre segment on the adjacent Pier 4 features a plan by Kallmann, McKinnell & Wood, Boston, for a hotel, a seven-story retail building and four towers of 9, 16, 26 and 27 stories.

The two sites, which appear to be only marginally integrated, hold an assemblage of varied buildings, from a 47-story Hyatt hotel to low-rise condominiums, with far less signature than the
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The amenities of both site plans have more appeal. Pelli's new canal lined with shops, for example, seems artful. (Critics claim, however, that this segment will stay permanently in shadow.) A lagoon and marina provide a picturesque focus in some views. McKinnell's plaza makes the projects' most congenial public gesture. But the basic decision to create a hard-edged, highrise gridded city by the water, wrapped by roads and penetrated by parking for 5150 cars, makes the entourage more of an island than the public waterside place promoted.

Though now a barren and bleak parking lot for 1500 cars, the piers have attracted greater public scrutiny as new structures on neighboring sites—the new Rowes Wharf (SOM) and Marriott Hotel (Araldo Cossutta)—wall off the waterfront. South Boston neighbors now voice concern about the impact of this affluent development on their neighborhood. Conservationists have expressed concern about new sewage demands as the city cleans its old harbor. The potential traffic pile-up has united any number of opponents. "The project will cost its private developers $1.075 billion, but public expenditures for necessary and assumed infrastructure improvements will more than double the price tag," the Conservation Law Foundation observed.

Some criticisms, however, have already been taken into account. The architects are considering limited redesign, and the developers are sponsoring a $50,000 study of traffic impact.

Whoever and whatever prevails, critics will no doubt continue to insist that the pier developers and planners bear in mind the Back Bay environment they invoke: The pedestrian scale and parklike quality of that district should be their model, if not its 50-year building time.

Jane Holtz Kay

McKinnell design for Pier 4.
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5 Shonan-dai Cultural Center, Fugisawa City. Architect: Itsuko Hasegawa, Tokyo. Winner of the 1986 competition for Fugisawa City’s Shonandai Cultural Center, Itsuko Hasegawa is perhaps Japan’s best known woman architect. The center’s program called for a civic auditorium and theater, a children’s museum, a planetarium, gymnasium, restaurant, various support spaces, government offices, and parking totaling 13,000 square meters. These facilities are interlocked in a space-age landscape dominated by geodesic domes covering the auditorium, planetarium, and a radio satellite studio. A mountain range of small, gable-roofed elements lines one side of the site; a raised terrace and water course furnish elements of earth and water. Three underground levels contain the gym, museum, and parking. The 20 by 50 meter site is tied to an adjacent park by a pedestrian bridge over a main street. The center is to be built in two stages over the next three years, beginning this summer.

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Through May 19

Through May 20

Through May 31

Through June 7

Through June 9

Through June 28

May 5–31
Le Corbusier at Geneve (1922–1932). Immeuble Clarte & Galerie Bonnier, Geneva, Switzerland.

May 28–June 26
The Art of Tall Building. Gallery at the Old Post Office, Dayton, Ohio.

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Deadline, Du Pont Hypolalamus Excellence in Architecture Awards. Contact Bill Onderick, Du Pont Company, External Affairs Department, Wilmington, Del. 19898 (302) 774-9471.

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Deadline, Second Annual DataCash Contest for projects using DataCAD. Contact Lou Bodnar, Microtech Corp., 617 W. Main St., Charlottesville, Va. 22901 (804) 295-2600.

(continued on page 51)
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Application Deadline, Architec-
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of Collegiate Schools of Archite-
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June 15
Deadline, East Meets West in
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June 15
Application deadline, Fulbright
Scholar Awards. For program
details contact Council for Inter-
national Exchange of Scholars,
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ington, D.C. 20036-1257 (202)
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June 19
Deadline, Town of Leesburg
Design Competition. Contact
Competition Project Director,
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burg, Va. 22075 (703) 777-2420.

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April 25-26
The Baroque: Its Power Today,
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(continued on page 56)
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Calendar (continued from page 51)

April 25–29

May 2–10

May 6–10
Scandinavian Furniture Fair, Bella Center Exhibition Hall, Copenhagen, Denmark. Contact Gura Public Relations, 156 Fifth Ave., New York, N.Y. 10010.

May 10–16

May 11–13

May 29–June 2
Environmental Design Research Association Conference, Ottawa, Canada. Contact Conference Coordinator, EDRA, L'Enfant Plaza Station, P.O. Box 23129, Washington, D.C. 20024.

June 9–12

June 14–19
Success and Failure, 37th Annual International Design Conference, Aspen, Colo. Contact International Design Conference in Aspen, P.O. Box 664, Aspen, Colo. 81612.

June 19–22

June 23–26
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Circle No. 334
Management: Collaborating with Artists

The collaboration of artists and architects has drawn increasing attention in recent years. This trend is due, in part, to Post-Modernism's celebration of ornamentation on buildings, but it is also due to a rediscovery of a collaborative tradition. Many of the celebrated buildings of the past were the result of successful collaborations of disciplines that were not so specialized that they wore the names "architect," "landscape designer," or "artist."

Economics has been a major factor in this trend. "In today's market, both the developer and the architect should realize that artwork in a building is not only important and highly desirable, but essential. It makes a better building," notes architect Vlastimil Koubek. Legislation, too, has played a role, giving us the various "Percent for Art" programs at local, state, and federal levels, that allocate from ½ to 2½ percent of construction costs for artwork. "Unfortunately," notes Francoise Yohalem, Washington-based art consultant, "sculpture is often just plopped in front of a new building. Dwarfed by the architecture, it struggles for an identity, unable to compete with the mass of the building, unable to create its own special place."

This makes collaboration vital, from the earliest possible stage. Yet most architects and artists have not been trained to work together, as schools have maintained these as separate disciplines and not encouraged crossover. Indeed, most architects and artists have viewed the collaborative process, until recently, with a wary eye and have engaged in it only reluctantly. Both artist and architect must realize that they can work together and that a successful collaboration can enhance rather than diminish the work of either one. With some guidelines, the process should be not only rewarding, but enjoyable.

Timing
Architects, artists, and consultants alike agree that this is the most crucial part of the project. All too often the artwork is a major focal point of the design, but the decision is made to get to it later. If it is not a line item in the budget, it is easy to eliminate the piece, leaving a focus on a blank space.

Equally damaging can be efforts to plan for art without the artist's input. Done with all good intentions, bases are made for sculpture, atriums are designed for hanging pieces, and walls are recessed for murals without an understanding of the piece that may go there. Not only can this be restrictive for the artist but it is usually costly, as walls, floors, and ceilings have to be retrofitted to receive the art.

Planning with the artist can save time and money. The lighting of the art is a prime example. Although fine tuning cannot be done until the piece is installed, planning for its lighting will save expensive change orders later on, and eliminate the need to replace useless fluorescent coves or wall washers that are improperly placed. Early involvement of the artist can also have a major impact on the overall design. Notes gallery owner Max Proetch, "The way buildings are designed and fees are set, the architect cannot always concentrate on what is a relatively small space. For the artist, though, this might be a very large space, and for a modest commission, he can afford to concentrate all his energies into making it special."

Selection
Having a working knowledge of the art world is a great place to start, but a lack of it should not be a deterrent. More and more museums have advisory services, and consultants abound. A number of architectural and design firms are now adding art consultants to their staff on a full or part time basis.

Money spent early in the selection process is often the most important use of funds. Reviewing (continued on page 68)

Law: Strategies for the Small Firm

In the past few years, there has been great attention directed to the issue of legal liability in architectural practice. Not surprisingly, much of the work has come from lawyers who, perhaps even less surprisingly, often suggest the involvement of legal personnel in situations throughout the construction process. Furthermore, many of their ideas are framed in legalistic language and tend to reflect the perspective of the lawyer rather than that of the practitioner. Although much of this information is extremely valuable, it tends to be geared toward larger practices; they, after all, are more likely to be able to afford the considerable fees that such services command (in Wisconsin, for example, appropriate legal advice will cost between $75 and $150 per hour) or can employ individuals to concentrate on law/practice-related issues and make the best use of the available information. However, the American Institute of Architects estimates that less than 5 percent of architectural firms employ more than ten architects, while 62 percent are simply one-person practices. The likelihood, therefore, of the majority of practices either being able to afford much legal advice or having a workforce devoted solely to liability does not seem high. Also, much of the available advice may be inappropriate or hard to implement.

Developing a Defensive Mind
An analysis of numerous cases involving architects suggests that, although the standard of performance expected by the courts has risen, there are still many instances where litigation is caused by actions of the architects that were taken with little understanding of their implications. For example, a variety of cases can be cited involving poor contract formulation, where problems have arisen because of inadequate attention to establishing (continued on page 72)
Aesthetics and Collaboration
One of the biggest fears artists have of the collaborative process is its effect on the creative process. The selection process itself will help alleviate some of these fears. By viewing the artist as part of the design team from the start, the collaboration is made easier. Ken DeMay, of Sasaki Associates, points out that, for them, collaboration is a constant. With landscape architects on one side and interior designers on the other, architecture has always been a team effort; adding an artist is just a continuation of the design process.

Much of the success of a project revolves around the confidence architect and artist have working together. Early work with maquettes and sketches does much to establish this as do well-defined parameters for the artist. Careful studies of the site, covering its flow of traffic, lighting, use, maintenance, and historical and cultural concerns, must all be considered.

Art Consultants
In many collaborations, there is no need to get a consultant involved. There are artists who have been worked successfully with architects without intermediaries. Past collaborations or recommendations from other architects will often suffice.

When consultants are required, there are many ways to work with them, from selecting them as an artist, to coordinating the whole project, to a continuing involvement with both education and curatorial duties. A good consultant not only can get the process started, doing site analysis, making budget recommendations, and working with the architect on the selection, but can make sure that contracts are established properly, work is on schedule, and any problems are resolved.

Beatrix Medinger, president of the Association of Professional Art Advisors, points out that after the art is selected, the advisor should be involved in both curatorial and educational activities, helping the community understand the art and establishing a care and maintenance program. This follow-up work often plays a major role in the success of an art program.

Galleries that handle the artist’s work can be a good place to start for contracts and scheduling, and the Association of Professional Art Advisors, whose members work strictly as advisors with no financial interest in the art, is a good source for consultants. “An art collection is the most highly informed and accessible statement that a company makes about itself, next to the building itself,” notes Joan Kaplan of Joan Kaplan Fine Art. “Senior management should make the same informed choice about its art advisor as it does for its architect, lawyers, and other professional advisors.”

Other Consultants
There are other roles a consultant can play as well, as Henry Vasquez of Fine Art Consulting Service explains: “There is a lot to watch out for in commissioned art. For many artists this is the first time working in new materials and on a large scale.” For some, the transition is perfectly natural; others need coaxing and guidance.

Joyce Pomeroy Schwartz, a consultant for many major public art projects, advocates hiring a troubleshooter/fabricator to work with the artist. Many large commissions mix various media as well as cross established lines of responsibilities. A troubleshooter will often work with various fabricators to coordinate the work of the artist, architect, and landscape architect.

A good installer should become involved early in the project as well. Although it is usually preferable to install the artwork last, there are times when it makes more sense to install it early and protect the piece. A good installer can also make recommendations about fabrication and construction that will make the final installation easier.

Larry Doherty of Fine Arts Express notes that their getting involved up front has often resulted in savings of more than their fee. On large pieces, engineering plays an important role. Art advisor Mary Zlot specifies outside engineering reports in the contract, to insure that this type of work is not left to chance.

Hiring the Artist
It is best to specify a turn-key operation with the artist responsible for design, production, shipping, and installation. Fortunately, with the complexity of most large projects, this is becoming increasingly difficult. Another approach is to hire the artist as a consultant, paying a fee for the work; the architect then assumes responsibility for the other areas of the project.

Management (continued from page 67)
previous work, either completed pieces or sketches or maquettes, can winnow the selection down to a few artists or even a single artist. At this point a series of sketches or maquettes from the artist will show how he works, and how well he can relate to the space. The creative process being what it is, the first few ideas might be totally off the mark, but the collaboration might feel right. What you are looking for is creativity as well as craftsmanship; testing and searching are part of the early stages of any collaboration.

While an architect should understand the artist’s work to make a successful installation, responsibility should not be the architect’s alone. The artist working on a commission should understand the architect’s requirements as well. An artist who can read blueprints, understand the structural requirements of his work, and give input into the lighting requirements will help the project flow more smoothly.

P/A PRACTICE
Paul Sisko sculpture at Merrill Lynch Executive Center.

Management (continued from page 67)
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This saves the artist from playing hardball with the contractor, putting the onus of change orders related to the art on the architect, who is better equipped to deal with them.

Payment Schedule
Most payments are tied to a review process, and so act to monitor the progress of the work. The payment schedule usually is one third in advance, one third upon approval of the final design, and the balance upon completion. Coupled with a maquette fee for preliminary design, this provides natural stopping points that make the creative process seem less all-or-nothing and generally makes clients and architects alike feel more comfortable with the collaboration. Also, when determining the schedule of payments, consider the cost of fabrication. Artists are usually not prepared or equipped to carry even part of the cost of fabrication.

If the commission is cancelled for any reason, payments made up to that point are generally considered payment for work completed. If the artist has completed the piece on schedule and there is a delay in acceptance, final payment is usually made with the stipulation that the artist still be responsible for overseeing installation. Storage fees are usually assumed by the client at this point, but this should be addressed in the initial contract.

Contracts
The best contracts tend to be those between the owner and the artist directly; the worst, those that go through the general contractor. Contracts should be site specific and cover installation, shipping, and fabrication.

There is a temptation to take a standard contract for buildings and use it for the artist. This seldom works, for much of it does not apply, and the time spent redefining it with lawyers usually is not justified by the size of the commission. Many artists work with simple letters of agreement, trying to cover as many details as possible.

With the advent of Percent for Art programs, many of the administering organizations have developed standard contracts that are available. New York’s Volunteer Lawyers for the Arts, with Columbia University School of Law, has developed an annotated model agreement for commissioning a work of public art. Not only is this a good reference for a contract, but it is an insightful look at the whole process of producing a work of commissioned art.

Most artists lose money or break even at best in the preliminary maquette stage of a commissioned piece, so both the rights to and the physical sketches or models generally belong to the artist. Sometimes even the commission itself is at best break-even, and the right to sell sketches, drawings, or models is the artist's only hope financially.

In virtually all cases, the artist maintains the copyright to the piece. There are sometimes restrictions placed on how the images might be used. Equally important is the issue of credit, both for the architect and the artist. In a collaboration, the work of the artist, architect, and landscape architect often merge, and proper credit should be given on all press releases and documentation.

There has been a trend towards the inclusion of arbitration clauses in artists' contracts, because most artists are ill-prepared for the cost of litigation, and the subject itself is so subjective that a specialized panel can deal with it more thoroughly. Other areas to consider including in contracts are resale clauses, a warranty on the workmanship, and maintenance.

Budget
With the recognition of the importance of art in buildings, there has come increased confusion as to how much to spend. Very rarely are there previous budgets with good guidelines for art. Fortunately, the numbers are becoming increasingly consistent. The Percent for Art programs range from 1/2 to 2 1/2 percent of the total cost of the building, and most private development seems to mirror that, with the percentage occasionally going up as high as 5 percent. Most consultants agree that 1 1/2 to 2 1/2 percent is enough to do a good job. All this, of course, depends on what the client wishes to achieve.

Maintenance
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Management (continued from page 70)

frequently at best, but this insures continuity and involvement of the right people.

Shipping

The mere mention of shipping artwork brings chills to the most experienced project managers. With the increasing use of public art, however, there have sprung up a number of companies that specialize in shipping art. With years of museum experience behind them and special trucks and crating departments, it is no longer the problem that it is perceived to be. Some companies maintain regular routes so some scheduling here can avoid additional costs.

Installation

Many of the same people who ship art have installation crews who are often museum trained. Used to working on site, they can develop a rapport with subcontractors, which makes the workflow smooth. This avoids the problem of trying to use the best carpenter on the job and praying a lot.

Lighting

Early discussions of the lighting are of prime importance. Once a client has spent vast sums on the artwork, it is hard to go back and ask for more for the lighting. The lighting consultant and the artist have to work in concert. What may be a correct lighting solution may not show off best the texture of the piece or capture nuances that the artist is trying to create.

Security

Fortunately, one of the best solutions for securing a piece of art is the art itself. Areas of buildings traditionally covered with graffiti are usually unmarrered when art is placed there, and even small pieces of sculpture are generally left alone. Here again, education and community involvement play a major role. When a piece of artwork becomes important to the community, it is rarely bothered. For smaller pieces of art there are a number of security brackets that have been devised for protection.

In both the public and private sectors, the collaboration of artists and architects is a growing phenomenon. Yet, notes Joyce Pomeroy Schwartz, "Much public art selection bypasses the architect, and this is a mistake. Most architects end up working with the artist whether they have selected him or not." Understanding and embracing this process will afford the architect more control, resulting in more exciting and better buildings. Stephen Knapp

The author is an artist living in Worcester, Mass., with extensive experience producing art works for buildings.

Law (continued from page 67)

In an increasingly litigious environment, it is vital that every action taken by the architect is carefully thought out and, if possible, reviewed dispassionately as if it were being scrutinized several years later by an impartial third party, which is how it is likely to be treated if a dispute goes to court. This requires the adequate recording of all decisions or discussions that involve money, time, the nature of the project, or the relationships among the parties.

The process begins with the contract between the architect and the client (which preferably should be standardized), and continues through all levels of communication between all parties. Important decisions should be transmitted or confirmed in writing, and all telephone conversations noted, and if necessary, supplemented with a written communication. Such activity creates an effective "paper trail" through each project that can be referred to at a later date if problems arise. In the absence of documented proof of what happened and why, court decisions may hinge on one person’s word against another, which may entail conflicting or inaccurate accounts of past events.

In addition to the adequacy of good records, the habit of thinking ahead to the implications of one’s actions and their interpretation by a third party is in itself a useful if pessimistic exercise, helping the architect to develop a continuously watchful, defen-
sive posture. The act of preparing for problems thus may help to minimize their occurrence and reduce the liability threat accordingly.

Weighing Up the Risk
The architect is exposed to a variety of risks, and it is important to assess the nature and extent of these risks in each situation. Indemnifications or warranties may be sought, or insurance policies purchased to provide some degree of protection to the architect. Where additional or unusual risks appear in new or ongoing jobs, it is important to determine whether they are worth the trouble. A heightened threat of future problems may be considered acceptable if the remuneration is adequate, which may involve the negotiation of higher fees or additional services. Conversely, the expansion of liability by taking actions without adequate consideration or compensation is both dangerous and financially inept. This may seem self-evident, but many architects provide services, often unknowingly, that go beyond their conventional duties without requesting extra pay, even though the extra work inevitably involves an increased risk. Stopping or changing work on site or instructing the contractor as to construction or safety matters are typical examples. Again, the development of a defensive, forward-looking attitude toward the implications of all actions and activities is in itself likely to lessen the potential outcome of many legal problems.

When You Need Advice
In the case of contract modifications or legal action taken against the practice, it would be unwise to cope with the situation without expert, professional advice. However, in some circumstances, it may be possible to secure assistance without immediate recourse to the law. The American Institute of Architects, for example, maintains a legal staff at its headquarters in Washington that is very knowledgeable in the liability field. Although they are unlikely to provide specific legal advice over the telephone, they may be able to give some direction to the practitioner. In addition, the AIA has established the CAL Resource Team, which provides a hotline for members with questions concerning compensation, and published the “AIA Liability Strategy Guide: State Legislative Remedies.” Similarly, state chapters may provide some assist-

ance; the Wisconsin Society of Architects, for example, has a lien hotline and often publishes useful legal tips in its monthly journal. It is possible that such help may not be applicable or useful in particular cases, although the investment of the cost of a telephone call (sometimes a toll-free number) is modest enough to make the process worthwhile.

Other sources of free information may also be useful. Universities, for example, may be a source of reference and expertise, and calls to Departments of Architecture, Engineering, or Law may yield some valuable advice or direction. Public libraries, some of which maintain extensive “Ready Reference” services, may be a good starting point, while various public agencies, such as Public Health or Building Inspection, may provide useful information. Although legal aid is unlikely to be available to practitioners, some cities offer services, including the Better Business Bureau and Consumer Advice/Protection agencies, that could be useful in securing advice or information.

When You Need a Lawyer
When matters should be dealt with by a lawyer, the expenses incurred are secondary to the expert handling of the situation. In these cases, a suitable attorney’s office should be selected carefully and their services utilized effectively. As most legal services are billed on an hourly rate, it is important not to waste time in consultation with long-winded or scrambled accounts of the problem. If it involves a complex series of events, it is advisable to prepare all documentation in chronological order to facilitate its discussion. In addition, a brief account of the facts and important dates of the project and an outline of the problem may be useful both to give the attorney an introduction to the case and to clarify the major issues in the mind of the architect. Any questions that the latter may wish to ask should also (continued on page 74)
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Three Houses

As unlike each other as they are unlike the houses around them, these three, each a Citation winner in the P/A Awards program, pursue design directions that derive from recognized masters yet go well beyond pure derivation.

A time-honored truism holds that houses offer the architect an unequals laboratory, a field in which to try out or perfect a philosophy within the art of architecture. It has also been obvious in recent times that it is no longer scandalous to admit one's sources of inspiration, even if it is the intent from the outset to modify or combine those sources. In following up on three previous P/A Awards Citation winners (of the four in this issue), both of those points are prominently illustrated. All of these houses are clearly Modernist, yet with fascinating modifications in allusions the architects discuss readily. The cast of references is just as interesting—Scarpa, Wright, Greene & Greene, Mies, Corbusier, and several others. These houses are not derivative in the negative meaning of that term, yet all of them owe something to earlier precedents; they are not Post-Modern, but are born of the reevaluation that the "dread" PM movement prompted. It was well worth all the posturing, the counterposturing, and the soul-searching. Jim Murphy
A Marriage of Disciplines

A house that aspires to heroic goals in both craftsmanship and energy technology, this design by architect Arne Bystrom is an assured answer to those and other related challenges.

IT takes imagination to conjure up a picture of how Trail Creek Valley must have looked to Ernest Hemingway before his death in 1961. A modest and relatively untended monument to him maintains a position overlooking this valley, reminding visitors of his love for the Sun Valley area in Idaho. Trail Creek still tumbles past below this vantage point, lined by a golf course which, while not the natural landscape, nevertheless provides a green belt. The immense power of the hills and mountains and vistas still controls any perception of the place, despite a fair amount of aggressive construction.

The houses that line the southeast side of Trail Creek Valley are expensive, assertive, and largely architecturally uninspired. An exception to the latter is to be found in their midst; nothing about the 8600-square-foot house shown here, a P/A Awards Citation winner (P/A, Jan. 1985, p. 128), is ordinary. Designed by Seattle architect Arne Bystrom, it is not inexpensive, and is assertive in its own way. But sited between two other houses and viewed end-on from the street, it is far from overwhelming, approached in the normal way. Arriving from the center of Sun Valley, a visitor can just see the distinctive roof form—a sheltering bent plane—hovering above the adjacent meadow. The form is meant to recall the roll of the terrain beyond, and the full extent of what it shelters is not apparent until closer inspection begins to unfold the complexity of the house.

In addition to the sweeping roof gesture, the imagery sought by the owner and the architect was one of combined craftsmanship and technical sophistication. Craft permeates the entire building, while the technology is most directly expressed by the white glazing frames and suspended solar collectors; the rest of the intense solar and energy measures are much less evident. Berms on the northeast perimeter of the house, and the broad, sloping copper roof protect against the snow season, and passages through the berms are simply not used at that time of the year.

In plan, the rooms are arranged in an offset, sawtooth configuration. This allows the best solar orientation, and an autonomy for each of the bedroom/bath/dressing suites on the upper and lower levels, of which there are five, including the master bedroom but excluding the caretaker studio. All of these suites are basically self-contained and front on a “solar gallery” encapsulated by the
and Scarpa in the details. Among those, the gates, railings, and fireplace screen combine with ceramic tile banding and edging.

Interior paneling and woodwork produce the overall effect of one cohesive declaration, that of a fine cabinetmaker. All cabinets, in fact, are faced with doors and drawers of redwood, inlaid with fir detailing; the same routed cross-hatching first noted on the outside occurs in courses inside, reinforcing the effect of tile and wood banding where concrete is exposed. Probably the most prominent examples of wood craftsmanship are the two main stair compositions, one a spiral and the other boldly bracketed from the wall in the entry space. It is not possible, in less space than a book, to describe all the design facets of the house. The examples shown here will have to be taken as typical and illustrative of the whole.

Having invested so many months of their time, the builders and various tradespeople—a mostly young and enthusiastic group of men and women—were somewhat at a loss about how they could now return to building "normal" houses. It will probably be a long time before such a client/architect pair come along. Perhaps never, in Sun Valley. Jim Murphy

Arrival from the street is by way of the paneled garage doors (top left), where the craft aspects of the wood and the technical imagery of the suspended collector array begin to become recognized as an intentional design direction. Only from the field south/southwest of the house (top right and preceding page) is the full complexity of the merged disciplines obvious. On the bermed north side (bottom left), the standing seam copper roof and laminated structural members hover just above the embankment and the exit/entry slots, minimizing exposure in that direction, yet allowing access to the tennis courts beyond in warm weather. On the way to the entry, a visitor passes carefully detailed walls and gates (above) with a tile threshold and a water-filled moat, beyond which is a courtyard with fountains. Directly inside the solar gallery from the courtyard (facing page) is one of the spectacular stairs, a spiral, with a sunken spa beyond it. Operable sash and fixed glazing permit light and ventilation into the bedrooms; fixed glass is detailed in between the projecting wood members in lower bedrooms, above awning windows.
Stairway to the upper bedrooms (above left) is another example of the amount of time lavished on careful detailing, with its intricate bracket, handrail, and tread assembly. Medium red tile banding is typical of the condition at exposed concrete walls. From the entry, a visitor passes the kitchen/dining area (below), located under the master bedroom suite. The dining table and chairs are the creation of the architect as well. From the dining area, a mezzanine overlooks the living area (above right and facing page) and the view over the valley and golf course beyond. The focus of the living space, the fireplace, is a few steps further down, enclosed by an almost Wrightian iron and glass folding screen. As in cabinetry throughout the house, the redwood door and drawer fronts are inlaid with fir bands; the wood, concrete, tile, and metal detailing is impeccable, and the level of craft by the builders and finishers follows suit. All blinds along the south wall are computer-controlled to get maximum gain or shading, as needed for comfort in the space.
Bedrooms each have bath and dressing spaces; one, on the lower level, is shared with living areas, but the other four suites are self-contained. As is common on the lower level, walls in bath (above) and bedroom areas are exposed concrete with a warm-toned aggregate, banded with ceramic tile. Upper level bedrooms (below) have the feeling of separate cottages, with their own climate and daylighting controls. Individual blinds for each section of the interior window wall retract into pockets in the sill below, and have angled tops to seal against the pitched members of the roof above. Conditioning of the air temperature in these spaces is separately controlled, independent of the solar gallery beyond, and can be monitored by the central computer. Operable sash allows fresh air ventilation in each room.

Structure, whether for the stair or the roof, is treated with the same care as the cabinetry (facing page, top). The lyrical water wheel, by The British Engineerium in England (facing page, center), is an expression of the client's interest in engines; it incorporates a locomotivelike set of pistons, driven by the wheel. At dusk, the house is dramatically lighted to reveal its spaces to the outside.
Project: Sun Valley House, Sun Valley, Idaho.
Site: large parcel along residential road, sloping from road level down 30 feet to golf course. Elevation is 6000 feet, in a transitional zone between high prairie and alpine, subject to heavy snows.
Program: second home for California clients; strong emphasis on energy and technology, with equal stress on craft and alpine tradition.
Structural system: concrete foundations and lower walls; glued laminated beams, purlins, and decking on redwood columns.
Major materials: copper standing seam roof, redwood, fir, cedar decking, special glazing system, ceramic tile, and ground and/or sandblasted architectural concrete (see Building Materials, p. 206).
Mechanical system: computer-controlled shading and ventilating; heat pipe solar collectors and passive solar rock bin storage, gas-fired boiler and conventional air-handling equipment backup, with fin tube radiators.
Consultants: ENSAR Group, solar design; Ian Mackinlay, snow design; Darrold Bolton, structural; Torgerson-Yingling Associates, electrical; Robert Murase, Murase Associates, landscape.
Contractor: Grabher Construction.
Costs/client: withheld by request.
Photos: John Fulkner.
The interior of the pavilion clearly demonstrates the opposition of rotated to "un-rotated" plan: the shell of the building is rotated at an angle to the main house, while the central core (which includes bookcases, above at far right) and the poché "solids" from which the seating alcove and desk (above, at left) were carved align with the main house's axis. This creates the triangular "sliver" of space between the garden façade wall and the wall that brackets the central core (facing page, with bathroom door and ladder to storage loft at right, entrance at rear). The parallel white lines on the floor trace a "circulation swath" on the rotated grid, while the black lines define the "un-rotated" axis.
The axis from the entrance (facing page) ends in a square window, above the desk, which offers a glimpse of the main house beyond. The bookshelves and loft (above right, loft is reached by ladder) are carved out of the exterior of the central core, while the seating alcove (above left) is carved out of the poché at the eastern end of the building. Above the alcove is a sleeping loft that is reached by a narrow oak stair, which begins to the left of the alcove and which can be seen winding around behind it. The air return grille above the bookshelves is intended as a “microcosm” of the shelves’ grid, while the square window and cloud form above the alcove mark the sleeping loft.

Project: Garden pavilion, Atlanta, Ga.
Client: Anthony Ames.
Site: a one-acre wooded lot in a residential neighborhood.
Program: a 570-sq-ft studio and guest house.
Structural system: concrete columns, steel platform, wood framing.
Major materials: synthetic stucco, glass block, and exterior grade gypsum board (see Building Materials, p. 206).
Mechanical system: electric furnace and air conditioning.

General contractor: Harben Construction Company; Sawhorse Inc.
Costs: withheld at client’s request.
Photos: Stephen Brooke.
On the Wall

A jewellike house by UKZ Architects introduces Modernism to a colonial suburb of New Jersey and investigates the nature of the wall.
When viewed from the northwest, the concrete block garden wall that runs through the house is clearly visible. The wall continues inside to form the rear wall of the glass-faced living room, which faces the more public side of the house toward the large front garden. The marine-grade mahogany-finished plywood panels, which are used both inside and outside the house, were a compromise solution that was reached after other solutions were either rejected or too expensive.
"THIS is a Colonial neighborhood!" asserted one perturbed member of the community planning board when UKZ revealed drawings for their P/A Award citation winning Knee Residence (P/A, Jan. 1984, p. 124). The problem, however, was not so much that the house wasn't Colonial, or even that it was uncompromisingly Modernist. The community seemed more perturbed by the materials. The glass and stone (or at least what looked like stone) building was too stark and did not produce an aesthetic deemed appropriate for the pastoral suburban neighborhood.

The entire upper story of the house appeared to be stone, but it was actually faced in horizontal wood plank siding, painted and scored in the 18th-Century manner to look like stone. This was what the community objected to, and finally an agreement was reached to change the material to natural vertical planking. That turned out to be much too expensive, though, when finally costed out (this house was built very economically), and all parties finally agreed on the unusual but brilliantly inventive solution of using the marine-grade, mahogany-faced plywood panels now in place. Some of the neighbors still don't like what they call "that house," but it does now have a degree of coziness acceptable to the community.

Although the house appears to be Miesian, especially in plan, strictly speaking it is not, the architects explain. But to the degree that it deals with "the universal quality of stylistic language of each component," contributing "to the abstract qualities of ... a three-dimensional collage," as did the Hobbs house (P/A, July 1982, p. 88), it is very much concerned with the Miesian mode of Modernism. Like that earlier house and the later Wiemer winery (P/A, April 1985, p. 98), it departs radically from a main concern of the Miesian country houses, which dealt with the abstract positioning of planes in space, thus creating ambiguous or unclearly defined space. Instead, it concentrates on the non-Miesian notion of clearly defined volume-object, for which there is no ambiguity.

The house is composed of two primary elements: an L-shaped wood-frame building and an L-shaped concrete block garden wall that intersects the house and becomes a major part of it. At the ground level, the wall divides the house into public and private zones, and it extends into the landscape (very much in Miesian fashion) to continue the demarcation of open vs. closed, of formal and informal spaces.

In order for the living room to be seen almost as a "public outdoor pavilion," enclosed only by the garden wall and a full-height glass wall, the rooms above it have been cantilevered by means of a bridge-type structure to free that ground-floor space of any supporting function above it. Inside the living room, from the top of the garden wall to the ceiling, a clear glass band suggests nothing above it; the only obvious support for the upper floor is a large column (unnecessary, the architects say) outside the living room.

In contrast to the public, formal side of the house, the back is intimate and informal. There, the family room in the leg of the L opposite the living room encloses, along with the exterior side of the living room's interior garden wall, a small private garden protected on its far side by a densely wooded area at the back of the lot.
In the living room (left and above), a band of windows can be seen at the top of the concrete block interior garden wall, indicating that the walls have no bearing function. The rooms above, in fact, are cantilevered, and the large column seen outside is really unnecessary. The marine-grade plywood used outside can be seen on the wall dividing the dining area from the kitchen (facing page). Opposed to the openness of the more public space of the living room, the family room (bottom left) is enclosed; high windows face the street and French doors open onto a small, private garden.
Essentially, say the architects, the house concerns itself, as does Mies’s architecture, only with elements particular to architecture. In this case, the house primarily concentrates on the wall. But, as distinguished from that of Mies, it does not look at the wall as a generator of planes creating ambiguous space. Instead, the emphasis here is on clarity, on definition; and where there is transparency, on that which is definitely literal, not virtual. The only mystery in the house would have been the “floating” level above the living room, but the local building inspector’s insistence on the supporting column jinxed that.

It’s harder to figure out, however, what jinxed the neighbors into changing their attitude about “that house,” but something must have. The local garden club recently asked the owners if the house could be put on their annual tour. No one suspected that something this house might also have been about one day was irony. David Morton

**Project:** Knee Residence, North Caldwell, N.J.

**Architects:** UKZ, Yonkers, N.Y. (Simon Ungers, Laslo Kiss, Todd Zwigard) with Associate Architect Adalbert Albu.

**Client:** Mr. Stephen and Mrs. Carole Knee.

**Site:** A suburban corner lot of 1.2 acres with an incline from north to south.

**Program:** A single-family house of 4000 sq ft with 1500 sq ft of outdoor terrace.

**Structural system:** Concrete block foundation on poured concrete footings; reinforced cast-in-place concrete columns and steel-pipe columns for west wing; house shell of wood frame with 35' x 4' wood box beams at west wing cantilever.

**Major materials:** 12-inch Insolite concrete block garden walls; marine-grade, mahogany-faced plywood panels with galvanized steel channels at joints for house walls; plaster finish over poured-concrete columns and entry stairs (see Building Materials, p. 206).

**Mechanical system:** Two independent systems of gas-fired, forced-air heating; forced-air supply/central return air conditioning.

**Consultants:** Raymond A. DiPasquale Associates, structural.

**General contractor:** CSR Construction Corp.

**Costs:** Withheld at owners’ request.

**Photos:** Mark Darley.
A Set Piece

SAN FRANCISCO’S comprehensive Downtown Plan (P/A, Jan. 1986, p. 122), adopted in 1985, contained aesthetic guidelines devised to restore to contemporary buildings the kind of plasticity so admired in the city’s pre-Modern skyscrapers. The result so far has been a set of mostly lackluster buildings ineffectually dimpled and pimpled with knobs and other nameless features. What went wrong? Nothing, maybe. The suspicion grows that the fault lies in the basic assumption that design quality could be legislated.

Now comes a building from Skidmore, Owings & Merrill (the firm which, in the good-old-bad-old days before The Plan, contributed most significantly to changing the downtown skyline) that demonstrates conclusively that richness and plasticity are more often than not a product of wrestling with the elements at hand than leaning on the past.

While 388 Market Street (P/A, Jan. 1985, p. 114) reveals aesthetic guidelines to be weak generators of quality, it offers positive evidence for limiting height and bulk. Actually, the limiting factor here, the size of the site, was a fluke. The collision of two street grids at Market Street, which created generous triangular blocks along the length of its north side, yielded only one of this small size.

Larry Doane, the design partner, strongly believed that the building should read as a set piece. But, rather than settle for the simple geometry of an extruded triangle, the designers sculpted and refined the form to express the variations suggested by the triangular site and its context.

The teardrop shape created by articulating the shaft as a cylinder set into a triangle permitted the building to “bow” to the faceted tower of the Johnson Burgee building across the street at 101 California Street. But the mechanical floor, defined by narrow slits instead of louvers, serves, as does the smooth cornice, to tie the forms together. (Tangential beams, 31 feet long, running between the two forms do the real work.) A courteous touch, invisible from the street, is the metal doughnut that shields the rooftop equipment from the view of the taller neighboring buildings.

Aesthetic considerations aside, the building’s asymmetric form gave it a natural tendency toward wild lateral and torsional displacement under seismic and wind loads. To minimize this and to stiffen the structure adequately, the chief structural engineer, Navin R. Amin, connected a perimeter, ductile, moment-resisting space frame to the heavy frame of the central building axis. The presence of this crucial element of the structure is subtly indicated by the unfenestrated section running down the wall at this point.

The deep red color of the granite cladding, which would be overwhelming in a bulkier, taller building, intensifies the effect of the building-as-object. The tinted glass also contributes by minimizing the contrast between the windows and the wall. Besides responding to changes in the building’s uses, the fenestration expresses the mutations of its form, as when the rectangular openings in the triangular end of the shaft shift to squares on the swelling form of the cylinder.

Designed during the period of interim controls before the Downtown Plan became official, 388 Market reflects a short-lived official approach to solving the city’s increasing housing shortage brought on by skyrocketing development of office space. For a brief period, developers were allowed to provide housing in new downtown buildings. Since 388 Market Street was one of a handful of projects that became eligible for this, the upper seven floors are composed of one- and two-bedroom apartments. The apartments have French doors opening onto three-foot-deep, glass-ruled balconies. Because 70 percent of the apartments’ perimeter can be opened to the outdoors, prevailing winds and fog can provide air-conditioning.

The building base, which contains 9300 square feet of commercial space, conforms to the site footprint. The corners abutting Market Street are rounded; the north corner is squared to reflect the grid. The street-level fenestration is more kin to portals or shop windows scaled to the pedestrian pace. Tripartite windows in blue-green metal frames edged with narrow panels are set in granite reveals. A faceted granite strip added at the bottom of the reveal suggests a plinth. The glazed sections are graded in size and shape from rectangular to square. The placement of the larger square at the top increases the diffusion of natural light into the interior.

Two blocks up Market Street is SOM’s 1959 Crown Zellerbach Building, a glass-curtain-walled office tower that signaled both the firm’s arrival in town and the city’s post-war wave of downtown development. That wave appears to have crested. If, for good or ill, downtown has finally been locked up by a combination of economic and political factors, this well-orchestrated building is a great swan song. Sally Woodbridge
388 Market Street is partly the result of the guidelines set forth in San Francisco's new comprehensive downtown plan, but its odd-shaped lot was also a very decisive factor in the design of the building. Rather than let the simple geometry of the triangular site dictate shape, SOM sculpted and refined the form to express the variations suggested by the site and its location, which is across the street from Johnson-Burgee's 101 California Street (at far right in photo at right). The entry (facing page) shows the polished red granite that is a prominent feature of the lobby.
P/A Awards Update
388 Market Street
Although the red granite predominates in the entry lobby (facing page, bottom left), the palette changes to gray granite and white Carrara marble in the elevator cores (facing page, top left). The entrances, which appear to be angled into the base of the building (see ground floor plan, facing page, bottom), are actually set parallel to the central axis. The corners of the building abutting Market Street are rounded (right), and reinforce a motif previously established at 101 California Street (seen in top right corner of photo, right).
computers, and land use and traffic analyses not executed by computer, though the data were later entered into the computer (below). While computers were used at this phase only for shadow studies, in other projects now in the office J/BA is using computers heavily: For Deer Island, a small island in Boston Harbor, they used CAD to study the environmental impact of a proposed sewage treatment plant in its center, and devised a method to screen the plant using landscape profiled in such a way that views from surrounding neighborhoods would seem virtually unchanged. Bruce K. Forbes, president and CEO of J/BA Research and Development, explains that "the more gives or limitations in a project, the more useful is CAD," which is the reason that J/BA is using CAD for all phases of a rehab project, and that hospital projects, for example, are particularly suitable for development on CAD.

Overview of the Present
It is now possible to use the computer to analyze a building's program in terms of its functional relationships, room adjacencies, and the like. And it will soon become possible to go one step further: using the computer to determine which arrangement of spaces is best according to some predetermined criteria, such as the shortest circulation or the least perimeter area. Such software not only can increase a firm's productivity, but can help it derive an optimum arrangement of rooms, whether or not that arrangement is ever followed.

Computers also have enabled some architectural firms to expand greatly the programming services that they offer clients. Some firms, for example, have helped institutional and corporate clients develop a database of their existing organization and facilities as a first step toward a building decision. Others (such as J/BA with their Dynamic Archival System) have aided developers' investment decisions with software that overlays physical and economic information about a site and its locale. Such work not only offers architects a new source of fees and an expanded role within the building team, but a more active involvement in the initial and often most important decisions about projects.

The Future
Some architects expect that automated programming will make this phase of work an ever larger share of architectural services; Bruce Forbes of J/BA puts its potential at 8 percent of total fees within a decade. Others, though, see programming taking less and less of an architect's time.

Both directions are possible. If expanding architectural services is the goal, then the computer does offer a basis for consulting with clients on their facility needs and thus a basis for establishing an ongoing relationship with them. If the goal is to reduce the time a firm spends on a program, the same software offers that as well. The computer makes it much easier to order similar functions in a complex program or to visualize the relative sizes of various square foot requirements.

Whatever the aim of its use, though, such software promises a future in which the development and accommodation of a building's program are better informed. It will give a much broader factual base to decisions about what to build. And it will allow programs to contain a finer grain of information, describing not just raw square footage requirements, but the reason for and exact functions in each space.
Monarch Place

While computers were used, as mentioned, to study the effects of shadows cast by Monarch Place upon adjacent buildings, other urban design issues were studied and resolved manually, which was the most efficient method given the time and staff then available for this project. The computer drawings shown here indicate some of these issues.

The effect of the project on City Hall was crucial. To provide a neutral backdrop for that Neoclassical structure and the adjacent campanile, glass was used on the adjacent sides of the two buildings; to give a sense from City Hall plaza of the city beyond Monarch Place, a slot was strategically located between the new highrises; and to maximize the feeling of the tight civic space, the office tower was oriented at 45 degrees to the plaza. Also important were vistas to the river from the office and hotel, so the initial design concept was changed, putting the shorter building in front of the taller one.

Traffic studies were especially crucial, given not only the central location of the site but also its proximity to highway 1-91. As a result of these studies, a private drive was put through the site, facilitating the unloading of hotel guests, while service deliveries were located on a secondary side street. One level of underground parking was eliminated for budget reasons, and alternatives for parking were investigated.

Overview of the Present

One of the major benefits the computer holds for urban designers is its ability to help people visualize what a building will look like in its surroundings. Researchers at MIT, for example, have combined computer and video technology so that a three-dimensional, computer-generated image of a building can be placed in a real-time video of its surroundings, allowing a viewer to simulate walking around and even through the structure (P/A, May 1984, pp. 155–157).

Another current use of the computer's graphic ability is in code compliance. Zoning codes, particularly in some of the larger cities, have begun to regulate the effects buildings have on such phenomena as daylight, glare, or wind turbulence. While compliance with such regulations can be accomplished manually, the computer does ease the process. Shadows can be cast without having to build a physical model; sky exposures, calculated without having to use daylight pyrometers; and reflected glare, estimated without having to construct extensive building sections. Firms that have developed software for zoning compliance claim that it not only speeds up the process, but can help win approvals.

The Future

One implication of computers for urban design is to enhance its experiential aspects. While urban design has been characterized by an order largely perceptible from the air (no doubt the result of studying designs using small-scale models), the ability of the computer to simulate walking down a street may shift our conception as well as our perception of proposed developments.

Another effect computers may have on urban design is the encouragement of performance-oriented zoning codes. Such codes have always faced the obstacle of being too difficult to enforce. The greater speed and accuracy of computer analyses, though, raises the possibility of zoning codes that, instead of specifying heights or setbacks, could set performance criteria for such issues as daylight or wind speeds at street level and would leave it up to architects to satisfy the requirements.
Monarch Place

As design development began, CAD became indispensable, given the two opposing grids, the non-rectangular site, and the need to use 100 percent of the available space. Column locations were fixed, based on the site perimeter, as foundations had to be designed before the building design was finalized. In fact, because of the developers' eagerness to complete the project in a short time, delays in waiting for UDAG grant approvals, and major changes throughout the design and construction processes, Monarch Place was particularly difficult to keep on track, as J/BA principal and project director Axel Kaufmann explains.

One level of parking was eliminated only three months before groundbreaking, many transfer columns were needed because the building design had not been fixed before the foundations were poured, the cladding material was changed to precast concrete from granite after the steel was bid, and two stories were added after the steel was erected. Yet from schematics to move-in this fall only three years will have elapsed.

The core of the office building (above) was only partly developed on the computer. The stairs were designed using the relevant expert system program developed as part of J/BA's Archibus microcomputer software (see P/A, June 1986, p. 106), while the remaining core was developed manually and relined on the computer. The Archibus expert system core program is now ready for use, helping to optimize what Forbes calls the spine of the building, and coordinating the requirements of, in addition to the architect and client, six engineers (structural, HVAC, electrical, elevator, fire protection, telecommunications) with more experts beginning to contribute (microdisk, videometrics, computer). Forbes predicts that expert systems will allow the development of the core in response to both code and real requirements (permitting the use of performance codes), and will enable predictions as to core changes in the lifespan of the building.

Overview of the Present

The design development phase may undergo an even more dramatic change than that which some have predicted for schematic design, although the nature of the change will be very different. Right now, the use of the computer for design development varies from firm to firm and job to job. Its use seems to depend on other factors such as project size. As microcomputers have become more powerful and less expensive, though, they appear to have brought an increase in the computerization of design development, since such machines seem perfectly suited to the detail required for that phase of work. The increasing compatibility among machines also has encouraged their use for design development since work begun on a microcomputer can be more readily uploaded to a large machine for the preparation of contract drawings. Or, as J/BA has done for Aetna Insurance Company, the building plan can be broken down into segments allowing contract drawings to be prepared by several PCs.

The Future

The change some see the computer bringing to the design development phase is the automation of much that is now done manually. Large amounts of time in this phase are spent drawing standard elements or locating manufactured products. While the computer can speed up that activity, it also can be programmed (as J/BA has done with the Archibus system) to generate design development drawings, requiring the input of people only at the beginning and end of the procedure. Savings in time and labor are significant. Such automation takes us a step closer to the establishment of expert systems for architecture. Rather than just draw details automatically, expert systems would serve as an information resource to which architects could refer (as physicians now do) for second opinions. Considerable controversy exists over the viability of expert systems especially in fields such as architecture that are so hard to quantify and that lack standard procedures or a single, common body of knowledge (see P/A, June 1986, pp. 106–107). Yet, as expert systems are developed for other disciplines, the power of the tool (and more important, the expectations of clients and the courts) may force changes in our thinking about architecture. Whatever knowledge is capable of being codified may, by default, become the common knowledge base for these systems. And whatever formats or procedures ease that codification may, by default, become the profession-wide standard.
MARKETING

Monarch Place

Computers can help clients market their projects and can help architects market their services. The partial rendering (below), prepared on a CAD-generated drawing, illustrates the first of these possibilities, while Jill Weber, J/BA Senior Associate and Director of Development, explains the second:

Word processing is used to prepare and update firm and partner resumes and experience lists, to prepare marketing letters, and to retain and update lists of all kinds, including mailing lists, which are referenced by both client type and contact within J/BA. Word processing is used to maintain regular contact with former clients, and for callback systems for leads and prospects.

The IBM PC is used by J/BA's librarian for market research, accessing specific and general information through the use of the DIALOG system.

CAD itself is seen as a marketing advantage, and prospective clients are always shown the CAD department in operation, though J/BA has developed no demonstration program as yet.

H&S and the Workplan system (p. 116) is used to manage marketing costs, both for general marketing and for specific projects. The most exciting use of computers in marketing is explained by Weber as well as Dennis Roth and the partners Yu Sing Jung and Robert Brannen. Building trends can be observed and analyzed, the probability of J/BA's getting a certain percentage of expected commissions can be factored, and a prediction can be made as to the firm's staffing needs for the next year, using Workplan as a forecasting tool. The firm recruits young architects in schools all over the country, and with its forecasting method, is able to follow its policy of never downsizing its staff.

Overview of the Present
A primary role for computer-aided design and drafting equipment in many architectural offices is as a marketing tool. When such equipment isn't demanded by clients as a requisite for securing a commission, it almost always is useful in impressing them.

Computers, though, do have greater marketing benefits. Many firms report that desktop publishing software has greatly eased the production of marketing brochures, allowing, for example, the tailoring of information about previous work to suit a client's particular interests. The professional quality of most desktop publishing also has allowed even the smallest firms to produce marketing materials that they would never have tackled before, for example newsletters or large-format newspapers.

Computers also have aided the marketing of firms by simplifying the production of renderings. It has become common among many firms to use the computer to generate perspective views of a project and use them as the base for hand-finished renderings. That has not only speeded up the rendering process, but has enabled many firms to do most of their rendering in-house, at a considerable cost saving.

The Future
As computers become more common, other marketing benefits will undoubtedly accrue. For example, some firms already have found a strong selling point in offering a client a direct electronic link to their computers so that the progress of a design can be monitored and regularly commented upon. Other firms have joined forces and linked their offices electronically to get work that might otherwise be too large for any one of the firms to handle. Such a computer network overcomes the common objection that associations of small firms are too cumbersome.

Implicit in using the computer to link firms to their clients or to each other is a blurring of traditional boundaries or rivalries—which could have an enormous impact on the marketing of professional services. The direct link of architect and client, for example, not only changes their relationship, making it more open and less fraught with communication problems, but puts a premium on the service aspects of the profession. The accessibility of the design process could become as important to clients as to the final product. The increased use of electronic links among firms also may make marketing less a matter of selling one firm's experience than in selling that of several firms as one package.
P/A Technics
Computers

CONTRACT ADMINISTRATION
Monarch Place

As numerous small changes still had to be made after construction began, and the database was so big that the computer moved slowly, drawing revisions began to be made manually. Once this process began, the database was no longer quite accurate, and so all further changes had to be made manually.

Since the drawings had been prepared at three scales, revisions had to be entered in triplicate.

Some of the shop drawings—for the ductwork, precast concrete, steel, and the PPG window wall—were produced using CAD.

Contract administration was tracked using Workplan, as explained above (p. 116).

Overview of the Present

Computers also have facilitated communication among the people in an office and in the field. Some firms have placed computer workstations in their field offices to allow for a faster response to and better communication of field changes. The combination of video and telecommunication technology (P/A, June 1986, p. 183), while only indirectly related to that of the computer, also now serves the same end.

Computers have been increasingly used in the actual construction of buildings as well. The use of computer-aligned lasers to insure the alignment or levelness of elements on a site is one example. The computer-based fabrication of products and the computerized reading of bar codes on products as they are delivered to a site are others. Of all the new technology, though, construction robots (P/A, June 1986, pp. 110–111) have pushed it the farthest.

The Future

No one expects the construction industry ever to become fully automated; the unpredictability of site conditions, alone, would preclude it. But many people have predicted that the industry will become much more automated than it is today. According to these predictions, robots will become increasingly used especially for dangerous work, reducing at least some of the union opposition to their introduction. The prefabrication of subassemblies also should continue to increase as the pressure to increase productivity and reduce costs mounts.

An important and relatively new area for computers in construction is in the diagnosis of existing conditions in buildings. The monitoring of indoor air quality, of ground or building movement, or of the condition of materials buried in a structure are just a few uses for computers.

Expert systems, too, may have a place on the construction site. Electronic data similar to that which might help architects select products could help contractors find the least costly or most readily available product for a job. Expert systems, too, might have a use in finding the most efficient sequence of construction or delivery and storage of materials.

Project: Monarch Place, Springfield, Mass.
Architects: Jung/Brannen Associates, Inc., Boston (Yu Sing Jung, principal in charge; Axel Kaufmann, project director; Thomas Dolle, project designer; John Willand, Marshall Silva, Theodore Callahan, project architects).
Client: Monarch Place Associates, a joint venture of Forge Capital Corp., O’Connell Brothers Development Corp., The Flatley Co.
Site: 89,402 sq ft in downtown, adjoining City Hall and near highway I-91.
Program: office building, 388,000 sq ft; 300-room hotel with extensive function spaces and health club; retail, bank building; public plaza; below-grade parking. Total 894,000 sq ft.
Structural systems: friction piles, structural steel frame with composite slab (office building), bar joists (hotel).
Major materials: precast concrete backed with Styrofoam; all-glass curtain wall with insulated reflective vision glass and reflective spandrel glass backed by...
INTERIOR LAYOUT, BANK BUILDING

Facilities Management

Monarch Place

J/BA was able to provide shell drawings for tenant use, and to build on its own database to provide interior design services for the Bank of New England, which has now taken about 120,000 square feet of space. Bob Ondrey of J/BA's interior design department explains that the bank has introduced many changes and CAD has saved considerable time in incorporating these. CAD was not used for adjacency and stacking studies, as the bank provided the allocation of departments, but it has been useful in designing 3D studies of various areas both as an internal design tool and to clarify design intentions to the client.

Various workstations have been explored, using a wood-paneled system.

It has not been decided whether the eventual database will be converted to microcomputer and used as a facilities management tool by the client, as J/BA is doing in its rehabilitation project for Aetna Insurance Company in Hartford.

Overview of the Present

Many vendors have found that the best market for architecturally oriented software is not among architects, but facilities managers. While the larger capital reserves available to facilities people certainly has something to do with their larger investments in computers, too does the nature of the problems they must deal with. Facilities management is a very information-intensive business and its growth has nearly coincided with the computer's.

The software currently available for facilities managers, for example, can help them identify all of the equipment in a building according to its type or location, plan and schedule the reorganization of spaces, or predict the financial and spatial implications of future growth.

Some building product manufacturers have developed their own tools to help the management of buildings. H.H. Robertson, for example, offers a software package that helps a facilities manager keep track of all the wiring and cabling in a building and find the most efficient (or least clogged) path for new lines. Otis, to take another example, maintains a 24-hour call-in service, with repair records according to its type or location, plan and schedule the reorganization of spaces, or predict the financial and spatial implications of future growth.

The future uses of the computer by facilities managers are considerable. For example, the computer has the potential for allowing a building to monitor and diagnose its own operation or condition. Energy management systems already perform that monitoring of buildings' thermal conditions. The capacity of the computer to take in and summarize large amounts of data and the variety of sensors now available make it possible for a system to monitor the amount of moisture in an exterior wall or roof membrane, the amount of settlement occurring in a foundation, or the amount of rebar corrosion occurring in a structural member. Acceptable limits of moisture or movement might be programmed into the computer so that it would only report conditions that exceed the limits. A similar monitoring of electronic equipment in a building also is possible: the computer can check every line to insure that equipment is still connected.

The computer, too, offers facilities managers not just a fixed set of contract documents of a building, but a database that can be referred to and modified long after the structure itself is complete. That database also offers architects opportunities for expanded services, either to maintain and update the database, or to train and consult with a facility's managers.

See Technics-related products and literature, p. 124.
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Circle No. 360

WOMEN'S RIGHTS NATIONAL HISTORICAL PARK
DESIGN COMPETITION

Background: The first women's rights convention was held in the Wesleyan Chapel in Seneca Falls, New York in the summer of 1848. In 1980 Congress authorized the National Park Service to acquire and interpret the site of the convention, the Wesleyan Chapel.

Today, little remains of the original fabric of the Wesleyan Chapel. The challenge of the design competition is to create a physical place which preserves the remains of the Wesleyan Chapel and celebrates the events of 1848. In addition, entrants are asked to address the site of the Wesleyan Chapel for present day National Park Service needs which will include a visitor’s center, open plaza space and parking facilities.

Sponsors: National Park Service
National Endowment for the Arts

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Eligibility: This is a one-stage idea competition open to all US citizens or permanent residents of the US.

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Seneca Falls, New York 13148

The registration fee must be postmarked no later than July 1, 1987. Deadline for submissions is Sept. 22, 1987

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Welcome to Lighting World International, the largest conference and exhibition of architectural lighting equipment, sources and control products in North America.

It seems that at each new Lighting World we talk about "more"—more exhibitors, more designers and specifiers, more educational sessions, more products, more space.

Lighting World 1987 is no exception. Once again, it is larger in every way than any previous show. We started in 1981 with 130 exhibitors. This year our sold-out floor will total more than 450 companies. In 1986 we presented 15 educational and special events. This year we will have 21.

We think you will find the show not only bigger but better. Our educational program represents the consensus of some 600 comments, suggestions, and requests submitted to the program committee. A new session entitled "Preview of Products" will introduce the latest in lighting and control equipment, and you can go from there to the booths for details.

The person who said that business and pleasure don't mix was wrong. Our cruise in New York harbor will give you the chance to relax with colleagues while the lights of Manhattan provide the backdrop.

We're sure that Lighting World 1987 will be well worth the time you spend here, but we won't sit back when it's over. Look for even "more" in Los Angeles in 1988.

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Monday, May 11

The Opening Breakfast: A Lighting World Tradition*
8:30-10:30 A.M.
Keynote Speaker: Hans Hollein
Level 1, Special Events Hall

The Opening Breakfast on the morning of the first day of each new Lighting World has become a popular tradition. The convokeation of designers, specifiers, buyers, manufacturers, and those whose interest is simply to learn, testifies to the diversity of the lighting industry. Lighting World '87 will continue the tradition of a welcoming address by a prominent political figure, followed by a keynote address by Hans Hollein, the noted Viennese architect, artist, teacher, and author. Mr. Hollein received the Pritzker Architecture Prize in 1986.

Color in the Mind's Eye*
11:00-12:00 NOON
Session 1
Speaker: Alexander Styne
Level 1, Special Events Hall

All designers want to achieve a color result in the final installation that closely matches their design concept. Understanding the basic concepts of color and perception can help the designer be more confident in color application and more closely approach the intended result. Professor Styne will explain the basic principles underlying color and perception, illustrating how insight into the process, potential, and limitations of perception can be used to advantage in lighting design.

Alexander F. Styne is an industrial design consultant and adjunct professor of electrical engineering at the University of Miami. He has specialized in lighting and color for over 25 years.

Gallery and Museum Lighting: Combining Preservation and Artistic Expression*
12:30-1:30 P.M.
Session 2
Speaker: Frank A. Florentine
Level 1, Special Events Hall

Aesthetics and technology, the primary issues in lighting, are nowhere more important than in a gallery or museum. Light, heat, and humidity are the enemies of a collection if not properly applied and controlled. Gallery and museum lighting must be designed to conserve the life of the artifacts and, at the same time, to express the artistic intent of the exhibit. Frank Florentine will discuss the considerations involved in presenting a visually interesting exhibit, including forming a concept and developing a process. He will give equal time to preservation issues such as footcandle levels, ultraviolet emissions, and exposure levels, including measurements, filters, fading and energy management. He will briefly discuss electrical systems, power distribution, and maintenance of equipment.

Frank Florentine is responsible for lighting design for the exhibitions at the National Air and Space Museum of the Smithsonian Institution. His background in theater lighting, particularly the ballet, taught him the importance of lighting artwork from different angles—a technique not always used to advantage by exhibition designers.

Preview of Products—The Latest in Lighting Today
2:00-3:30 P.M.
Session 3
Level 1, Special Events Hall

The “best and the brightest” in the world of new lighting products and control systems will be unveiled by manufacturers at this special Lighting World session. In one 90-minute program, specifiers and buyers will have the opportunity to survey the state-of-the-art of lighting technology as manufacturers present and demonstrate their latest products and systems.

The fixtures and controls featured will be selected by a panel from the International Association of Lighting Designers, the Illuminating Engineering Society of North America, and the New York Section Illuminating Engineering Society. The products will be drawn from those exhibited at the show: commercial/industrial fixtures, programmable lighting control systems, light sources, occupancy-sensing technology, switching and dimming systems, outdoor walkway and roadway equipment, floodlighting, security lighting, fiber optic developments, retrofit and conversion fixtures, theatrical and special effects, track lighting, task lighting, landscape lighting, and decorative fixtures.

Industrial Lighting*
4:00-5:00 P.M.
Session 4
Speaker: Roger L. Knott
Level 1, Room 1CD4

Industrial lighting systems present special design and installation challenges. This discussion of industrial lighting will be of particular interest to engineers, contractors, facility planners, and lighting designers. It will cover the use of various lamps and lamp/ballast combinations in industrial facilities, with particular emphasis on products introduced recently. Factors to be considered in choosing the most effective luminaires for industrial applications will be explored. Representative tasks will be reviewed with emphasis on their special lighting problems and possible solutions. The session will include many application slides illustrating principles of industrial lighting.

Roger L. Knott is vice president and manager of electrical engineering for HWH Architects Engineers Planners, Inc. of Cleveland, OH. The majority of the firm’s work over the last few years has been industrial, and many Fortune 500 companies are among their clients. Mr.

*For information on taped sessions, please see page 55LW.
Knott is a member, and has twice served as chairman, of the IESNA Industrial Lighting Committee.

**New York By Night**
**7:00–11:30 P.M.**
A New York Harbor Cruise

Boarding begins at 7:00 p.m.; boat leaves promptly at 7:30 from Pier 62 at West 23rd Street and the Hudson River. Transportation will be provided from the Javits Center to Pier 62 and back to mid-town. Limited pay parking available on first come, first served basis.

What is more spectacular than the New York skyline at night, seen from a luxury yacht cruising the waterways around Manhattan island? Lighting World will take to the river for a four-hour cruise timed to view the setting sun behind the Statue of Liberty. As twilight fades and the lights of Manhattan rise, our craft will pass the Statue, and Eric Staller’s latest light sculpture creation, the “Bubbleboat,” will appear on the water. Staller, the recipient of an IIDA award, is a light artist with a degree in architecture. He created the “Bubbleboat” for Liberty Weekend. The 12-foot diameter craft has 594 computer-controlled red, white and blue bulbs, which display an infinite variety of visual patterns.

The water-proof cruise (the yacht is heated, air-conditioned, and totally enclosed except for promenade decks) will include a full gourmet buffet, open bar, and live disc jockey. More social than business, this special Lighting World evening event will bring together people from all facets of the lighting community. Space is limited—reservations are required.

**Tuesday, May 12**

**Photometrics Workshop for Lighting Designers and Engineers**

**8:30–11:30 A.M.**
Speaker: Dr. Ian Lewin
Level 1, Room 1C04

Photometric factors can dramatically affect the lighting design and engineering process. This half-day workshop is intended for lighting designers and engineers who are familiar with the basic principles of photometrics. Comprehensive presentations on the following topics will include:

- Quantitative uncertainties in photometry.
- Tolerances and variations in lamp operation.
- Tolerances and variations in luminaire operation.
- Environmental factors influencing photometric performance.
- Meters and field measurements.
- Comparing predictive calculations and field measurements. Demonstrations will be given and written material provided. IES CEUs will be offered to those who complete the workshop.

**Dr. Ian Lewin** is president of Lighting Sciences, Inc., of Scottsdale, Arizona, an independent laboratory offering professional services in optics, vision, testing, and illumination design. He received a doctoral degree in illumination engineering from the University of Newcastle, England.

**Photometrics for Architects and Interior Designers**

**9:00–10:00 A.M.**
**Session 5**
Speaker: Helen Diemer
Level 1, Special Events Hall

Photometry, the measurement of light intensity and distribution, is used by lighting designers to compare the performance of various light fixtures. A knowledge of basic photometrics can help architects and interior designers appreciate the functions of various types of luminaires and understand why they are appropriate for some applications and not for others. This program is intended for those with little or no background in photometrics and will provide a conceptual understanding of the considerations involved in assigning numbers to lighting. Simple graphics and calculations, as well as actual mockups of typical fixture types, will be used to show how photometrics fit into the lighting design process.

**Helen Diemer** is director of lighting services at Flack + Kurtz Consulting Engineers. An architectural engineering graduate of Pennsylvania State University, she is experienced in design of lighting and electrical systems.

**Light and Expectation: The Retail Experience**

**10:30–11:30 A.M.**
**Session 6**
Speaker: Peter Barna
Level 1, Special Events Hall

Lighting design for retail sales is a study in customer expectation. Customers whose expectations about product quality and price are fulfilled during the shopping experience are usually satisfied customers, and lighting plays a significant role in forming customer expectation. Peter Barna will discuss the role of lighting in the retail establishment, particularly the ways in which it structures space. Generic or glamorous, K-Mart or Bloomingdales, retail lighting’s first priority is expectation fulfillment.

**Peter Barna** is president of Light & Space Associates Ltd., a New York City-based lighting design and interiors firm with a diversified practice that includes many retail installations and showrooms. He received an electrical engineering degree from Virginia Tech. University and a master of Industrial Design from Pratt Institute.
Behavioral Responses to Lighting
1:00–2:00 P.M.
Session 7
Speaker: David Loe
Level 1, Special Events Hall

In creating a pleasant, effective, and efficient environment, visual performance and comfort are only two of the important lighting considerations. Research shows that the pattern and brightness of the lighting in a space affect mood, productivity, traffic patterns, and many other kinds of behavior. David Loe will use the results of his own research to illustrate how behavior is affected and changed by light and lighting patterns, thereby demonstrating the importance of incorporating subjective considerations into the lighting design process.

David Loe is a lecturer in lighting and color at the Bartlett School of Architecture and Planning, University College London. He and his students have conducted research projects on behavioral response to various kinds of lighting, and have observed the changes in behavior that accompany changes in lighting. He was previously deputy manager of the Lighting Equipment Test Laboratory of the British Standards Institution.

Lighting: By Design or by Default?
1:30–4:30 P.M.
A Workshop Presented by the NY Designers Lighting Forum
Speakers: James L. Nuckolls, Gerry Zekowski; Moderator: Connie Jensen
Level 1, Room 1C04

Do you have a client who wants a bright but all black showroom? Or one who has a living area with 18' ceilings and needs a sense of intimacy? Do you want artwork without glare? Spaces that come alive?

How do you approach these challenges? How do you determine the solutions?
The New York Designers Lighting Forum is offering a dynamic two-part workshop to address these questions and many more.


Part 2: Lighting applications and techniques—the all-important “how to’s” and “why not’s.”

With the help of your questions, the speakers will discuss, illustrate and demonstrate perceptive solutions and approaches to lighting commercial and residential spaces. Take back to your office the valuable reference binder that is included in this workshop. It will reinforce the approaches and applications covered during this session.

James L. Nuckolls is president of LuxCo Limited, a past president of the IALD, a faculty member at the Parsons School of Design, and recipient of the New York Designers Lighting Forum Honor Award. He is author of the classic Interior Lighting for Environmental Designers and has been a lighting designer for 20 years.

Gerry Zekowski, lighting consultant and partner in Lighting by Design, is a recipient of the IES Distinguished Service Award. He has been published frequently, and is a much-sought-after international speaker. He was for many years Director of Education and Labs for Lightolier, Inc.

Connie Jensen is a lighting consultant and president of Lighting Professionals, Inc. As an educator and lecturer, she developed “The Art and Science of Lighting,” a course sponsored by the New Jersey Section Illuminating Engineering Society. Emerson said, “...we have no questions to ask which are unanswerable.” Question the experts—let them excite you with their ideas.

Is Lighting Harmful? A Health Controversy*
2:30–3:30 P.M.
Session 8
Speaker: Dr. Alan L. Lewis
Level 1, Special Events Hall

Today’s light sources and lighting systems are more efficacious, more powerful, and offer a greater spectral range than ever before. However, these sources have also created concern about the photobiological and psychological effects of visible and near-visible radiation. Reported effects range from the possibility of melanoma associated with fluorescent lamp exposure in Australia to retinal damage from quartz halogen sources among dentists. Light sources have also been reported to affect muscle strength, personality, cataract formation, vitamin D synthesis, and the formation of bilirubin. Many of these effects are based on hard data, but others are at best questionable. Dr. Lewis will review the non-controversial uses of light as a therapeutic agent and will assess the scientific validity of the controversial claims. He will address the role of infra-red, short wavelength visible and ultraviolet radiation in health and vision, and the indications for limiting our exposure.

Dr. Alan L. Lewis is professor of physiological optics at the State University of New York, College of Optometry in New York City. His research interests are in the areas of human visual performance, color vision, and illumination, with special emphasis on vision of the aged and partially sighted.

What A Specifier Should Know About Luminaire Design*
4:00–5:00 P.M.
Session 9
Speaker: Noel Florence
Level 1, Special Events Hall

Unless specifiers have seen a given luminaire in an actual installation, they must rely on catalog specifications and drawings to determine how the luminaire would look and perform in the space they are designing. Often, this paper representation is unavoidably inadequate.

The performance of a luminaire, and the differences between similar luminaires, can be better appreciated if a specifier understands the considerations involved in their design.

Noel Florence will describe where luminaire designs come from, how ideas are developed, how light is controlled, how to select materials and processes for maximum value, the importance of details, and how fixtures are tested. The presentation will include slides and demonstrations.

Noel Florence, who retired in 1986 as Lightolier’s vice president of research and technical development, is currently an independent design consultant. At Lightolier, he produced many original lighting equipment designs and holds numerous patents. He studied engineering at Birmingham University in England, and fine arts at Cooper Union.

Lumen Awards Dinner of the New York Section of the IES
6:30–9:30 P.M.
Speaker: Bartholomew Voor-sanger
Cash Bar, Crystal Palace (6:30–7:30 p.m.)
Dinner and Awards Presentation, Special Events Hall Lobby, Level 1 (7:30–9:30 p.m.)

The New York Section Illuminating Engineering Society will present its 22nd annual Lumen Awards at Lighting World. The Lumen Awards Program was conceived and developed to encourage and publicly recognize excellence, professionalism, ingenuity, and originality in lighting design. A special feature of the dinner will be the presentation of the first annual Lifetime Achievement Award to a distinguished member of the lighting community. All Lighting World attendees are welcome to join us at a cash bar in the Crystal Palace after leaving the exhibits.

Progressive Architecture 4:87 9LW
Marketing: Creating New Business Opportunities for Design Professionals
8:30–11:30 A.M.
Speaker: Dr. Stuart Rose
Level 1, Room 1C04
The most accomplished designer in the world will not be in business long unless he or she knows how to attract and keep clients. This five-hour seminar, directed to designers from all disciplines, will address how to uncover early new business leads; how to educate potential clients in a way that heightens their interest and desire to use a designer's services; how to build a solid commitment from prospective clients; and how to design and conduct a winning presentation. The ASID will offer CEUs to registrants.

Dr. Stuart Rose conducts a regular series of marketing training workshops for the ASID and other professional organizations. His techniques emphasize bottom line results, and his doctoral work in management and the applied behavioral sciences enables him to present a balanced format that stresses individual responsive experience.

Fiber Optics and Architectural Lighting*
9:00–10:00 A.M.
Session 10
Speaker: Bill Novey
Level 1, Special Events Hall
In fiber optics, light is transmitted through a thin flexible strand similar to the way water is conducted through a hose. Used for years in the entertainment industry to create special effects, fiber optics are only now finding applications in architectural lighting. According to Bill Novey, they will revolutionize thinking in certain quarters of the field. Mr. Novey will explain the theory of fiber optics and its application to architectural lighting for such uses as signage, remote situations, maps, museum exhibits, store displays, and decorative needs. He will touch on the diversity of effects obtainable with fiber optics and the cost effectiveness of the technique, which allows one lighting source to be used for hundreds of points.

Bill Novey is a principal in Art & Technology, Inc., a firm that applies high technology to contemporary exhibits and entertainment. Before starting his firm, he was co-manager of the special effects department at WED Enterprises, where he directed the design, production and installation of over 300 special effects for Disney projects.

Developing a Concept for Exterior Lighting*
10:30–11:30 A.M.
Speaker: Peter Golden
Level 1, Special Events Hall
In any community, a building with a lighted exterior is a major presence, and rarely a neutral one. It either contributes positively or it detracts, and much of the praise or blame is traceable to the lighting concept. Exterior lighting must respect the building's architecture and the surrounding area, and it must engender a sense of place. Peter Golden will concentrate on the conceptual development of exterior lighting for façades, towers, and plazas. He will deal with color, composition, source, directionality, and intensity in terms of conceptual impact rather than application.

Peter Golden is manager of the lighting group at Seelye Stevenson Value & Knecht, engineers and planners. He has a Master of Science degree in architectural engineering from Pennsylvania State University.

Light as a Landscape Design Tool*
1:00–2:00 P.M.
Speaker: Timothy Coppola
Level 1, Special Events Hall
Landscape lighting clarifies the organization of a site after dark and facilitates circulation. Using as its tools the built environment, the walks and drives, and the horticulture, landscape lighting differentiates vehicular and pedestrian areas and reveals the hierarchy and pattern of circulation paths. Timothy Coppola will show how standard interior lighting considerations compare and apply to landscape lighting and will discuss how to achieve something distinctive and special using stock fixtures. He will suggest different attitudes that can be created, illustrating with day and night photos of installations, and with diagrams.

Timothy Coppola is a landscape architect with The Architects Collaborative in their San Francisco office. A past president of the Boston Society of Landscape Architects, he has been on the visiting faculty at the University of Michigan and at Harvard, and is currently on the landscape faculty at the University of California at Berkeley.

Lighting Control in the Intelligent Building*
2:30–3:30 P.M.
Speaker: Alan B. Abramson
Level 1, Special Events Hall
As a major operating cost in a facility, lighting is a prime candidate for application of control techniques. Automated lighting controls range from simple occupancy detection to more sophisticated centralized, computerized approaches. This presentation will cover occupancy detection, timed switching, centralized zoned switching, carrier current techniques, automatic dimming, and telecommunication system interface. All of these approaches will be discussed in terms of first cost, potential cost savings, occupant convenience, and technological requirements.

Alan B. Abramson is president of Electronic Systems Associates, a firm which designs building and plant automation, fire protection, security, communications, and telecommunication systems. A graduate of Cooper Union, he has written on intelligent building controls for Forbes and several McGraw-Hill publications.

Office Lighting: Matching Needs with Systems*
4:00–5:00 P.M.
Session 14
Speaker: Lee Waldron
Level 1, Special Events Hall
Designing a successful office lighting system often means finding a way to accommodate several competing needs. Owners need to control the bottom line. Employees need a workspace in which they can be comfortable and productive. With the diversity of lamps and luminaires available, there is no simple solution to matching need and system.

Lee Waldron will review the three primary approaches used in office lighting today—indirect pendant fixtures, furniture integrated systems, and recessed systems—and will discuss the many considerations involved in correlating needs with systems.

Lee Waldron is managing partner and principal in charge of the Philadelphia office of Grendahl Associates Ltd., a lighting design firm. Many major office complexes are included among their projects. He is a graduate of Carnegie-Mellon University.

New York DLF Cocktail Party and Honor Award Reception
4:30–7:30 P.M.
Level 1, Cafe South
The New York Designers Lighting Forum will present its Honor Award to Jeffrey A. Milham for his outstanding contributions to the initiation and continuing success of Lighting World.
All members of the lighting industry, and especially Jeffrey's friends, are invited to unwind from the rigors of three days of Lighting World with cocktails (cash bar) and hot hors d'oeuvres. Come and join us.

Jeffrey A. Milham is president and head of design for Design Decisions Inc. He is a past president of the IALD, former member of the Board of Managers of the New York Section IES, a member of the NY DLF, and former lecturer at the Parsons School of Design.
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Exhibitor's Index

See Exhibitor List, page 41LW for alphabetical listing and floor plan.

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Booth 227
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A wide variety of alzak reflectors for all aspects of lighting. Introducing our anti-iridescent process for compact fluorescent fixtures.

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Cerritos, CA 90701
213/926-1361
Designer line of decorative lighting fixtures for use in architectural, commercial, and residential applications. Designs are readily identifiable and in ever increasing demand.

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Kings Norton, Birmingham B38
9UR England
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A range of industrial commercial and floodlighting luminaires including vandal-resistant and anti-corrosive types.

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1021 Davis Rd.
Elgin, IL 60123
800/222-6569
Solid state fluorescent electronic ballasts (high frequency).

Booth 883
Gaslamp Power & Light, Inc.
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San Diego, CA 92111
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High efficiency (30%–90% energy saving), RFI-FREE electronic ballasts with full range dimming; locally/remote adjustable lighting control products.

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Cleveland, OH 44112
216/266-2187
Incandescent, Fluorescent, and H.I.D. lamps for commercial and industrial application.

Booth 441
General Electric Co.
Lighting Systems Dept.
Hendersonville, NC 28793
704/969-2200
H.I.D. lighting systems for industrial lighting, roadway lighting, floodlighting, sports lighting, hazardous location lighting, commercial lighting, and area decorative applications.

Booth 436
General Electric Co./Lighting Controls
225 Service Ave.
Warwick, RI 02886
401/886-6246
Relay-based lighting control products and systems including: programmable lighting control . . . integrated lighting control for intelligent buildings; smart remote control . . . low cost lighting automation panels.

Booth 551
The Genlyte Group
100 Lighting Way
Secaucus, NJ 07094

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4301 Winer Way/P.O. Box 325
Lawrenceville, GA 30046
404/963-6224
Decorative brass lighting fixtures available in a variety of styles, sizes and finishes, with custom capabilities.

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Globe Illumination Co.
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Gardena, CA 90248
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Recessed fluorescent parabolic luminaires "ULTRAPAR," "TRIPAR," "MINI-PAR," plus other energy efficient systems, high pressure sodium and metal halide ULTRALIGHT garage and low bay units.

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Jamaica, NY 11435
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Recent innovative installations of decorative lighting glass in major buildings.

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Greenlee Landscape Lighting
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Lighting fixtures, H.I.D. lighting, security lighting, indoor industrial, sports lighting, outdoor security and specialty lighting.

Booth 669
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5125 W. Lake St.
Chicago, IL 60644
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Energy saving decorative outdoor area lighting, security lighting, floodlighting and poles for parking lots and automobile dealerships.

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Guth Lighting
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St. Louis, MO 63103
314/533-3200
H.I.D. indirect lighting, design/accent lighting.

Booth 644
Hadco
100 Craftway Littlestown, PA 17340
717/359-7151
Architectural outdoor lighting. Period and contemporary fixtures, poles and landscape lighting.

Booth 1251
Halo-Marvin L. Walker & Associates
3045 Kingston Ct.
Norcross, GA 30071
800/241-3736
Bulbs, fluorescent tubes, retrofit, ballast, H.I.D. fixtures.

Booth 733
Halo Lighting
400 Busse Rd.
Elk Grove Village, IL 60007-2195
312/956-8400
H.I.D. incandescent downlighting, track lighting, surface lighting.

Booth 1062
Harry Garlin, Inc.
121 W. 19 St.
New York, NY 10011
212/243-1080
Decorative and display lighting, task lighting, track lighting, tungsten-halogen lighting, sconces, track fixtures and wall washing systems. Custom fabrication to specification.

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Watertown, CT 06795
203/274-7573
Battery operated emergency lighting and exit signs.
A new accent on lighting efficiency and design. Desk lamps, wall sconces, ceiling fixtures, spotlights and downlights utilizing efficient light sources.

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Highline Products Corp.
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Old Saybrook, CT 06475
203/388-3506
Fiberglass lighting poles, polymer decorative lampposts.

Booth 670
Hydrel/Div. of Manville Corp.
214 Oakwood Ave.
Newark, OH 43055
614/345-9631
Indoor and outdoor commercial and industrial lighting fixtures, poles and accessories.

Booth 300
Home Lighting & Accessories Magazine/Elta-Doctorow Publications
1115 Clifton Ave.
Clifton, NJ 07013
201/779-1690
Since 1923, the magazine of the residential lighting business, for retailers, electrical distributors, manufacturers and lighting professionals.

Booth 337
Honeywell, Inc.
Buildings Control Div.
1985 Douglass Dr. N.
Golden Valley, MN 55422-3992
612/542-6462
New fluorescent control system for commercial, retail, and institutional applications—operates with energy management and building automation systems.

Booth 240
Hunt Electronics
4221 Airborn Dr.
Addison, TX 75001
214/248-1808
Architectural dimming controls/systems for application with incandescent, fluorescent, low voltage, or neon lamps. Available with flush mount 24V remote control.

Booth 383
Hydrel
12881 Bradley Ave.
Sylmar, CA 91342
818/362-9465
Architectural and landscape lighting, underwater lighting, fountains and fountain lighting.

Booth 1246
Hilgut Co.
295 Park Ave. S./Suite 11N
New York, NY 10010
212/529-2849

A new accent on lighting efficiency and design. Desk lamps, wall sconces, ceiling fixtures, spotlights and downlights utilizing efficient light sources.

Booth 112
Hytron Electric Products/div.
Troyan, Inc.
114 Poplar/P.O. Box 404
Meadville, PA 16335
814/336-4460
Manufacturers of incandescent lighting products, SAF-T-COTE lamps, fluorescent lamps, self-ballasted mercury, mercury, quartz, metal halide, extended service lighting products our specialty.

Booth 162
ICSI (International Conservation Systems, Inc.)
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Austin, TX 78744
512/444-5821
The Sonlight and Ultralight are presence sensing devices designed to control commercial building lighting and HVAC systems. The Ultralight controls lighting by directly replacing the existing light switch.

Booth 1247
IFM
13333 Bell-Red Rd.
Belview, WA 98005
206/746-4222

Booth 381
Ilumilite, Inc.
6920 Havenshira/#208
Van Nuys, CA 91406
818/904-9861
Designers and manufacturers of low voltage tube lighting, chandeliers, light panels, light curtains and custom works of light. Innovative designsg catering to the discriminating commercial or residential user.

Booth 1057
Illuminating Engineering Society
345 E. 47 St.
New York, NY 10017
212/705-7926
IES, a co-sponsor of Lighting World, is a technical society whose purpose is to advance the art, science and practice of illumination. IES publishes Lighting Design & Application magazine and the Journal of the IES. Other publications include technical, design and the IES Lighting Handbooks.

Booth 221
Illuminating Engineering Society—New York Section
% Peter Blauffeu
330 W. 85 St.
New York, NY 10024
212/877-1656
Co-sponsor of Lighting World. Society for the advancement of lighting. Booth will inform show attendees of our Lumen Awards program, our Richard Kelly Grant program, our educational workshops and our support of the New York Hall of Science.

Booth 215
Illumination Concepts & Engineering
500 Gallahen Rd.
N. Kingstown, RI 02852
401/295-2533
Architectural extruded, and sheet metal fluorescent lighting.

Booth 368
Illuminotecica
Via Sofocate 7
20145 Milano, Italy
2/4814800

Booth 545
Imperial Bronze Lighting
P.O. Box 606
San Marcos, CA 78666
512/392-8957

Booth 171
Indy Lighting, Inc.
8341 Castlewood Dr.
Indianapolis, IN 46250
317/849-1283
Specialty lighting including recessed, track, accent and low voltage incandescent, fluorescent and H.I.D. systems.

Booth 336
InLite Corp.
939 Grayson St.
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Smallest single—two circuit track on the market today 1¼ wide x 3¾ high. Low voltage, line voltage fixtures and directional spotlights.

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San Diego, CA 92117
619/581-8188
Imported lighting fixtures for homes, offices, stores, hotels, museums, outdoors.

Booth 863
Interlectric Corp.
1401 Lexington Ave.
Warren, PA 16365
814/723-6661
Manufacturer of specialty fluorescent lamps, specializing in manufacturing odd-ball sizes, colors and special application fluorescent lamps such as Black-light, Black-light blue, sun-tanning light, color corrected true-lite lamps and U-Lite® products.

Booth 237
Interior Design Magazine
475 Park Ave. S.
New York, NY 10016
212/576-4222
The magazine for all concerned with the planning, design, specification and/or purchase of interior furnishings and products for various contract/commercial and residential installations.

Booth 481
Interiors
1515 Broadway
New York, NY 10036
212/764-7521

Booth 748
International Association of Lighting Designers, Inc.
18 E. 16 St./Suite 208
New York, NY 10003
212/206-1281
IALD, a co-sponsor of Lighting World, is the professional association of the architectural lighting designer. Founded in 1969 in recognition of the importance of the role of light in architecture and interior design, IALD sponsors programs for both the established lighting designer and the student just entering the field. In addition to Lighting World, IALD administers a student intern program, an awards program, an educational program, and is involved in energy conservation standards and research.

Booth 467
International Lighting Review
5600 AS Eindhoven/P.O. Box 721
The Netherlands
4-752525
Booth 937
Linear Lighting Corp./Contemporary Ceiling, Inc.
31-30 Hunter Point Ave.
Long Island City, NY 11101
718/361-7552
Linear fluorescent, extruded and steel. Recessed wall wash systems.

Booth 958
Litecontrol Corp.
100 Hawks Ave./P.O. Box 100
Hanson, MA 02541-0100
617/294-0100
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Booth 741
Litelab Corp.
251 Elm St.
Buffalo, NY 14203
716/856-4491

Booth 127
LiteTouch Inc.
220 W. 2855 South
Salt Lake City, UT 84115
801/466-9142
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Booth 1160
Lite-Tronics International
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Alsip, IL 60658
312/571-4590
Complete Super Service line of 20,000 hour commercial/industrial incandescent lamps available in popular shapes and sizes from 11W thru 500W.

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Decorative lighting suitable for hotels, offices, building lobbies, restaurants, banks and other commercial installations.

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Manufacturer of high intensity discharge lighting fixtures, ballard style, site lighting, steel and aluminum lighting standards.

Booth 321
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P.O. Box 570375
Miami, FL 33137
305/551-7978
Low voltage, incandescent linear light system, incandescent tube system, halogen recessed, surface and track mounted mini spots. Showcase reflector system featuring TRUCOOL & RETRO-RAIL.

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Lumark Lighting
1751 Hurd/Suite 104
Irving, TX 75068
214/258-8253
Indoor/outdoor H.I.D. lighting.

Booth 881
Lumatech Corp.
148 Grand Ave.
Oakland, CA 94612
415/444-8802
Manufacturer of compact fluorescent fixtures featuring innovative and architectural designs.

Booth 581
Lumax Industries, Inc.
Chestnut Ave./4th St.
Altoona, PA 16603
814/944-2537
Commercial and industrial fluorescent H.I.D. lighting fixtures. Includes decorative residential fluorescent fixtures.

Booth 477
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618, Rue Care Boivin
Boisbriand, Quebec J7G 2A7
514/450-7040
Beyond offering a remarkable collection of distinctive outdoor luminaires Lumez's dynamic team brings to life original concepts.

Booth 165
Lumari
110 Greene St./Suite 301
New York, NY 10011
212/925-4770
Lightbulbs and tubes, low voltage fixtures.

Booth 1245
Lumitel Systems Inc.
11 New Hyde Park Rd.
Franklin Square, NY 11010
516/532-4301

Booth 736
Lutron Electronics Co., Inc.
Suter Rd./Box 205
Coopersburg, PA 18036
215/282-3800
Lighting dimming and control systems for all light sources used in architectural and energy management applications.

Booth 521C
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32 Midland Ave./P.O. Box 951
Port Chester, NY 10573
914/937-4433
Task lighting for home, commerce and industry.

Booth 541
Lytebrands
2345 Vauxhall Rd.
Union, NJ 07083
201/964-7000

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408 E. Devon Ave.
Elk Grove Village, IL 60007
312/640-6515
Various types of lamps: reflector, sub miniature, LED, fluorescent, halogen.

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Macro Electronics Corp.
4711 E. 5th St.
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Lighting Controls and Dimming Systems for H.I.D., fluorescent, cold cathode, neon and incandescent lighting sources, 2500 watts to 25,000 watts and up.

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Custom designed specular aluminum fluorescent light reflectors.

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Manufacturers of outdoor area lighting, roadway lighting, security lighting, apartment and residential exterior lighting and specialty items.

Booth 257
Macro Lighting
6100 S. Wilmington
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Manufacturer of residential, commercial recessed downlights using fluorescent incandescent and H.I.D. lamp sources. Manufacturer of track lighting and a wide variety of specification grade lighting.

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ILS—An indirect lighting system providing a comfortable work environment without harmful glare and design continuity for the entire interior space.

Booth 689
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Dallas, TX 75235
214/358-4327
Linking Master-Dim's new Optimid lighting processor with its new TouchMaster-18 "smart" switch creates a microprocessor-based lighting control limited only by your imagination.

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Max
2235 Ralston Ave.
Burlingame, CA 94010
415/340-1270
Maxchase Rope Light, non-neon flex lights, sensor switch.

Booth 363
Maximum Technology
60 Industrial Way
Brisbane, CA 94005
415/468-2560

Booth 733
McGraw-Eldison
7601 Durand Ave.
Racine, WI 53405
414/754-8001
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McFadzen/Omega Lighting
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Melville, NY 11747
516/293-8500
Indoor, outdoor lighting fixtures and systems for commercial, institutional and industrial applications.

Booth 867
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Holophane® brings a great new look to outdoor lighting with the ParkLane™. This high-powered fixture's extruded aluminum housing, with internally-welded seams, is available in either painted or anodized finish.

The seamless acrylic prismatic cone/cube helps reduce "puddles" of light at the pole base while projecting light in a wide overall pattern; one wide enough to reduce the number of fixtures and still provide up to a 6:1 spacing-to-height ratio.

The ParkLane luminaire integrates with practically any contemporary architectural theme. ParkLane uses either metal halide or HPS lamps and is available in 4 mounting configurations: C-bracket, tuning fork, straight arm, and flush mount. Plus, the cube can be replaced with a flat door assembly. In addition, ParkLane is backed by an exceptional 5-year warranty.

For more information, including photometric data on floppy disk or isofootcandle templates, call or write on your letterhead to Randy Crothers, Holophane Division, Manville, 214 Oakwood Avenue, Newark, Ohio 43055. (614) 345-9631, Ext. 428.

Circle No. 378 on Reader Service Card

Progressive Architecture 4:87 27LW
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PowerLine Communications, Inc.
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Williston, VT 05495
802/262-7521
PowerLine Lighting Management System with 1000 circuit capacity, fluorescent dimming, on/off and dual circuit control, modular local override switching.

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3106 Spring St.
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415/364-5001

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Recessed down lights, surface line trac, exit, aisle and outdoor lighting. Available in all sources.

Booth 457
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San Leandro, CA 94577
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Booth 271
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Philadelphia, PA 19134
215/289-1200

Booth 767
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203/948-7531
Monthly architectural publication edited to provide information for all architectural professionals on the latest developments in their field. The magazine is directed to those individuals who take part in design and product specification.

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Los Angeles, CA 90058
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Fluorescent architectural lighting systems of round and square aluminum extrusions for wall and ceiling mounting. Recessed perimeter and in-line systems.

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QOR Technology
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Philadelphia, PA 19140
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N. Hollywood, CA 91605
818/982-0160
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Booth 347
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Italy
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Majazines.

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RIBBONLITE®—Flexible miniature light strip—low voltage—4.4. to 37 watts per foot with replaceable lamps with a life of up to 93,000 hours.

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Lenses and housings for fluorescent, PL, HPS, and incandescent using injection molding structural foam molding, vacuum forming techniques. Also extrusion of acrylic, polycarbonate sheet.

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800/823-5633
Fluorescent and H.I.D. ballasts and low voltage transformers.

Booth 264
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P.O. Box 11251
Boulder, CO 80301
303/530-2961
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914/937-1300
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Long Island City, NY 11101
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Full line of track, track fixtures, low voltage lamps and fixtures, Par 36 Pin Spot, MR-16 halogen lamps featuring lightweight solid state transformers for home use or commercial installation.

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203/789-1710
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Booth 411
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At first glance, the elegant art deco chandelier at 275 Madison Avenue appears to be part of the original lobby. But in reality, this elaborately fashioned piece is a typical Visual Comfort Lighting solution.

By closely collaborating with the project’s architects, VCL was able to accommodate the demand for a chandelier to complement the art deco lobby. This design translates the lobby’s striking terrazzo stellar floor pattern into a three-tiered stainless and bronze sculpture of light.

Exemplary of VCL’s attention to detail and awareness of the material technology of the time, this chandelier recalls the building’s original architectural and decorative aesthetic. VCL also offers a complete line of extruded aluminum shapes and standard luminaires, which can be modified for your custom applications.

VCL is becoming the name architects and designers think of when they need unique lighting solutions. Call us or drop by our booth at the Lighting World 9 Show and let your creative ideas become realities.
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U.L. listed X-18 series of energy efficient lighting fixtures. Saves energy, cuts maintenance costs and improves light distribution.

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3053 Sierra Pine Ave.  
Los Angeles, CA 90025  
213/264-1533  
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Sentry Electric Corp.  
185 Buffalo Ave.  
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Ornamental luminaires and posts for lighting streets, parks, plazas, campuses, promenades, roadways. Catalog models and custom designs available.

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Hobby & Brown Electronic Corp.  
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Rockville Centre, NY 11571  
516/678-2272 or 800/645-3272  
Full line of emergency lighting equipment—self contained 2-headed units, exit signs, AC and emergency, remote central systems, AC power inverters.

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800/845-7750  
Fiberglass light poles featuring colorful round, square and decorative styles are displayed in both anchor base and direct burial exit signs.

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771 Shrewsbury Ave.  
Shrewsbury, NJ 07701  
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Plastic-coated, shatter-proof fluorescent and incandescent lamps. Virtually all glass is contained if the lamp is accidentally dropped and broken. Coating protects workers, worksite, and products.

Booth 606  
Shep Brown Associates  
Booth/Glashutte Limburg  
307 W. First St.  
S. Boston, MA 02127  
617/268-2900  
Bom—Exterior lighting fixtures for residential and commercial made of corrosion resistant metals and glass. Glashutte Limburg—Pendant fittings, ceiling fittings, table and floor lamps made of glass. Used both commercially and residentially.

Booth 878  
Sherman Engineered Fiberglass Products, Inc.  
2131 Magnolia Ave. S./P.O. Box 1926  
Birmingham, AL 35205  
800/533-5103  
Fiberglass street lighting poles.

Booth 1142  
Siemens Energy & Automation, Inc.  
Lighting Systems Div.  
100 Wood Ave. S.  
Iselin, NJ 08830  
201/321-8800  

Booth 546  
Siutron Illumination  
7015 Center Ave.  
Cucamonga, CA 91730  
800/874-3392  
Emergency lighting, specialty lighting and track lighting.

Booth 482  
Sim-Kar Lighting Fixture Co., Inc.  
601 E. Cayuga St.  
Philadelphia, PA 19120  
215/831-7700  
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Skantronics  
1578 Port Washington Blvd.  
Pt. Washington, NY 11050  
516/944-6244  
Thyristor dimmer components including SCRs, SSRs, heat sinks and toroidal chokes; silent convection cooled AC dimmer modules; dimmer analyzer instrumentation.

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SNOCDiv. Manville Canada, Inc.  
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514/774-5258  
Outdoor residential cast aluminum luminaires. New architectural designs to complement clean lines evident in new construction today.

Booth 103  
Sparkle Plenty, Inc.  
101 E. Ontario St.  
Chicago, IL 60611  
312/266-1700  
Decorative low voltage address light fixtures; page fashion light fixtures; specialty cleaners for crystal, acrylic, polycarbonate and glass trimmed light fixtures.

Booth 942  
Spaulding Lighting, Inc.  
1736 Dremen Ave.  
Cincinnati, OH 45223  
513/541-3486  
Outdoor lighting fixtures, poles and brackets. Indirect ambient lighting. Wall sconce lighting fixtures.

Booth 1233  
Spectrum Design & Development  
3420 Spectrum Park Dr.  
Allentown, PA 18104  
215/695-6934  
Entertainment and stage lighting control systems, including touring and custom packages. Modular mainframe controller designs and high density dimmers.
Booth 870
Spero Electric Corp.
18222 Lanken Ave.
Cleveland, OH 44119
216/486-0666

Booth 960
Startire Lighting, Inc.
317 Saint Pauls Ave.
Jersey City, NJ 07306
800-443-8823 or 201/656-7888
Startube low voltage lighting; techtrack MR11 halogen; new MR11 fixture series; custom projects including “starlight express” fiber optics.

Booth 733
Sternberg Lanterns, Inc.
5801 N. Tripp
Chicago, IL 60646
312/252-8700
Historic ornamental posts, bollards and H.I.D. luminaires in “turn-of-the-century” and “art deco/post-modern” designs with wall units.

Booth 967
Northside Agencies
135 Fifth Ave.
New York, NY 10011
212/677-5997

Booth 460
Theatre Techniques, Inc.
6 Connolly Pkwy.
Hamden, CT 06514
203/281-6111
Architectural dimming and control systems.

Booth 116
Stage Lighting Distributors
815/459-6100

Booth 144
Sunex, Inc.
33R0ute 304
Nanuet, NY 10954
514/437-2555

Booth 466
Starfire Lighting, Inc.
124 W. 66 St.
Cincinnati, OH 45216
513/242-7004
Manufacturers of decorative energy saving fluorescent and HPS lighting fixtures.

Booth 209
Theatre & Light Ltd.
250 Fifth Ave., Suite 400
New York, NY 10001
212/696-0262

Booth 226
Teledyne Big Beam
P.O. Box 518
Crystal Lake, IL 60014
617/444-4700
Halogen task lights for home, office, hospital, medical and industrial applications.

Booth 733
Sure-Lites
400 Busse Rd.
Elk Grove Village, IL 60007-2195
312/956-8400
Emergency Lighting.

Booth 210
Sutton Publishing Co.—CEE
707 Westchester Ave.
White Plains, NY 10604
914/949-8500
New products magazine serving the total electrical construction industry.

Booth 537
Stonco
2345 Vauxhall Rd.
Union, NJ 07083
201/964-7000
Architectural light sources.

Booth 633/627
Strand Lighting
18111 S. Santa Fe Ave.
Rancho Dominguez, CA 90221
213/657-7500
Dimming and control for all applications and architectural lighting, as well as representative dimming, control and fixtures for entertainment lighting.

Booth 1063
Stress/Crete Ltd./King Luminaire Co.
P.O. Box 7
Burlington, Ontario L7R 3X9
416/632-9301
Authentic reproductions of ornamental concrete and ductile iron lighting poles and bollards, together with high efficiency ornamental outdoor luminaires.

Booth 1033
Stromberg Lighting
100 Endicott St.
Danvers, MA 01923
617/777-1900
State-of-the-art display of incandescent, capslite, compact and designer fluorescent, and high intensity discharge lamps.

Booth 1069
Sun Valley Lighting Standards
7900 Clybourn Ave.
Sun Valley, CA 91352
818/767-3031
Nostalgic luminaires and poles with matching arms, bollards and wall sconces featuring corrosion resistant cast aluminum construction and durable beauty.

Booth 936
Sun Valley Lighting Standards
7900 Clybourn Ave.
Sun Valley, CA 91352
818/767-3031
Nostalgic luminaires and poles with matching arms, bollards and wall sconces featuring corrosion resistant cast aluminum construction and durable beauty.
Booth 658
Times Square Lighting
318 W. 47 St.
New York, NY 10036
212/245-4155
A complete line of standard and low voltage lighting fixtures suitable for architectural, display, entertainment, and theatrical applications.

Booth 1139
TIR Systems Ltd.
3935 2nd Ave.
Burnaby, B.C. V5C 3W9
604/294-8477
Light Pipe® gives linear, uniform color-changeable illumination from "remote" point light sources, for functional effects, indoor or outdoor lighting.

Booth 147
Tishman Research Co./Infracon®
666 Fifth Ave.
New York, NY 10103
212/399-3657
Infracon® a passive infrared occupancy lighting control by Tishman Research Co.

Booth 970
Tivoli Industries, Inc.
1513 E. Gertrude Pl./P.O. Box
11523
Santa Ana, CA 92711
714/957-6101
Light tubing, golden rain chandeliers and light curtains, tivolines, tivoliite bulbs, starlike panels, twilights, tivolitrak, guidelights.

Booth 1237
TLS, Inc.
101 Morse St.
Watertown, MA 02172
617/926-0561
Fluorescent emergency lighting and low energy security lighting—fluorescent exit signs.

Booth 305
TPR Enterprises Ltd.
14 Bradford Ave.
Harrison, NY 10528
914/833-3224
MicroMini low voltage linear strip lighting, dazzle low voltage tube lighting, low voltage par fixtures, special effects.

Booth 657
TrakLiting, Inc.
14625 E. Clark Ave.
City of Industry, CA 91746
818/350-3106
Track lighting systems—lute tubes recessed downlighting—H.I.D. and incandescent surface lighting, wall sconces, low voltage lighting, fluorescent lighting.

Booth 789
Transtek International
713 Elgin Rd.
Newtown Square, PA 19073
215/356-7530
Lighting, sound, video and communications systems—design and implementation.

Booth 765
Triad-Urad
1124 E. Franklin St.
Huntington, IN 46750
219/356-6500
Ballast electronic ballasts for fluorescent lamps.

Booth 1044
The Trilin Group/Tek-Tron
1918 Main St./Suite 240
Santa Monica, CA 90405
213/392-7002
Synergizer miniature fluorescent adaptor, model 10009 (9-watt); model 10007 (7-watt); model 10005 (5-watt) H.I.D. lighting.

Booth 157
Ultrabeam
1325 Carroll Ave.
San Francisco, CA 94124
415/822-5111
A skillfully designed metal space-frame system. Providing ultimate contemporary design, visual impact and creative space planning. Available in 5", 10" and 12" trabeams.

Booth 1064
Unenco, Inc.
208-B Industrial Ct.
Wylie, TX 75098
214/442-5483
Full line of infrared and ultra-sonic occupancy sensors, current limiters and day light dimming system all for lighting control and conservation.

Booth 1061
Unilight Limited
5550 St. Patrick St.
Montreal, Quebec H4E 1A9
514/769-1553
Decorative, incandescent and energy saving light fixtures, chandeliers and custom made lighting, wall sconces and ceiling fixtures.

Booth 163
Union Connector Co., Inc.
300 Babylon Tpke./P.O. Box H
Roosevelt, NY 11575
516/625-7461
Unitrol® dimmers and computerized lighting control system. Electrical distribution equipment. Pin type connectors—20 to 125 amp, single and multi-phase.

Booth 402
Union Metal Corp.
P.O. Box 9920
Canton, OH 44711
216/546-7653
Ornamental nostalgia poles and luminaires made from original historically accurate molds. Steel, aluminum and concrete lighting poles. Abacus raise/lowering system.

Booth 1084
Universal Manufacturing Corp.
200 Robin Rd.
Paramus, NJ 07652
201/967-7600
Fluorescent and high intensity discharge ballasts, watt reducer ballasts, genesis electronic ballasts, emergency lighting fluoro-par.

Booth 865
US Powerbeam, Inc.
32 Trepow St.
Little Ferry, NJ 07643
201/662-3888
MR 16 and MR 11 tubelighting systems. Low voltage retrofit fixtures. Multiple head low voltage fixtures.

Booth 457
USI Lighting, Inc.
1251 Doolittle Dr.
San Leandro, CA 94577
415/652-3500
Commercial, institutional and residential indoor and outdoor lighting fixtures and dimming controls for fluorescent, incandescent, low voltage and H.I.D. light sources.

Booth 761
Vahmont Industries, Inc.
Highway #275
Valley, NE 68064
402/359-2201
Complete manufacturer of steel street, area, sports lighting, traffic signal, sign and city scape street furniture structures.

Booth 470
Vance Controls
376 & 400 South/Suite 315
Salt Lake City, UT 84111
801/364-5850

Booth 1166
Veart International, Inc.
10245 Cote De Liesse
Dorval, Quebec H9P 1A3
514/631-6703
Modern + contemporary task lighting, halogen lighting, handblown Murano glass lighting.
The Beauty of Track Lighting... without the Beasts!

RECESSED-TRAK™
From ALKCO

Track systems for accent lighting used to mean that the most noticeable (and distracting) accents were the track fixtures themselves!

Those days are over. New Recessed•Trak™ fits flush into any ceiling system... turns corners, runs to any length you desire. It tracks without distraction!

Totally concealed inside the housing, lightmodules can be placed anywhere along the track, rotated 360° and adjusted up to 45° from vertical.

You can pin spot, accent, highlight or flood. Optional lenses and filters produce special effects and vivid colors. Twin circuits allow individual control of lightmodules for maximum flexibility.

Miniaturized quartz halogen lamps emit true white light with exceptional color rendering.

Now when your accent lighting message isn't the system itself, your medium most surely should be Recessed•Trak, from Alkco.

For your copy of Alkco's new condensed Space Enhancers catalog, write to the address below.
When E.F. Hutton teamed up with Gerald Hines Interests to build the brokerage firm's new world headquarters, their project designers turned to National Lighting for the building standard fixture. The 2x2 low brightness champagne gold parabolic in a 5x5 ceiling module answered the unique design needs of the trading floor with its myriad desktop terminals.

National Lighting maintains the largest factory in the New York area dedicated exclusively to the manufacture of fluorescent fixtures. When a future landmark rises in Manhattan, we light the way.
The best investments around aren't sold on Wall Street.

In fact, most people on Wall Street probably don't even consider them investments. But they should. And so should you. Because these investments not only give you a high return on your money. They guarantee it.

They're energy-saving Sylvania lamps. And they prove that the cheapest lamp isn't necessarily the least expensive.

Take our Sylvania SuperSaver® fluorescent lamp for example. It costs more than the standard 40-watt fluorescent lamp, but uses 7 watts less. At the national average electric rate of 8 cents per kilowatt hour, the SuperSaver cuts energy costs by $11.20 over the operating life of the lamp.

These savings in energy costs result in a 173% annual return on your incremental investment. Even if the standard lamp were free, you'd be losing more than $8.00 by not switching to a SuperSaver fluorescent.

ROI varies from lamp to lamp. But any of our exclusive energy-saving Sylvania fluorescents, incandescents and H.I.D. lamps give you a better return than stocks, bonds, and other conventional investments.

So if you're looking for a great return for your money, why look on Wall Street? Just call 1-800-LIGHTBULB (or if you prefer, contact your IED Independent Electrical Distributor or write GTE Products Corp., Sylvania Lighting Center, Danvers, MA 01923).

Circle No. 555

SYLVANIA

GTE
CB1900 - 15" height, 7½" extension

CB1600 - 10¼" height, 15" extension

The Hand Blown Opal Glass Diffuser is 4¾" x 3½" high on the CB2000 and 13¾" dia. on all other fixtures.

Available Finishes
Polished Solid Brass, Polished Chrome, or any painted finish you desire.

Available Lamping
Incandescent, Fluorescent, or Quartz Halogen.

CB1700 - 10" height, 15" extension

CP1000 - 13½" dia., 6½" height

CB1800 - 6" height, 7" extension

CB2000 - 18" wide, 10" height, 9" extension

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Lighting World International Floor Plan

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Polyquad — Hadco's family of sharp cutoff luminaires is specifically designed to offer superior performance, high quality and aesthetic continuity to a broad range of outdoor lighting applications.

The most notable characteristics in this family is a combination of unusually good light distribution, efficiency with true sharp cutoff performance, ease of maintenance and superior appearance.
**Products**

**Sentinel/Airey-Thompson:**
Space Frame Fixtures, constructed of anodized aluminum, are offered in a choice of satin or polished finishes. The two part extrusions feature a snap-on cover for easy wiring and installation.

*Circle 100 on reader service card*

**Alanod:** Alanod reflector sheet meets every lighting application. Super specular, specular, semi-specular, diffuse, hammertones and anti-iridescent finishes are available.

*Circle 101 on reader service card*

**Alkco:** Wallscapes is an artful yet efficient alternative for wall mount fluorescents. Indirect, direct and combination direct/indirect lighting can be obtained.

*Circle 102 on reader service card*

**American Lantern:** Many new wall and ceiling units are now available in fluorescent or incandescent lamps. Polished brass offered for some models.

*Circle 104 on reader service card*

**American Light:** Retrofit adapters for fluorescent and HPS lamps consist of cut crystal decorative, energy-efficient fixtures and lamps.

*Circle 105 on reader service card*

**ARC Sales:** The Mini-Bmf is one of five new products to be on display at Lighting World 5.

*Circle 107 on reader service card*

**American Crafts:** The new ceramic lighting line, designed by Mill Mros includes sconces, pendants, table lamps, torchiers, wall lights & ceiling fans.

*Circle 103 on reader service card*

**ARC Sales:** The Mini-Bmf is one of five new products to be on display at Lighting World 5.

*Circle 107 on reader service card*

**Architectural Area Lighting:**
Bridging the traditional and contemporary gap with a new lantern constructed of aluminum with a rounded "DR" acrylic diffuser, illuminating today’s technology in outdoor lighting.

*Circle 108 on reader service card*

**Appleton Lamplighter:** This custom fabricated wall sconce consists of a solid brass frame with an opal glass lens and contains two fluorescent lamps.

*Circle 106 on reader service card*

**Architectural Lighting Systems:** Luminaire, designed by Robert Sonneman, is constructed of extruded aluminum. Four decorative styles and over 900 color finishes may be selected.

*Circle 109 on reader service card*

**Artelide:** Anton Modular, designed by Ernesto Gismondi, consists of extruded aluminum and is offered with fluorescent, halogen or incandescent lighting. Signage and other accessories available.

*Circle 110 on reader service card*
**ECP:** Series 10 is a screw-in hi-hat retrofit utilizing 2-twin tube lamps with a specially designed reflector. Five, seven, nine or 13 watt fluorescent tubes may be used.

*Circle 137 on reader service card*

**Electrix:** Halogen Drafting Lamp uses zinc cast adjustable clamps and has a spring balanced 45-inch reach. Optional side bracket available for use with automatic drafting machines.

*Circle 135 on reader service card*

**Fail Safe Lighting Systems:** The all weather, vandal resistant Exit sign is injection molded with a polycarbonate housing and operates on PL/7W fluorescent illumination.

*Circle 141 on reader service card*

**Enel Design:** Enveltec 2-foot by 2-foot modular ceiling lenses combine highly reflective optical mirror surfaces with soft, matte white or pastel backgrounds.

*Circle 138 on reader service card*

**Exide Electronics:** Ceil-Pak Series, a totally flush emergency lighting system, mounts in t-bar grid ceilings and offers halogen lamps as well as remote units.

*Circle 139 on reader service card*

**Environ Design:** Enveltec 2-foot by 2-foot modular ceiling lenses combine highly reflective optical mirror surfaces with soft, matte white or pastel backgrounds.

*Circle 138 on reader service card*

**Electrics Diversified:** Star-lite® Architectural Lighting Controller features a fade rate from 0-60 seconds, LED bargraph display, keyed lockout and programmable or manual control.

*Circle 136 on reader service card*

**F.R. Industries:** Lenzi Ornamental Public Lighting is a complete line of urban furnishings in styles ranging from ornate Louis XV to popular Art-Deco themes.

*Circle 140 on reader service card*

**Fyrnetics:** A new line of high frequency electronic ballasts is available in 120 and 277 volts in four model sizes.

*Circle 142 on reader service card*

**General Electric:** Perma Gard® corrosion-resistant luminaire for hazardous and adverse locations has no exposed metal parts. Perma Gard® offers a choice of optical assemblies.

*Circle 143 on reader service card*

**Harry Gitlin:** This wall sconce accommodates both halogen and frosted lamp lighting. The flashed opal glass shade is bracket-mounted.

*Circle 144 on reader service card*
BUILDING PRIDE THROUGH Lighting

See
GENERAL ELECTRIC
Lighting Systems Department
Booth No. 441
at
LIGHTING WORLD V

GENERAL ELECTRIC COMPANY
Lighting Systems Department
Hendersonville, NC 28739

Circle No. 351
**Georgian Art Lighting Designs:** This solid brass lantern stands 38 inches high, 10½ inches wide, and extends 15 inches. It is available in a variety of finishes and similar styles. Circle 148 on reader service card

**Guth Lighting:** Silhouette wall sconce series for either PL-13 fluorescent or 35 watt HPS lamps is available in three faceplate styles and twenty-one material finishes. Circle 146 on reader service card

**Halo Lighting:** This compact fluorescent downlight features an integral ballast, snap-on junction box cover and an adjustable socket plate. Reflectors offered in different finishes. Circle 147 on reader service card

**High Lites:** The all die cast exit sign is now offered with dependable twin seven-watt PL type lamps, in both nonemergency and fully self powered models. Circle 148 on reader service card

**Hilight:** Mosquito Halogen wall sconce is designed by Megalit, France. The body is made of lacquered aluminum and the reflector is stippled aluminum. Circle 149 on reader service card

**Indy Lighting:** The Baffled Downlight Series highlights the G.E. 32W medium base metal halide lamp. Circle 151 on reader service card

**International Lighting Review:** ILR is a richly illustrated quarterly review devoted to all aspects of lighting application world-wide. Circle 152 on reader service card

**IPI:** Designed by Roberto Pamio, Eta is a recessed fixture providing a downward and diffused light through a translucent multi-color Murano glass diffuser. Circle 153 on reader service card

**Joslyn:** Joslyn/Thompson lowering systems are easy, safe, economical solutions to maintenance problems for indoor and outdoor fixtures and lighting pole systems. Circle 154 on reader service card

**Joslyn Thompson:** The all die cast exit sign is now offered with dependable twin seven-watt PL type lamps, in both nonemergency and fully self powered models. Circle 148 on reader service card

**J.T. Kalmar:** Kalmar's products feature modern and traditional kinds of glass used in imaginative applications. Circle 155 on reader service card
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J W Lighting: Paraloc’s® unique interlocking louver eliminates joint separation and provides optimum performance. Thirty louver/lamp designs may be configured. Circle 156 on reader service card

Kenro Light: Kalmar Pyramide HL is available as a ceiling fixture, wall bracket or floor lamp and consists of a polished brass opal glass. Circle 157 on reader service card

Keystone Lighting: A new high-efficiency, open-bottom recessed reflector keeps the light source above the ceiling and out of the glare zone while directing the light. Circle 158 on reader service card

King Luminaire: The Coronet, patented version of the original style 118 Acorn, has true IES type II or type V distribution. Circle 160 on reader service card

Koch + Lowy: Pharaoh T-605, designed by J. Philippe Zampol of Paris, stands 17 inches tall. The shade is finished in white acrylic and the base finish is offered in black or aluminum anodized. Circle 161 on reader service card

George Kovacs Lighting: Robert Sonneman designed Feather, a portable, 50 watt halogen lighting system that has a 32-inch reach, rotates 360 degrees and is finished in black satin. Circle 162 on reader service card

Lightalarms: Series FFAM is a tamperproof, vandalproof fluorescent emergency fixture. The battery pack provides power to one of the lamps for 90 minutes. Circle 202 on reader service card

Lighting Systems: The Citation Series, designed to utilize a range of lamp types, is available in three sizes. The reflector has segmented optical assembly for precise control. Circle 203 on reader service card

Kim Lighting: The 4300 Series Architectural Mini-Floods with die-cast swivel are low-wattage, high performance compact floodlights housed in a cylindrical aluminum extrusion. There are no exposed fasteners. Circle 159 on reader service card

LAM Lighting: Elan is available in direct, indirect, and directable configurations using lenses and diffusers. Easily mounted, Elan is lit by Octron or rapid-start lamps. Circle 200 on reader service card

Lightolier: Structura is a new space-frame system designed to partition areas, carry loads or localize lighting. Custom colors and several lighting accessories are available. Circle 204 on reader service card

Lehigh Electric: Sunburst, a packaged, high-performance dimming system offers manual slider or multiple scene preset controls. Circle 201 on reader service card
Lorin Industries: Binder offers forming assistance for reflector designs that incorporate pre-anodized aluminum and low-iridescent materials. Circle 208 on reader service card

Lightworks: Crystawall is the latest in low voltage light tubing technology. Circle 205 on reader service card

Litecontrol: The Via indirect, only 4 and \( \frac{3}{16} \) inches high, has a wide-top opening for high efficiency. Recessed track option is available. Circle 207 on reader service card

Lumatech: Reflect-A-Star 9 watt and 13 watt Quad Compact fluorescent floodlights are designed to replace up to 100 watt incandescent reflector floods in downlights and track fixtures. Circle 211 on reader service card

Lumec: Candela consists of a basic clear or opaline polycarbonate globe, ballast base and aluminum or steel poles and mountings. Circle 210 on reader service card

L’Image: L.L.S. are modular lighting systems capable of integrating communication, power and utility lines. Many configurations are possible for all dimensions. Circle 206 on reader service card

Lucifer: Trucool is an air-cooled low-voltage halogen showcase reflector engineered to revolutionize cosmetic, jewelry, leather goods and fabric displays. Circle 209 on reader service card

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Lutron: Versaplex Manual Slide Control System controls 1 to 12 independent lighting zones and can be set as well as operated from any number of locations through the "Take-Command" control. Circle 212 on reader service card

McGraw-Edison: The HID Park-King lighting fixture provides lighting solutions for all parking structure illumination needs. Circle 213 on reader service card

McPhilben: A new generation of luminaires for area lighting offers a choice of reflectors. Disc, square, rectangular cube models with pole, wall or ceiling mounts are offered. Circle 214 on reader service card
**Macro Electronics:** These dimmer systems work for HID, neon, cold cathode, fluorescent, and incandescent lamps with controls from simple to sophisticated electronic memory systems.

_Circle 213 on reader service card_

**Magnalite:** ML Systems are custom designed anodized aluminum reflectors for fluorescent lighting systems.

_Circle 216 on reader service card_

**Magni-Flood:** These luminaires accommodate high pressure sodium, low pressure sodium, metal halide and mercury vapor lighting in a range of illumination systems.

_Circle 217 on reader service card_

**Marco/Marvin Electric:** The MX711 line incandescent and fluorescent recessed downlights offer a variety of housing-trims including specular Alzak, eyeballs, and lensed fixtures.

_Circle 218 on reader service card_

**Maximum Technology:** These energy saving optical reflectors for fluorescent lighting utilize premium grade reflectors and are designed for both retrofit and new construction.

_Circle 220 on reader service card_

**Marco/Marvin Electric**

**Mitsubishi:** Super Marathon quad is a 22-watt instant-on screw-in compact fluorescent lamp that provides light equivalent to a 100-watt incandescent and lasts 12 times longer.

_Circle 221 on reader service card_

**Master-Dim:** Recall from 4 to 18 preset lighting scenes with TouchMaster-18 control station that features custom finishes and switch selectable personality.

_Circle 219 on reader service card_

**Magnalite**

**Mitsubishi**

**Neon Modular Systems:** Laser Light Sculptures, a neon light source housed in sleek visionary designs, provide a variety of decorative possibilities.

_Circle 222 on reader service card_

**NL Corporation:** This line of recessed fixtures for G.E.'s 32-watt Halarc® Metal Halide Lamp have electronic ballast, and are offered in 120 and 270 volts.

_Circle 223 on reader service card_
AUDIO CASSETTES

Cassettes of most of the Educational Seminars and Panel Presentations are available at the CCI desk in the Crystal Palace Lobby

LIGHTING WORLD INTERNATIONAL

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New Horizons Lighting: Series 4000 Tubular Fluorescent lighting systems are offered in standard 4-inch and 6-inch diameters. Architectural fluorescents are available in many designer colors.

North American Philips Lighting: Intended for stage and studio use, the SureSpot lamps feature built-in reflectors which eliminate cleaning and focusing time.

Norton Industries: NWG-C Series is a non-modular wood grille ceiling fabricated of solid hardwood to create a continuous appearance in lit or nonluminous designs.

Polarized International: Polarized/Radialens Panels, 150 inch thick, provide wide (bat-wing) distribution to reduce lighting and glare and improve vision.

PowerLine Communications: The PowerLine Dimmer for manual control is a revolutionary microprocessor controlled dimmer that enables dimming of entire 120 or 277 volt, 20 ampere, fluorescent lighting circuits.

Prescolite: The new Double Twin Tube Fluorescent Downlight Series uses two double twin tube lamps providing a 1700 lumen package in a 6-inch aperture.

Progress Lighting: The collection of eleven new cord and chain hung pendant lamps offers distinctive design in a selection of accent and pastel colors.

Prime-Color: Illumination quality meter is a sophisticated, handheld, computer-operated light-measuring device.

Prescolite Controls: Horizon, an ultra-thin wallbox dimmer, features an exclusive touch on/off switching separate from the slider and offers full control from multiple locations.

Quoizel: Royal Kensington Series, handmade with acid etched crystal, is an authentic 19th century reproduction in solid brass with ornamental arms. Six sizes offered.
All across the U.S.A. Sentry Electric luminaires are brightening up streets, parks, plazas, campuses, and historic restorations. By day they ornament their surroundings. At night they radiate brilliant light at very high levels of energy efficiency.

Sentry Electric offers you a wide selection of catalog-model luminaires; as well as custom designs that can remain (if you wish) unique to your site.

Call or write for a catalog and the name of your nearest Sentry Electric sales representative.
Scientific Component Systems: X18 CR Flush-mount, screw in retrofit fixtures for 6-inch diameter recessed ceiling downlights are housed in anodized aluminum and provide easy ZIP-CORD installation. Circle 238 on reader service card.

Société Pole-Lite Ltee: Square tapered or non-tapered aluminum poles are now available for applications from 8 feet to 35 feet. Color finishes can be designer specified. Circle 242 on reader service card.

Fredrick Ramond: The Riva series of sculptural floor standing Halogen fixtures features optically beveled and polished acrylic columns. Circle 235 on reader service card.

Roxter: Euro style fixtures are interchangeable on 2- and 4-foot tracks, both are offered in permanent mount and portable plug in models. Circle 236 on reader service card.

Sentry Electric: The Bishop's Crook is one of several ornamental luminaires equipped with metal halide, high-pressure sodium or mercury lamps for high light output and efficiency. Circle 239 on reader service card.

Sentry-Lite: Sentry-Cycle, a diagnostic system for emergency lighting, provides continuous (every 15 seconds) automatic monitoring along with instant display of critical functions. Circle 240 on reader service card.

Sentry-Lite: Sentry-Cycle, a diagnostic system for emergency lighting, provides continuous (every 15 seconds) automatic monitoring along with instant display of critical functions. Circle 240 on reader service card.

Sennex: High-intensity, low-voltage halogen TINY lamps provide brilliant lighting, attractive design, and all-brass construction. Floor, desk/table, and wall models are available. Circle 245 on reader service card.

Saunders-Roe Developments: BetaLux-E, with a safety-10 rating, is the slim aesthetic solution in self-luminous exit signs. Circle 237 on reader service card.


Spaulding Lighting: Cambridge parking area radius corner luminaires are available with field rotatable forward-throw optics, asymmetric or symmetric distribution. Circle 243 on reader service card.

Staff Lighting: Oval Tubular Lighting System has captured a new dimension in tubular lighting. Fluorescent, track, or blank tubes are offered. Circle 244 on reader service card.

Sunnex: High-intensity, low-voltage halogen TINY lamps provide brilliant lighting, attractive design, and all-brass construction. Floor, desk/table, and wall models are available. Circle 245 on reader service card.
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*Circle 249 on reader service card*

**Sun Valley Lighting Standards:** This collection of cast-aluminum constructed classic ornamental and traditional lighting fixtures and poles, includes matching arms, sconces and bollards.  
*Circle 246 on reader service card*

**Unilight Limited:** Solid brass ceiling fixtures, very practical for low ceiling areas, are available in polished chrome, antique brass, or polished brass finishes.  
*Circle 252 on reader service card*

**Unenco:** The Unenco Switch occupancy sensor covers 250 square feet and is capable of switching up to 12 fluorescent tubes.  
*Circle 250 on reader service card*

**Universal Manufacturing:**  
Genesis is a high frequency, solid state electronic ballast engineered to maximize reliability and minimize operating costs.  
*Circle 253 on reader service card*

**Tishman Research Company:**  
Infracon®, a passive infrared lighting control sensor automatically turns lights on and off according to occupancy. A wide view sensor may be added.  
*Circle 247 on reader service card*

**TLS:** Securelight system combines a low voltage power supply with a rechargeable battery to provide emergency and energy saving night security lighting.  
*Circle 248 on reader service card*

**Union Metal:** “The Real Thing” is among the original historic families of lamp posts using hand-crafted patterns manufactured since 1906.  
*Circle 251 on reader service card*

**Venture Lighting International:**  
Double-ended metal halide lamps provide the same color and color rendition as regular single-ended lamps. Both lamps may be used in the same installation.  
*Circle 254 on reader service card*

**Visual Merchandising & Store Design:**  
VM & SD monthly design magazine for retail display designers, store planners and store interior designers features successful display techniques.  
*Circle 255 on reader service card*
Voigt Lighting: Custom Architectural Lighting Instruments emphasize photometric control. Pictured is the Sky-Beam concept—building blocks for sculpture with light.

Vue: The MoreVue is a specular aluminum reflector which clips into fluorescent lamps and improves single lamp task lighting by 63 percent.

Western Industries: Omegalux 1200 Luminaires consists of metal housing, a specular aluminum reflector, 10-ambient ballasts, Lexan lens, and photometrics.

Woodform: Group 4000, contemporary outdoor HID lighting, features cylindrical, conical or parabolic options to minimize glare and concealed reflector assembly to maximize light distribution.

Westerfield: The Reflectocap is a screw-in R40 chrome aluminum reflector with a 72W Sylvania Halogen Capsylite lamp.

Westinghouse Electric: INCOM, a lighting and energy management system, automatically controls lighting and heating through a programmable personal computer.

Woodform: Group 4000, contemporary outdoor HID lighting, features cylindrical, conical or parabolic options to minimize glare and concealed reflector assembly to maximize light distribution.

Circle 256 on reader service card

Circle 258 on reader service card

Circle 259 on reader service card

Circle 260 on reader service card

Circle 261 on reader service card

Union Metal
CORPORATION
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CANTON, OHIO 44711
Circle No. 412
General Information

Registration Information—Exhibits, Seminars, Workshops and Special Events
Lighting World International is the largest trade show in the United States dealing specifically with the many aspects of architectural, industrial, commercial, institutional and decorative lighting. It is an international event designed to facilitate the exchange of information and the transaction of business within the industry.

Lighting World International is open to all professionals active in the industry including architects, lighting designers, consulting engineers, building and plant engineers, interior designers, contractors and developers, facility planners and managers, distributors, manufacturers, representatives, educators and the working press. Children under the age of sixteen will not be admitted to the exhibition.

All seminars and workshops will take place on the first floor of the Jacob Javits Convention Center. Registration fees for seminars and workshops vary. Please consult the registration form for fee schedule.

Exhibit Hours
Monday  11:00 A.M.–7:00 P.M.
Tuesday  10:00 A.M.–7:00 P.M.
Wednesday 10:00 A.M.–4:00 P.M.

Registration
Registration will take place in the Crystal Palace of the Jacob Javits Convention Center, 34th Street and 11th Avenue.

Registration Hours
Monday  7:30 A.M.–7:00 P.M.
Tuesday  7:30 A.M.–7:00 P.M.
Wednesday 7:30 A.M.–4:00 P.M.

A badge allowing entrance to the exhibition for all three show days is $15.00.

Badges
Where the information has been furnished, attendees will be provided with a color coded badge indicating their occupation. The coding is as follows:
- Architect
- Lighting Designer
- Interior Designer
- Consulting Engineer
- Building/Plant Engineer
- Contractor/Developer
- Representative
- Facility Planner
- Facility Manager

Colored Badges
- Red
- Blue
- Green
- Black
- Brown
- Orange
- Yellow
- White

Offices
The Show Management office will be located on the fourth floor of the Convention Center in Room 4E01. Information regarding Lighting World International will be available throughout the show.

Press Room
Working press are invited to make full use of the Press Room located on the fourth floor of the Convention Center in Room 4E02. Personnel will be on hand to assist qualified members of the press in their coverage of Lighting World. The Press Room will be open during all show hours.

Services
- Lost and Found—see any building public safety officer in the Convention Center.
- First Aid Room—located behind Hall 1E on Level 1 of the Convention Center.
- Message Center—Messages may be left for an attendee or an exhibitor at the Information Desk located in Registration in the Crystal Palace or placed directly on the Message Board located in the Crystal Palace.
- Bus Service—Shuttle buses will run continuously during show hours between the Convention Center and the New York Hilton and Sheraton Centre hotels. Consult signs in the lobbies of the hotels and the Lighting World Registration area for schedule.
- Dining Facilities—There is a cafeteria located on Level 1 of the Convention Center as well as a concession stand with seating which is located in the Crystal Palace for your convenience.

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Museum for the Menil Collection

Designed by Italian architect Renzo Piano, in joint venture with a Houston firm, the Menil Collection is a deliberately nonmonumental structure for the care and display of Modern Art. Suspended between the art works and the Texas sun is a unique system of ferrocement “leaves” that reduce and disperse daylight over the galleries.

P/A Inquiry
Health Facilities

Examined here will be the design and remodeling of health facilities in response to changing methods and standards of care.

Also in May

Features on other outstanding buildings, a report on the annual P/A International Furniture Competition, a special NEOCON section, a P/A Reader Poll on the AIA, and a P/A Technics article on ceilings.

Future Issues

In June, P/A will publish a special issue on Young Architects, and in July a critical look at new work in Paris.

Menil Collection, Houston, Texas, by Piano & Fitzgerald.
The Marvin Magnum Authentic Double-Hung may look like it belongs in the Nineteenth Century. But the truth is the technology we build into this window will be more at home in the Twenty-first.

**AUTHENTIC. RIGHT DOWN TO THE DIVIDED LITES.**

Some companies might be content to simulate what were originally divided lites by placing a wood (or even plastic) grid over a single pane of glass. Not Marvin.

By taking the time and making the effort to create real divided lites, we give you a window that more closely replicates the original. We bring the true spirit of craftsmanship to the job. The same craftsmanship to be found in the original windows.

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This window is made to stand the load. ¾" stock is standard in the frames, with 1¾" throughout the sash. Header, check rail and bottom sash, all are sealed with the best possible weatherstripping.

The result is a window that performs better under severe weather conditions. Without compromising the architectural integrity of the building.
CENTURY WINDOW HOME IN THE 1800'S.

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Both sash on every Magnum Double-Hung tilt into the room for cleaning. It's a feature that will save time and money for years to come.

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Some companies are content to offer standard sizes from inventory. We make every window to order. This unique, Marvin way of doing business makes it easier for us to fabricate windows that simply don't fit into other companies' plans.

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Maybe that's why so many architects and designers put their trust in Antron. And why they've made Antron the number one specified carpet fiber in the country.

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THE ANSWERS COME EASY WITH ANTRON.®

Circle No. 342
Generally speaking, the purpose of a roof is to keep what's outside a building from getting inside a building. Which means the last thing you'd expect to want in your roof is a hole.

But that's exactly what we do with the most advanced single-ply roofing system you can buy. Put holes in your roof so it doesn't leak. The mechanically-attached Hi-Tuff™ roof. What goes down doesn't come up. To stick a single-ply membrane to the roof deck, some people use glue. Which works. For a while. But because glue can be sensitive to moisture, rooftop chemicals, and building expansion, the membrane can come unglued. And there goes the roof.

Others use ballast, or stones. Thing is, to keep a 100,000 square foot roof in place, you need a million pounds of stones on top of it. Now, is that something you want hanging over your head? Which brings us to the Hi-Tuff roof from Stevens. We attach the scrim-reinforced, Hi-Tuff membrane to the deck with corrosion-resistant fasteners. We cover the fasteners with the next layer of membrane. And then we fuse the two layers together with a hot air welder. The result is a single, roofwide sheet of rubber.

A Stevens roof isn't gone with the wind. Once installed, a Hi-Tuff roof resists destructive wind uplift forces. In fact, in Factory Mutual's wind uplift test, the Hi-Tuff roof received the highest available rating of 90 pounds of pressure per square foot, then exceeded it by 50 percent. Which means if there's a place on earth that's too windy for a Hi-Tuff roof design, nobody's discovered it yet. Or if they did, they got blown away.

When the weather gets tough, Hypalon® gets tougher. The Hi-Tuff membrane is made

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Your Roof leaking.

from DuPont's Hypalon. Unlike other membrane material, Hypalon combines the best properties of both thermoplastics and rubbers. So after it's hot-air welded and fully installed, it self-cures to resist ultraviolet rays, rain, pollution, heat, and cold.

And Hypalon is white, so it reflects up to 78 percent of the sun's heat. Which makes your HVAC system work less. Which, in turn, saves you money.

Our operators are now standing by.

We could also tell you about Hi-Tuff's UL Class A rating, its resistance to aggressive chemicals, its low temperature flexibility, or its low burning characteristics. But, quite frankly, we're out of room.

So instead, we'll send you some product literature. But first, we need to know your name and where you pick up your mail. So give us a call at 413-586-8750. We'll take care of the rest.

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Circle No. 383
New Products and Literature

Teorema wall tiles have bold black and white positive and negative circles centered on five-inch-square white Italian ceramic tiles. They are also available, on special order, in blue, orange, yellow, or coffee brown. Teorema can be used as accents for solid tile or arranged in patterns. Hastings Tile & II Bagno Collection.

Circle 263 on reader service card

Comfort-E® glass makes maximum use of the sun’s energy and daylight and minimizes the heat that escapes through the glass in winter. The energy-efficient properties of Comfort-E, combined with good architectural construction, assist in reducing summer air-conditioning loads. The glass has a low-emissivity coating that slows the emission of radiant energy while allowing daylight, or short-wave energy, to pass through the glass. AFG Industries, Inc.

Circle 269 on reader service card

European style faucets and accessories are shown in a 56-page full-color catalog. There are seven collections of faucet designs in the International line. Each collection offers matched accessories. The catalog includes description, model number, finishes available, weight, and list price of each product. Moen Group, Stanadyne.

Circle 272 on reader service card

Concrete publications catalog contains over 325 listings. Publications include those on concrete technology, structural design, concrete construction, and ACI standards, codes, and specifications. The catalog also lists design handbooks, monographs, symposia, bibliographies, and special publications. The American Concrete Institute.

Circle 273 on reader service card

The Reveal-leg Parsons Table has a reveal at the juncture between the leg and apron, giving the appearance of a floating top. The table is available in 13 wood veneers, with a reverse diamond top, and in 16 colors. Tops are round or rectangular. Intrex Furniture.

Circle 274 on reader service card

Silhouette movable wall systems feature sturdy steel construction and a range of choices in colors, textures, and customized dimensions. The system requires no fastening holes to show when the system is moved. Electrical raceways on top and bottom accommodate wiring for communications and office equipment systems. Virginia Metal Industries.

Circle 275 on reader service card

(continued on page 206)
**NEW PRODUCTS AND LITERATURE**

**Toughwall wallcovering** is intended for heavy contract use. It is available in 15 colors, has an excellent acoustical rating, and is Class A fire rated. The 100 percent polyester fabric is 54 inches wide. Coral of Chicago.  
*Circle 270 on reader service card*

**Architectural Radiation** catalog of wall fin and convectors discusses product features, styling, and accessories. It includes selection procedures, ratings, correction factors, installation information, capacity data, and mechanical specifications. Used for heating commercial, institutional, and industrial buildings, the systems are available for hydronic, steam, or electric heating. The Trane Company.  
*Circle 277 on reader service card*

**Building Materials**

**Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.**


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**Tao wood chair** has upholstered or wood back. It has tapered legs and radiused arms accented by square edges of the back frame. The chairs are available in mahogany, oak, walnut, and cherry finishes on a hardwood maple frame. Helikon Furniture Company, Inc.  
*Circle 279 on reader service card*

**A smallwares washer** for fast-food operations fits under a sink drainboard. It features automatic operation, a 21-racks-per-hour capability, and a built-in drain pump for installation flexibility. The hot-water sanitizing unit saves energy, water, and detergent, as well as space. Stainless-steel top and sides are standard. Hobart Corporation.  
*Circle 278 on reader service card*

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206 Progressive Architecture 4/87
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Provide professional service in research, development, design and construction of residences and office buildings under the supervision of a licensed architect. Plan layout of project and integrate engineering elements into unified design. Prepare architectural drawings and make presentation models of structures. Provide information regarding specifications for building materials, the method of installation, the quality of finishes, and related materials. Bachelor’s degree in Architecture and three (3) years experience in the offered field required. $3250/mo. 40 hrs/week. Job site and interview in Los Angeles, California. Send this ad and your resume to Job #CP0607, P.O. Box 9560, Sacramento, CA 95823-0560 not later than May 1, 1987.

INTERIOR DESIGNERS/ARCHITECTS:

Key positions are available nationwide. Specialists in senior level managerial and technical design industry placement. For confidential consideration, contact: Phil Collins, Dept. "J", CLAREMONT-BRANAN, INC., 2295 Pacific Dr., Suite 520, Atlanta, GA 30345 (404) 491-1292.

South Florida firm has position available for person skilled in hospital space planning and design. Minimum 2 years experience in architectural design. $30,000-$35,000. Send resume to: Progressive Architecture, Job Mart, Box 491.

ARCHITECT

Plans layout of project & design; consults w/client & prepares information re design, specifications. Must be eligible for the Architect Registration Exam., in CA. 3 yrs college in Architect/Design w/diploma required yrs. exp. in subject job. $2365/mo. Jobsite/Interview; L.A., CA. Send this ad & your resume to Job #CW 1277, P.O. Box 9560, Sacramento, CA 95823-0560 not later than 4/30/87.

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ARCHITECT, INTERIOR DESIGN: Interior planning and design of hotels, restaurants and commercial buildings with emphasis on Chinese architectural concept, planning/layout in all aspects of Chinese restaurant. Min. req.: Bachelor of equivalent in arch. or civil eng' & 5 yrs exp. Full-time, $3,000 per/mo. If hired, must show legal right to work. Job site and interview: San Fran. Send this ad and resume to Job No. CP 0617, P.O. Box 9560, Sacramento, CA 95823-0560 not later than May 1, 1987.

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Progressive Architecture
Job Mart—(Assigned Number)
P.O. Box 1361
660 Summer Street
Stamford, Connecticut 06904

Freelance draftsman wanted to redraw architectural plans, sections, and details for publication. Must be available on call. Send resume and samples of inked work to RJ Huff, Progressive Architecture, 600 Summer Street, PO Box 1360, Stamford, CT 06904

DIRECTOR OF URBAN DESIGN
New director position available with consulting firm offering urban planning, landscape architectural and graphic design services. Responsibilities include coordination with urban planning, landscape architect and graphic design divisions as well as direct client contact, complete project management and public presentations. Must have minimum of 8 years experience with design guidelines and regulations, streetscape improvement programs, community redevelopment efforts, etc. Salary commensurate with education and experiences. Send resume to: Anne Booth, P.O. Box 024348, West Palm Beach, FL 33402-4348.

SCHEDULE

Information:
Debbie Trunkenwolz
213.854.7475

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8611 Santa Monica Blvd., West Hollywood, California 90069

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<td>Sherwin-Williams, Wholesale Div.</td>
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<td>J.P. Stevens &amp; Co.</td>
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Note: R or W after page numbers denotes material that appears in regional editions only.

*Contact company directly
On July 10, 1985, the independent laboratories of Warnock Hersey International conducted a 90-minute fire endurance and hose stream test on a prospective product by Alumax/Magnolia Division. The result was PHOENIX, the first aluminum door frame to receive a 90-minute fire rating.

PHOENIX combines the fire resistance of steel with the aesthetics of aluminum. Few materials are so fire resistant as steel. Steel alone, however, does not have the design flexibilities or aesthetic appeal of aluminum. To achieve the advantages of both metals, therefore, a bi-metal frame system was devised which consists of unexposed 16-gauge steel sub-frame and 6063-T5 alloy outer aluminum frame.

PHOENIX permits design consistency — with no job site finishing. New PHOENIX matches Alumax's 20-minute Royal and Imperial frame lines in both color and configuration. Available are factory finishes of clear, bronze and black anodized, plus a variety of electrostatically applied, baked on paint finishes. The steel subframe, too, is bonderized, dip process painted and oven dried.

PHOENIX is a free-standing system which can accommodate multiple sizes of doors. PHOENIX units utilize single doors up to 4 feet by 8 feet, 10½ inches; double doors up to 6 feet by 8 feet, 10½ inches. Throat sizes range upward from 3½ inches, and corner tabs are included for convenient field installation.

PHOENIX is produced by Alumax, an integrated company. Each aspect of production, from smelting to extrusion, machining to fabrication, is Alumax owned and operated. As a result, it is able to offer not only an exceptional level of quality, but a custom capability which is second to none.

Ask us about the PHOENIX "Total Opening" package. Included are PHOENIX, Imperial and Royal interior door frames ... wood veneer and plastic laminate doors ... all hardware. For more on Alumax door systems, consult Sweet's Catalog, section 08100/ALU. Or contact us direct: Interior Products Group, Alumax/Magnolia Division, P.O. Box 40, Magnolia, AR 71753; 800-643-1514 (In Arkansas, 501-234-4260).
PARALINE...
Not all linear metal ceilings are created equal.

There is only one linear metal ceiling available as a fire-rated system, Paraline. The same system offering the flexibility to create barrel vaults, crisply angled planes of sleek flat surfaces. The same elegantly detailed system that's available in more than 100 contemporary colors and even a Deep Profile series, Paraline. A Dorn ceiling product now available from Integrated Ceilings, Inc. The place that makes a habit of doing things a better way.

SOMEONE HAS TO BE FIRST
Integrated Ceilings, Inc.

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