Progressive Architecture

October 1976 A Penton IPC Reinhold Publication

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People who walk on it know it for the nice underfoot comfort. People who wheel equipment on it know it for the smooth, taut surface. And people responsible for the hospitals and nursing homes in which it's installed know it for the special characteristics that help meet all the requirements of the Hill-Burton Act regarding smoke-generation and flame-spread limits. And everybody who looks at it knows it's beautiful. That's Quiet Zone II Vinyl Corlon® from Armstrong.

Start at the top, and Quiet Zone II gives you a hard-working vinyl wear layer that's built to take heavy traffic and embossed to help hide traffic scuffs. Go to the bottom, and Quiet Zone II gives you a vinyl foam backing with a refreshing resilience that makes standing or walking easier and quiets noise more effectively than any conventional vinyl floor covering.

In Quiet Zone II, practicality is built right in along with all its other benefits. Seams are readily sealed to provide essentially a seamless floor. Spills wipe up, promoting constant cleanliness. And as for meeting Hill-Burton requirements, Quiet Zone II has an ASTM E-84 flame-spread rating of 75 or less and an average NBS smoke density of 450 or less — as well as a Flame Propagation Index of less than 4.0 in the UL-992 Chamber test.

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FROM THE INDOOR WORLD® OF

Armstrong

This pendant fixture, movable to many points in the room, provides both quality task lighting and substantial energy savings.

The Synercon™ 60 Ceiling System from Armstrong. A new standard of design flexibility produces a new high in energy savings.

The Synercon 60 Ceiling System from Armstrong is all new from the grid to the board, from the lighting options to the air handling. More important than even its newness, however, is its innovation. Innovation that serves to increase design flexibility, decrease energy consumption, and enhance lighting quality.

The new lighting starts with a pendant fixture designed to provide highly efficient task lighting that can save as much as 65% in electrical costs when compared to conventional-type recessed troffers. It accommodates two 40-W lamps which result in 70 or more footcandles at the work surface and is offered with a special double lens that controls brightness and effectively beams the light exactly where it's needed. What's more, with the fixture suspended, the ceiling is 100% acoustical material.

With the Synercon 60 Ceiling System, however, that's only the start. Because there are two other lighting options as well. The newly designed recessed troffer you see above that also saves energy because it normally requires fewer fixtures than competitive systems. And the energy-efficient sodium fixture has been

Lighting includes 14" x 48" troffer (2- or 3-lamp) with standard or polarized lens; parabolic louvered fixtures (8- or 16-cell).

Further lighting is this 29"-square fixture with high-pressure sodium lamp, offered with standard or polarized lens or parabolic louver.

Air-handling options include air boot and bar for constant-volume systems as well as two variable-volume systems designed for energy savings.

specially designed to control brightness without seriously reducing the lamps' efficiency. Optional polarized lenses with these fixtures can further lower energy requirements as well as improve lighting quality by reducing veiling reflections.

With all three systems, the lighting efficiencies result in both immediate and long-term cost reductions. To deliver 70 footcandles, the pendant fixture can require only .9–1.0 watts per square foot; the high-pressure sodium, only 1.4–1.5; the standard troffer, only 1.9–2.0.

The new grid is three inches wide, with a flat flange, and features a 1⅝" black reveal that extends down the side of the recess and takes partition studs. It has a five-foot on-center hanging capability and can be 100% slotted for air distribution.

The new board is nondirectional Cortega™ which, combined with the flat grid design, produces a subtle, unobtrusive look. A new super acoustically efficient board called Silok™, shown in main illustration, is also available for use in open plan spaces.

The new air handling gives you a choice of a high-capacity five-foot-long air bar designed for constant-volume systems as well as two variable-volume systems—each with two options—that save energy in several ways. They require no reheat, thus saving the cost of reheating cooled air. They need no external power to operate either valves or thermostats. And by reducing air quantities, they allow a reduction in the size of ductwork and fans.

With all its newness, innovation, and energy efficiencies, the Synercon 60 Ceiling System gives you a sum total of flexibility you've never had available before. In fact, this new system offers so much, we think you'll want to read about it in depth. Write us now for all the technical details. Armstrong, 4208 Watson St., Lancaster, Pa. 17604.

FROM THE INDOOR WORLD® OF Armstrong

October 1976

Progressive Architecture

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Cover: Detail of skylit, barrel-vaulted galleria atop Pacific Design Center (p. 78) by Cesar Pelli of Gruen Associates. Photo: Marvin Rand.

New Highspire Travertone™ from Armstrong. It's what "first class" was always meant to look like.

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1001 paradoxes

تعليم القراءة عكسياً

Arabic script for "learning to read backwards," or accommodating to the Middle East, from P/A Apr. 1975, p. 21.

Paradoxes abound in the Middle East architectural saga. The same petroleum crisis that precipitated a recession in the West set off a race among U.S. architects for the pot of gold at the end of the jetstream. But the Middle East embodies a paradox common to Gold Rush situations: since some veins run out quickly and other diggings never pay off, anxiety among those who seek their fortune over there seems to run even higher than among those who scrape by on their home turf. U.S. architects rarely risk being quoted on the Middle East; hence P/A's fable of the composite Harry Barber (p. 56).

In the long run, of course, the locals there will be able to handle commissions and contracts that are now up for grabs internationally. All of the outside professionals, contractors, and suppliers currently working the Middle East are, in fact, involved in a crash program to eliminate the need for their services. The oil-rich states—with their own set of anxieties—mean to develop their professional skills and industrial capacity before that precious petroleum runs out.

For the present, however, the Gold Rush pattern holds sway, with the terrible cost escalation that develops when everyone suddenly goes furiously to work in some previously placid outpost. With extraordinary demand for materials, labor, and equipment, the cost of building in Arabia, for instance, has climbed from only slightly above U.S. levels to four or five times as high. (For a succinct review of construction economics and problems on the Arabian peninsula, see *Fortune,* Sept. 1976.)

Another Middle East paradox: a lot of architectural and planning expertise already exists there, but not in the right countries. Among the oil-rich nations, even Iran's reasonably developed professions are by no means up to present tasks; Egypt and Lebanon can export some talent. Only Israel has an abundance of architects experienced in advanced techniques—and aware of regional conditions as well—but they are totally barred, except from Iran. The ban against Israelis extends beyond the Middle East—in the form of the "Arab boycott"—to those of any nationality who do business with Israel and, ineffect, to those who even sympathize with it (i.e., Jews).

In this country, the acceptance of boycott rules (through contract provisions, not consistently enforced) has raised the specter of economic inequities against Jewish practitioners and employees. (For an airing of this issue, relying heavily on innuendo, see Ellen Perry Berkeley's article, "Jews Need Not Apply," *The Village Voice,* New York, Mar. 22, 1976.) The issue of whether boycott compliance violates U.S. anti-discrimination laws is the subject of a Justice Department suit against Bechtel Corp., and stiffer legislation is being disputed in the U.S. Congress as we go to press. Meanwhile Jewish principals of some architecture firms willingly accept fees—willingly paid by Arab clients—for projects they could never visit.

And that brings us to a colossal paradox, historically speaking: access to Saudi Arabia and some other states (there is a good deal of ambiguity on this point) requires evidence that the visitor is a Christian—this despite a millenium of bitter Moslem-Christian warfare, still going on in Lebanon and Cyprus. Would Richard the Lionhearted get his visa, or Queen Isabella? Surely not if Suleiman the Magnificent were in charge.

Iran, of course, is different. Jews—native and foreign—can work there freely. And women can also operate freely there, one reason why we have an on-the-site report on Iran in this issue by one of P/A's editors (p. 49).

And there is an ultimate—more specifically architectural—paradox. We may be helping to duplicate in the Middle East a pattern of development already discredited in the West. Even if—for the moment—one has a surplus of fuel, that may not justify building another Phoenix or Houston. Wiser minds have advocated a building pattern close to indigenous models; but coming from foreign advisors, this position is easily dismissed as a Western attachment to primitive charm in people's countries. Local sages fare somewhat better: Hassan Fathy of Egypt, who has advocated and built historically patterned communities in the Middle East (see his *Architecture for the Poor,* Chicago, 1973) has even received honorary fellowship in the AIA.

There remains much more that could—and probably will—be told about the subject. In the immortal words of Scheherezade: "To be continued."

John Morris Dixon

Views

National monumentality
Your article on the National Air & Space Museum (July 1976, p. 70) is wonderful. We need more articles like it and fewer buildings like that.
David Slovic
Friday Architects/Planners
Philadelphia, Pa.

Singular houses
In the August 1976 P/A review of houses, it is interesting to observe how little consideration in those examples is given to children, both in terms of comparative functional sophistication, and in terms of plain square footage. I feel sorry for the kids who might have to grow up in such houses.

This might be a result of your example selection policy, or it might be a representative sample of architects' interest in houses. In both cases it would be symptomatic for our profession. This lack of interest is one of the primary reasons why a house is a house in the first place (as related to the microcosm of family) and might be one of the factors contributing to the gap that exists between architects and the homebuilding industry.
Chris Brozek, AIA, AIP
Phoenix, Ariz.

[While some of the more adventurous house designs are for that large portion of the population without children in the home, three of the five houses in the August P/A were, in fact, designed with ample provisions for children. Editors]

You postulate in *The House as a Relevant Object* (P/A, Aug. 1976, p. 37) that "the house is not dying but is very much alive and is making a strong recovery as a proving ground for design ideas."

In documenting this premise, however, you seem to fall into the same trap that many of us in the profession do when analyzing building types or illustrating life styles—that is documenting the exception rather than the rule.

The exception is your selection of individualistic, whimsical, and expensive pieces of sculpture by prestigious architects for wealthy clients. While each of the examples given are interesting, competent, and probably worthy of publication, I fail to see how variation in design form and space are really indicative of new housing ideas.

I maintain that the state of the house today is deplorable, and the architect has failed miserably in dealing with the problem. The present single family home is now priced beyond the means of the average middle income family, and the alternative is poorly constructed and undesigned condominium projects, and apartments. For a large segment of our population, the only alternative is the mobile home, which has been unmoved by the design profession, is unsafe, and is generally relegated to those areas of the city "where nobody else wants to live." The state-of-the art house design today does nothing to address the problems of energy conservation, nor does it address the continued proliferation of suburban, subdivision development, the continued misuse of decreasing agricultural and recreational land, and the continuing decay of our existing city housing stock.

While I do not wish to discount the excellence of the examples you have selected, I maintain you have not begun to address the design problems befalling the house. Until we, in the profession, get our heads out of the clouds of "ego-architecture," we will never really impact the housing environment from which the "rest of society" must choose.
Richard L. von Luhrte
Architect/Urban Designer
Denver, Colo.

A slightly belated fan letter for your issue on houses (Aug. 1976). Conceptually brilliant and stimulating and above all fresh—exactly the kind of thing one expects from *Progressive Architecture.*
James Stewart Polshek, Dean
Graduate School of Architecture and Planning
Columbia University
New York, N.Y.

The August issue of P/A still seems to preserve the world as Europe and the United States East of Chicago. The only geographical exception, and the only non big-name architect example, looks like it could have been built in the South of France or New Canaan, Connecticut. The examples, despite spectacular photography and an incredible expenditure of construction dollars, don't seem to have any evidence that human beings live in them. In fact, almost without exception, there are no people in the photographs. They are all white or concrete inside, devoid of textures, flat-roofed, and have very rigid geometries. They run the gamut from A to B.

The only examples of something other than cold and sophisticated architecture are held up to ridicule, in the report on the Venturi & Rauch Exhibit. At least I hope it is ridicule.

Regional architecture is not totally dead. There are still architects not afraid to expose the natural grain of wood and to use colors other than white. Oriental, and other cultures, are still exerting some real influence outside of the New York area. The counter culture book, "Handmade Houses (A Guide to the Woodbutcher's Art)" has a real influence in Europe as well as kooky California.

I am not angry, but rather discouraged, that your excellent magazine is not giving a broader spectrum, and that in my opinion you're not really "charting the progress of the profession" or "showing what is new." Another title might have been "Rehashing Some Ideas of the 30's and the 50's."
Henrik Bull, FAIA
Bull Field Volkmann Stockwell
San Francisco, Calif.

[Henrik Bull's point about regionalism is well taken. In his region, for one, there is a thoroughly valid modern tradition, which gets limited attention in the architectural press precisely because it is so stable and predictable. We would ask him, however, whether the Illinois and Connecticut houses shown in that issue are any less international—whether they, too, might be equally at home in the South of France. The lack of people in photos is not our choice; only the Netsches helped us out on that point. As for the material from the Renwick exhibition, we definitely did not mean to hold it up to ridicule; we intended it not for admiration, but for sober consideration, a fact that Bull—considering his own observations—ought to recognize.—Editors]

Critical applause
Bravo! Bravo! Congratulations and thanks on a job well done. Suzanne Stephens, articles in the July and August issues were superb, magnificent, and exhilarating. We get meaningful criticism so seldom, I feel I must say thank you! I enjoyed your articles and will look forward to the next issue.
Jon B. Thogmartin
DeWild Grant Reckert & Associates Co.
Sioux City, Iowa

Innovation or outrage
In your August '76 editorial you quote Philip Johnson's facetious proposal to change the title of his firm to "Philip Johnson and John Burgee innovators," instead of "architects."

In your commentary you explain the current trends and referring to the residential architecture in the same August issue you say: "We don't think you will find these houses predictable; if any strike you as outrageous, that is a risk we can accept."

Since you publish these with a certain pride, why not change the name of your formerly distinguished publication from *Progressive Architecture* to *Outrageous Architecture* and thus be more representative with what it is.
Joshua D. Lowenfish, AIA
New Haven, Conn.

Philadelphia delineated
In response to our criticism of the city maps offered at the AIA Convention in Philadelphia in May, we have been informed about a map which does show downtown Philadelphia and all buildings of major architectural interest with admirable clarity. It can be obtained for $1.95 (plus $.50 postage and handling) from Joseph Fox Bookshop, 1724 Sansom St., Philadelphia, Pa. 19103).

Correction
The "In Progress" item incorrectly identified as a security station (P/A, July 1976, p. 42) is in fact an industrial plant conceptual study by the Bechtel Power Corporation of San Francisco, which had not submitted it for publication.

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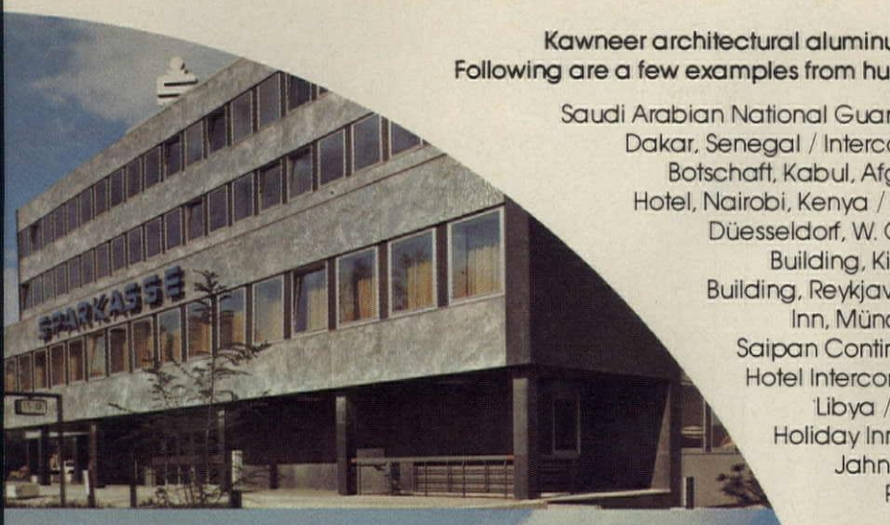

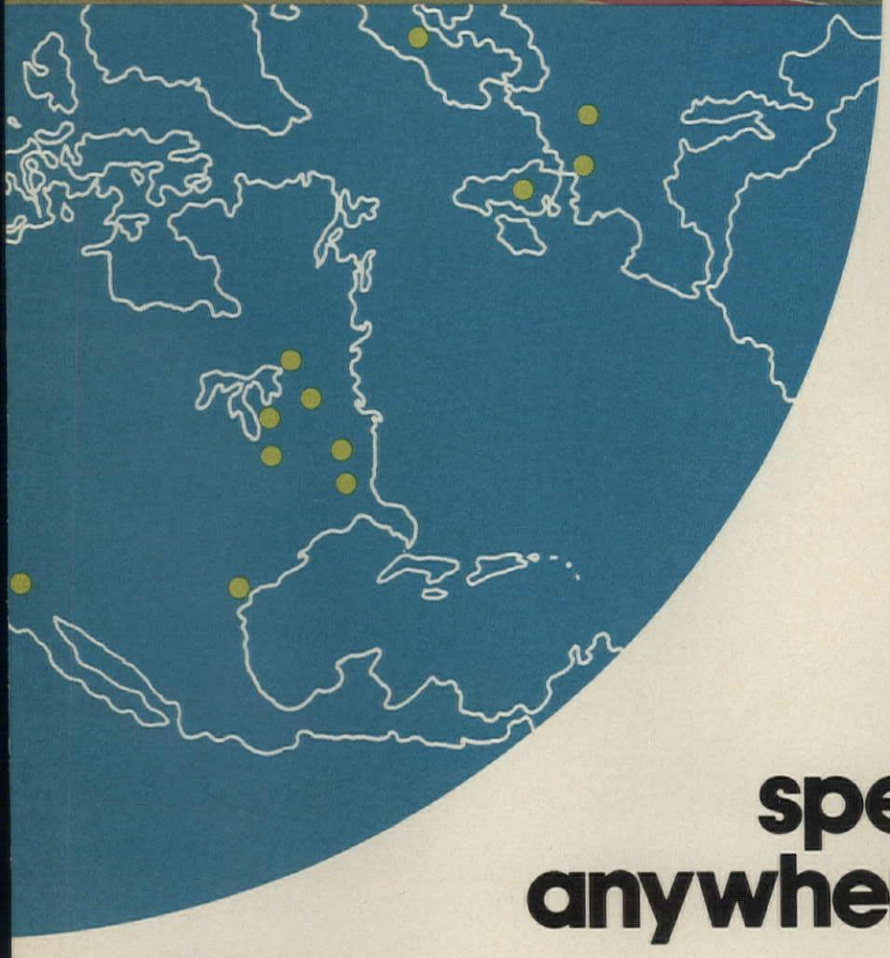

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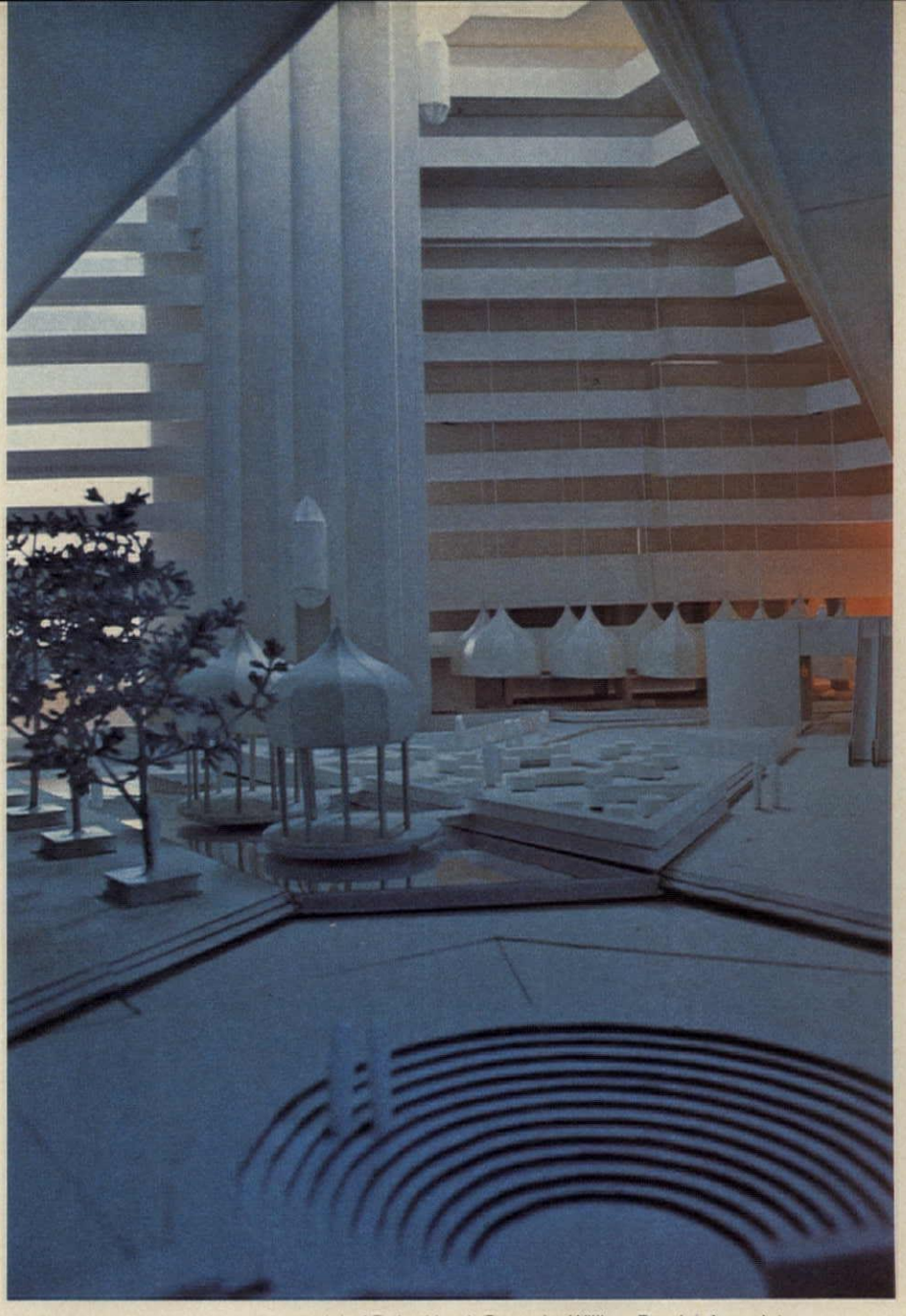
News report



Oasis atrium lobby and exterior model of Doha Hotel, Qatar, by William Pereira Associates.

Hotels first to bloom in Mid-East

Hospitals and universities, housing, factories—all are priority items in the eager-to-catch-up Middle East, but no building type is hurrying to make a debut more swiftly than the hotel—and luxury hotels, at that. Two years ago when the Middle East beckoned the American businessman, tales of nightmare accommodations were notorious. Cancelled reservations; no ham and eggs; no bars or relief from the extremes of life in the blazing desert.

No more. The most frequently used word to describe the hotels under construction or planned is "oasis," and this means hanging gardens around, yes, atrium courts; saunas, whirlpools, health clubs, and swimming pools; rooftop garden restaurants; and plenty of bars.

Whereas the new hotels in America are geared for conventions, the Middle East hotel is geared for business. They include conference rooms for high-powered talks, communications centers where telex machines and audio-visual facilities are available; there are provisions for interpreters, stenographers, and secretaries.

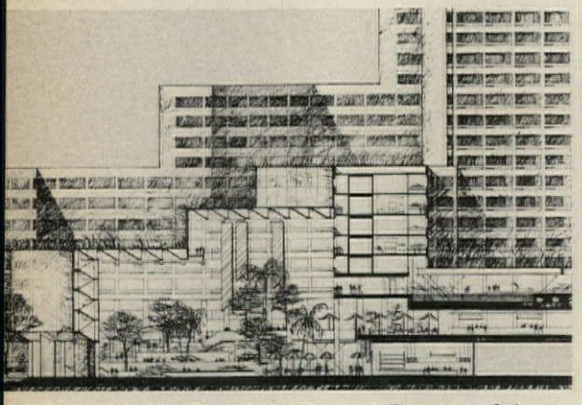
The hotel concept also is evolving into a town center, such as the $150 million Cairo Hyatt Regency (by Skidmore, Owings, & Merrill) which will include residential units, offices, and a trade center.

The major American hotel chains have hotels or additions to existing hotels under construction and in design: Sheraton has 17 projects with over 5200 rooms scheduled to open within the next three years; Inter-Continental, 11 projects with over 4300 rooms; Hilton, 11 projects with nearly 4000 rooms; Hyatt, 9 projects of over 4200 rooms; and Marriott, 2 projects of 1200 rooms.

For a preview of what luxuries await the global professional, read on. The cost per day ranges from a low of $40 for a single room to several hundred dollars for a luxurious suite.

Doha Hotel, Qatar

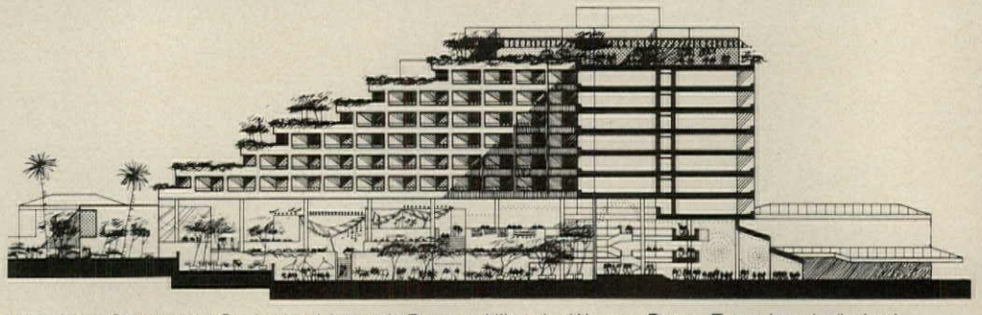
The Doha Hotel in Qatar on the Arabian Gulf is being built for Emir Higher Sheikh Khalifa bin Hamad al-Thani of Qatar as the social center and marketplace for New Doha, a planned extension of the city. William Pereira Associates of Los Angeles is designer both for the hotel and the new city master-plan. The $100 million multi-level hotel is a three-sided tower of 450 rooms, and it encloses an interior space. Attached to the tower is a one-level conference center with full audiovisual facilities for press and interpreters plus a 750-seat assembly hall. Along the front of the terrace is a westernized Souk—a shopping arcade. Inside the triangular atrium lobby is a pool which cascades to a level below. Each guest room has a terrace; VIP suites occupy the top (13th) floor of the tower and have private gardens with a pond.



Abu Dhabi hotel Benjamin Thompson & Assoc.

Steve Rosenthal

TAC deluxe hotel for Sharjah overlooks Arabian Gulf; park and shopping arcade enclose the beach area.



Al Ain Inter-Continental Oasis Hotel (above); Ramses Hilton by Warner, Burns, Toan, Lunde (below).

Hotel Inter-Continental Sharjah
The Architects Collaborative, Cambridge, Mass., which has been busy in the Middle East longer than anybody else except, perhaps, Minoru Yamasaki, has designed a 14-story luxury hotel for Sheikh Sultan Bin Mohamed Al-Qasimi, Ruler of the Emirate Sharjah and Dependencies in the United Arab Emirates. The hotel will be operated by the Inter-Continental chain. An atrium the full height of the hotel has a garden with palm trees and waterfalls, two restaurants, a bar, and nightclub. Guest accommodations total 330 rooms and suites including two floors of ministers' suites and a wing for nobility. Indoor health and recreational facilities include six bowling alleys, two squash courts, and a movie theater with stage for live performances. Outside, in addition to the Arabian Gulf beach, will be a pool with cabanas, snack bar, and tennis courts. Completion is set for early 1979 at a cost of $43 million (includes furnishings).

Hotel Inter-Continental Abu Dhabi
The 455-room Inter-Continental Hotel in Abu Dhabi, by Benjamin Thompson & Associates of Cambridge, Mass., will be located on the Arabian Gulf. In the tower of 25 stories overlooking a marina, each room will have a terrace facing either north or south. The top five floors will be VIP suites with private elevator entrances and a private kitchen. Entry into the hotel is gained by a ramp driveway that continues through the hotel and down into a 250-space garage. A glassed-in garden court penetrates the tower, stepping back at each of the first three levels. The ballroom has separate entrances for men and women. Completion is set for 1979.

Al Ain Inter-Continental Oasis Hotel
The 265-room Inter-Continental Oasis Hotel in Al Ain also is by Benjamin Thompson & Associates; its 11-story tower is surrounded by gardens, terraces, waterways, and fountains. To the north of the lobby is an enclosed sunken garden with swimming pool, groves of fruit trees, an aviary, and aerial walkways. Also off the lobby is the traditional Souk (shopping arcade) and eating places. The hotel ballroom will seat 550. Guest rooms and suites are arranged in an L-shaped plan with views either of the Oasis, the sunken gardens, or the Oman Mountains. Children's facilities include a pool and play yard. Completion will be 1979.

Ramses Hilton
The 909-room Ramses Hilton along the Nile in Cairo, Egypt, by Warner, Burns, Toan, Lunde of New York and Ali Nour El Din Nassar of Cairo, consists of a four-level podium of public spaces enclosing a 60-ft-high atrium and a 30-story triangular tower of guest rooms and suites. On top of the tower is a restaurant/observation deck with views of the distant pyramids. A podium roof terrace will have a pool and a restaurant. The building is scheduled for completion the end of 1979. The hotel is being built for the Arab International Company for Hotels and Tourism; Hilton International will be operating this luxurious new facility.

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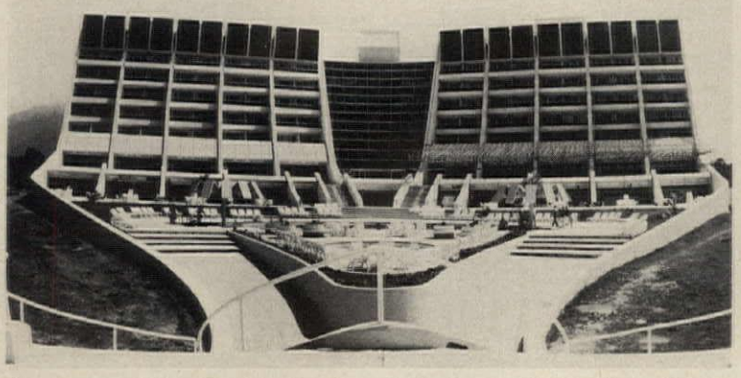
Louis Checkman

Addition by William B. Tabler, Architects, N.Y., to Jordan Inter-Continental.

Damascus-Sheraton by Lucio Barbera of Rome will open in early 1977.



Just-completed Hyatt Regency Caspian, Chalus, Iran, by Rader/Mileto of Rome, cost $20 million and has 200 rooms. Two other Hyatts soon to open in Iran.

Louis Checkman

Jeddah 500-room Inter-Continental Hotel, by William B. Tabler, Architects.

Saudi Arabia's Riyadh Hilton, by Warner, Burns, Toan, Lunde, New York, will be situated in a historic park. Project manager and engineering consultant is Frank E. Basil, Inc. of Athens; client, Real Estate Development Company, Sheikh Fahd A. Altobaishi, general manager. The 602-room hotel will open in late 1978.

Arab boycott triggers revisions

Legislators and members of the American Institute of Architects and other organizations are working on a number of fronts addressing the ugly issue of the Arab boycott against any party dealing with Israel or doing business with a party dealing with Israel.

Few instances of anti-Semitism in the practice of architecture as a result of the boycott have been noted officially by B'nai B'rith's Anti-Defamation League, said Justin Finger, assistant director of the civil rights division, but the instances he could relate are:

A Massachusetts architect who filed under Title 7 (prohibiting discrimination in employment) of the Civil Rights Act with the Massachusetts Commission on Discrimination.

A Southern architect, former partner in a firm, who said he was pressured to resign because the firm wanted Middle

East work. He didn't file charges because he felt he might be hurt professionally.

A Florida architect said his firm was concerned because it had a joint venture with a Jewish firm in New York and feared Arabs would put his firm on the black list.

"That's the terrible, chilling part," Finger said. "This boycott throws a climate of fear on business. The possibility exists that the next time that Florida firm has to joint venture it won't go with a Jewish firm. We feel the only solution is to enact federal legislation to make it (tertiary boycotts) illegal."

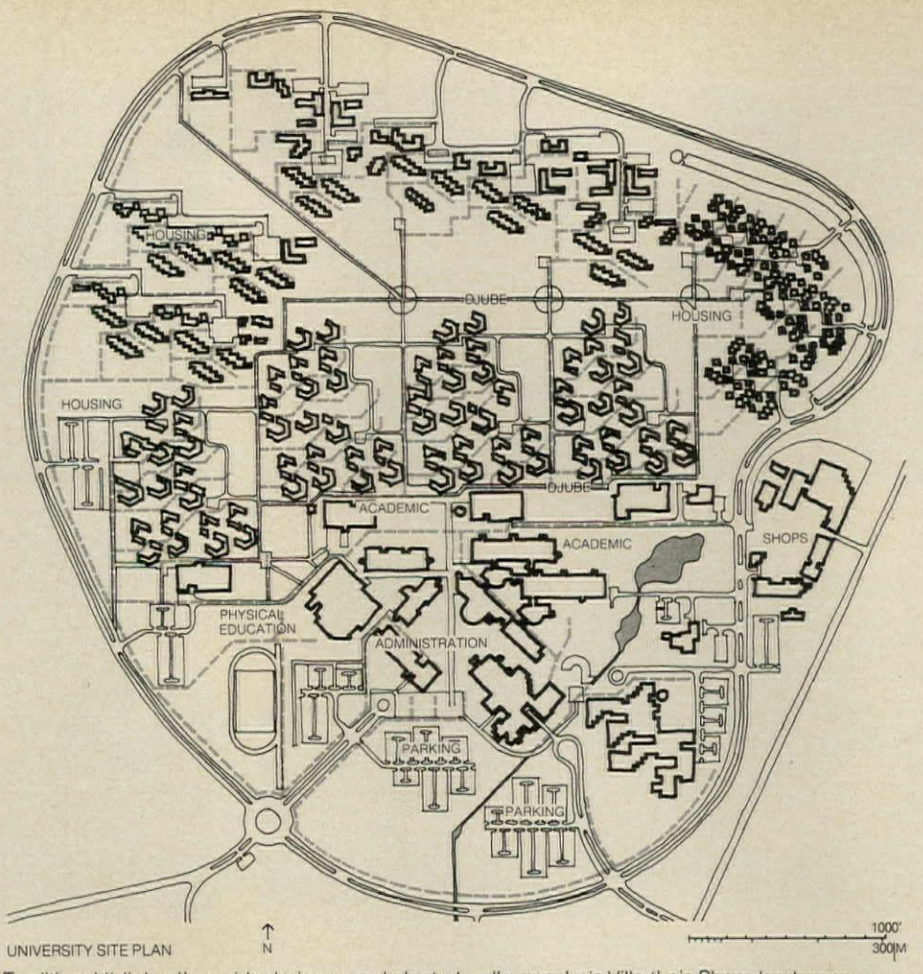
Congress is considering a bill (S 3084) that would make public all reports of U.S. firms respecting the boycott. The current law (the Export Administration Act) requires firms to report all boycott activities, but these reports are strictly private. Also, penalties for failure to file are light—up to $1000.

Senate and House conferees also have approved a tax bill that would impose tax penalties on firms in compliance with the boycott. The penalty would be a partial loss of tax credits.

The AIA has an Ethics Task Force subcommittee investigating issues dealing with foreign practice. Heading this group is Robert Marquis of San Francisco. The Institute membership will vote on revisions to the ethical code next year. Meanwhile, David Caney of the AIA's government affairs department advises architects to "watch out" in their Middle East dealings. "No one knows what's going on," he said, "and potentially this is an extremely explosive situation."

WMRT's global Pardisan Park

A 700-acre park ambitiously conceived to present all of the world's bioclimatic zones—from arctic to jungle—has been designed for a location on the outskirts of Tehran by Wallace, McHarg, Roberts, & Todd of Philadelphia and the Mandala Collaborative of Tehran. The plan, presented to Iran's Department of Environment and accepted last year, still has to be designed in detail, but preliminary site work is expected to begin soon. Completion of Pardisan ("Paradise") Park will take 10 to 15 years and cost $106 million.



Traditional "djubes" provide drainage and planted walkways; Luis Villa/Lois Sherr, landscape consultants, New York, and Backen, Arrigoni & Ross, architectural consultants, San Francisco.

Pardisan: view of Persian Gulf and Gatehouse.

Architecturally, the main feature will be the domed orientation and theme Gatehouse, a grouping of structures including a natural history and science building, planetarium, aquarium and administration building. Construction of the Gatehouse will be one of the first phases undertaken. The botanical and zoological presentations throughout the park will emphasize the park's main theme: unity of man and nature. Plant and animal life will be combined in natural settings sufficiently large to give them "visual credibility."

Coaxing a garden for arid Iran

The famed skill for gardening that once belonged to Persia in the 17th and 18th centuries has been neglected, and so modern Iran has looked to Westerners for landscape design as well as for architecture and planning. Landscape consultants for the 500-acre Teachers Training University (Tosehe-Omran, architect) near Tehran is the New York firm of Luis Villa/Lois Sherr. Except for irrigated portions, the campus will remain desertlike—a landscape similar to the moon. But when watered, the soil will produce plants that thrive. Vegetation on campus will be used to express both pedestrian circulation and drainage. Plantings also will serve as wind breaks and divisions between academic and housing areas.

The land receives only nine inches of rainfall a year, therefore well water will be used for irrigation. The traditional Persian "djube"—a gravel-filled, usually water-carrying trench—will be used for both drainage and walkways. Pedestrians will walk on pavers set in the djubes. Because moisture is there,
[continued on page 31]

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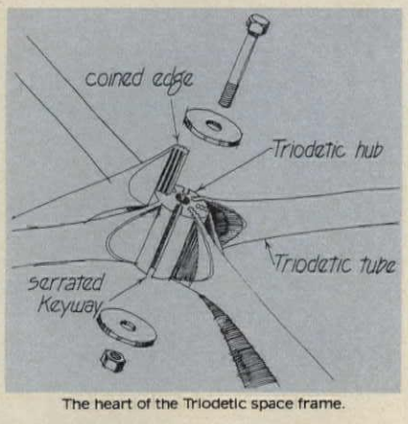

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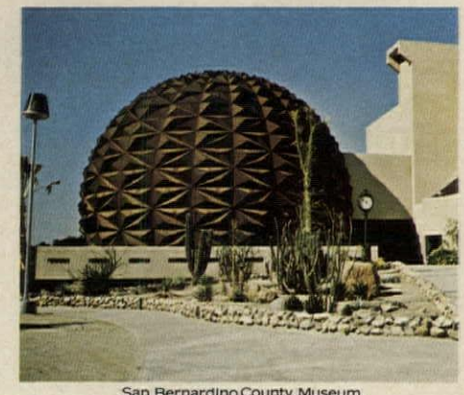

San Bernardino County Museum, San Bernardino, California
Architect: VTN Consolidated, Inc., Irvine, California

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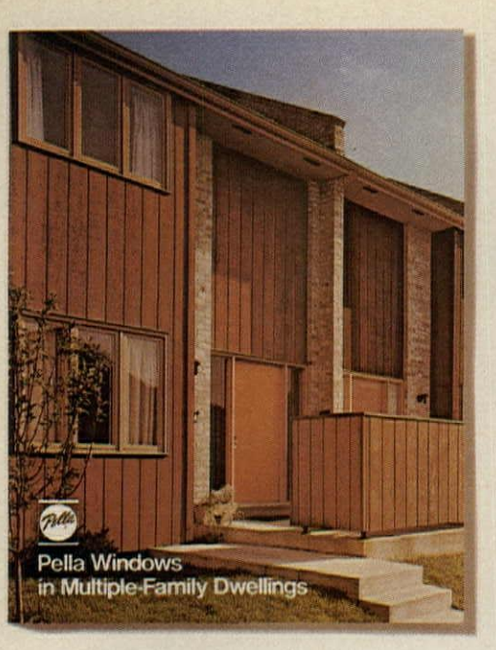

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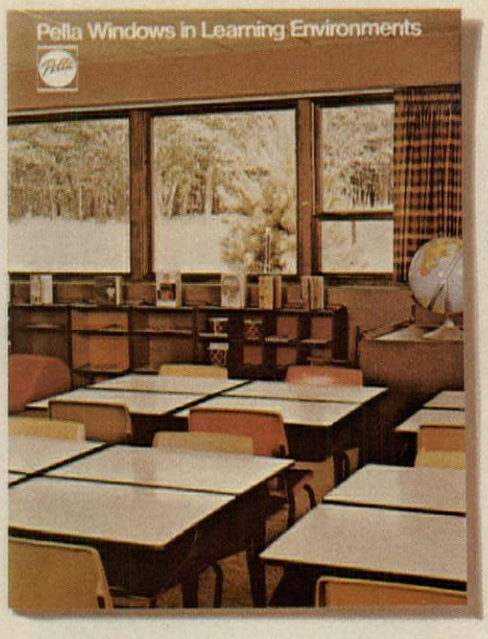
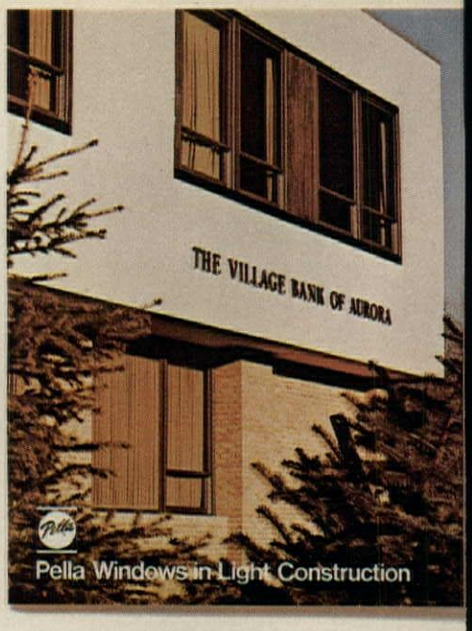
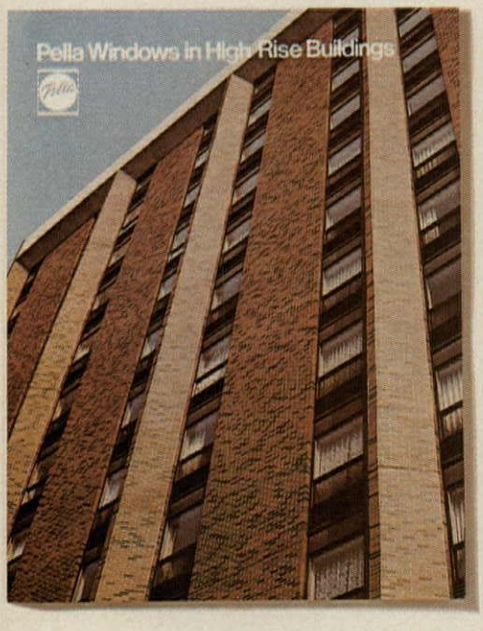


Learning Environments — shows how Pella Windows are being used to create the kind of warm, home-like environments students prefer.



Light Construction — illustrates how Pella Windows and Sliding Glass Doors contribute to the architectural theme of a variety of building styles.



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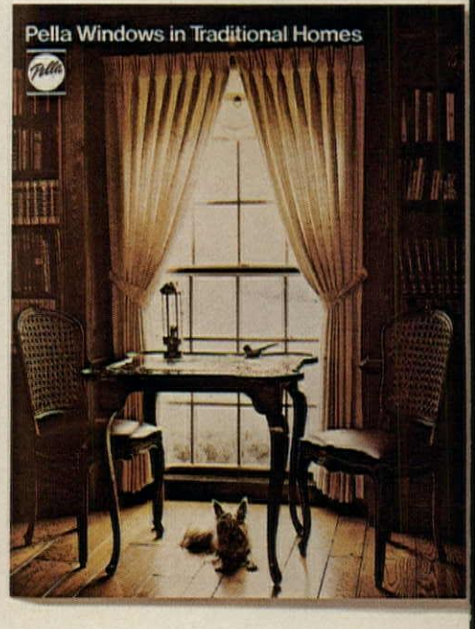

Traditional Homes — Pella takes a close look at the types of windows best suited to the traditional home.

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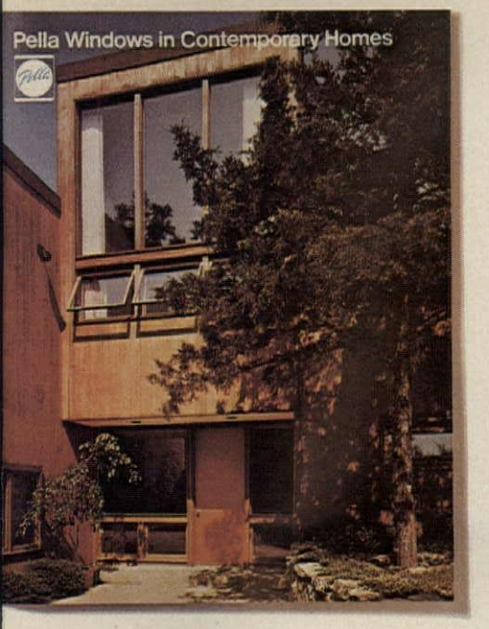

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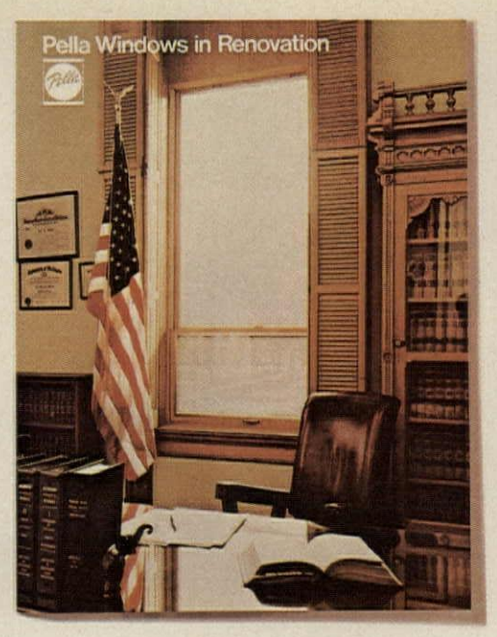

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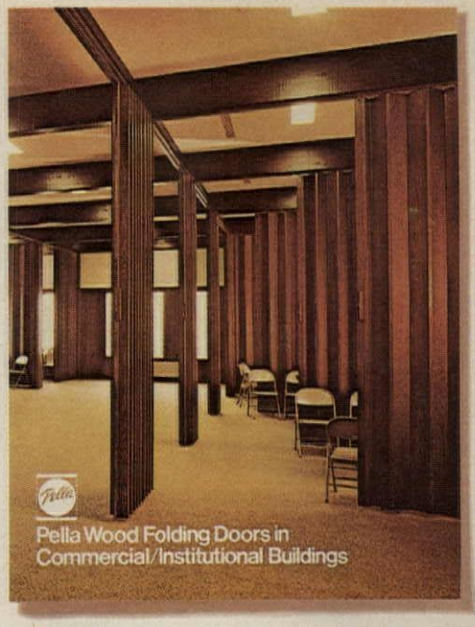

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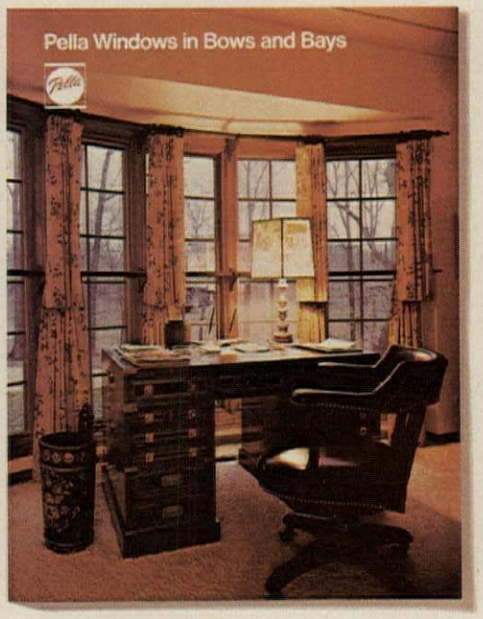
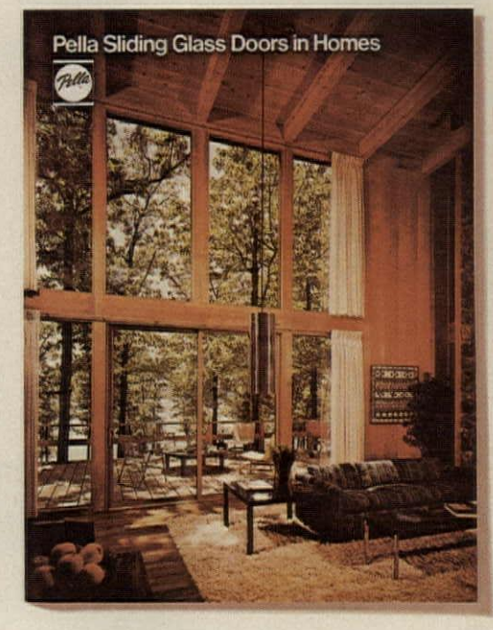


Bows and Bays — these arrangements are an important architectural element. This brochure contains a good selection of classic examples.



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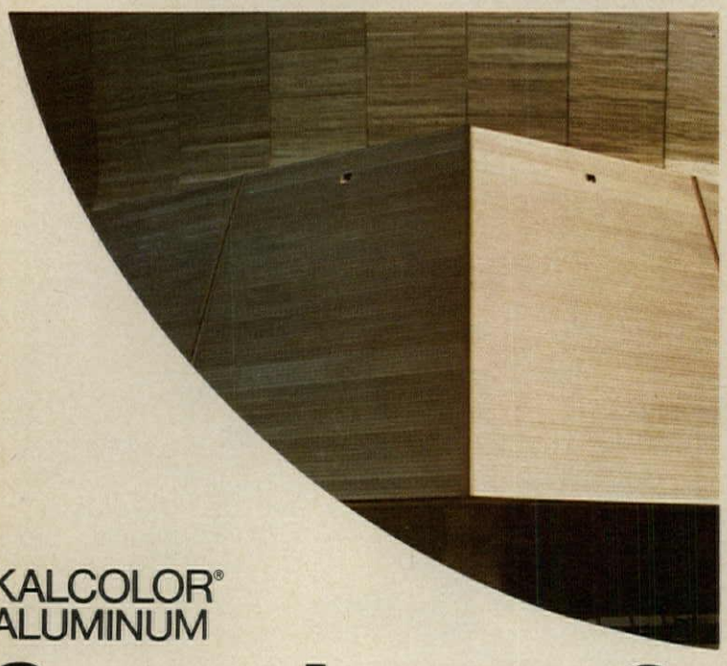

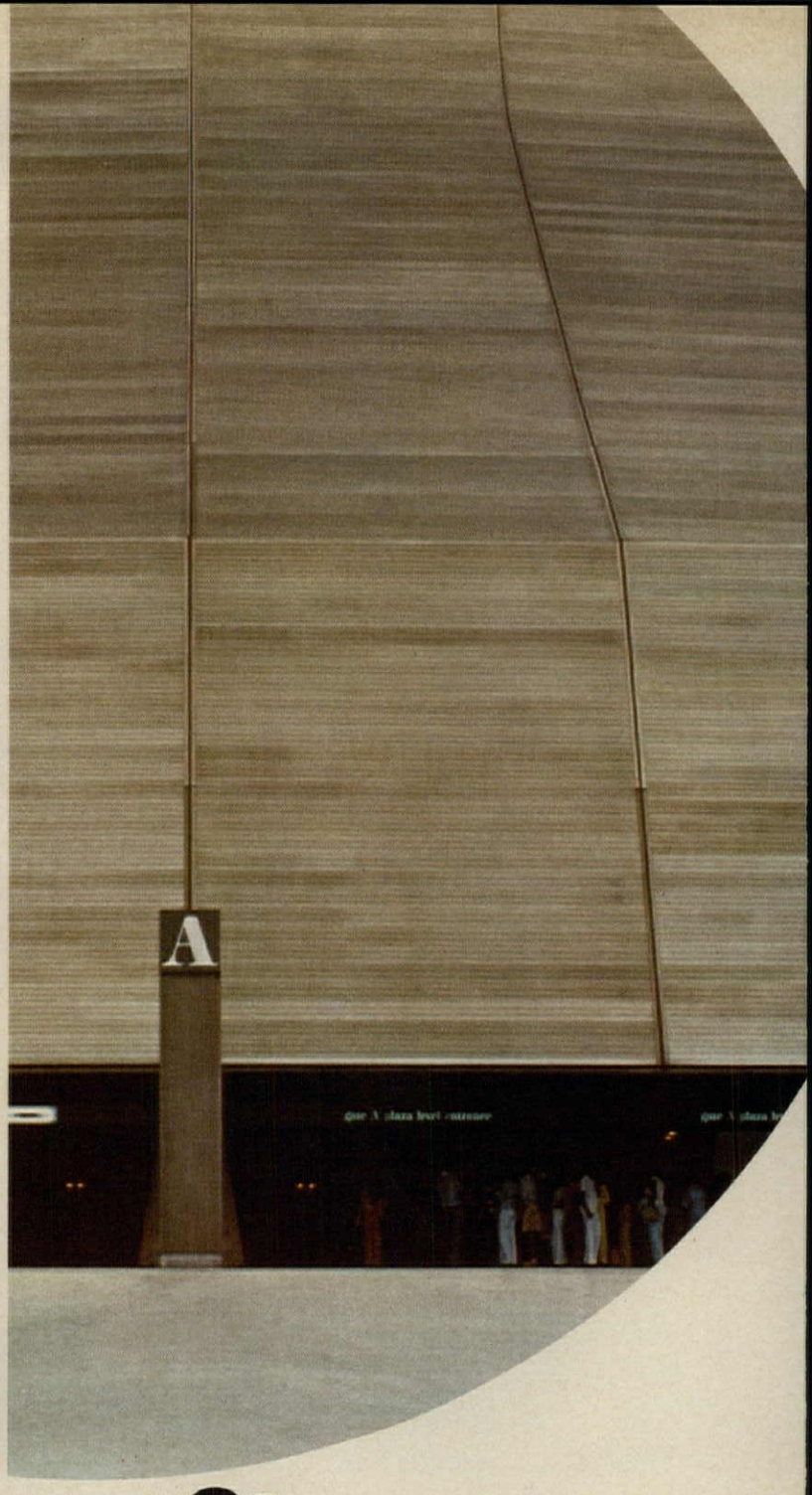

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News report continued from page 26

the paths will be shaded by trees and vegetation.

At certain key locations, such as an approach to a building, the watercourse bubbles in a fountain, pool, or spray. Plantings for the campus will include an arboretum, individual gardens with fruit trees, and planted courtyards. A gate of cypress trees will separate the public from the private areas and also will mark the origin of the watercourse.

Chicago AIA honors 8 firms, 14 projects

The Chicago Chapter of the American Institute of Architects recently presented honor awards to eight Chicago firms for outstanding projects. A total of 14 projects from 113 submissions were picked by a jury of Gunnar Birkerts, John Entenza, Ralph Rapson, and Paul Rudolph.

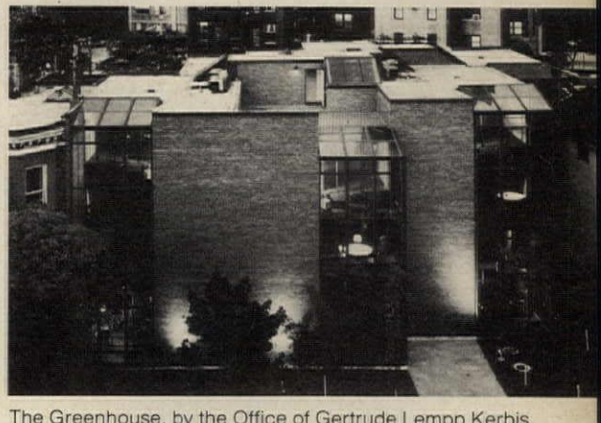
The firms and their award-winning projects are Booth & Nagle for the Bush House, Telluride, Colo., Freedom Hall, Park Forest, Ill., and a residential remodeling, Chicago; Chicago city architect Jerome Butler for the Navy Pier restoration, Chicago; Hammond Beeby & Associates for the Beidler conference room, Glessner House, Chicago, and First National Bank, Ripon, Wis.; Jaeger Kupritz Ltd., for the Levy Weiss Housing Complex, Lake Delton, Wis.; the Office of Gertrude Lempp Kerbis for The Greenhouse, Chicago; C.F. Murphy Associates for the Auraria Learning Resources Center, Denver, Colo.; O'Donnell Wicklund Pigozzi Architects for the Central Services Facility generator/boiler building, Lake Forest, Ill.; Skidmore, Owings, & Merrill for the Baxter corporate headquarters, Deerfield, Ill., and Sears Tower, Chicago; and Harry Weese & Associates for the Mercantile Bank, Kansas City, Mo., and First National Bank, Albuquerque, N.M.

DC women's exhibit: brief, but memorable

Although the exhibition, "Washington Women Architects" organized by Washington Women in Architecture

Community center, Park Forest, by Booth & Nagle.

Weiss complex, Lake Delton, Wisc., by Jaeger Kupritz Ltd.



The Greenhouse, by the Office of Gertrude Lempp Kerbis.

Navy Pier restoration, Chicago, by the city architect.

only lasted 10 days in early August, the women involved consider it to have been a great success.

Eileen Ross, coordinator of the exhibit, said that more than 1500 persons viewed the show at the Interamerican Development Bank gallery. "We were able to show what young architects in Washington are doing," she said, adding that design in Washington is shortchanged by a lack of new blood. "This show offers encouragement."

The exhibit included 42 projects by 25 women architects. Work ranged from private houses to office buildings, from renovation and restoration to new construction, and from planning studies to landscaping.

Highlights included a competition entry for the Wainwright State Office Complex in St. Louis by Randy A. Steiner (it was her graduate thesis for Washington University; city gardens in Alexandria, Va. and Washington, D.C., by Mary E. Spencer; and a beach cottage at Pine Knoll Shores, N.C., by Margaret Robb Shook Cooper.

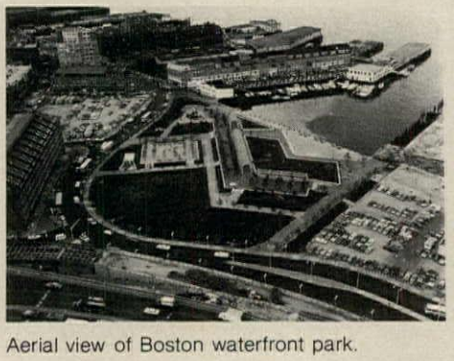
"Washington Women in Architecture" was organized last year to draw attention to the work of women architects; less than 3 percent of architects are women. [Carleton Knight III]

Waterfront parks for urban enjoyment

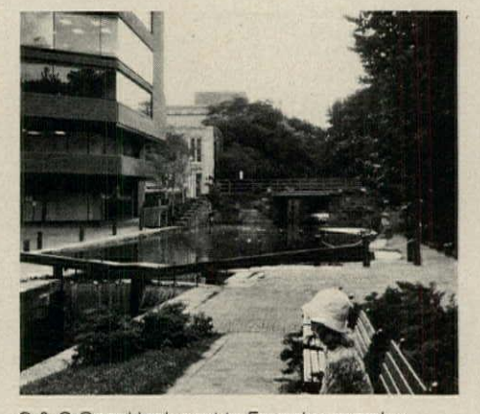
Boston, Trenton, and Washington, D.C., all have new waterfront parks—finished in time for use during the Bicentennial summer. The Boston park occupies 4.5 acres along the Boston Harbor, a five-minute walk from the newly restored Faneuil Hall Markets. Part of a highway was relocated to accommodate the $2.5-million park, designed by Sasaki Associates of Watertown, Mass., in conjunction with the Boston Redevelopment Authority's Urban Design Department.

The Trenton, N.J., project is more modest but no less attractive. Working with an $850,000 budget, the Department of Planning and Development headed by architect John Clarke planned the upgrading of a quarter-mile stretch of Assunpink Creek bordering an inner city neighborhood undergoing renewal. The Schnadelbach Baurn Partnership of Philadelphia did the landscape design.

Arbor is principal focus of Sasaki-designed park.



Aerial view of Boston waterfront park.



C & O Canal lock next to Foundry complex.

Assunpink Creek park in Trenton, N.J.

The creek banks were reinforced with a Gabion system of wire baskets filled with rocks which collect silt as the creek swells; eventually natural growth appears.

Assunpink Creek Park includes a play area for children and a bankside amphitheater next to a wooden bridge no longer used for traffic but ideal as a stage. The park connects with Douglass Place, a city-designed square in front of rowhouses and adjacent to a future residential tower for the elderly (P/A, Aug. 1975 p. 19).

The Washington green space is the reopening of the Chesapeake & Ohio Canal, which was destroyed by hurricane in 1972. The canal originates in historic Georgetown where, at the bottom on 30 St. near the Potomac River, the recently completed Foundry—first phase of Inland Steel Development Corp.'s $120 million Georgetown Harbor, has opened alongside the canal. Sasaki Associates did the landscaped plaza connecting The Foundry with the waterway.

The canal itself was refurbished by the National Park Service. Most of its $6 million in restoration work was rewatering the canal, which had been dry for the last four years, and repairing damage to the tow paths. Mule-drawn barges traverse the canal daily and are available for public rides.

Trenton, which contains 2.7 miles of the Delaware & Raritan Canal, some of it through Cadwalader Park, designed by Frederick Law Olmsted, wants to turn the banks into a landscaped bike path and is seeking $3.5 million in state funds for the project.

The Boston Harbor park completes the "Emerald Chain" of parks throughout Boston designed by Olmsted in the 1870s. Its flavor is nautical: bollards similar to those on surrounding wharves are linked with anchor chains and line the seawall; brick and cobblestone pave the walkways; and lighting fixtures resemble ships' lanterns. A 340-ft-long wooden arbor is planted with climbing roses and wisteria, and festive lights decorate the trellis. Other amenities include a fountain, wooden "shipwreck" play sculpture, and a three-hydrant dog station—a feature that came from numerous meetings with members of the community.
[continued on page 35]

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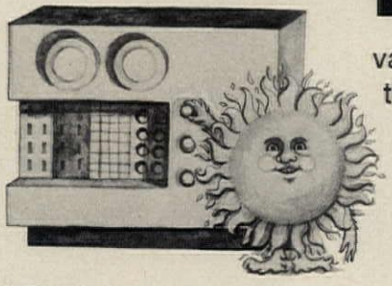

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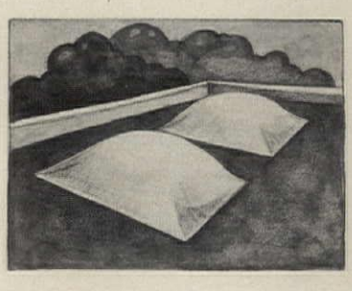

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Client: Virginia Department of Highways & Transportation; *Owner:* Town of Grundy, Va.; *Designers:* Higgs & Higgs, Inc., Vienna, Va.; *Consultant Architect:* James W. Ritter, Springfield, Va.; *Contractor:* Wiley N. Jackson Company, Roanoke, Va.; *Fabricator:* Structural Steel Company, Inc., Roanoke, Va.; Structural steel furnished by Bethlehem Steel Corporation.

The depth of the mountainside excavation, which greatly influenced the cost of the project, dictated the need for a long (240 ft), narrow (63 ft) structure.

depend on Bethlehem

A state road-widening project through Grundy, Va., eliminated many of the town's Main Street parking spaces. And because of the area's steep terrain, no alternative off-street parking sites were available.

Solution: build a three-level, 144-car parking structure into the side of a mountain to replace the spaces eliminated by the construction.

The difficult nature of the site immediately suggested the use of structural steel framing. It could provide the required column-free long spans. And it could be erected rapidly.

Sales Engineering service valuable. "Bethlehem Sales Engineering personnel were very helpful in furnishing us with technical publications and advice," reports Mr. Gerry E. Higgs, president, Higgs & Higgs, Inc., designers of the structure. "Two slide presentations, featuring steel-framed parking structures and the use of Weathering Steel in construction, were given to our engineering staff. It was also on the advice of Bethlehem's Sales Engineer that we considered Weathering Steel for the interior, as well as the exterior framing of the structure."

Why Weathering Steel? The designers decided on ASTM A588 Weathering Steel for both the exterior and interior framing for two reasons: (1) it provides a very rustic appearance which, when fully matured, will blend well with the surroundings of this rural coal mining community; and (2) its low maintenance cost will minimize future financial burdens on the town.

Several special design details are employed to minimize staining during the weathering process. Open slots are placed in the concrete slabs around all columns to avoid runoff from the columns onto the slabs. At grade level, gravel pockets surround all the column bases.

Architectural considerations. A low-profile parking structure was desired in order to avoid overpowering the neighboring one- and two-story buildings. The design features an open structure with exposed steel framing, partially faced with sand-blasted precast panels.

A set of ramps at the south end provides entrance and exit to the parking levels. One of the ramps also serves as the entrance and exit right-of-way for the property on the mountainside above the parking garage. The system of circular and straight ramps allows one-way traffic to be maintained on all parking levels. Stair towers, located at each end of the structure, control pedestrian flow.

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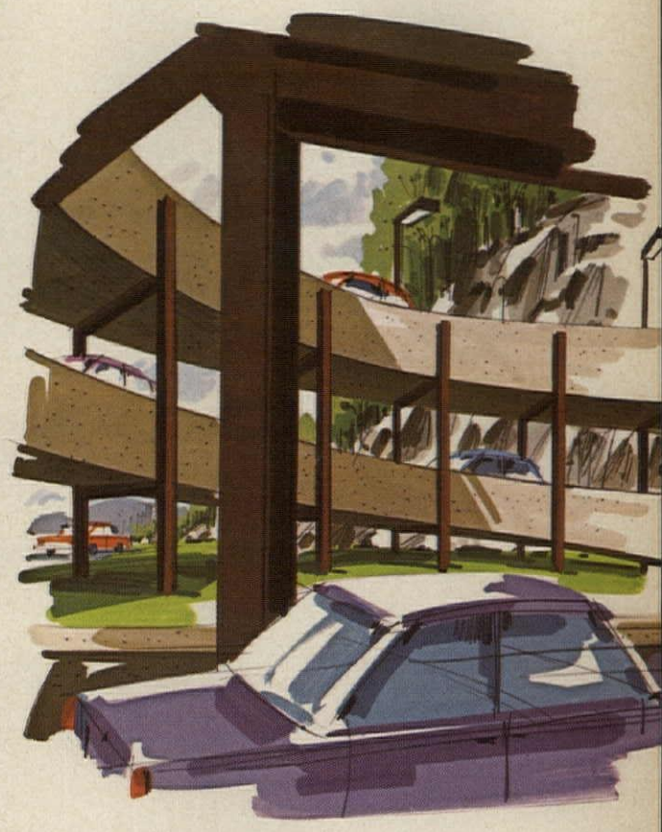

A circular ramp at the north end permits traffic flow from the level below to the one above.

Bethlehem BETHLEHEM STEEL

Slide presentations, as well as numerous Bethlehem publications and design aids, provided valuable assistance to Higgs & Higgs, the project's designer.

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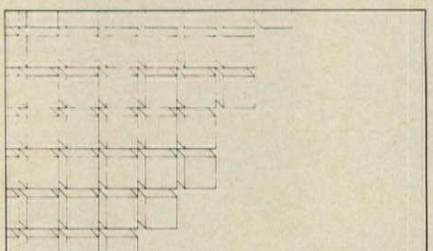
Ask for Sales Engineer

News report continued from page 38

serialized repetition of a single module. This principle is expressed in his design for a house emphasizing the possibilities of architecture as formal recombination—a response to the condition of permutation that is the reality of the suburb. For his part, Stanley Tigerman introduces a sardonic, mildly scatological approach to the phenomenon of the suburb as a sociopolitical commentary directed toward the recipients of the gifts of architects and planners. He formally presented his ideas as a series of "Dirty Postcards."

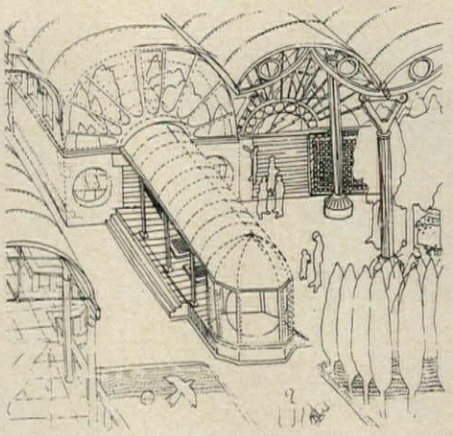
"Five Easy Pieces," a strong statement by Peter Eisenman on the decomposition and reintegration of suburbia, suggests a dialectic through which the suburban house can become, once more, the vehicle for private well-being and collective good.



"Five Easy Pieces," Peter Eisenman.

For their presentation Robert Venturi and Denise Scott Brown excerpted parts of their exhibition "Signs of Life: Symbols in the American City" from the Renwick Gallery (P/A Aug. 1976, p. 62) to demonstrate the importance of the suburban house as a form of self-expression in America. Craig Hodgetts' transparent, color photocopy curtain wall uses the vocabulary of classical antiquity in a suburban context to bring the historic center and the suburb into congruence. John Hejduk's subtly colored drawings and models, expanding on the formal concerns of his past work, treat the subject of suburbia as a "detective story" alluding to Proust, Gide, Celine, Robbe-Grillet, and John Hawkes, authors who have intrigued the architect.

Certainly the architectural triumph of the 1976 Biennale is Venice itself. The



Craig Hodgetts' suburban concept.

decision to use such buildings as the Chiesa di San Lorenzo, the Magazzini del Sale, and the Cantieri Navale on the Giudecca in addition to the Giardini was inspired. Organizers of the architectural exhibit and a conference, Vittorio Gregotti, Gino Valle, Franco Raggi & Co. proved through "adaptive reuse" that Venice remains the primary site for international cultural events. [Barbara Jakobson]

[Barbara Jakobson, formerly chairman, Museum of Modern Art's Junior Council, is a Museum trustee and a publisher.]

Personalities

Sanford R. Greenfield has been appointed professor and chairman of the department of architecture at Iowa State University, Ames.

J. Stewart Johnson has been named curator of design at The Museum of Modern Art, New York City.

Joel Rudick has been appointed chief of the interior planning and design branch, Public Buildings Service, General Services Administration, Washington, D.C.

The following have joined the Board of Directors of the National Institute of Building Sciences: **Jasper S. Hawkins, Jr., FAIA,** Los Angeles, Calif.; **Herbert H. Swinburne, FAIA,** Philadelphia; **Rudard A. Jones, AIA,** University of Illinois at Urbana-Champaign.

Ifan Payne has been named head of the department of pre-design professions in the Kansas State University College of Architecture and Design, Manhattan, Kan.

Harold Box, FAIA has been appointed dean of the School of Architecture, University of Texas at Austin.

Calendar

Oct. 3–Jan. 9. "The River: Images of the Mississippi," Walker Art Center, Minneapolis, Minn. Exhibit includes three architectural proposals of Nicollet island in downtown Minneapolis, Minnesota.
Oct. 13–17. International Congress of Women Architects, Ramsar, Iran.
Oct. 14–Feb. 6. Retrospective exhibit of the works of Alexander Calder, Whitney Museum of American Art, New York City.
Oct. 20–22. Conference on philosophy & issues in the design of play environments, The University of Wisconsin-Milwaukee Department of Architecture and Department of Physical Education.
Oct. 21–23. Interdisciplinary Design Exposition (INDEX), Laclede's Landing, St. Louis, Mo.; co-sponsors include AIA, ASID, IDSA, AIP, ASLA.
Oct. 27–31. National Trust for Historic Preservation convention, Philadelphia.
Oct. 31. Deadline for entries in the Riviera design competition sponsored by Levolor Lorentzen Inc., Hoboken, N.J.
Nov. 3–4. Computer graphics conference and equipment display, Engineering Society of Detroit.
Nov. 7–9. National conference on planning and design of state court programs and facilities, University of Illinois, Urbana-Champaign.
Nov. 8–9. Conference on ways to finance downtown recycling, Hotel Warwick, New York City. Conference is sponsored by the Downtown Research and Development Center.
Nov. 17–19. Building & Construction Exposition & Conference sponsored by The Producers' Council, Inc., McCormick Place, Chicago.
Nov. 18–19. Annual public relations workshop sponsored by the National Trust for Historic Preservation, Louisville, Ky.
Nov. 22–25. National Organization of Minority Architects convention, Shoreham-Americana, Washington, D.C.
Dec. 6–10. National plastics exposition sponsored by The Society of the Plastics Industry, Inc., McCormick Place, Chicago.
Jan. 5–8. World of Concrete Exposition co-sponsored by The American Concrete Institute, New Orleans Rivergate Exposition Center.
Jan. 23–26. National Association of Home Builders convention-exposition, Dallas Convention Center, Dallas, Tex.

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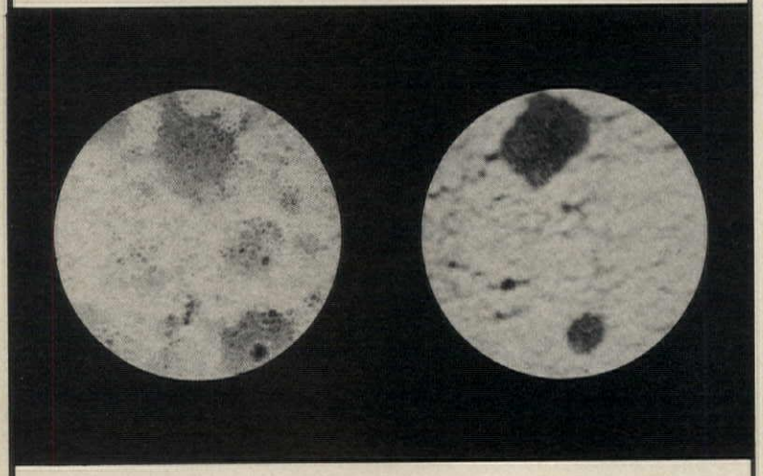

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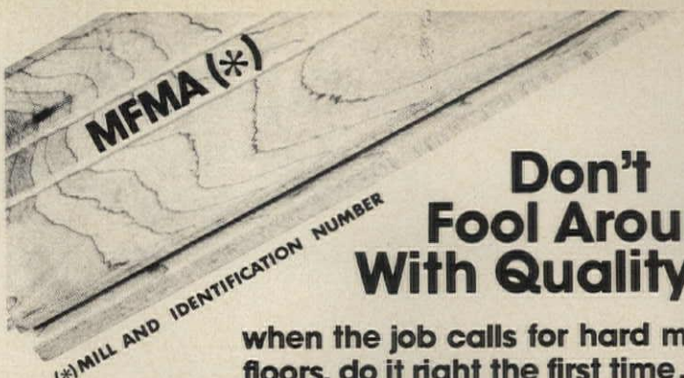

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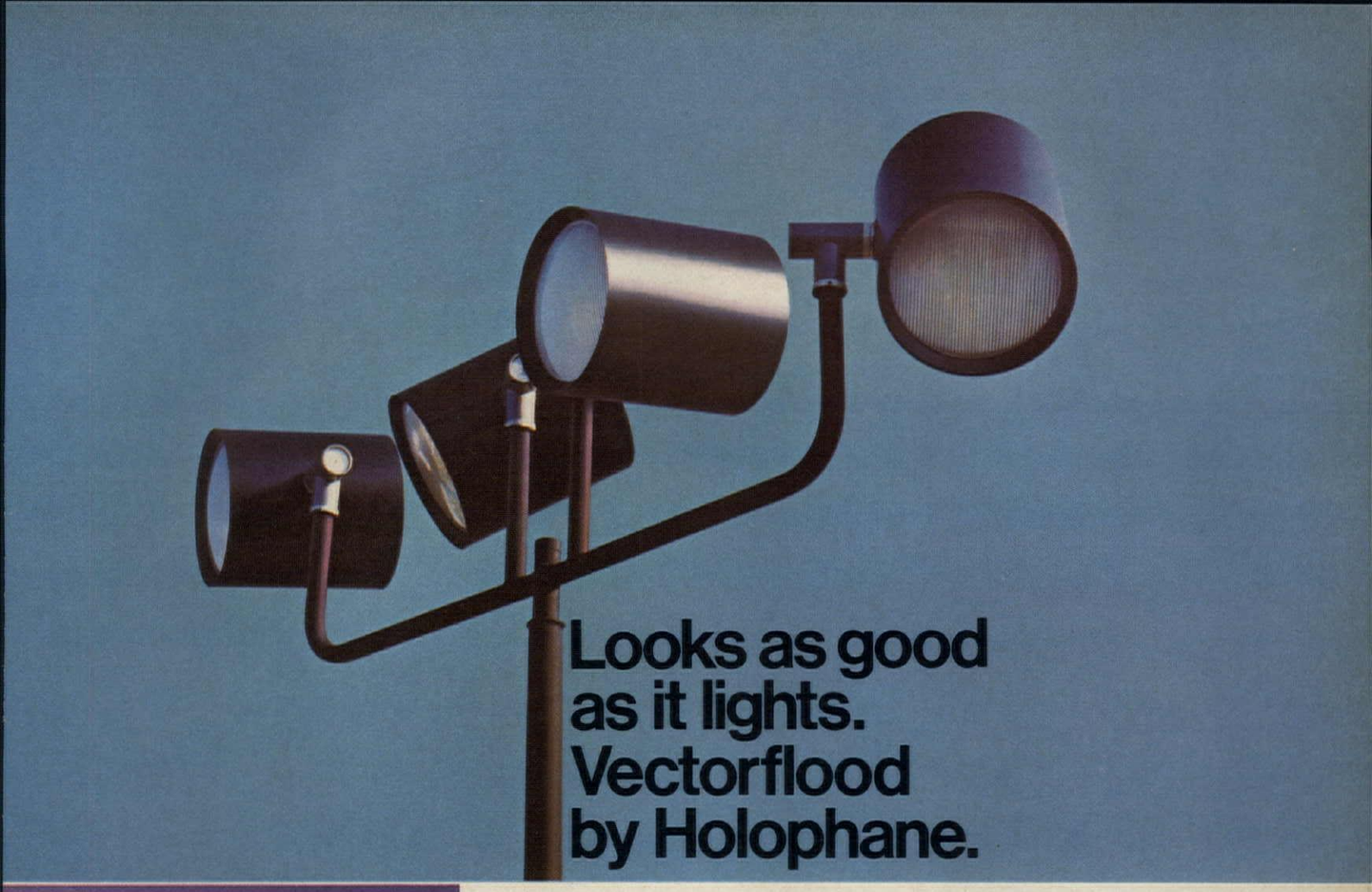

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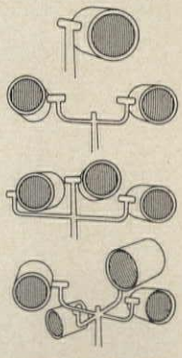

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The Front Row Theatre,
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Architect:
Richard R. Jencen & Associates

Structural Engineer:
D. T. Levigne Associates, Inc.

Electrical Engineer:
Denk-Kish Associates, Inc.

General Contractor:
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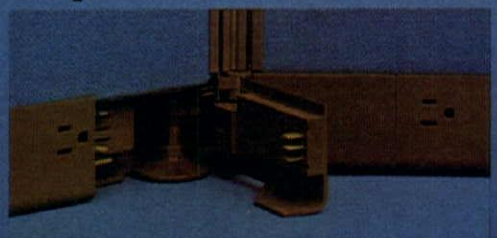

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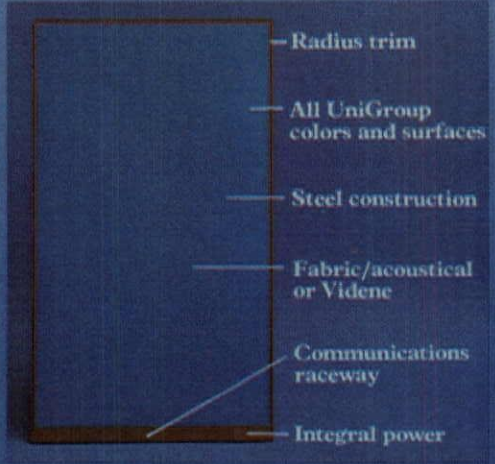

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A place in process

Perhaps the most developed nation in the Middle East, Iran is a strange mixture of cultures that coexist and, at times, provide stark contrasts.

Some 6500 miles and 14 hours from New York City is Iran. The relief of the journey's end is tempered, however, since the view from the window looks as if the plane had mistakenly landed at the Gaza Strip rather than at the international airport of Iran's capital city. But reassurance is not long in coming: after a bus ride over vast fields of black asphalt, passengers arrive at a steel and glass terminal—replete with white Helvetica signs—that looks as if it might well have been designed by SOM.

That experience of arrival, the blunt contrast of barren desert and glistening new terminal, proves to be a distillation of what the country later reveals itself to be. For a Westerner, there are enough of those shiny symbols to lend a certain familiarity to an otherwise strange place, enough of those symbols to make one wonder if 6500 miles and 14 hours was all that far from where one had just come from.

This country, now called Iran, is the present-day successor to the once immense empire dating back to the 6th Century B.C., ruled by Darius the Great from his capital city of Takht-e-Jamshid (or Persepolis, its Greek name). The empire extended into Asia on its eastern boundary and into Europe on its western edge. It embraced many cultures and people within its borders and the ancient capital still bears witness to that empire in the processional reliefs of those bringing offerings to Darius the Great.

It would seem, at first encounter, that the present-day empire, shrunken in size but extensive in oil, still maintains the traditions of its forebears. Tehran, the present capital and largest city, abounds with contrasts, the idiosyncratic result of the overlaying—and in part assimilation—of its varied history. And, on top of this has been added the altogether too obvious symbols of 20th-Century westernization.

The chador, the traditional dress worn by women on the streets and in the mosques, is still seen worn over tee shirts, blue jeans and platform shoes. Noonday prayer calls from the minarets have been replaced by cassette tapes, amplifiers and, occasionally, not-so-discreetly placed speakers. Automobiles abound. Partly for the car's symbolic value and partly from the lack of any other form of transportation, mass ownership has been encouraged through government support of the automotive industry. But in fact, while everyone has a car, it is nearly impossible to get anywhere. There are streets, but few signal lights and no traffic regulations that are easily discerned after watching the free-for-all. The only certain thing is that the middle of the road is defined by who takes it, and subtle maneuvering has become a high art. Pedestrians, in these circumstances are left to their own devices.

Contrary to the notion that there is prodigous building in this oil-rich country and, consequently, work to be had, there is little evidence to be seen, so far, of any projects now on the drawing boards of American architects. Or, to put it in the words of one American who is attempting to adjust to working in Tehran, there is a lot going on, but there is nothing happening—a sentiment shared by many others. Which is not to say that there is no new building for, in fact, a good third of the city is presently under construction, but mostly by the private sector and on a small scale. Areas that are being built up look, curiously, as if they are in the throes of demolition, and new high-rise construction along the main commercial street appears deceptively incomplete as exposed side walls await, patiently, the high-rise to be built next door. While Tehran is being built in much the same manner as most Western cities, lot by lot, there are none who can remember New York or London in the early 1800s when vast estates were sold off for speculatively built row housing. So the signs of growth in this city are deceptive to the Western eye, the process not altogether evident or rational. What one becomes aware of is a city in the midst of getting there and it can be, at times, a little like living in a Jacques Tati movie.

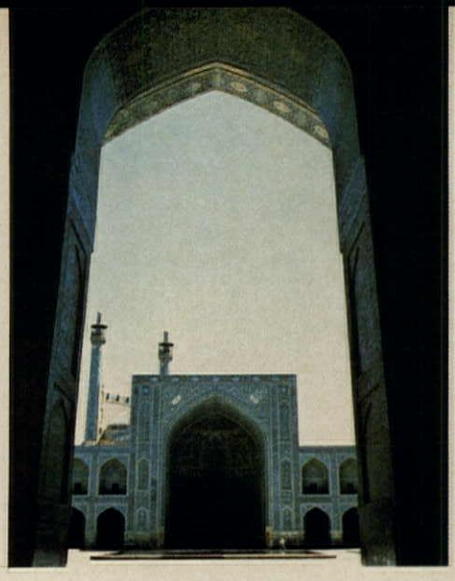
Master plan for 5.5 million

In an effort to give shape to the rapid growth of the city and to ensure the adequate development of supporting facilities, a master plan for Tehran was begun in 1965 and completed in 1968. A joint venture of Gruen Associates of Los Angeles and Abdul Aziz Farmanfarmaian of Tehran, the project was under the direction of Persian architect Feyerdoon Ghaffari who was then at the Gruen office.

There were two principal decisions which had major impact on the planning concepts and the shape of the final document. The first was a decision (of necessity) to limit the population of the city to 5.5 million people due, simply, to the lack of water resources in the region. At the time the master plan was begun, the population of the city was only 2.6 million and the projected population figures were viewed as being absurdly optimistic. In retrospect, however, with the population now 4.7 million and the growth rate averaging 5 percent per year, the upper limits of growth are becoming a reality more quickly than anyone is prepared to handle.

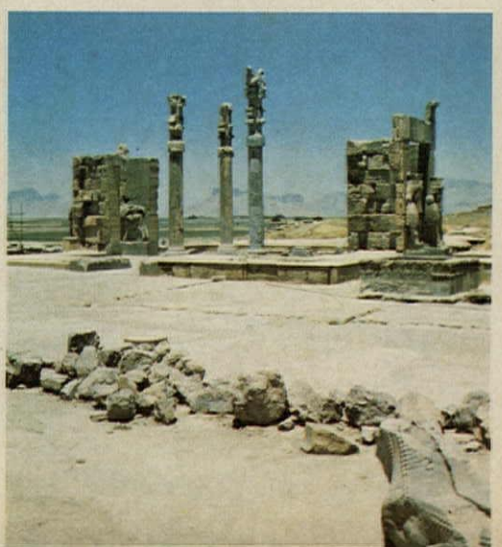
The second decision established a boundary beyond which no development would take place for five years. The municipality would provide new services within this area, but no permits would be issued for development outside the boundary unless the developer was prepared to assume the costs of the necessary infrastructure. While this strategy did contain the sprawl that might otherwise have occurred by creating a denser development, it caused a tremendous increase in land values and a great deal of congestion.

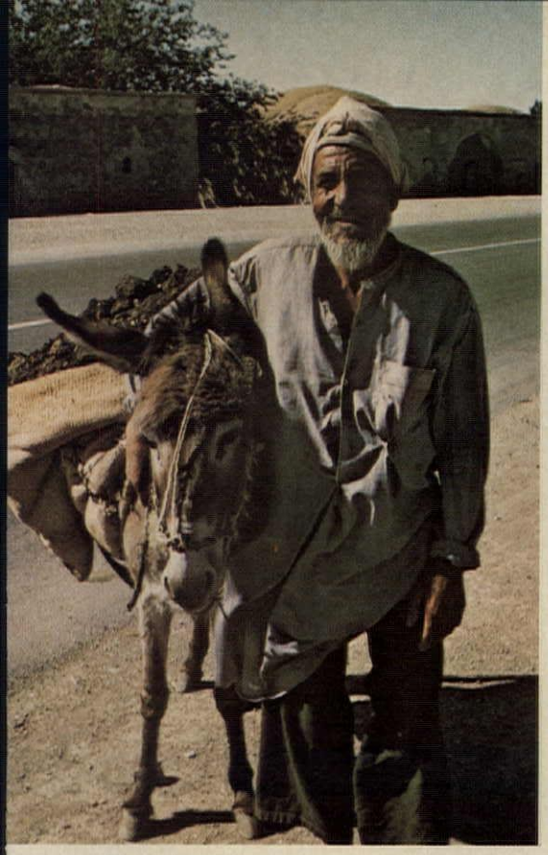
Although the plan was completed and drawn up by 1968, it seems to have had little effect, outside of the two basic strategies, principally because there was no mechanism established to see that its concepts were carried out. For the most part, the concepts of large scale land acquisition and mixed-use developments have not yet taken hold in a culture that still builds

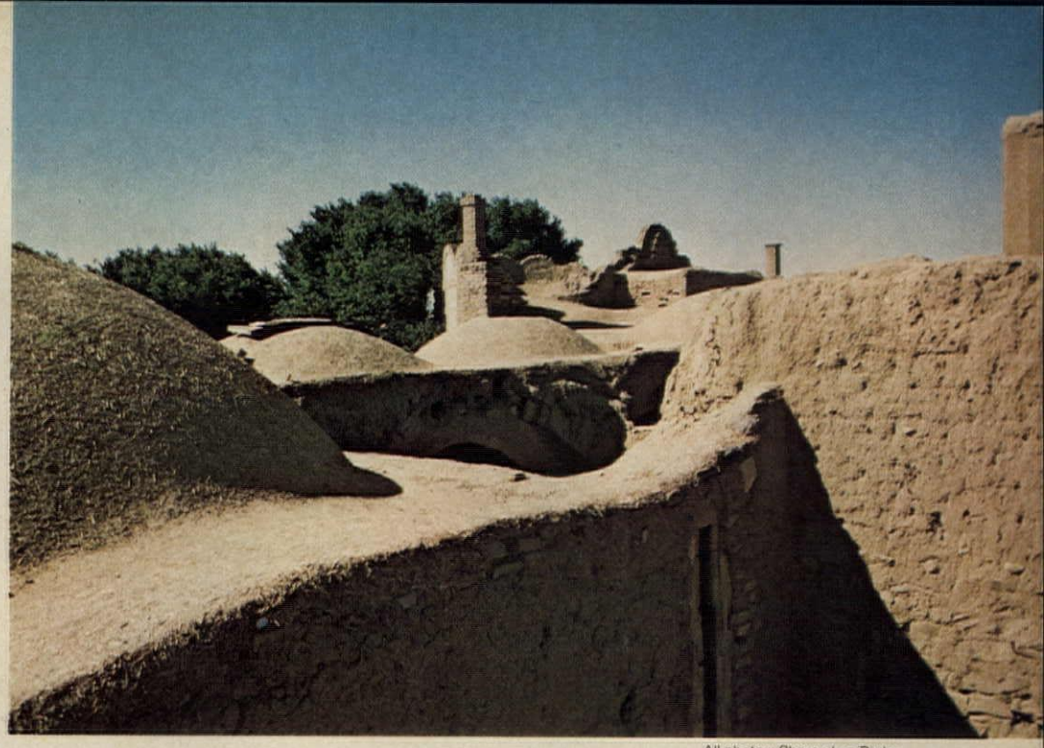


The Islamic religion established its own style as seen in the Mosque at Kashan (right) or the highly decorated Shah's Mosque (above, left) in Isfahan. Some of the older parts of the Friday Mosque in Isfahan (below) bear a resemblance to the Romanesque style in France with their massive stone piers and patterned vaulting.

The sculptural reliefs of those bearing offerings to Darius the Great (right) and the entry gate (below, right) are the ruins of the once great capitol city of the Persian Empire, Persepolis. The tombs cut into the rock cliffs (below) are said to be those of Darius and his son Xerxes.







All photos: Sharon Lee Ryder

The indigenous, vernacular mud architecture of desert villages (right) seems to be threatened by the increasing use of the automobile and the need to widen existing streets. The results can be seen in towns like Kashan (right) and Isfahan. Craftsmen still predominate (above, below) although industrialization will soon make most handmade goods increasingly uneconomical.

Wrightian and International styles.

New high-rise office building awaiting a neighbor.

New villas based on the traditional courtyard style.

Old building with decorative stone and grill work.

mostly single-family houses and where the extended family is still a viable and strong social unit. There are, however, several vastly monumental developments, some begun, others still on the drawing boards, which will soon alter the scale and development pattern in Tehran.

Farahzad, a mixed-use development, immediately outside the five-mile boundary, combines low- and high-rise dwelling with commercial and community development. The development of the entire complex was undertaken by the North-West Development Co., a subsidiary of the Pahlavi Foundation, with master planning by Perkins & Will and private development of parcels by various foreign interest and architects including Gruzen & Partners. Judging from the dubious beginnings evidenced on the site, Farahzad will be little better in conception or realization than New York City's notorious Co-op City. While some high-rise development is inevitable in a city where land values have escalated tremendously, this development is based on the absurd proposition that single family villas and 20-story high-rise slab housing can be successfully combined and that, somehow, both will benefit from the juxtaposition.

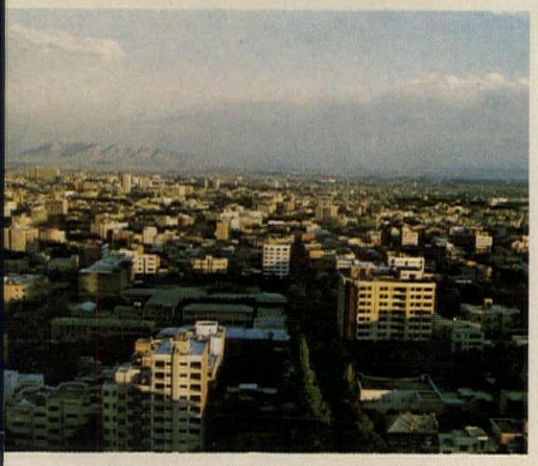
Two new town schemes by the firm of Farmanfarmaian, as implementations of the master plan, seem much more thoughtful in their mix of densities and site organization. Lavizan, for an area east of the present city, and Kan, for the western area, are both tightly knit urban schemes combining low-, medium-, and high-rise dwellings organized into neighborhoods around schools, open space, and community facilities. Both have major commercial downtown areas which will be serviced by the proposed rapid transit system. While in the schematic drawing stage, neither plan is revolutionary in concept, the attempt is far more thoughtful than Farahzad or, for that matter, any new town schemes built or proposed so far in this country.

The Shah's new city

Another project that will have major effect on the city and will change the scale of development is Shahestan Pahlavi. Nothing more than a series of barren hills through which the only expressway passes, the site will soon be a key link between the ongoing development to the north and the older parts of the city to the south. As intended on the master plan, the site is the major interchange for north-south/east-west movement. The original intentions for the site, during the time of the master plan development, was to encourage its development as one of several new commercial centers, partly in an effort to alleviate congestion in the present downtown.

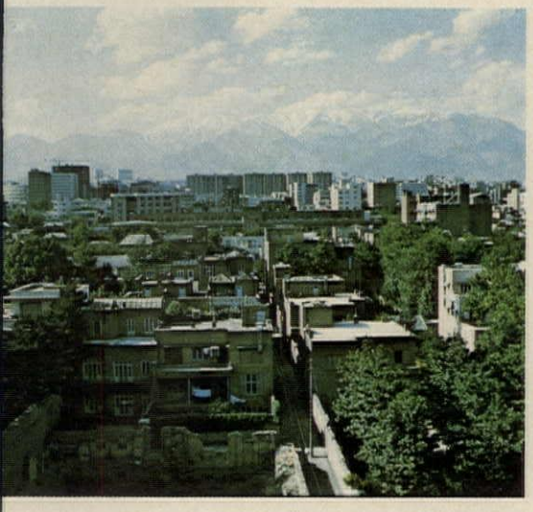
The firm of Llewelyn-Davies Va Shovaka, as part of a financial and development consortium, won the international competition for the project, but development proved so unwieldy that this arrangement was terminated and the municipality became the developer. Llewelyn-Davies was invited back, this time as master planners, for what was conceived of as a new city center of governmental activity, commercial and office space, housing, parks, and cultural facilities. While it may take quite some time for the Iranians to make decisions, once the decision is made, results are expected immediately. With the project some two months underway on paper, it was deemed necessary to stage a groundbreaking ceremony to signify that something, indeed, was happening. With little more than the first stages of analysis and feasibility completed, a framework, based on a set of assumptions, had to be adopted and certain decisions made without a fully developed comprehensive scheme.

A gold cornerstone was laid at the edge of the Shah's square and some months



Views to south (above) and north (below) give a sense of the density and size of Tehran. New high-rise (right, above) breaks traditional form while new villas (below) maintain old patterns.

All photos: Sharon Lee Ryder



later 50 trees, in concentric rings, were planted at the crest of one of the hills to celebrate the 50th anniversary of the Pahlavi Dynasty. Nothing else above ground has happened for months although site work has commenced and infrastructure is being laid.

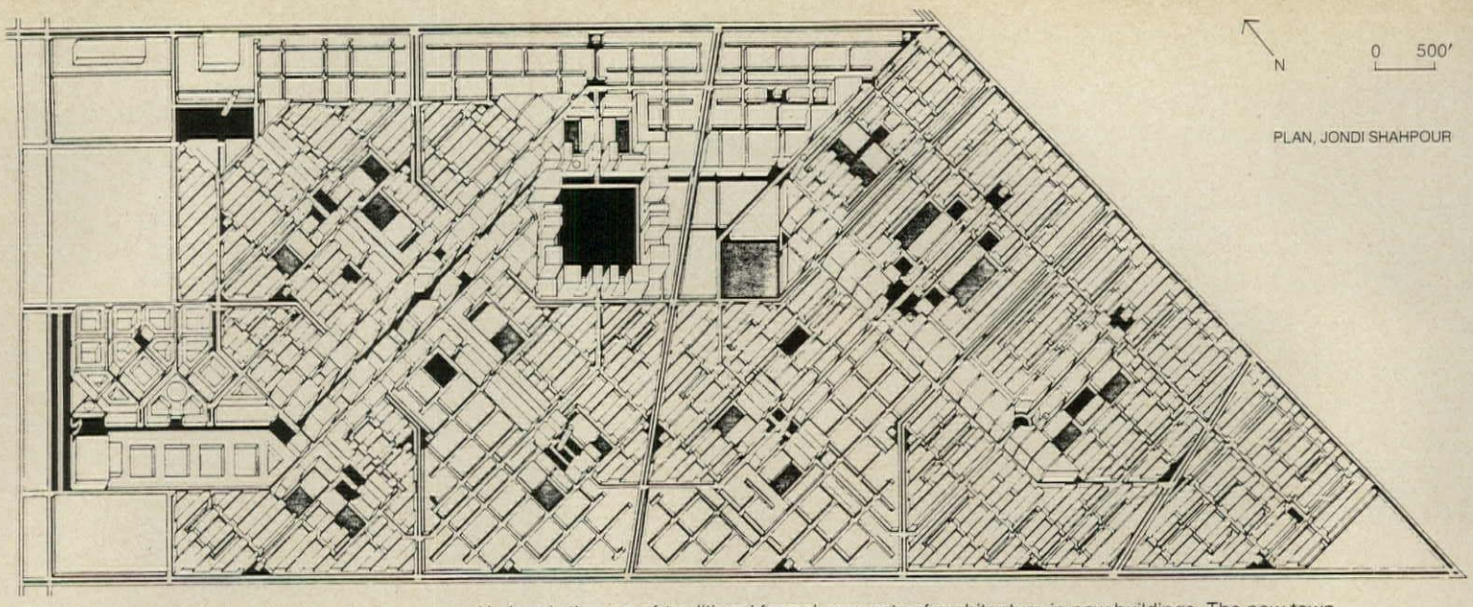
Except for the governmental offices all of the buildings on the site will be privately developed, and the plan, under the direction of Jaquelin Robertson, sets up a series of development controls and design guideline conceptually not unlike the special district zoning in New York City developed by Robertson when he was with the Planning Commission there. The principal axis of the site is a ceremonial boulevard ending in a major, public square, named for the Shah. Governmental, public, and institutional buildings will flank the boulevard and square, with housing and recreational uses allocated over the rest of the site.

The project, on one level, is reminiscent of so many misspent efforts in this country, not only in its size and conception, but also in its "image" value. It is, as someone put it, an effort to create an image of civic dignity. It is not the rhetoric, in the end, that one takes exception to, but rather the built form that is meant to embody and give shape to such ideas. If Western notions prevail, it will be a grand gesture in travertine; the ultimate in a sophisticated Western façade that seems to be rapidly obliterating all that might have been uniquely Persian in Tehran.

There are many other examples of the same tendency, but they are smaller and more scattered. It is, perhaps, a bit unfair to single this project out. But it does, consciously or not, embrace Iran's tendency to acquire the trappings of Western civilization as the outward symbol of development, growth, and the inevitable progress by which everything is measured. Other projects, now in the planning stages, illustrate well the same issues. Tehran, at present, has no sewage system and appears to have no need for one beyond the natural percolation capability of the soil. Consultants brought in to study the issue recommended that a sewage system be constructed throughout the city by covering over and using the existing djubes, a system of irrigation that once brought water from the mountains to the agricultural land south of the city. (The outcome of the study, some felt, was inevitable and simply a matter of prestige.) Not only would the covering of djubes alter the unique spatial quality of Tehran streets, but it would destroy the city's natural cooling system, so necessary when the temperature is over 100 F several months of the year.

Another quietly discussed issue is the matter of the proposed new airport facility with a capacity to handle 13 million passengers a year (equal to London's Heathrow). The proposed site, some 45 kilometers from the city, would permit the building of such a facility without the need to relocate any existing uses. The present facility with the capacity to handle 5 million passengers annually is more than adequate now and further expansion of the facilities is quite possible on the existing site. The real issue centers around the conflicts of simultaneous military and commercial use of the present in-town facility. The military would prefer to remain in its present location, and so an elaborate rationale has been developed for a new commercial facility. But since the real issues are not addressed, the real questions will never be answered.

There is also a proposed metro system. While perhaps necessary to alleviate the vehicular traffic now clogging the streets, plans call for an underground network which, because of its extensive size, would be rather a disruption to build in an existing city. There is little doubt that some



PLAN, JONDI SHAHPOUR

One of the current design directions being pursued in Iran is the use of traditional formal concepts of architecture in new buildings. The new town scheme (above), a joint project of SOM, San Francisco, and Nardir Ardalan of the Mandalia Collaborative in Tehran, is based on Ardalan's analysis of form.

form of public transit is needed, but an elevated system or a well-organized surface system would seem more feasible instead.

And, in the meantime, building continues at an alarming rate, without much concern for what is happening down the street, in the immediate area, or what effect future proposals will have. With no administration of the master plan concepts, everyone was left to interpret, however loosely, the specific intent for development, without overall administrative direction to see that all the pieces fit together, and that support facilities were adequate or would be increased.

A planning review process

Only recently has there been some attempt to establish an administrative process that will review projects in the larger context of their neighborhoods and the city, and will give some shape to overall development of the larger scale projects. The Mayor's office has an urban design advisor, responsible for reviewing all projects within the bounds of the municipality, including Shahestan Pahlavi. The Tehran Development Council (TDC) has jurisdiction over the master plan area, outside the bounds of municipal jurisdiction, where most new construction is and will be taking place. The council comprises 12 ministers and the mayor and is advised in its decision-making by the Tehran Development Council Secretariat (TDCS), the functioning staff of the council. In addition, a multidiscipline team from the Harvard Institute for International Development has been brought in to assist the TDCS. Actually, the Harvard team, headed by Senior advisor John Hirten, sees its primary responsibility as helping to set up an administrative body and establish a process of evaluation and review so that, in two years time, the decision-making process will be in the hands of the Persians, and foreign consultants will no longer be needed. The fundamental lack of any evident administrative process has, perhaps more than any other factor, contributed to an underlying frustration felt both by American architects working in Tehran and by Western-educated Persians who have spent some of their professional lives working in a Western culture. The frustration and conflicts arise from the knowledge of what it is possible for them to accomplish in another context, only to return to a culture which has not, as yet, evolved to this same level. One immediately senses the discrepancy between the traditional ways and the imported ones.

The basic unit of housing, the single family villa, has certain religious and social elements contained within it that serve the extended family. Newer high-rise dwellings are patterned after a Western life-style and many people have commented that such non-traditional concepts have begun to alter the basic life-style of the Persian family. This is only one example of almost intangible consequence of the attempt to impose an alien form on an existing culture. Obviously, in such circumstances, accommodation is made, but the subtle effects of such accommodation may not reveal themselves until it is too late to reverse a change in the basic social pattern.

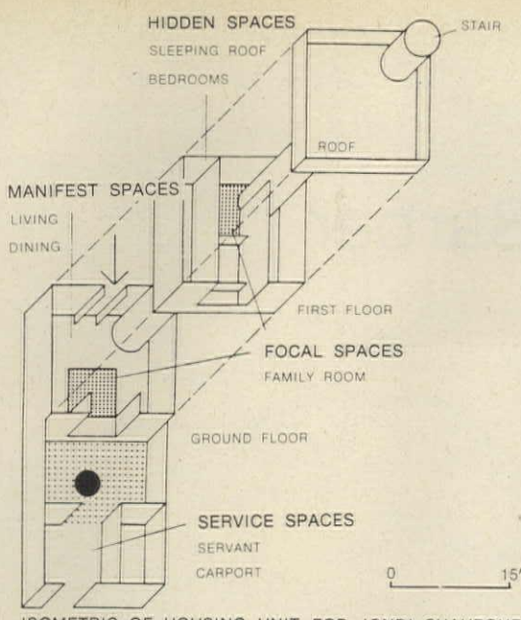
Planning in another city

Isfahan, as a secondary center encountering the pressures of growth, offers other examples of such imposition which are clearer in their impact and more far-reaching in their consequences. Without taking up the entire issue of the pressures of growth on a city like Isfahan, one example will serve to illustrate the nature of the conflicts encountered. To permit greater automobile access to the commercial areas of downtown, a large road was cut through a residential quarter of the city (one of many roads on the master plan for the city which imposed a grid of streets over the existing system) which severed the bazaar route leading from the square to the Friday Mosque near its center.

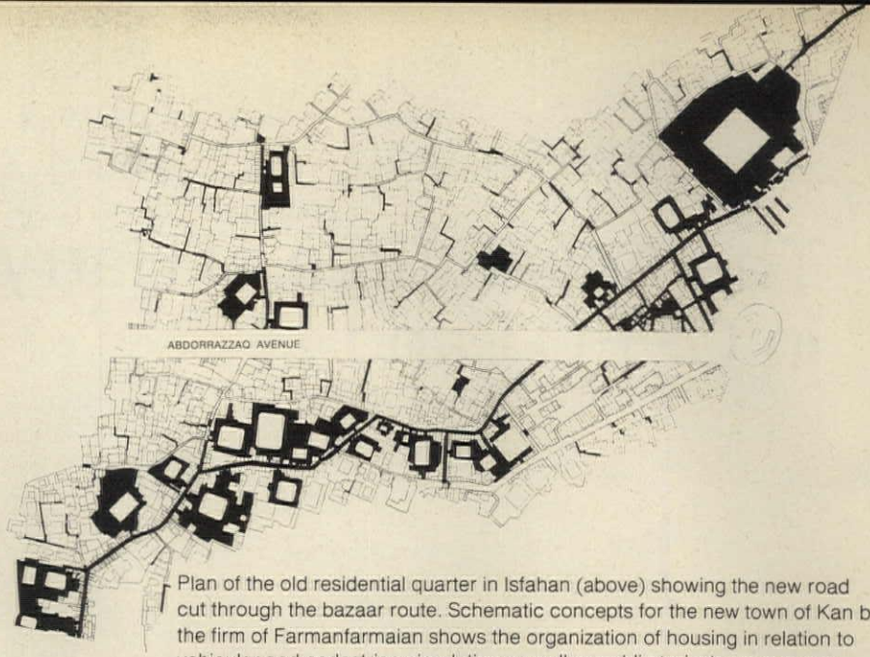
The residential quarter, through which the road passed, is a complex institution serving as a social, economic and religious community for the families within. The resulting physical labyrinth, while seemingly chaotic in contrast to Western notions of clarity, embodies the necessary elements and connections to support the community. It is an implicit meshing of a social and physical system and, therefore, not obvious or explicit. The introduction of an element foreign to this system, such as the automobile, creates an immediate and apparent conflict since the existing system can not accommodate the new element. Because this conflict is altogether too obvious, the efforts to remedy it are directed toward altering the existing physical system through the introduction of a new road system. The implicit physical system is altered and, as a consequence, the nature of the social, religious, and community functions become subtly altered and begin to break down. The results are inevitable and are as easily seen in the U.S. as the result of the last 20 years of revival efforts, as they will be seen in places like Isfahan if this process continues.

Fortunately for Isfahan, although some damage has been done, further implementation of the plan has been stopped, and alternative solutions are being sought for vehicular access. In addition, the residential quarter, which had begun to disintegrate physically and socially, is being studied in an effort to piece together the fabric in an economically and socially viable way. But the pressures of growth will not lessen as the process of industrialization begins to replace a handcraft and agricultural economy.

There seem to be two basic elements at work in this process. The first has to do with the natural evolution and growth of society over any given period of time. In Iran, this process has been accelerated and compressed into a much shorter period of time due to the second factor, the presence of an already more advanced body of knowledge. The introduction of the one into the other begins a cycle that can only escalate, for once an alien element is introduced, the conflict between the two systems is remedied by importing the next solution. The problem then, becomes compounded and the nature of the existing organism altered; what the Persian culture might have been, had it evolved through its own process, becomes only a rhetorical question. [Sharon Lee Ryder]

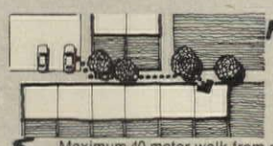


ISOMETRIC OF HOUSING UNIT FOR JONDI SHAHPOUR



Plan of the old residential quarter in Isfahan (above) showing the new road cut through the bazaar route. Schematic concepts for the new town of Kan by the firm of Farmanfarmaian shows the organization of housing in relation to vehicular and pedestrian circulation as well as public/private open space.

Vehicular Access



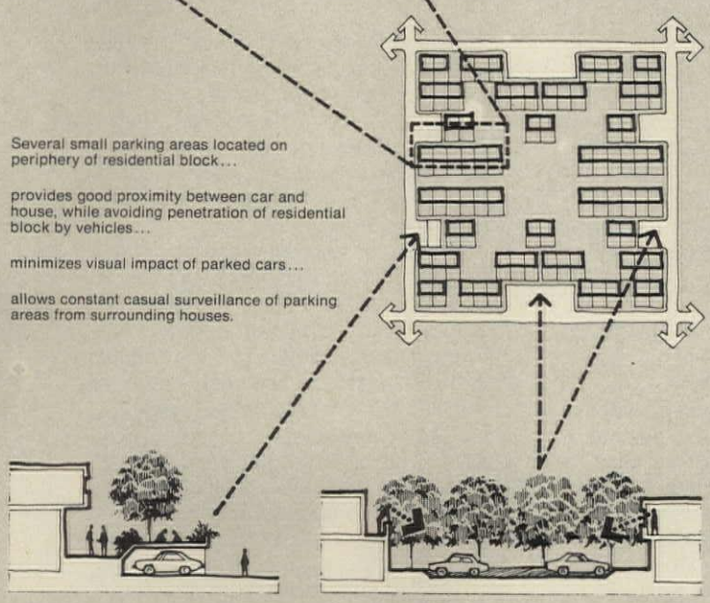
Maximum 40 meter walk from parking to farthest house.

Several small parking areas located on periphery of residential block...

provides good proximity between car and house, while avoiding penetration of residential block by vehicles...

minimizes visual impact of parked cars...

allows constant casual surveillance of parking areas from surrounding houses.

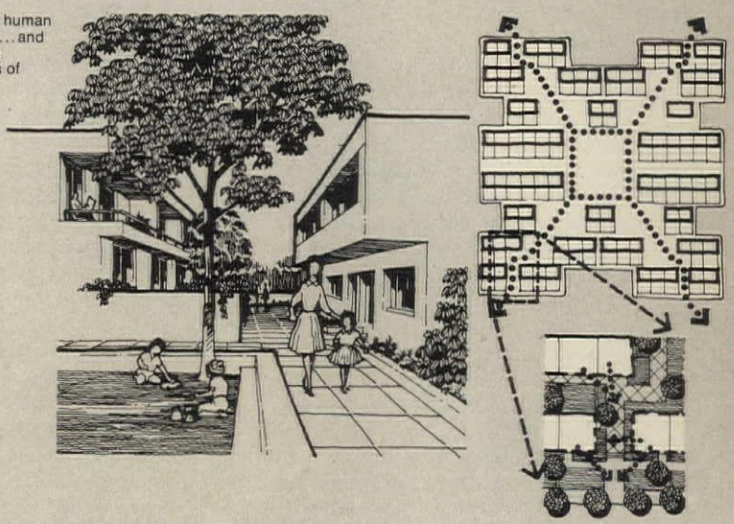


Covered car parking where desired. These can be designed with landscape buffer as shown above.

All parking areas under casual surveillance of nearby residents for maximum security.

Pedestrian Circulation

Pedestrian walkways are at a pleasant human scale... shaded by buildings and trees... and passing through a constantly changing sequence of active and passive spaces of varying size and shape.



The pedestrian zones of each residential block serve a dual purpose:

They provide safe local access for residents between homes and various activity spaces...

The primary paths also form part of the continuous pedestrian system linking together all parts of the town.

In this way, a major planning goal... to provide a highly interconnected pedestrian network segregated from high speed traffic... can be achieved at no additional cost. No special lands need be reserved for these pedestrian routes, and no additional landscaping is required beyond that which must be provided for the residential areas.

Access into the residential block from public sidewalks is through entry locks which clearly announce to the visitor that he is entering a semi-public space. This is emphasized by:

A clear boundary between public and semi-public territories, formed by a change of paving materials and sometimes a change of level (step up or down)

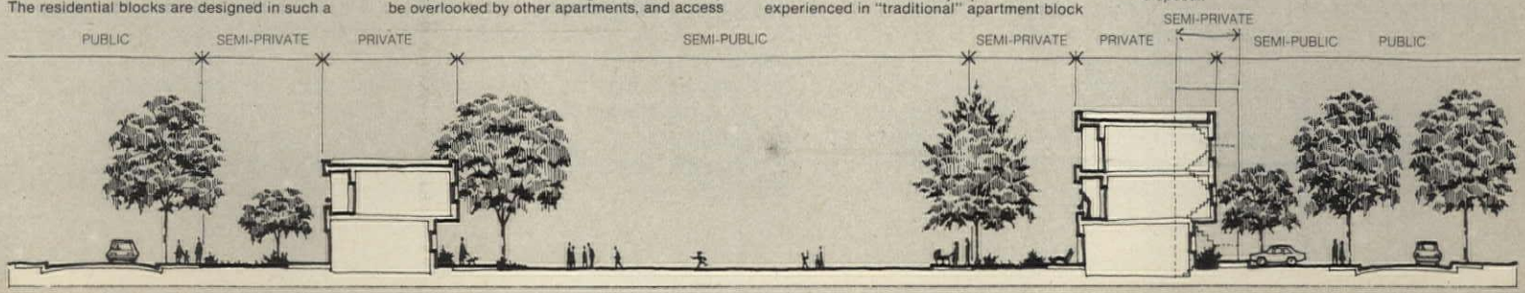
built-in casual surveillance of the entry from several houses to discourage loitering, vandalism, and other undesirable behavior, eliminating the need for special security measures such as guards, etc.

Public/Private Hierarchy

A fundamental aspect of low rise/high density is that of territoriality — that is all spaces, inside and outside, are clearly defined as to their place in the public/private hierarchy.

The residential blocks are designed in such a way that even the casual stranger, walking through them, is made aware of the transitions from purely public areas (such as streets) to semi-public (such as the block interiors) to semi-private (such as some gardens which may be overlooked by other apartments, and access halls and stairways) to purely private (individual apartments and some gardens).

This avoids one of the major problems experienced in "traditional" apartment block developments — large, anonymous, ill-defined spaces between buildings which fall into disuse and neglect, and often become a no-man's land of anti-social behavior and informal refuse disposal.



The Adventures of Harry Barber in OPEC Land

Wherein an apocryphal account is related by a fictitious American architect who seeks his fortune in the Middle East and thus engages in a host of experiences.

Up till now my life had been reasonably prosperous. My partner and I had maintained a 50-person architectural office in New York. We had achieved no small renown in our 15 years of practicing architecture, having won awards for houses, then schools, finally office buildings. But the economic "downturn" of 1974–75 forced me to make a dramatic decision. Our professional and personal lives had been a year in the hands of our creditors when I decided to take leave of our comfortable New York office and journey to the unknown lands of the Middle East.

Of all the places to look for prospective clients, I reasoned that either Saudi Arabia or Iran would be the most promising.[1] I decided to go to Tehran, since many of my local colleagues from New York's boom years had work there—I.M. Pei, Marcel Breuer, Skidmore, Owings & Merrill, Gruzen & Partners, Edward Durell Stone, John Carl Warnecke. These firms might be larger than mine, I realized, but the stakes were too high to get nervous about that. So I set out with only presentation drawings for an unbuilt high-rise office building in Midtown Manhattan to comfort me—and to offer assurance of my abilities to interested parties.

Upon arriving I went directly to the Tehran Hilton. The sight I beheld in the lobby was most incredible. It was a market place for every commodity or service one could name; kewpie dolls, helicopters—and architecture. (One architect even had his drawings spread across the floor of the lobby.) Although I had booked a room in advance, the room clerk was unable to locate my reservation and assured me there was not another hotel room in all of the Shah's kingdom. Thus I was forced to retire to the bar to ponder my gloomy fate.

Standing there was a well-dressed Iranian fellow who, seeing my portfolio under my arm, looked over my dark navy pinstripe suit (too hot for the 120 F temperature) and my wire-framed glasses and asked me if I were an architect from New York. Astonished at his perspicacity, I asked him how he knew. He explained he too was an architect, a cousin of the Shah and was friendly with many architects from the States. His curiosity about my portfolio impelled him to ask to see it.

Upon my opening it he immediately began praising the office tower's aesthetic and functional merits, and proclaimed he must show it to the Shah. Since the Shah was known to favor high-rises and to influence a lot of architectural decisions in this country I gladly relinquished the portfolio. Explaining that I wasn't sure where I could be reached since I had no room, the architect immediately took me to the room clerk and demanded that he locate my room reservation.

Presently the clerk, his memory jogged with a "gift," (suggested by my new friend) found the correct records. Elated, I returned to the bar to ponder my good fate.

An old acquaintance

All of a sudden out of the corner of my eye I saw a person who looked vaguely familiar from my days in architectural school. Upon scrutiny he appeared to be much older than 41 however, for his face was

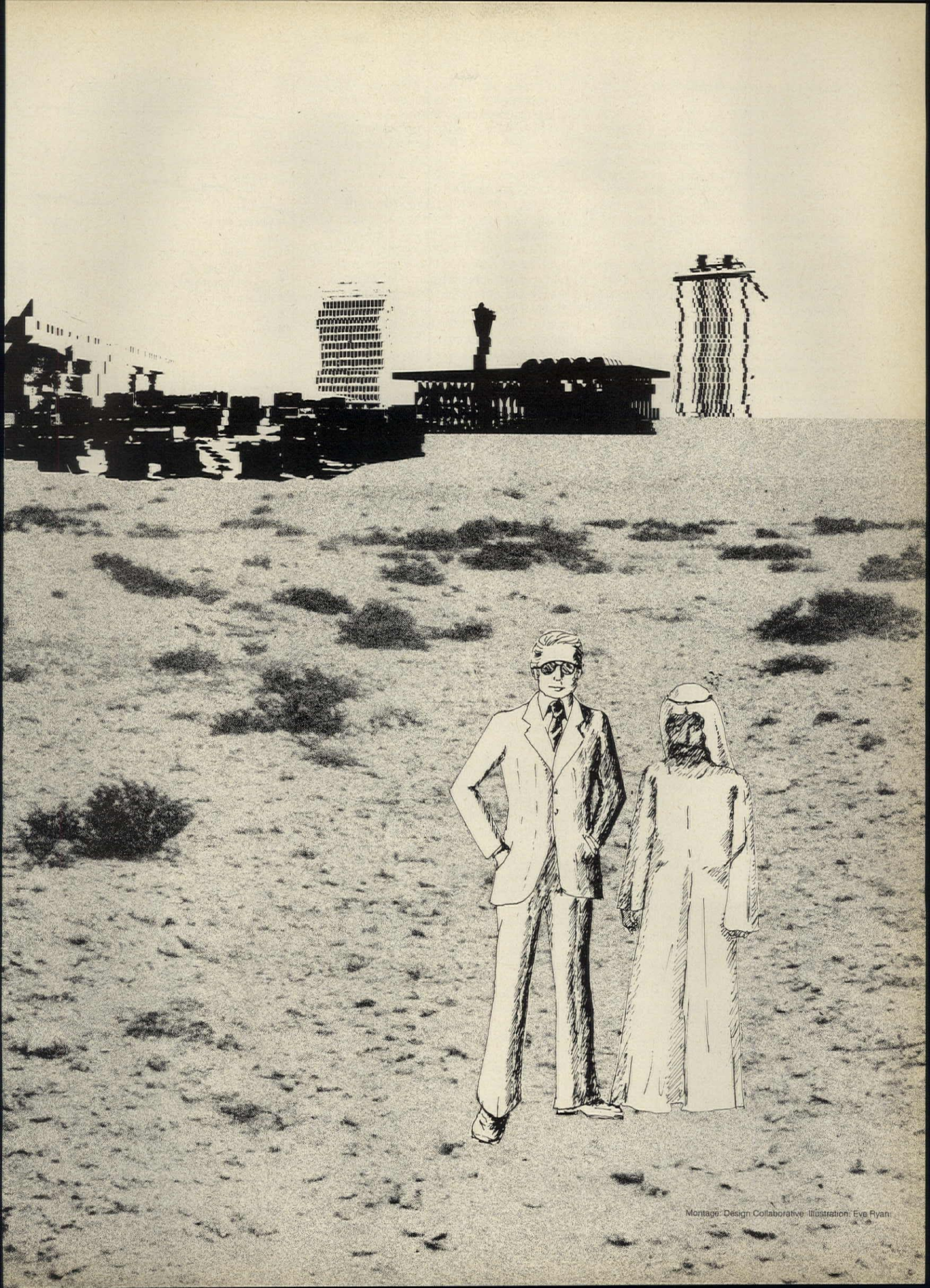
Courtesy of Hagstrom Company, Inc.

browned and wrinkled, his eyes, smoldering dark flames, glazed from alcohol. Presently he spoke, "Harry Barber, Yale '61." Astonished, I acceded I was Harry Barber and was it possible he was my old schoolmate. Much clasping of shoulders took place before I finally asked him what he was doing in Tehran.

His voice became slightly strangled as he told me he was studying the "rules of the game" that were essential for doing business in the Middle East successfully. Like another schoolmate of ours, Jaquelin Robertson, my friend had been a city planner in New York, where he had been drawn into the development game. "But New York was little league stuff," he claimed, "Here the projects are immense, the construction budgets staggering, and the fees monstrous. Even Robertson is here," he confided, alluding to the news that Jaq had just been named director of the Llewelyn-Davies design team to execute the "new town" of Shahestan Pahlavi in Tehran.

But my prematurely aged friend proceeded to warn me that he wasn't sure Americans could ever understand the rules according to Persian practice and began recounting his experiences over the years. Tales of long detailed negotiations ensued, wherein the agreements of one day were no more binding than the shifting sands of East Hampton at high tide. "Remember every day is a new day," he muttered, "and the weather is always decided by the Shah."

Editor's note: The characters in the above article are purely fictitious, as are the "adventures." The story, however, is based on actual experiences reported by a number of architects working in the Middle East. The device of fiction was employed in order to circumvent the problem of confidentiality. Because of the sensitive architect-client relationships (which even prevented many projects from being published), many architects interviewed did not wish any of their observations or experiences to be quoted or attributed. While the single-person narrative is a limited one (excluding the many *positive* experiences and overlooking some OPEC countries), it was felt that this composite narrative might provide a capsulized view of what an architect working in the Middle East could encounter.



Montage: Design Collaborative. Illustration: Eve Ryan

By that time my friend had, as we say, really tied one on and was babbling about the 19th-Century picaresque novel written by an Englishman, *The Adventures of Hajii Baba of Ispahan.*" Hajii Baba, he philosophized, knew that "Truth can be but a matter of definition; it is so ephemeral that it may constantly elude you." Many more Persian nights were to be spent in the company of this cynical friend, whom I enjoyed to a degree. His black humor could be entertaining, though I felt it shouldn't be taken too seriously.

Later, when I was finally contacted by the architect cousin of the Shah, I found he had set up some meetings with private developers for a condominium project where we would be joint architects. I related the news to my all-knowing friend. "Blood is thicker than friendship, friendship more binding than law, and money is the only force that transcends all," he responded darkly.

Design dilemmas

During the ensuing months of interminable negotiation and stops and starts, my spirits began to lag. "Persians don't really believe in planning as much as they believe in intrigue," my friend cheerfully pointed out, "Negotiation is much more important than the design phase and will take more time. But learn to enjoy it, it can be fun."

Still, several things bothered me. I was increasingly anxious about the elusiveness of the decisions made at the meetings. I had always prided myself on my ability to communicate with my clients, one of the reasons I'm sure my firm was so successful. We also were known for our realistic approach, based on attention to economics, user needs, existing technologies. I certainly did not neglect "design," but let's say that formalistic or theoretical considerations were not very interesting to me. In fact I resented their increasing significance to more than a few New York architects.

Back home, controversies had been raging over the philosophical assumptions of "Modern Architecture," its functionalist tenets, its technological imperatives, its alleged lack of visual interest, human scale, or "content." "Don't ask questions, until you can give me answers" I always said. "Why tear something apart unless you have something else to replace it with?," I would go on, remembering how Modern Architecture had so aptly performed just that replacement role with regard to the Beaux-Arts architecture that had preceded it. A "hard-core pragmatist," I was especially sick of issues that weren't clear cut. The situation was all so ambiguous.

But I was not prepared for ambiguity and pragmatism *in combination.* After months of negotiation in which it was impossible for me to decipher the events, my architect-partner told me the developers had decided to build *exactly* the tower I had designed for Midtown Manhattan. Since it had a glass curtain wall, I questioned its appropriateness for the hot dry climate. And because most of Tehran is 3-to 6-stories high, I wasn't quite sure how its 50-story height would fit in with the surrounding context.

When I expressed my surprise about the apparent abbreviated design phase to my bibulous friend at the Tehran Hilton, he gurgled pithily, "Remember this is a place where trading is a way of life. They want to get the tower built, get the money, and get out." I then explained that while the tower had originally been designed for offices the developers wanted condominiums. Surely, I conjectured, I would have to redesign the interior. My friend looked at me soberly, as he asked me about the contract. I quickly answered that we had signed it that day. To which he replied testily, "Not that it matters. Whereas we look on the contract as a legally binding document, some tend to see it as a statement of intent, sort of like our farewell greeting of 'Let's get together sometime.' "[2]

I asked why he hadn't imparted this advice to me before. "The safest, most expedient way to do it is have the contract drawn up in the States with payment in American dollars and with good accountants consulted," he replied. "You were too impatient. I figured you wanted to get in and get out too. That's what a lot of American architects are over here doing."

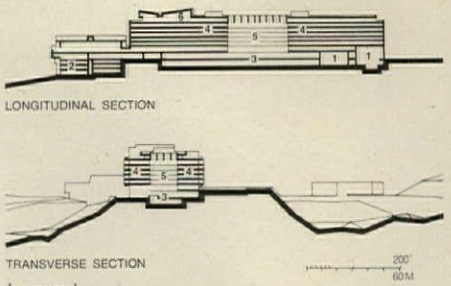
Gold at last

I congratulated myself for having at least persuaded the developers to give me an advance of the 5 percent design fee upon signing the contract. Not all of my business acumen had left me, I thought, though I was increasingly conscious of an ever-present, naiveté that had taken its place. I did have to give half the advance to my Iranian architect-partner, whose firm would execute the working drawings and supervise most of the construction.[3]

Upon seeing the drawings later, I was perturbed by their sketchiness but was told Americans spent too much time on these drawings; contractors didn't need that much detail. I was to see why subsequently. Local contractors had a tendency to conform very loosely to the drawings, arbitrarily making changes when they so desired. First, however, I found that my associated architect was *also* making changes in the scheme. Ogee-type arches were added to the black spandrel panel-and-mullion curtainwall. When the steel frame gave way to a concrete structure (heavy steel was not yet being manufactured there and had to be imported), the ogee arches were done in precast concrete panels.

Second thoughts about architecture

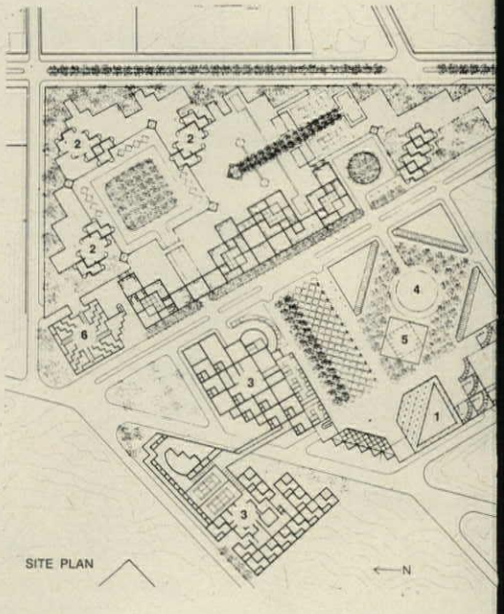
Iranian architects were hardly alone in this embarrassing attempt to fuse modern technologies and forms with Persian stylistic motifs. A good many American architectural firms were experimenting the same way with equally disheartening results. The effect went beyond that of the



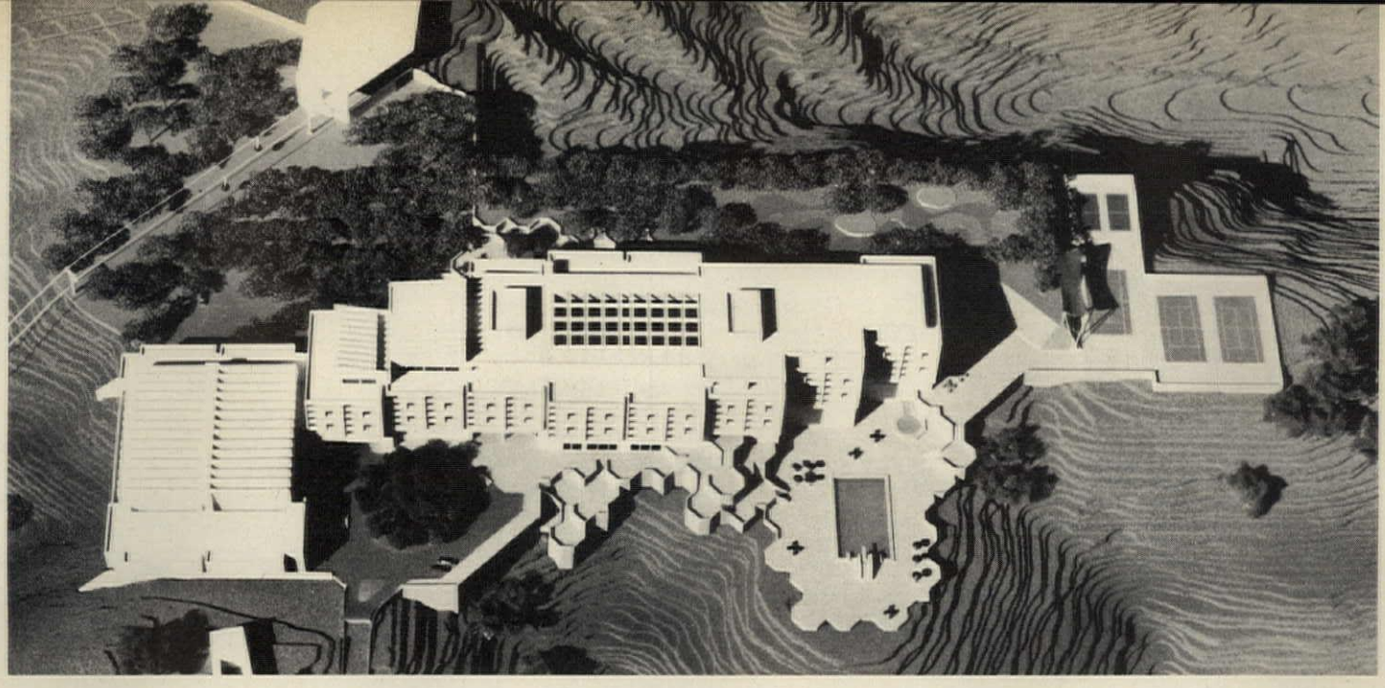
Legend
1 Pool, gym, health club
2 Parking levels
3 Shops and main lounge
4 Guest rooms
5 Courtyard
6 Nightclub

A new luxury hotel on Mount Tochal, Tehran, is being designed by Marcel Breuer & Associates (Robert Gatje, principal in charge of design) for private Iranian investors. The hotel sited in a northern (and most exclusive) section overlooking the city has 320 rooms plus retail and recreational facilities organized around a seven-story-high skylit atrium. The structure will be concrete with thermally honed granite cladding.

On a 36-acre site in the northwest section of Tehran, I.M. Pei & Associates in joint venture with Sazeh Consultants has designed Kapsad, a mixed-used center replete with apartments, 2 million sq ft of offices, 400 hotel rooms and 150,000 sq ft of retail space. Although the design has been reworked since this model was prepared, the new version is expected to retain the reflective glass skin and faceted massing of this earlier scheme.



Legend
1 Office tower
2 Residential
3 Hotel
4 Office space
5 Banking
6 Retail



Nathaniel Lieberman

"historical allusions" the newer generation of architects were so fond of employing in the States. This went back to the architecture of the 1950s when any number of effects were tried on to "soften" modern architecture or give it some particular identity.

I began to realize that serious issues were involved regarding Iran's quest for modernity. Journeys to Persepolis and Isfahan had made me increasingly enamoured of the mud brick vernacular of the village huts, the bubblelike roofs of the bazaars penetrated by skylit apertures, the evanescent mosaic tiles of the mosques, the lush gardens and courtyards hidden behind walls, the varied spaces within the caravansaries. I was glad that some Iranian architects were trying to call attention to a fascinating tradition.[4]

They clearly had a problem, but so did we. What kind of architecture could Americans hope to provide these people other than the very solutions that were being questioned back home? "Why do so many Iranians want to be accomplices to these acts of infidels," I asked my friend at the Hilton bar. "If you notice the Iranians and Arabs all seek our skills, services, and technologies, but are decidedly ambivalent about our presence here," he answered. "Aren't we all," I murmured.

Meanwhile the condominium tower went ahead. As it turned out my Persian partner did do most of the layouts since I wasn't aware of the ample space demands customary for wealthy middle Eastern clientele (3000 to 6000 sq ft per apartment) or their desire to have a series of closed off rooms for various uses.

The condominium developers were quick to excavate, but I soon found it had less to do with fast-tracking than with their unique methods of financing (in the process of improvement at this writing). At that particular time, (early 1976) there was no permanent financing in the country so the only way the $50 million condominium tower could be started was by selling the condominiums before the building was completed (much less working drawings finished). To convince prospective buyers they were actually going to get the condominiums, the developers had to begin digging. "And you talk about New York's Dirty Dozen developers" my morose friend reminded me gleefully, "These guys will be out with their money before the lobby is decorated."

New York chic in Araby

Worried that I wasn't "spreading my risk-taking around" as my old chum urged, I decided to go to Saudi Arabia until the condominium construction actually got underway. The factor that impressed me most about Saudi Arabia was the sheer size and magnitude of developments taking place there.[5]

Somewhere, I thought, I must fit into the picture. The picture, however, was considerably cloudier than I had imagined. When I arrived in Riyadh, unpaved streets and buildings yet to be finished were bathed in a greenish gray haze formed by the dust and sand that fill the air. I quickly sought refuge in the Inter-Continental Hotel. The Inter-Continental was the only hotel in Riyadh to speak of, a situation I hoped to change. Through some luck I had an old friend in a hotel chain in the States that was beginning to penetrate the Middle East market. My partner and I had contacted him before I left, and when I arrived in Saudi Arabia I was to find the chain had given our names to some Saudi developers. One hurdle over.

The interviews didn't take place for several weeks but this time I was prepared. (There is the joke about a Saudi ambassador to the United Nations who says to a Mexican ambassador "What does this word mean, manana?" The Mexican responds, "It means 'tomorrow.' Surely you have a number of words in your language for that." "Oh yes indeed we have," replies the Saudi ambassador, "but none with the same sense of urgency.")

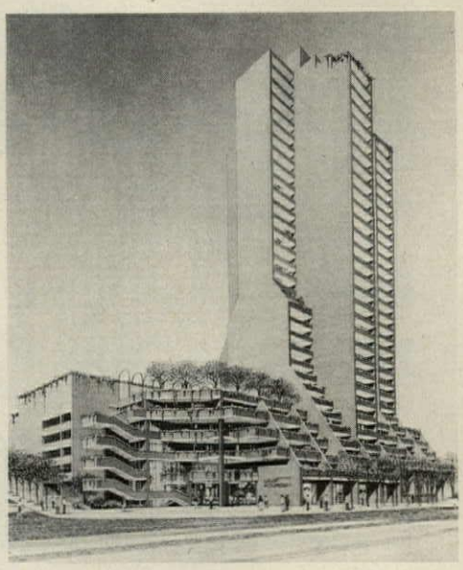
I was not terribly surprised to find five other architects were being interviewed for this job. What did take me aback however was that the client, an intelligent but demanding fellow, asked to see a "suggestion" for the proposed site instead of my by then well-worn portfolio of past work. I thought this was stretching AIA codes of ethical practice a bit, but after paying $100 a day for the room at the hotel (plus the "gift" to the reservation clerk) I was *not* going to ask questions. Ethics, *schmethics,* I figured, this was what the rules of the game were about.

Since the site had not been surveyed, determining the boundaries was not all that easy. And I had only four days to make some kind of presentation! (I found the Saudis were very true to their word about the deadlines they established, though they *did* mull over decisions.)

Success and hard work

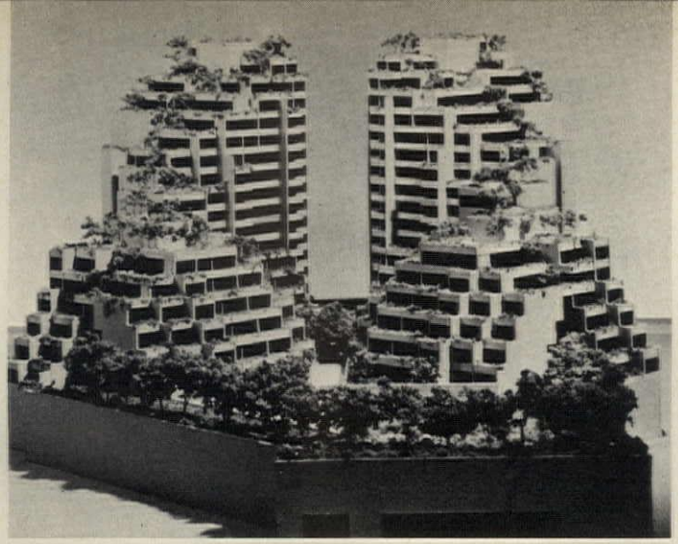
My client came back to me presently and informed me I had the job. But he wanted to see several more "ideas" for the same site—within two weeks! I telephoned my partners about the project, explained that I would proceed developing the scheme I had proposed, if the office could draw up the other projects to show the client. I hesitated to return to New York (job stealing seems quite prevalent in the Middle East, along with job giving). And since my partner is Jewish we felt it best that he stay away. I was Irish and Jewish, but fortunately I had been brought up as a Quaker. Of course the morality of my accepting the proscriptive practices of the Arabs against Jews bothered me a bit. "Now is not the time to drag in Martin Buber-type arguments" reasoned the pragmatic me.

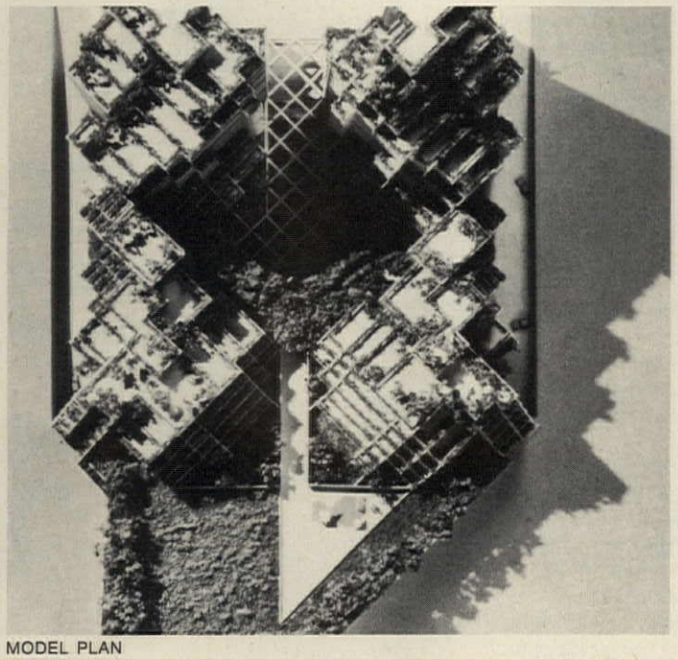
As it turns out of course, the client selected the scheme I had developed. (I was secretly glad, though I hardly wanted to tell my office after it had charretted night and day for two weeks on the other three.)



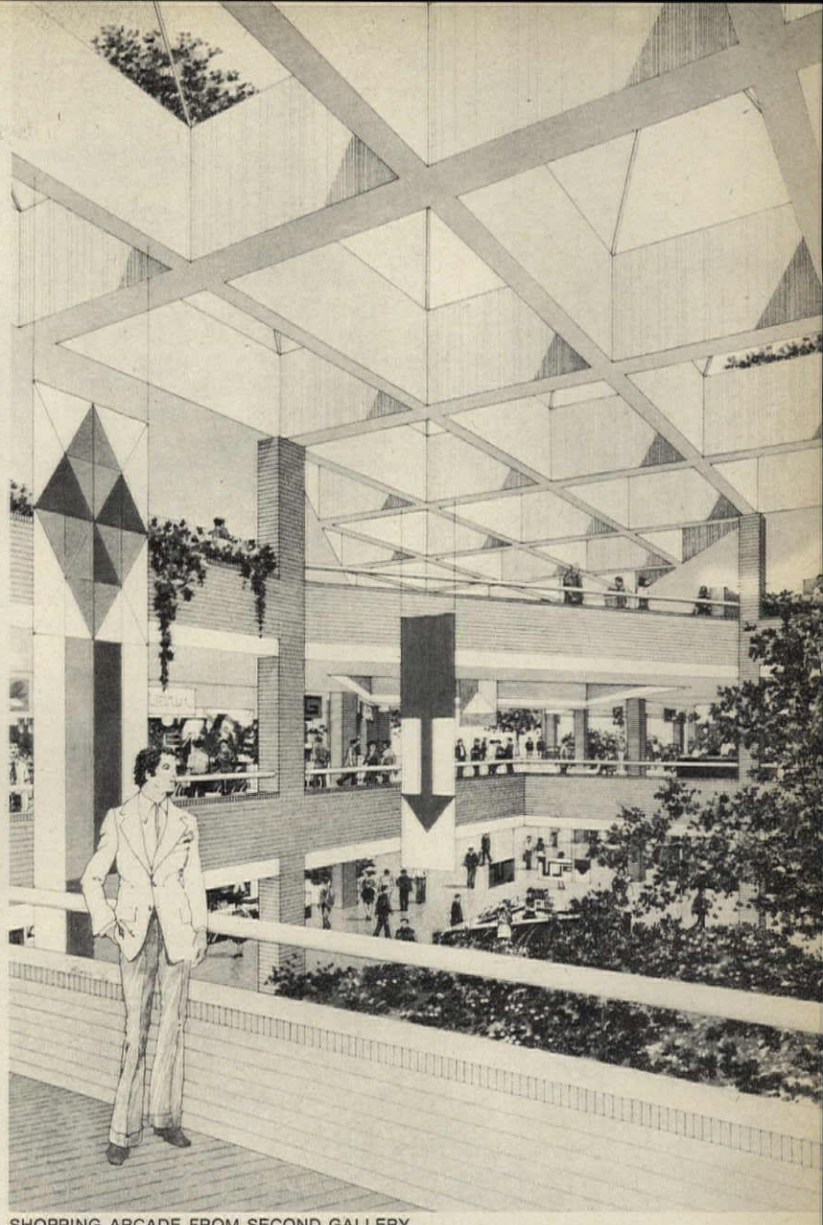
Eight multi-use complexes for the Kourosh department store chain of Iran are being prepared by the office of Edward Durell Stone. One, (above) in downtown Tehran, features a 28-story commercial residential tower with a five-story skylit galleria and below-grade department store. Four floors of parking will be included in the concrete frame and brick face structure. Another commercial residential project for Mashad, Iran (right) organizes terrace apartments around a central garden and three-story-high skylit shopping arcade. The apartment blocks step to 18 stories along the street and accommodate two levels of parking within the concrete frame and brick-faced structure. The "western" retailing concept includes air conditioned skylit malls in most projects.

Gil Amiaga

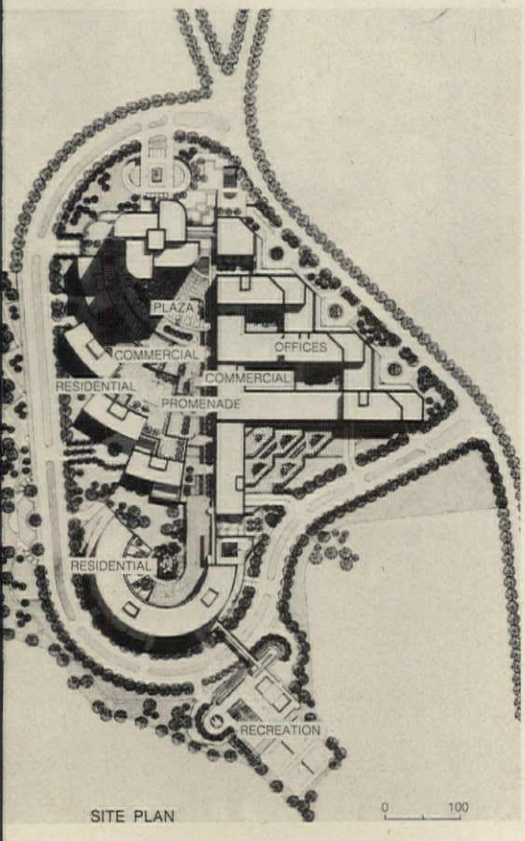




MODEL PLAN



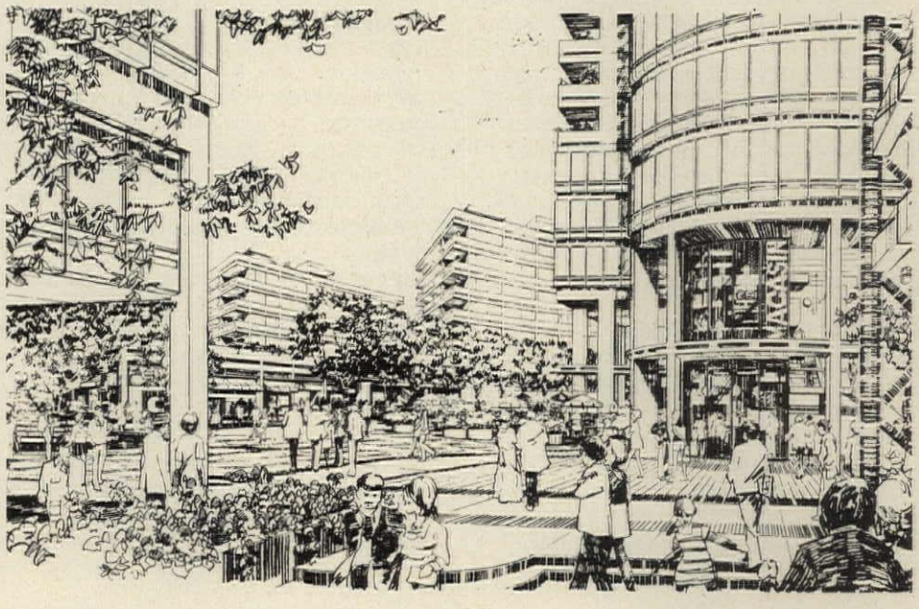
SHOPPING ARCADE FROM SECOND GALLERY



SITE PLAN

While religious strife continues in Beirut this project for a large subcenter will be kept in abeyance. On a spectacular 22.7-acre site overlooking the city, private developers, Arab Investment Company, commissioned Gruen & Associates (with Beda Zwicker partner in charge) to design this 270 apartment, office, recreational, shopping complex called "Beirut II." A 32-story tower combines 5 office floors with 27 floors of apartments plus 2 for restaurant/club facilities. Linking the tower at the highest portion of the site to the curved medium-rise apartment towers is the main promenade and shop-lined plaza. Structure is concrete, stuccoed walls.

VIEW OF THE PLAZA



Now came the difficult part. I wanted to get an American builder to take charge of the project. Although large construction and engineering firms were plentiful, they usually preferred to subcontract to architects with whom they had done business in the past. Yet an experienced builder was highly desirable, since materials, technology, and labor all had to be imported.[6] On top of that the port cities of Jidda and Dammam had such inadequate facilities that it took months for raw materials to be taken off the ships. One company even unloaded cement in the Jidda harbor by helicopter out of fear that the cement would first be ruined by moisture. Steel was flown in; some architects insisted bricks were too. And I was warned if you trucked in something through Turkey, chances were the cargo would be pirated before it reached Saudi borders.

Still trying

At last I was able to locate several firms who seemed promising. While my clients were deciding on which of them would be the best candidate, I speedily took the opportunity to go to Egypt where I could at least drink away my anxieties. Although I suspected some of the Middle East countries were too optimistic with their hotel construction where it seemed there were soon going to be more hotel rooms than travelers in the 120 F heat, this was not the case with Cairo—at the moment. Despite its lack of wealth in comparison to its neighbors, it needed hotels, and had the tourist attractions to warrant the increase.[7]

By a fortuitous coincidence I bumped into an old colleague in the Nile Hilton, a planner from New York who had been doing some consulting work for the Egyptian government. He told me of a piece of land on the Nile near the Pyramids for which he had obtained development rights from the Egyptian government. The project he had in mind, a resort condominium, seemed extremely apropos for us to team up on. Of course there was a bit of a hitch. Egypt would put up the land and labor, but not hard currency. We would have to obtain outside investment to import materials and to build the project. The planner had established a connection with some Kuwaiti investors but needed more money. I wired my partner for a likely American prospect. Ironically it proved easier to interest some U.S. developers in a resort condominium in Egypt than in almost any kind of development back home.

Voice of the desert speaks

While I waited for the American investment representative to come to Cairo I traveled to the fabled city of Alexandria. The sea was stunning, although the city of my fantasies was decrepit and decaying. Then one steamy night as I wandered the broken dirty streets, I came upon a English-speaking Coptic soothsayer near one of the cafes. I was in the mood for profound insight into how this whole thing would turn out. She seemed inconclusive. "Greed, opportunism, and hypocrisy are constantly at your side," she rasped. "And your future looks murky." Asked how I would avoid greed, opportunism, and hypocrisy she replied cryptically (coptically?), "Look within." "Just what I need," I thought.

In the single most discouraging two weeks of my life I returned to Tehran and found my condominium project was still in the same state as I had left it. Meanwhile a kickback scandal seemed to be brewing. The developers had allegedly paid off some of the government officials to push through rapid land clearance approvals. A similar situation had occurred with the Shahestan Pahlavi project, where government officials were still under investigation for receiving kickbacks for more than $33 million from landowners who had obtained inflated land compensation. I found to my dismay that my contract would also make me liable to kickback charges if the investigation were undertaken in my project. I finally got hold of my lawyer who advised me to try to terminate the contract, even if it meant losing the rest of the fee. I did.

When I arrived in Saudi Arabia I learned the hotel project was held up because of delayed deliveries on materials and equipment. The firm with which I was allied wasn't big enough to fly in materials, à la Bechtel. Prices were rising so rapidly because of inflation that already the hotel was going to cost $150,000 per room. (Construction figures are normally three to fives times those in the States.) And the clients were getting itchy.

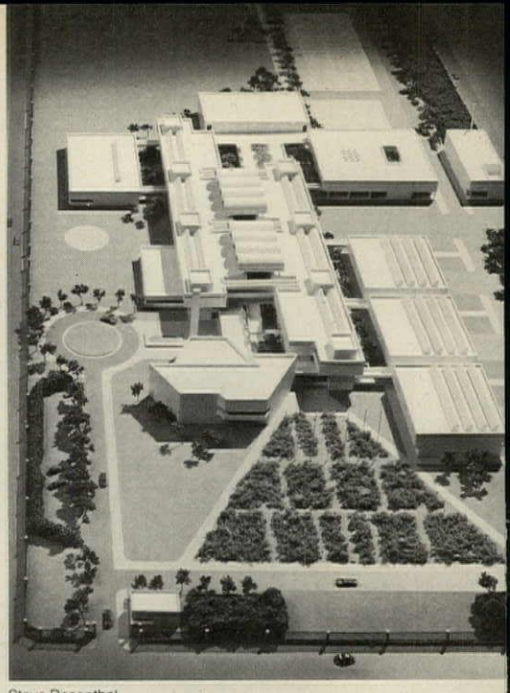
Back in Egypt everything seemed peachy, except for one thing. My planning friend explained that the government approval process might take six months to a year. As it was we had to make quite a few charitable donations to the government officials just to keep up their sense of urgency. But bureaucratic snags were combined with official ambivalence. Egypt was uncertain how much to encourage foreign "invasion."

Homeward bound

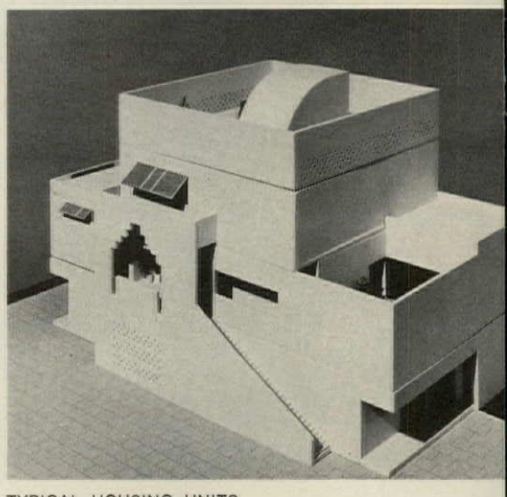
The next day I flew home. Now I am back in New York where my analyst and my partner can comfort me. I had been secretly hoping to find my office down to just one person, my partner, who would announce that we had just gotten a house commission in Greenwich. No such luck. We still had some work, but we needed more.

All agreed it was necessary to maintain "a presence" in the Middle East. Even colleagues with some of the most positive attitudes toward the Middle East (for example The Architects Collaborative, who got in there 18 years ago with the University of Baghdad) maintained it was best to stay with the project from beginning to end. So there I was, looking forward to going back to rent a bungalow in Saudi Arabia for $3500 a month or live out of a hotel room.

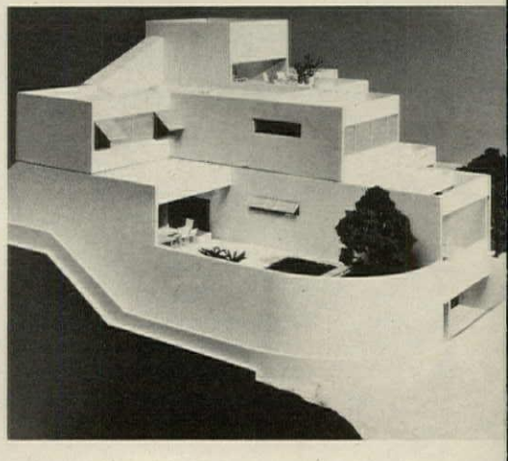
I have now had time and distance to mull



Steve Rosenthal



TYPICAL HOUSING UNITS

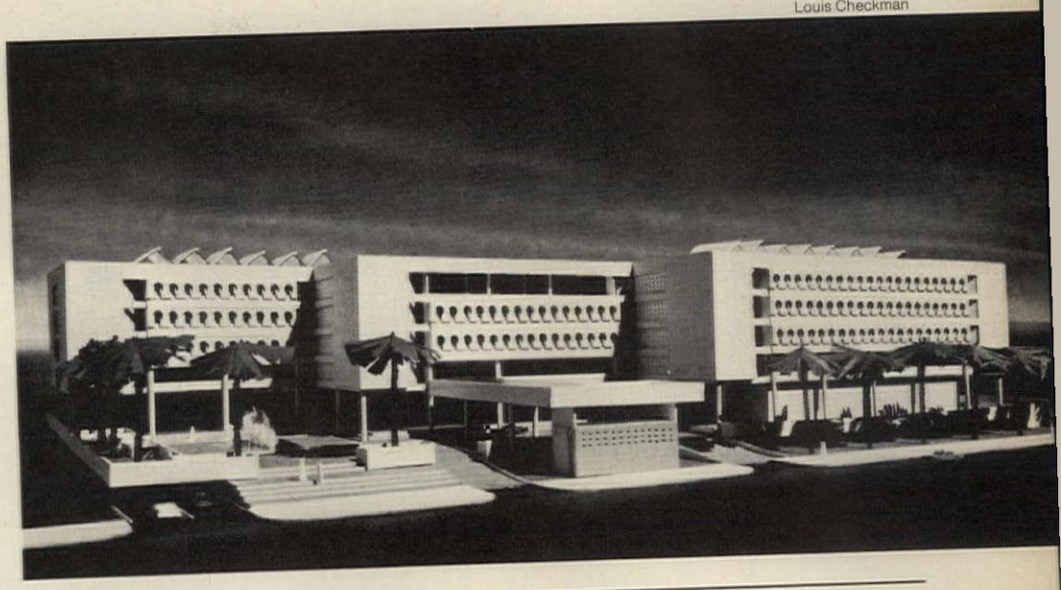


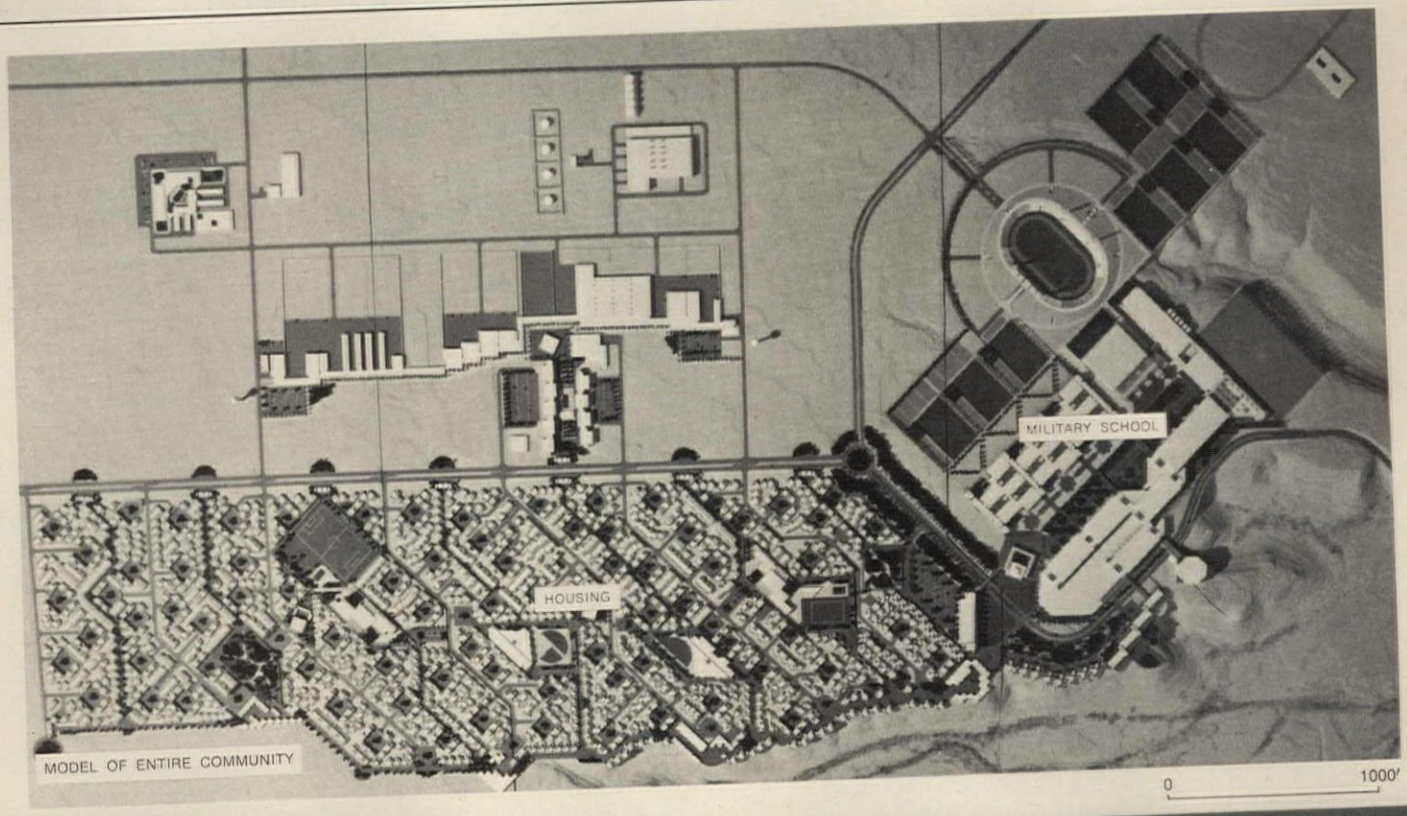
The U.S. Army Corps of Engineers commissioned Caudill Rowlett Scott/McGoughy Marshall & McMillan, architect/engineers, in joint venture, to design a military academy and new town in Riyadh for the Saudi government. The low-rise, 5-million-sq-ft complex will be located on 100 square miles of a rocky desert site. Besides the school for 1500 students (modeled on West Point and the U.S. Air Force Academy), there will be a new town for 10,000 residents. Estimated completion date for the complex using poured and precast concrete construction is 1983.

A technical institute in Shiraz, Iran by Hugh Stubbins & Associates (with Pirooz Shahrdar, associated architect) was designed for the Imperial Organization for Social Services as Iran's first college-level industrial science and technical school. The 280,000-sq-ft concrete frame structure is organized around an academic spine covered by an open barrel-vaulted canopy to which ancillary facilities are linked by bridges and walkways, (photo, left).

The Saudi Fund for Development Headquarters in Riyadh designed by Urbahn-Coile International, is a five-story poured concrete building that will be sheathed in travertine marble. Because of the triangular site, and the partly speculative (rental) functions, the office space has been broken down into three staggered units. Skylighted interior atria occupy the cores of the two end units, (photo, right).

Louis Checkman





MODEL OF HOUSING

Legend
1 Low-rise cluster
2 High-rise cluster
3 Hotel
4 Motel
5 Shops
6 Casino, restaurant
7 Recreation

over the events of the past year. Okay, I suppose I was greedy, impatient, and hypocritical. But you have to be all of the above (or crazy), don't you, to go over and try to adjust to such different mentalities, strange modus operandi, incomprehensible concepts of truth and time, not to mention actual physical hardship? You do pay a price.

I imagine most of us wouldn't be there if we had enough to keep us busy back home. And once the OPEC countries have developed their own professional work force, skilled labor, technology, and materials (which Iran is already on the way to doing) they won't be that intent on having us around anyway. In the meantime they'll get decent enough buildings and cities I suppose, though they may not have much to do with their physical landscape or way of life. Nor will they probably advance the state of architecture: most of the work going up is, at best, a series of facsimiles of Western modern architecture, at worst, ludicrous hybrids of Western and Middle Eastern architectural styles.

Our contribution, as I see it, lies not in generating architectural forms that are sensitive to the expressive needs of alien cultures. No, our contribution lies simply in the efficiency in the sophistication of our services, and the Middle East situation is forcing us to refine them and broaden them further. There we have to immerse ourselves in the entire process of building: not just design through construction supervision, but financing through labor and material supply. (In fact one firm, Adasco Tech International, was formed a few months ago by architect Paul Damaz and civil engineer Ergin Talimci to provide just that total range of services.

But I still wonder about the physical results. Can the increasing efficient production of architecture attain the level of design quality that we have known in the past (Persia and Egypt included)? After a year of being battered and bruised while tenaciously holding on to my pragmatic "nuts and bolts" belief system, I am now asking questions. Even if there aren't any answers. [Suzanne Stephens]

Notes

1 By 1976 Iranian oil revenues had jumped from $2.5 billion yearly in 1971 to $27.6 billion. Its $50.3 billion Gross National Product in 1975–76 is the "fastest growing" in the world. Its five-year plan initiated in 1973 for a country of 32 million, called for the government spending a total of $98.2 billion by 1978. Last year the government began to pull back on its spending, so that spending for construction is now about $3 billion a year (public) and $3 billion a year (private). Saudi Arabia claims a revenue of $32.7 billion in 1976 for a smaller population of five million. Its second Development Plan begun in 1975 calls for expenditures of $142 billion over the next five years of which $90 billion is expected to be devoted to construction.

2 A lawyer who has represented clients in the Middle East, Michael Lacher, advises that a firm's own American lawyer teams up with good local lawyers in preparing the contract. He also suggests that an arbitration clause should be included so that any dispute can be settled in the International Chamber of Commerce. Architects should also make sure they are protected for litigation (increasingly common) and for termination of contract, so that they may receive liquidation damages if fees haven't been paid.

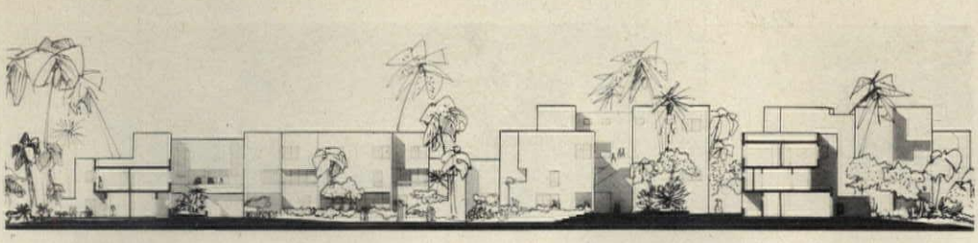
3 Joint venture and registration requirements change from country to country. Joint ventures between local architects and foreign ones are required in Iran, Iraq, Kuwait, Jordan, and Syria. Associating with local firms is wise in order to overcome obstacles regarding building or municipal codes, economic conditions, cultural customs, etc. Since building codes tend to be much less stringent than in the U.S., architects advise going by the U.S. building codes.

4 See *The Sense of Unity, The Sufi Tradition in Persian Architecture* by Nader Ardelan and Laleh Bakhtiar, (University of Chicago Press, 1973).

5 The U.S. Corps of Engineers has at least $8 billion worth of construction management projects underway for the Saudi government. It has subcontracted work to architects including a $2 billion military city planned by Brown Daltas & Associates and Sippicon Consultants and two military hospital complexes being designed by Ellerbe/Architects/Engineers/Planners and Daniel Mann Johnson & Mendenhall. Arabian-American Oil Company, originally Aramco, a company formed by Exxon, Texaco, Standard Oil of California, and Mobil, is being gradually sold to the Saudi Arabians. Meanwhile plans call for $1.25 billion worth of construction in 1975, for which both Haines Lundberg Waehler and Caudill Rowlett Scott are executing a number of projects. All this work in Saudi Arabia affects architectural firms: at least ten A/E firms are involved in $17 billion worth of contracts. Bechtel Engineering Corp. is also active. It is building an airport complex outside of Riyadh where Harry Weese & Associates is designing housing, Warner, Burns, Toan, Lunde, a hotel, and Hellmuth, Obata & Kassabaum the airport service facilities. Bechtel also just got the $9 billion contract for managing construction of the new industrial town of Jubail.

6 Manpower is still a problem. Much of the labor is done by immigrants from Yemen, Pakistan, and Nigeria, with builders supplying their housing at the site. Office clericals tend to be Palestinian and Egyptian, while Lebanese and Syrians are involved in trading enterprises. The actual number of Saudi men who work (women aren't allowed to work, drive, or mix with strange men) is about 500,000.

7 Although Egypt is not technically an "oil-rich" country (its GNP is about $10 billion; its population 37 million), it was selected for this account because of the unique opportunities it offers for foreign architects, builders, and investors who would like to enter into arrangements for developing land with Egypt's Ministry of Housing and Reconstruction. The Ministry has just selected a team to develop a comprehensive plan for the new community of Sadat City, some 40 miles from Cairo. The city of 500,000 initially will be planned to be attractive to private investment, both Egyptian and foreign. David A. Crane & Partners will be planners for Sadat City; Marcel Breuer & Associates, architects; Warner, Burns, Toan, Lunde, architects; Sabbour Associates (from Cairo) architects and planners; Parsons, Brinkerhoff International, engineers; Peat, Marwick, Michell & Company economists.



SECTIONS — ELEVATIONS

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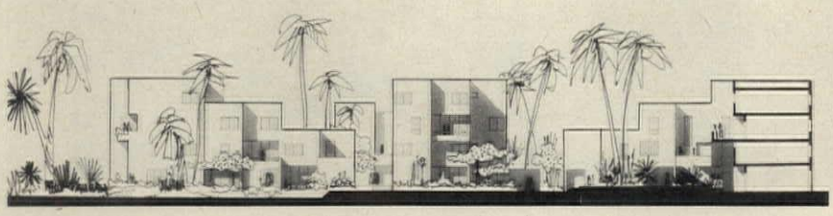


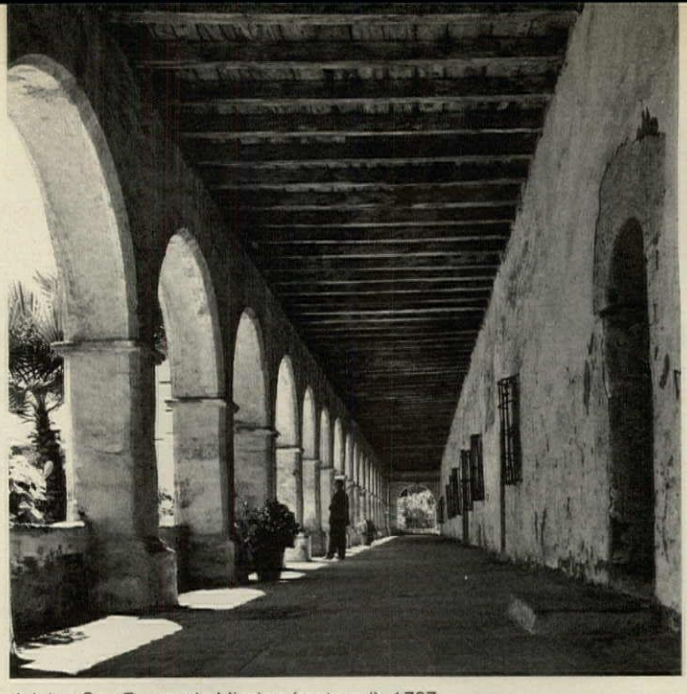
A condominium project for the coast near Alexandria has been proposed by an American-Canadian-Kuwait consortium to the Egyptian government. Called the New Maamoura community, the $43 million project was put together by Preston-Budd, Division of Dominion Industries, Canada and Community Design Associates in New York. (Jan Dabrowski and Jerzy Glowczewski are the architects and planners for the project, Michael Drucker the construction manager). The 350 dwelling units, grouped in clusters around green space and linked by pedestrian paths, will be built in phases using tunnel form concrete construction with metal scaffolding.

Middle East checklist: architects' work recently completed, under construction, or projected.

1. **Welton Becket & Associates**
   $40 million
   Arya Sheraton Hotel, Tehran, Iran
2. **Marcel Breuer & Associates**
   $90 million (excluding Sadat City)
   Mt. Tochal hotel, Tehran, Iran
   Hotel, Cairo, Egypt
   Sadat City, Egypt (architecture)
   Hotel/shopping arcade, Manama, Bahrain
   Fish, meat, and vegetable market, Kuwait City, Kuwait
3. **CRS Design Associates**
   $5.5 billion
   Aramco office buildings, Riyadh and Dhahran, Saudi Arabia
   Photogrammetry building, Riyadh, Saudi Arabia
   Saudi University for Girls (master plan), Riyadh, Saudi Arabia
   King Abdulaziz Military Academy, Riyadh, Saudi Arabia
   University of Petroleum and Minerals, Dhahran, Saudi Arabia
   Bahrain Monetary Agency building, Manama, Bahrain
   Gulf Air housing tower, Manama, Bahrain
4. **Community Design Associates (CODA)**
   $40 million
   New Maamoura housing, Alexandria, Egypt
5. **The ELS Design Group**
   $130 million
   New community, Tabuk, Saudi Arabia
6. **Ellerbe/DMJM**
   $925 million
   Medical community, Taif, Saudi Arabia
   Medical community, Al-Kharj, Saudi Arabia
7. **Gruen Associates**
   $43 million
   Beirut II urban subcenter, Beirut, Lebanon
8. **Gruzen & Partners**
   ($ withheld)
   Farahzad housing, Tehran, Iran
9. **Hellmuth Obata Kassabaum**
   $5 billion
   Terminal buildings for Riyadh airport, Riyadh, Saudi Arabia
   University of Riyadh (in consortium, HOK + 4), Riyadh, Saudi Arabia
10. **Philip Johnson and John Burgee**
    $100 million
    Housing, Isfahan, Iran
    Commercial center, Isfahan, Iran
    Bank headquarters, Tehran, Iran
11. **Llewelyn-Davies & Partners**
    $3–5 billion
    Shahestan Pahlavi new town, Tehran, Iran
12. **I. M. Pei & Partners**
    ($ withheld)
    Kapsad housing, Tehran, Iran
    Bank headquarters complex, Tehran, Iran
13. **William Pereira Associates**
    $300 million
    Medical complex, Tehran, Iran
    Hotel and new town plan, Doha Quatar
14. **Perkins & Will**
    $175 million
    Jondishapour University, Ahwaz, Iran
    Hospitals, Ahwaz, Iran
    Hospital, Tehran, Iran
    Khezar Shahr Resort, Iran
    Iranzamin International School, Tehran, Iran
    Palace, Ahwaz, Iran
    Hospital, Cairo, Egypt
    Town plan, Kuwait City, Kuwait
    Three training centers, Saudi Arabia
15. **Skidmore, Owings & Merrill**
    (Withheld all information on their work)
16. **Smith, Hinchman & Grylls, Associates**
    ($ withheld)
    Royal Saudi Air Force headquarters, Riyadh, Saudi Arabia
17. **Edward Durell Stone & Associates**
    ($ withheld)
    Kouroush department stores and housing (seven in Tehran, Iran, one in Meshad, Iran)
18. **Hugh Stubbins Associates**
    $8 million
    Shiraz Technical Institute, Shiraz, Iran
19. **The Architects Collaborative**
    $600 million (since 1970)
    University of Baghdad, Baghdad, Iraq (parts still under construction)
    Institute of Public Administration, Riyadh, Saudi Arabia
    Al-Ghanim Villa, Kuwait City, Kuwait
    Al-Shaya Village, Kuwait City, Kuwait
    Kuwait Fund for Arab Economic Development, Kuwait City, Kuwait
    Kuwait Investment Company, two parcels in Kuwait City, Kuwait
    National Real Estate Co., Kuwait City, Kuwait
    Arab Investment Co., Riyadh, Saudi Arabia
    Institute of Public Administration, Riyadh, Saudi Arabia
    Cold Storage Facility, Abu Dhabi, U.A.E.
    Ministerial Office bldg., Manama, Bahrain
    Two parks, Riyadh, Saudi Arabia
    Abu Dhabi National Library, Abu Dhabi, U.A.E.
    Kuwait Sheraton Hotel addition, Kuwait City, Kuwait
    Sheraton Hotel, Baghdad, Iraq
    Sheraton Hotel, Basrah, Iraq
    Hotel Inter-Continental, Sharjah, U.A.E.
20. **3D International**
    ($2 billion)
    (a subsidiary of Diversified Design Disciplines which includes the domestic subsidiaries of Neuhaus & Taylor, Architects and Engineers, Chenault & Brady, Consulting Engineers, and Brooks Barr Graeber White, Architects and Engineers).
    Aramco housing and community facilities, Dahran, Ras Tanura, Abqaiq, Udhailiyah, Saudi Arabia
    Dubai Inter-Continental Hotel, Dubai, U.A.E.
21. **Benjamin Thompson Associates**
    $150 million
    Intercontinental hotel, Abu Dhabi, U.A.E.
    Intercontinental hotel, Al Ain, U.A.E.
    Intercontinental hotel, Cairo, Egypt
22. **Urbahn-Coile International**
    ($ withheld)
    Saudi Fund for Development Headquarters, Riyadh, Saudi Arabia
23. **Wallace McHarg, Roberts & Todd**
    $100 million
    Pardisan, Tehran, Iran
24. **John Carl Warnecke Associates**
    $15-20 million
    Foreign trade bank, Tehran, Iran
25. **Warner Burns Toan & Lunde**
    $200 million
    Ramses Hilton, Cairo, Egypt
    Riyadh Hilton, Riyadh, Saudi Arabia
    Riyadh airport hotel, Riyadh, Saudi Arabia
26. **Harry Weese & Associates**
    $60 million
    Housing at airport, Riyadh, Saudi Arabia

Note: All figures given represent estimated total construction dollar volume.

Before the Silvers



Julius Shulman

Adobe, San Fernando Mission (restored), 1797.

On the following pages devoted to the architecture of Los Angeles, P/A takes a close look at the group recently identified as "The Silvers." Correspondent Esther McCoy surveys the region's architecture historically, and finds the group's similarities to be more practical than theoretical. Correspondent Peter Papademetriou then outlines who the Silvers are and what holds them together. The presentation ends with the publication of a major Silver building —the new Pacific Design Center—which is blue.

Forget the word Silvers. It was just a color to put on an invitation—us Silvers, you Whites and Grays. No theory holds the Silvers together, with the exception of Cesar Pelli and Anthony Lumsden, who worked together at Eero Saarinen's, along with Paul Kennon, before Pelli brought Lumsden to DMJM in 1964. But something else holds the Silvers together—an important event which is the dividing line between pre-1960 Los Angeles and the present. That is Ordinance 116214, which repealed the city's 150-ft height limit.

Repeal was an invitation to go vertical, and given the flourishing economy of the 1960s the invitation became a mandate. What you see here is repeal architecture. Not just the towers, but all of it came out of the intense urban consciousness which overtook us with repeal. There were towers enough (all big and impressive because they were up) but it was the two new nuclei of vertical developments that made the most difference—the downtown financial center and Century City. These two have in the short run created a surplus of office space but they have unified the city, intensified the interest in a rapid transit system and in a downtown plan. Their long-run effect will be to curtail sprawl. For the moment, the money is where the heart is—on high-rise.

The early years

We haven't had a style everyone would agree on since the early abode, which grew up under Spanish rule and served the mission builders of the 18th Century. There was little wood, only mud, in the semi-arid climate of the Los Angeles Basin. But by now we are so heavily landscaped that no one remembers that the shade trees were all brought in, and there were few of those until the 20th Century. (Greene & Greene built for an almost treeless Pasadena, hence the wide overhangs.) Few architects have understood or acknowledged our true environment. Yet Irving Gill sophisticated the mud style in reinforced concrete; Frank Lloyd Wright honored it in textured concrete block houses, and R.M. Schindler stated the principle when he based his buildings of the 1930s on mud forms of the Taos pueblo.

Mission style

American rule began in 1847, and 50 years was long enough for the American settlers to wait before starting a revival style—California Mission. Around 1900 the craftsmen's movement was at its height, and the similarity between it and Mission was so noticeable that the two intermingled. The Mission style fell into two categories, the Santa Fe Railroad station type with thick walls, small openings, and bell tower; and the San Diego Mission style with its roof comb, favored even for large buildings (one of them a large home for the aged).

Settlers from the East had brought with them the ideal of what a house should be. Wood. It was like the story of Ray Bradbury's about a woman on Mars sending back to earth for her rocking chair. This ideal of the settlers determined the material, and another determined the form of the city—a commercial acre at the end of the car line. The promise of "sewers in, streets proposed" (later it was freeways proposed) was, unfortunately, kept. We therefore became an aggregate of satellites around a hypothetical sun, each satellite pretending to be its own solar system.

The Greenes and Gill

Before 1915, the Mission style reigned. But the time is remembered now as belonging to the Greenes and Gill. (Gill belonged more to San Diego, but by 1910 he was building for the Los Angeles area.) In no sense were the Greenes Mission Revivalists; their sensibilities were a product of the stick and shingle style of the East where they had studied and worked. The two great influences on them in the West were Japan and the climate of Pasadena. Another thing that set them apart from the East was that the houses were not fitted to large estates, but to 100- or 150-ft front lots with neighbors on each side. The modesty of this gesture

Julius Shulman

Greene & Greene, Gamble House, 1908.

Marvin Rand

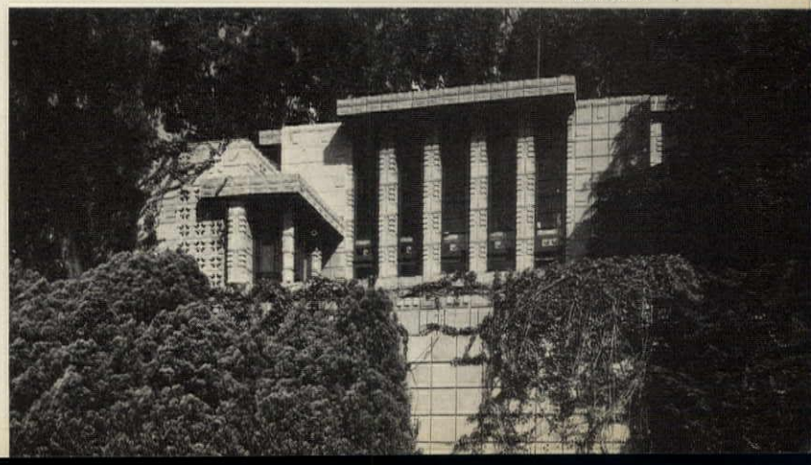
Irving Gill, Miltmore house, 1911.

Colonial Revival, R. Johnson, St. Pauls, 1925. Julius Shulman

Julius Shulman

Setback style, Parkinson & Parkinson, Bullock's Wilshire, 1928.

Frank Lloyd Wright, Storer House, 1923. Marvin Rand



was skin deep—everything inside was specially designed and then crafted under the Greenes' supervision: leaded glass, rugs, furniture, lighting fixtures, etc. The houses could, and sometimes did, cost a fortune. (It was an art in itself to spend money that didn't show.)

Gill also knew how to hide the cost, but like the Greenes his skill could be (and more often was) turned to low-cost housing. Gill's wood period was short-lived; he was more properly a technologist who worked out a methodology for concrete. His time went not into developing designs for interior objects of art but into devices for cutting down the labor of keeping the kitchen clean; he had a formidable list of inventions. But Gill's houses are prized for the same reason the Greenes' are—they are masterfully designed. The styles that Gill and the Greenes spawned are still with us on the old streets built up in the teens and 1920s; there, side by side, are the bungalows from the Greenes and Gill's stripped-down cubes.

The Spanish Colonial style

The Mission style ended in the Spanish Colonial revival, which began in 1915 when Bertram Goodhue introduced Churrigueresque in the San Diego Pan Pacific fair. Concentrated ornament combined with planar surfaces to give a restrained but rich look for large houses. A number of architects of taste followed the style in the 1920s, and then it ushered in a period of borrowing from the French and Italian as well as the Spanish. Since the detailing was out of the books, there was a cohesiveness to its eclecticism, which was not to be found in the work of Moderns of the 1920s and 1930s. Spanish Colonial was seldom adapted to tall buildings; first the Beaux-Arts styles and then the New York setback style were called in for these. Two splendid examples of the latter, with great flourishes of Art Deco, were Bullock's Wilshire (still here) and the Richfield Bldg, destroyed to make way for two dark glass towers which are the nucleus of the new financial center.

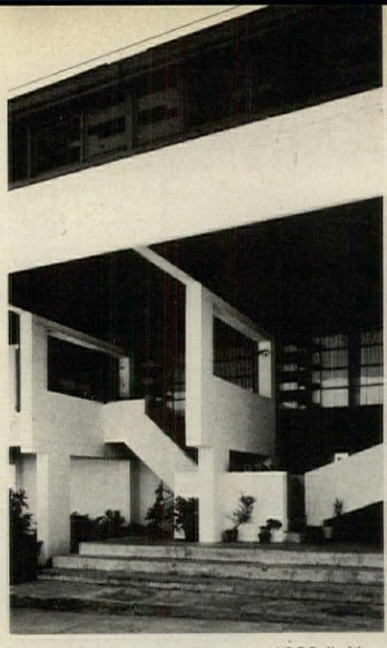
The early Moderns

The early Modern landmarks, in order of appearance, were: Wright's Barnsdall house of 1919 and his four textured block houses of the 1920s; Schindler's own house (occupied in 1921 before completion in 1922) and other con-

crete houses of the 1920s, the most important the Lovell house of 1926; Lloyd Wright's Taggart house of 1922, followed by six others of the 1920s; J.R. Davidson's elegant shops and restaurant from 1926 on (his first two houses were in 1937); Richard Neutra's 1929 Lovell house.

The differences between the Wrights and the transplanted Austrians and German (Davidson) were as pronounced as those between the Greenes and Gill, and from the beginning it was this ability of Los Angeles to accommodate variety that distinguished the Modern movement here. Wright was in the ebullient period that began with Midway Gardens, and his textured block houses with their tapestrylike surfaces appeared to many to be a not too happy interlude of the period, perhaps because they were little known except through photographs. Essentially they were cube forms whose skin was a pierced continuous pattern. Lloyd Wright's early houses, almost scaleless, identified themselves as houses because they were on residential streets, but they had a haunting resemblance to fountains or constructivist sets for movies. Against the richness of the Wrights were the purist forms of Davidson and Neutra; Davidson with a sensuous feeling for simple, costly materials, Neutra with an intellectual preoccupation with machine imagery. Schindler stood at a point between; he had pulled away from Europe in his seven years in the U.S., three of which had been in the Wright office, and had accepted Wright and Wright's Japan (for his first house) and then had nullified it in his exploration of concrete tilt-up. It was an heroic decade.

The new generation of the 1930s brought greater diversity. Harwell Harris' refined modular houses of wood caught the serenity of the Japanese house; there were Thornton Abell's own International Style house; Gregory Ain's terrace apartments, and many houses of studs and plaster with their perceptive floor planning; Raphael Soriano's first ventures with steel framing for small houses; John Lautner's dramatic use of wood; A. Quincy Jones' houses and commercial buildings around interior gardens, which were characteristic of all his work over the years. Another expression of Modern was especially strong in Los Angeles during the 1930s—Modernistic, with its curved surfaces, glass brick, and Art Deco detailing. It was abundant, and a surprising amount is intact today.



Marvin Rand

Fred R. Dapprich

R.M. Shindler, Lovell House, 1926 (left).
Harwell Harris, Fellowship Park House, 1929 (right).
Richard Neutra, Lovell House, 1929.

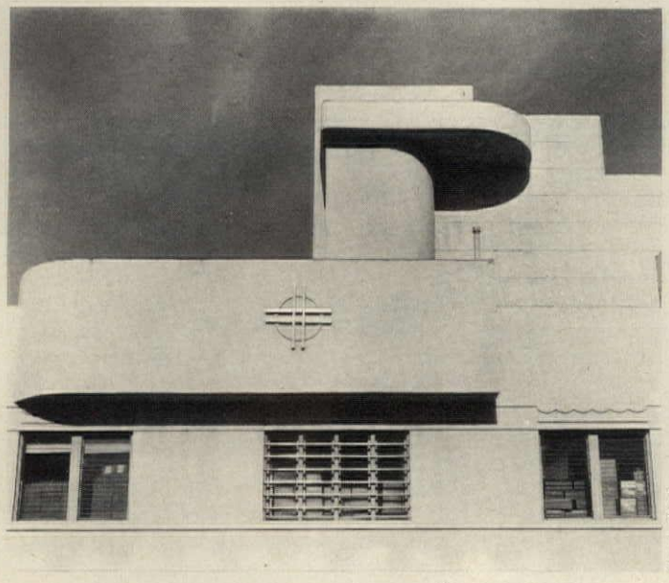
Richard Neutra

The Case Studies

One of the most important resources in the 1940s was John Entenza's *Arts & Architecture* magazine. At the end of the war, Entenza initiated the Case Study House program, which invited a group of architects to experiment with design and materials. The work was to be published as it progressed. In its first phase, most of the architects were ones who had gained a reputation in the 1930s, but today it is remembered more for the steel-framed houses. The first one of these to be completed and opened to the public, in 1949, was Charles Eames' own house, made entirely of off-the-shelf steel sections and other materials. The I-beam columns and web beams are exposed in the two-story space, which gives to the house some of the feeling of an Eames steel storage cabinet. It is not only the most beautiful of the Case Studies in steel, in its spaces and its site, but the only one still in its pristine form. That same year Eames and Eero Saarinen designed a house on the adjoining acre of Case Study house land for Entenza, but it was more sculptural and less fine-boned. Soriano, who for a number of years had been experimenting with the exposed steel frame composed of standard materials for a prototypical house, designed a 1950 Case Study which followed his practice of framing with 4-in. steel columns. His Shulman house of the same year is a handsome example of his design principles. Following this and continuing through the 1950s were the steel-framed Case Studies of Craig Ellwood and Pierre Koenig, all of which used the steel and glass technology to its limits. An early steel house by Quincy Jones was the basis for the design of a tract house; so it was the merchant builders who finished the job that *Arts & Architecture* had started—to provide prototypical examples of houses for mass production. And it was due to the talents of Jones and a very few others that tract-house design was not wholly wretched or mediocre. In 1950, Smith, Jones & Contini's Mutual Housing in Brentwood had provided the best example of site planning for a tract on hillsides. Gregory Ain's Mar Vista and Avenel housing were

Julius Shulman

Gregory Ain, Garden Apartments, 1938.

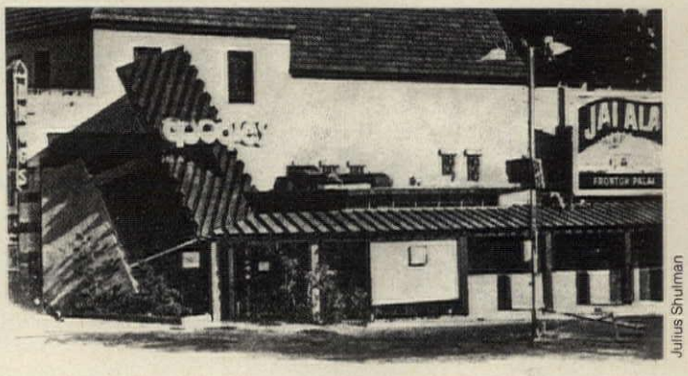


Marvin Rand

Art Deco style, Merle Norman Bldg., 1930s.

Marvin Rand

Craig Ellwood, Case Study House, 1956.



Julius Shulman

John Lautner, Googie's Restaurant, 1952.

other plusses in the history of group housing begun by Gill and reaching national importance in the 1941 Baldwin Hills Village by Alexander, Wilson, Merrill, & Johnson, and in Neutra's 1942 Channel Heights housing for war workers.

The Freeways

The freeways, in the long run, had the effect of bringing us into a single system without creating any true center. Before the freeways were in, visiting architects, critics, and editors were appalled by the deserts between architectural oases: an hour between Harwell Harris' Lowe house in Altadena and Neutra's Beckstrand house in Palos Verdes; an hour between Wright's Barnsdall house and Schindler's Lovell house in Newport Beach; an hour between the Eames house in Pacific Palisades and Greene & Greene's Gamble house in Pasadena. Freeways halved the time, but L.A. had already gained a reputation of a city without a legible thread. Editors dreaded it; they went first to San Francisco to delay the ordeal, and by the time they arrived their patience was thin and their hearts unreceptive.

For years we went on annoying visitors, but the variety of work increased with the sprawl. At the end of the 1940s, an editor found the symbol for Los Angeles in John Lautner's Googie restaurant, a tiny place on a pie-shaped lot next to the famous Schwab's drugstore on Sunset Blvd. Lautner's scheme took into account the automobile culture, i.e., grab them or they won't see you; he set a panel askew on the façade and filled in the angles around it with glass for a view of the Hollywood Hills; the seating was arranged to watch for friends or famous people on the street. Most of the detailing came out of Taliesin West, which Lautner knew well from his years with Wright. Googie was used as a synonym for undisciplined design and sloppy workmanship. But Googie was not a name forgotten in a year; it clung to us. In a letter to the editor (P/A, Aug. 1975) Mrs. Walter Gropius warned that "now we are getting back into plenty of Googie architecture and it will be all the worse because it will be done with the same kind of abandon, bad workmanship, cutting prices. . . ." A view from the outside. . . .

The Los Angeles style

It is with reluctance that the fine buildings of the 1960s and 1970s are passed over here, but they cannot in all honesty be said to represent a local style, for most of them could in San Francisco—or Chicago—as well. Finally, the uniqueness of Los Angeles is its form. [Esther McCoy]

Images from a silver screen

There has been no single style to represent modern architecture, and the profession now operates without a coherent design discourse. Yet, groups keep emerging, one of the latest being "The Silvers" of Los Angeles.

On April 20 of this year, as an interlude to normal programs in the UCLA School of Architecture, a group of six architects (Frank Dimster, Paul Kennon, Eugene Kupper, Anthony Lumsden, Cesar Pelli, and Thomas Vreeland) presented a series of their projects and completed works. They identified themselves as a group, and called themselves "The Silvers." On May 15 of this year, a show entitled "The Los Angeles 12" opened at the Pacific Design Center. Two of the 6 Silvers were among the 12 (Lumsden and Pelli). It was also reported at the time that the 12 admit they have nothing in common.

It appears that commonality is one of the most perplexing and frustrating issues in recent years; everyone is looking for it, but nobody seems able to supply it. There is no design discourse to which architects can all adhere, and whenever a "group" is announced, the problem only seems to be compounded. Yet, the formation of these groups, whether it be with apparent academic respectability or purely as a public awareness effort, nevertheless informs the central debates concerning an architectural attitude appropriate to our time. The current dilemma only clarifies the fact that, after all, the Modern movement altogether has been diffuse and divergent. The "first principles" have always been elusive, and close examination reveals as many differing groups during the formative years of the so-called Heroic Period as there have been since World War II. The apparent coherency of the International Style has been shown to be a chimera; can we then expect more at a time when the issues are even of greater complexity and uncertainty than in the 1920s?

Given the unlikely emergence of anything resembling a Ten Commandments of Architecture, architects themselves show a compulsion for drifting toward a consensus. Recent years in the United States have seen serious debate on the nature of architectural theory and criticism, centering around certain "groups." Robert Venturi admittedly broke things open a decade ago by being the first American architect in recent years to write seriously on the theoretical content of architecture. The appearance of his *Complexity and Contradiction in Architecture* coincided with the emergence of other, slightly younger personalities whose interests were similarly oriented and who eventually came to be known as "The New York Five" (or "The Whites"), and "The Grays." And yet the differences between individuals are more often than not the central item of interest.

So why have groups? It would appear that groups still perform a valuable role for all the misleading unity they seem to present. For one thing, they become a medium by which debate can be formed. For another, they catalyze an identity when identity is evasive, even within the work of a single designer, and provide the focus for this debate. And it would seem that continuing debate on architecture will be our only real consensus.

Being serious in Tinseltown

Architecture in Southern California has existed within a context where coherency of any sort was doomed. A wax museum of imported styles, the Greater Los Angeles environment never allowed a single-minded philosophy to develop, let alone flourish. Architectural education and the profession did not evolve into the sort of relationship enjoyed, for example, in Berkeley and the Bay Region.

One thing is true about L.A. You can't be subtle. And if creating the climate for debate on questions of architectural design is what you want, then it is necessary to have—as they call it in Hollywood—"impact." In recent years, the existence of an architecture school at USC, the formation of one at UCLA, and the creation of SCI-ARC (Southern California Institute of Architecture) in Santa Monica have brought together professionals interested in design education. Many of these people have likewise been instrumental in rejuvenating the professional society itself, to the extent of bringing in nationally prominent jurors for AIA Chapter design awards, producing the lively newsletter *L.A. Architect* (now a year-and-a-half old) and even playing host to visitors such as James Stirling.

These efforts set the stage (thank you, Hollywood) for California's first "group" to step forward. Confronted by the environmental realities of L.A., it's no wonder that they decided on some sort of united front. The City of Angels is a graveyard of noble men—such as Rudolph Schindler—who tried it on their own and achieved, in a broad sense, no impact on the city.

Remembrance of things past

One factor that has yet to be reckoned with in the history of postwar American architecture is the significance of the office of Eero Saarinen in the production of talented designers. It might even be said that, on a percentage basis, the Saarinen office produced *more* capable architects than any school of architecture. It is from here that half of the Silvers emerge: Paul Kennon, Tony Lumsden, and Cesar Pelli. From this experience they went their ways, only to come into contact again in L.A. Kennon went to Houston's Rice University briefly, and then to Caudill Rowlett Scott, where he was charged to form their L.A. office in 1969. Cesar Pelli had gone to L.A. to become director of design at Daniel, Mann, Johnson, & Mendenhall in 1964, and brought Anthony Lumsden in as the assistant director. In 1968, Pelli left to be partner-in-charge of design at Gruen Associates, while Lumsden became a vice president and director of design at DMJM. During the transition, Frank Dimster worked briefly at DMJM, before becoming director of architectural and urban design at William Pereira Associates. By 1975, Dimster had left Pereira and was on his own; Kennon had become president of CRS and was back in Houston. This year it was announced that Pelli would become dean of the school of architecture at Yale, while continuing a relationship with the

Gruen office. Yale was, in fact, already in the scenario, since Eero Saarinen was a Yale graduate. Tim Vreeland is also a Yale graduate and was responsible for bringing Eugene Kupper to UCLA when he took over in 1970. Kupper was at the time one of the recent graduates from the Serge Chermayeff-Shadrach Woods-James Stirling master's class at Yale.

Vreeland brought another idea to Los Angeles—his membership in the old CASE group. While a teacher at the University of Pennsylvania in the early 1960s, Vreeland had been invited to participate in CASE. The brainchild of Peter Eisenman, CASE was a formative discussion group organized to develop the individuals in it through the medium of critical analysis and the presentation of ideas and projects. CASE #7 eventually was published as the monograph *Five Architects*. In any event, it is unlikely that Vreeland forgot the idea of CASE, and the impact it had.

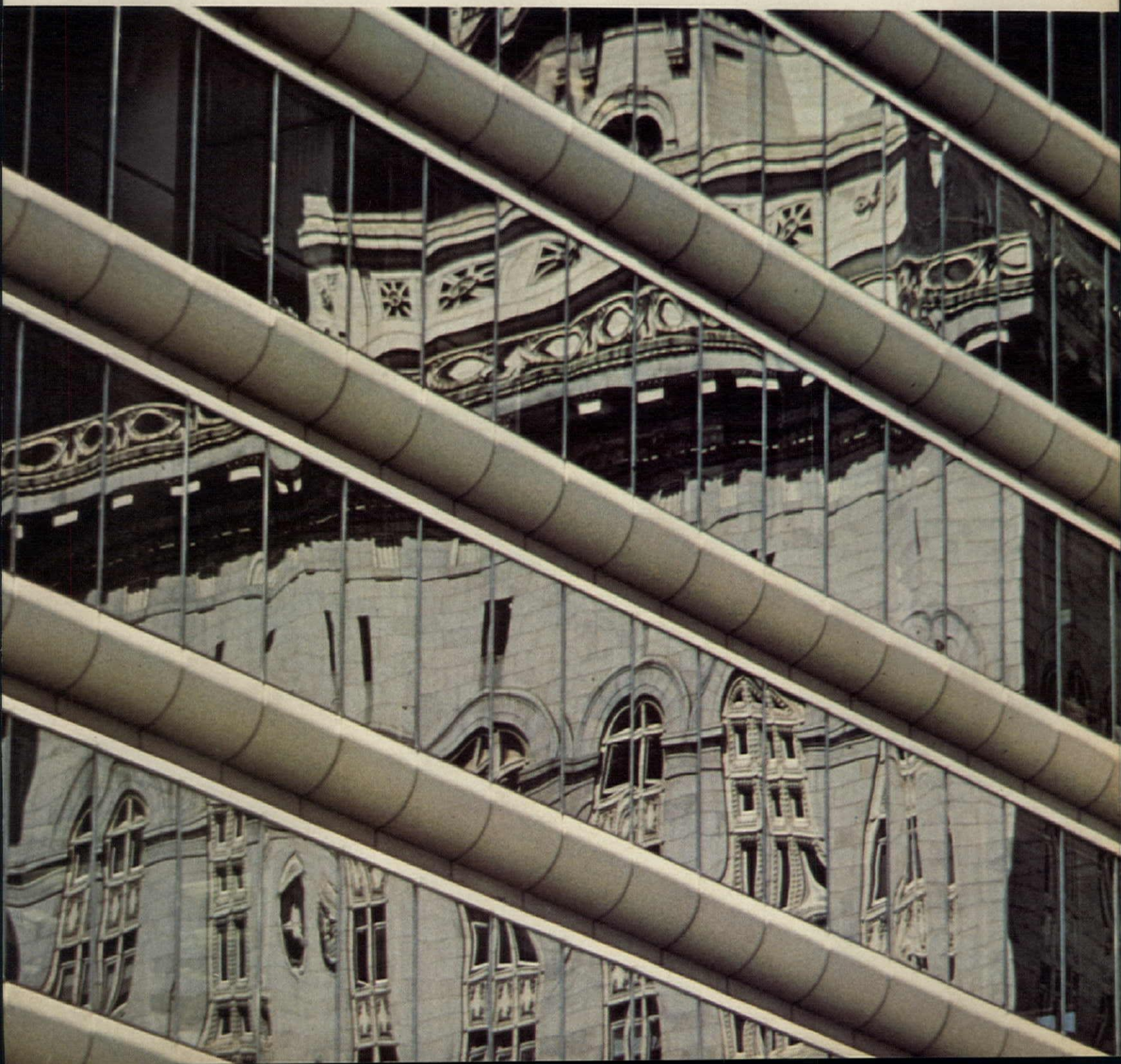
It therefore comes as no surprise that Vreeland was instrumental in implementing the event "Four Days in May" (P/A July 1974, p.26), when the "Whites" and "Grays" met to present their ideas before a third party, the UCLA school of architecture. A host group was formed under the aegis of Pelli, and the UCLA students responded by dubbing them (whose membership originally included Craig Hodgetts) "The Silvers." Such a quip combined the hue of gray and brilliance of white with the predilection that a majority of the members had for smooth surfaces generally achieved by an unmodulated glass membrane. After a year and a half of conversation with each other, it was decided by the Silvers to hold another symposium, only this time featuring their own work. John Hejduk, who had not participated in the original event, was invited to attend the two days of actual discussion, as was a panel including James Stirling, Charles Moore, Esther McCoy, David Gebhard, and Charles Jencks. And so, "Four Days in April" came about to ask the question: is there a Silver architecture?

Mainstream art

The corollary question, whether there is really a White or a Gray architecture had not been answered, except as a "no" when pressed on specifics and a "maybe" when dealing with questions such as public exhibitions, publications, and so forth.

One common factor of the White and Gray architects has been the generally small extent of both practice and size of commissions. Their clients, for the projects which the architects chose to present to-

Wells Fargo Bank, Oakland, Calif., Gruen Associates, Cesar Pelli.



The Silvers

gether, have been individuals with tastes compatible with the more esoteric concerns of the designers.

In contrast, the Silvers have operated in the context of large-scale, generally corporate architecture practices (see, for example, DMJM Profile in P/A, June 1972, p.72). Gruen Associates, Pereira, CRS, and DMJM are offices with an extensive and diverse capability to deliver services for a variety of environmental applications. It is *within* this structure that the designers such as Dimster, Kennon, Lumsden, and Pelli chose to develop their personal approaches. As a result, they evolved attitudes which could work with the realities of highly specialized but ever-changing programs of a generally large scale (frequently approaching urban design rather than single-building requirements), put together by teams of specialists and affecting a large number of unknown users. Even Vreeland and Kupper were operating at this scale, although their firms were small. Vreeland had done a fair amount of development architecture, and Kupper worked on jobs involving large numbers of users, both in the office of Frank O. Gehry and then on his own.

One issue is clearly the extent to which the professional *milieu* has conditioned The Silvers' attitudes. This is a question of whether their attitudes are a product of the conditions under which the projects are realized, or whether their attitudes exist separate from these conditions. There are already scale differences in terms of scope of professional practice: Dimster and Kupper are now one-man offices, Vreeland is part of a "small office," Lumsden and Kennon remain with large offices, while Pelli's future directions, particularly now that he will become dean at Yale, will bear watching. In any event, to a certain extent their attitudes exist apart from this variable. Their problem areas are commercial development, corporations or institutional parameters, or clients with basically middle-class lifestyles. Consequently, their art operates essentially from within the mainstream of American practice.

The Silvers, therefore, belong to a larger framework than that of the Whites or Grays. While they all have some sort of academic connections, their purest work is representative of the mainstream, and their ideals are ones to which many architects could agree. It was the mainstream itself—the question of architecture in support of an admitted *status quo,* the role of the architect as a mirror of society rather than a beacon to it, the acceptance of such value systems, and finally the concern with aesthetics reflecting today's technologies—which formed the debate.

Four days in April, and after.

This willingness to be characterized, both programmatically and aesthetically, with the mainstream of professional practice brought out a variety of criticisms from observers, ranging from misgivings about a lack of particularity reflective of Southern California, to a questioning of the compatibility between corporate America and modern architecture. Neither their critics nor the Silvers answered the issues fully.

The debate had been preceded by a reception for and speech by James Stirling. Stirling, admired more by architects in America than in his own country, led his fans on an excursion through his past projects. He characterized them as having fallen "into only five categories, which is three more than Mies and five more than Gropius," in terms of their formal organization. This was followed by a presentation of his competition entries for new museums in Cologne and Dusseldorf. These stood in jarring contrast to the work presented by the Silvers.

Cesar Pelli noted that "All of our projects are way below the level of people such as Stirling. We have made architecture out of buildings that had no intention of being such, and for clients that weren't looking for architecture." Lumsden replied to a question from UCLA Professor Thomas Hines about Stirling's influence on his process, saying, "The thing that distinguishes him is that he uses characterful forms in juxtaposition. We can't do that, cannot control it." Dimster also commented on this by characterizing one of his projects, the design of a department store prototype, as "the lowest level of design participation—a skin job." Vreeland, whose own background in Philadelphia at Penn and in the office of Louis I. Kahn was admittedly baggage he wanted to shed, outlined his interest "to find a style appropriate to each job—a task made simpler by virtue of practicing here in Los Angeles where no previous images interfere with the Silver screen upon which we project our imagery." Kupper characterized the consensus approach positively as "a diagrammatic, built form analogous to a landscape or cityscape" where "aesthetic and functional attributes come about through a reciprocity of possible intentions, rather than being unilaterally announced by the form of the building."

Finally, Kennon observed that he was "concerned about a building as a changing, growing process rather than as an object." He said "a positive attitude toward indeterminacy is part of our new reality. I think that we are more a part of the natural evolution in mainstream architecture."

It was the issue of the American mainstream's direction that occupied the discussions between the Silvers and their guests. Stirling began by asking, "What is the thread in Silver?" and eventually concluded that he could only find "a kind of expression of 'chic packaging' . . . stylistic streamline . . . an attitude which comes from the building type (commercial work)." David Gebhard concurred, from a historian's point of view, that the work presents "a series of images related to packaging of objects à la 1930, leaving complexities of structure, use, and so forth out," and that "the strongest images are of the machine," which he was "surprised to see . . . still here in 1976."

Regionalism and uniqueness concerned the panel, as expressed by Charles Moore, who noted that much of this work "is in other places—Lugano, Houston, Colorado, etc.—so how can L.A. contribute to this?" Esther McCoy asked of the work, "How does it describe L.A. in particular, as opposed to any good group anywhere?" While David Gebhard felt that "Few of the buildings addressed this issue of the romantic relationship between the landscape and the building in Southern California." John Hejduk observed that "high-rise is a foreign element in the L.A. context" and that "high technology is generally wrapped up in high romanticism, with the danger that [it could] lead to totalitarianism." Charles Jencks went to the dictionary for his definition of silver and noted that "silver is a) chiefly univalent in compound, b) a commodity, c) silver age is a period of achievement second only to a golden age, d) silver-plate is something added as artifice and, e) eloquently persuasive." Jencks also struck at "silver-plated capitalism" and felt there was a "silver style," although he charged that "If we accept the limitations of having to wrest poetry from a process we should look at the irony (that derives) from the process." For while "L.A. has vulgarity, the Silvers have good taste, but their codes are so restrictive they can't get above minimal art," he said.

With this, the Silvers found themselves defending the mainstream of architectural practice. A student observer saw the group as producing "not a rethinking of concepts and programs, but new images." John Hejduk took exception to a string of remarks emphasizing process; he recognized "a continuous problem to make an image/verbal relationship," and observed that Silvers' buildings "look like *objects.*"

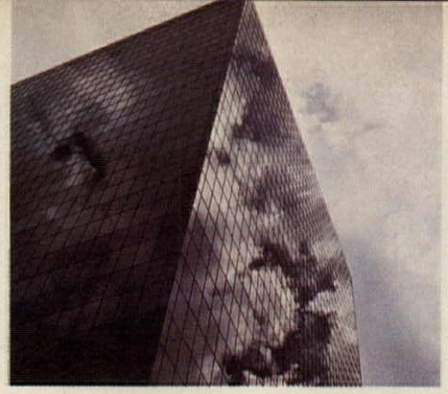
In attempting to evolve some general conclusions on the Silvers' work, David Gehard, as a true art historian, cataloged their features as he saw them and placed their work squarely in the mainstream. "Are these images unique?" he asked, and went on to observe that they were not, but showed both national and international design fashion. Gebhard cited their use of basic forms, and related this to current fashions in art, adding that they "could be going back to 1966 *Artforum* for the verbiage." He added, "I find it perplexing that various architects who have come to L.A. were foreigners, but created something unique to the area. Is there a shift now in the way architects look at California and now respond to it? . . . the Case Studies program came up with suggestions that were specifically Southern Californian . . ." He concluded that the reason the Silvers had generally shown work outside of Los Angeles was because their concerns had little to do with the place; that what the audience had seen, while diverse from individual to individual, and even outstanding in visual features was perhaps, in effect, the symptoms of a New International Style. [Peter Papademetriou]

Pelli

"Our architecture is primarily responsive to specific circumstances, and we mean all the circumstances that condition a project and not only its physical-aesthetical context. The circumstances in the reality of each project are for me, when properly understood, the source of opportunities in design. Seeking opportunities within a well-understood problem is the obverse of functionalism that sees in the same circumstances only a problem to be solved—a deterministic view that reduces options and allows no room for life—and much different from the formalist attitudes that will impose the source, preconceived intentions on any circumstances.

"We understand change as being the natural condition for architecture, and permanence as the exception. Creative compromise is one of the roots of our architecture. This requires flexible goals and a design process with decision-making as its main constituent."

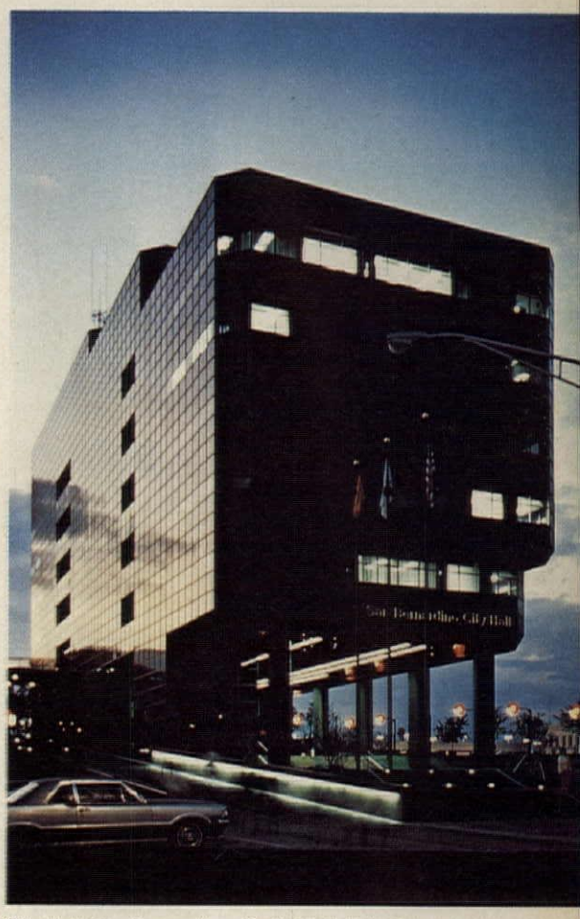
On "Third Generation Architects": "The first generation was that of the masters . . . the second generation is that of those who learned from the masters; their work was continuously measured by the yardsticks set up by the first. . . . Third generation architects are us. We also learned from the masters, but through the second. . . . The second generation is most clearly defined in America (as the first was in Europe).



Century Medical Center, Los Angeles, Calif.

The third appears to be American-oriented, but international in its make-up.

"Some of our characteristics: We don't build for eternity, we build for today. The last vestiges of the temple and the monument have wasted away. We understand change as being the natural condition of things and permanence as the exception. We have a strong preference for synthetic materials (shiny, hard, light, scaleless, colorful, changeable) as against handcrafted ones. We are interested in technology because of its potential for increasing the intensity of our experiences . . . we can claim that almost anything that an architect is interested in doing is architecture. Things are right when they produce correct results, not only when they fit our conception of right and wrong. Our need for personal commitment is very strong, although our causes and allegories are quite diverse. We are not too worried about contradicting ourselves."



City Hall, San Bernardino, Calif. (P/A, Feb. 74)

Lumsden

"We begin with logic. Decisions are made on the basis of reality. However, the design aesthetic does not rise out of logic. The aesthetic is created out of intuition, experience, imagination. The total design cannot rely on these traditional procedures. What is important is that the aesthetic and the logically deduced data are not exclusive.

"Often the result of the design process is an irregular form in section or plan. Some people confuse clean geometry with rational design. Minimal geometry and formal purism remain a curious misinterpretation of the useful part of rational design. We do our best to maximize art without violating the basic data. Logical systems are deductive and will not produce art. By synthesizing the logical with the non-logical—I do not mean illogical—we attempt to accomplish buildings which are aesthetic and realistic to social problems.

"I believe strongly in the influence of architectural images. Images based on unrealistic design systems or elitist aesthetics render architecture less effective and diminish architecture's participation in the built environment.

"I am extremely interested in developing an aesthetic that responds to and does not inhibit design methods. It is senseless to say or to use aesthetic systems that say, 'Let them eat temples.'

"Our buildings may look like [they are] high technology and primarily aesthetic. This is a superficial evaluation. However, I don't consider certain buildings inhuman because they are technical visually, anymore than I would consider an operating theater inhuman because it is visually technical.

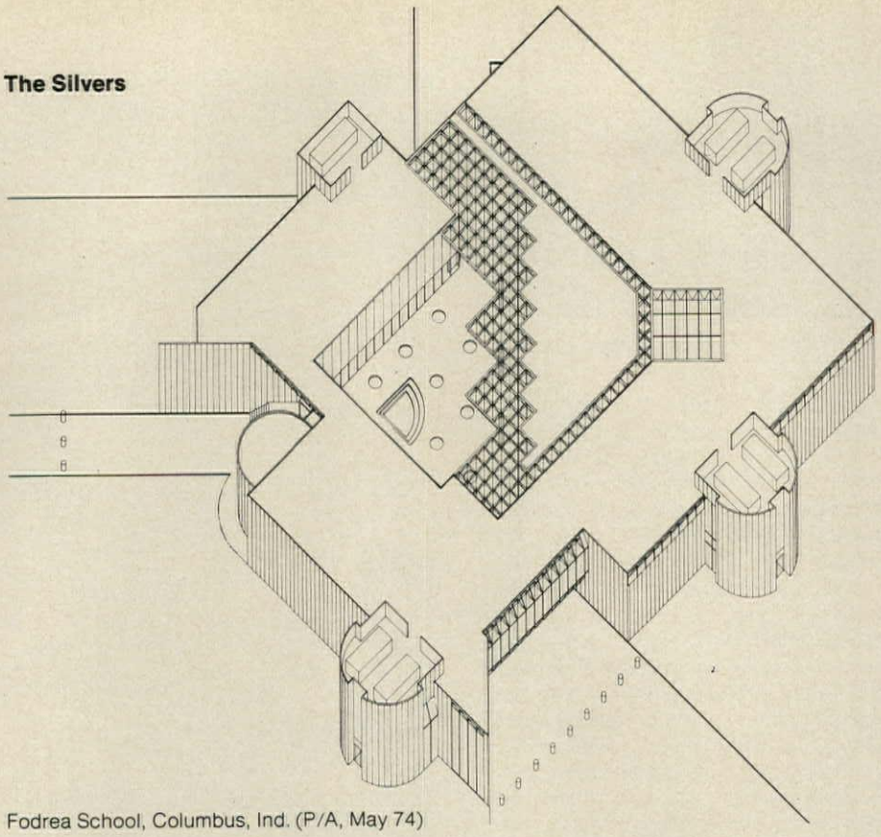
"I became very interested in the aesthetic of windows appearing as part of the surface of the building rather than as holes. In this way it is possible to place windows where they are required rather than where an aesthetic system compositionally dictates.

"Minimizing the mullion projection in the enclosure wall allows the membrane to become non-gravitational, non-directional, and non-structural. It tends towards non-articulated, non-monumental expression as an ideal. In this respect I believe it has the potential to be useful in building design when positioning and functional relationships are not formal.

"The continuity of different sections along a multiple axis is apart from an interest in the expression of intrusion. The section is expressed in the end elevation. The end elevation is not composed about an axis related to principal façades. Formally, the extension aesthetic is more dynamic and flexible, it suggests and allows extension and change."

Manufacturers Bank, Los Angeles, Calif.

The Silvers



Fodrea School, Columbus, Ind. (P/A, May 74)

Kennon

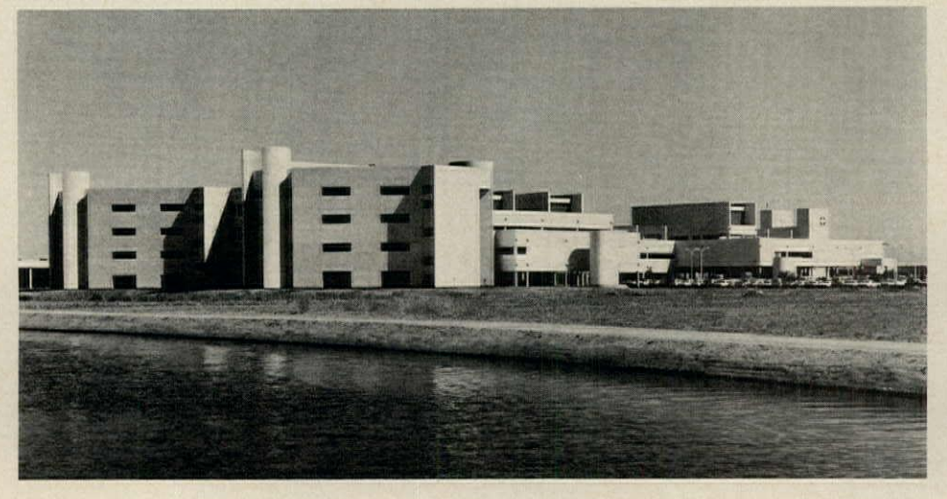
"We are concerned about a building as a changing, growing process rather than as an object—a positive attitude toward indeterminateness, that events are not and cannot be determined in a preemptory manner, but that there is the possibility or tendency for an event to occur. We think in terms of open-ended systems, internal flexibility, versatility and expansiveness.

"Technology is the means by which we go from the intangible to the tangible, and form becomes the complete expression that arises when systems are connected to reach an intended result. We place great emphasis upon the circulation system of each project, as it becomes the linking agent for events. Circulation becomes the syntax or connected system of order."

On the Desert Samaritan Hospital: "Desert Samaritan was built for the optimum in patient care and comfort. The modular facility is designed to expand easily, economically, and without disruption of services from the initial 275 beds to an ultimate 1100 by 1990. Its horizontal form permits a separation of traffic. Outpatient and inpatient areas are located at opposite ends of the complex with support facilities in between. Space has been left between departments to permit horizontal growth in more than one direction. Furthermore, the structure allows for the addition of an entire floor to be built above medical services."

On Fodrea Community School: "The organizing element of the design is the community concourse which invites people to come in and interact, to exchange ideas, to read, and to play. The design emphasizes a variety of spaces for learning and recreational options. Flexibility of space is a major design premise . . . to permit active, reactive, and interactive learning."

Desert Samaritan Hospital, Mesa, Ariz. (P/A, July 74)



Kupper

"Our plans bear a stronger relationship to integrated circuits than to cubist or expressionist compositions. A range of possible actions and an open attitude toward a range of possible form-complements leads to a diagrammatic built form analogous to a landscape or cityscape. The generality of image also derives from acknowledging the building as a constructed object, and therefore subject to the rule of human craft and mechanical performance. Technology is a matter of pragmatic selection from standard forms of production. Therefore, our buildings are not fixed-purpose machines or compositional exercises. They provide diagrams within which experience continues to reprocess itself, seeking behavioral complements to initial structure.

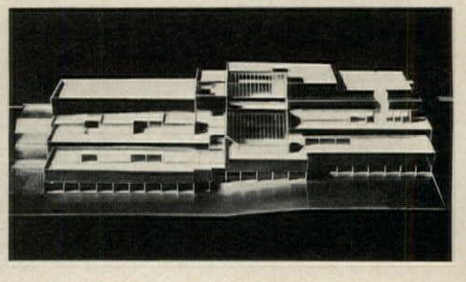
On the Conference and Continuing Education Facility/UCLA Extension: "It contains the beginnings of a vocabulary and a philosophy of architecture that will eventually materialize in a whole series of buildings. More than 100 meetings, from 6 to 800 persons, can be held simultaneously in this building. The sloping site generated a terrain building, a landscape/cityscape on the four lower floors, with large halls carved into the hillside, between which flow terraced lounges and a central garden, overlooked by lobbies and dining rooms. The terrain building is of reinforced concrete and masonry bearing wall construction. The sky superstructure contains flexible classrooms and conference rooms, the dining rooms, and an auditorium. Its construction is steel frame and metal/glass enclosure.

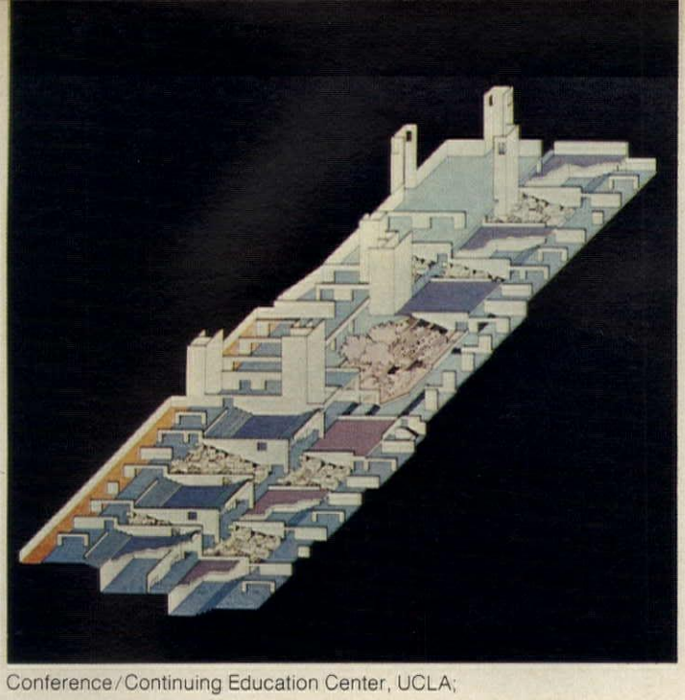
"The vertical layering of the plan organization creates a series of connected volumes throughout the building. As the floors stack above one another, they shift register and are perforated for motion and light. Levels consecutively change function so as to permit the reciprocal movement from contained formal spaces to open reprogrammable space.

"I believe architectural values arise from the dialectic of forces of immediate factoral environment, the suggestion of virtual places of metaphor or imagination."

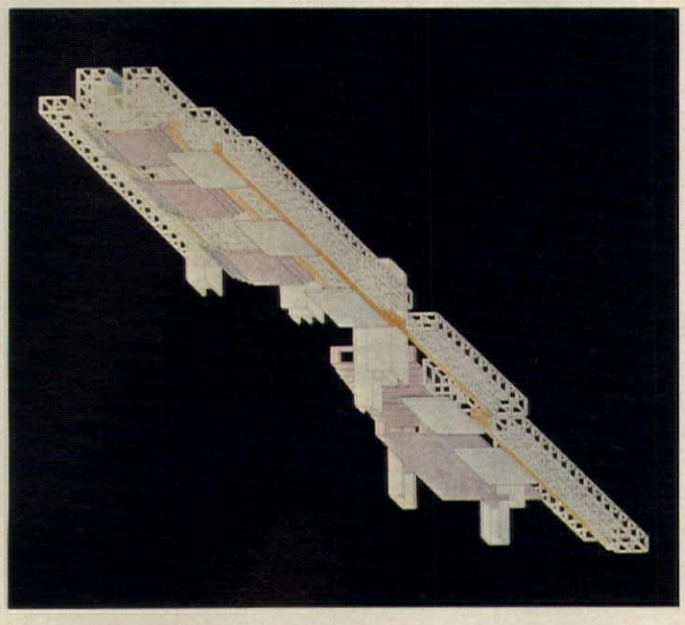
On the Nilsson House: "It has a 'long-building' (not linear) organization, some perpendicular and parallel layering given by perforated walls, some of which make outdoor rooms, bracketing a collection of metaphorical and actual places; the initial diagram has been completed by a variety of semantically active elements."

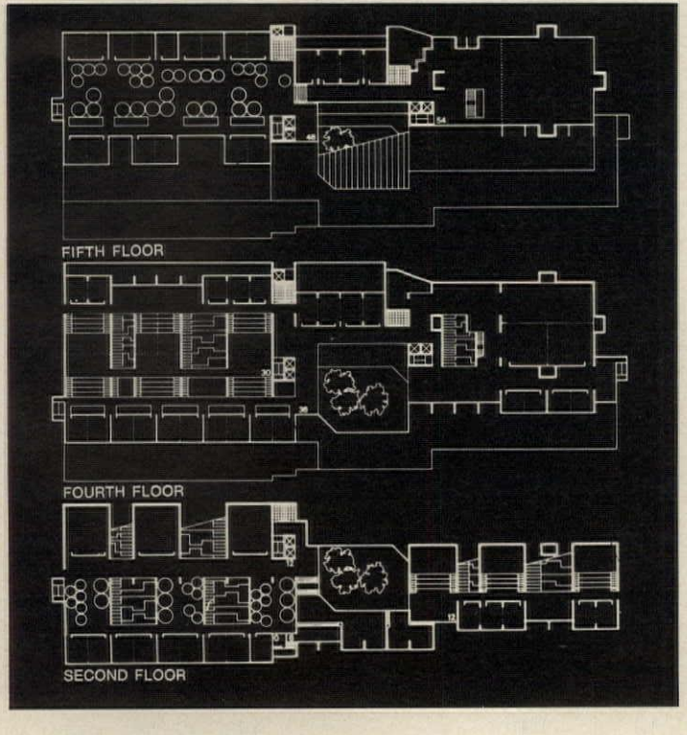
Conference/Continuing Education Center, UCLA.

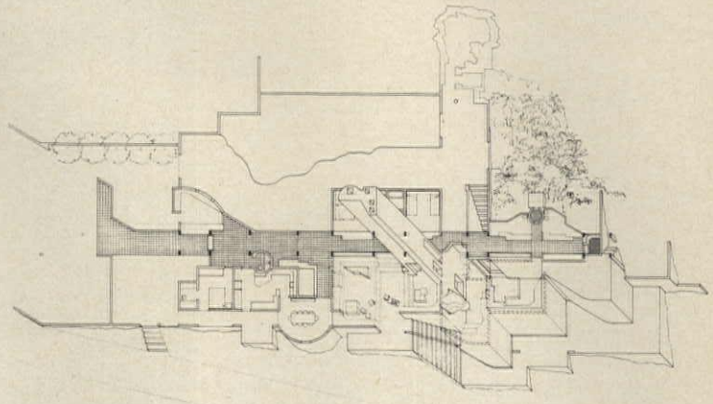




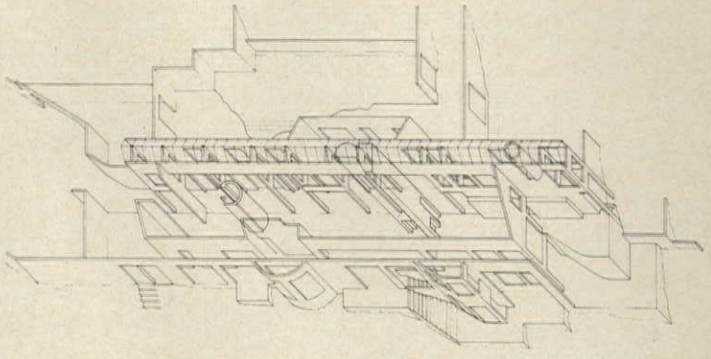
Conference/Continuing Education Center, UCLA;
sky superstructure (above), terrain bldg. (below).





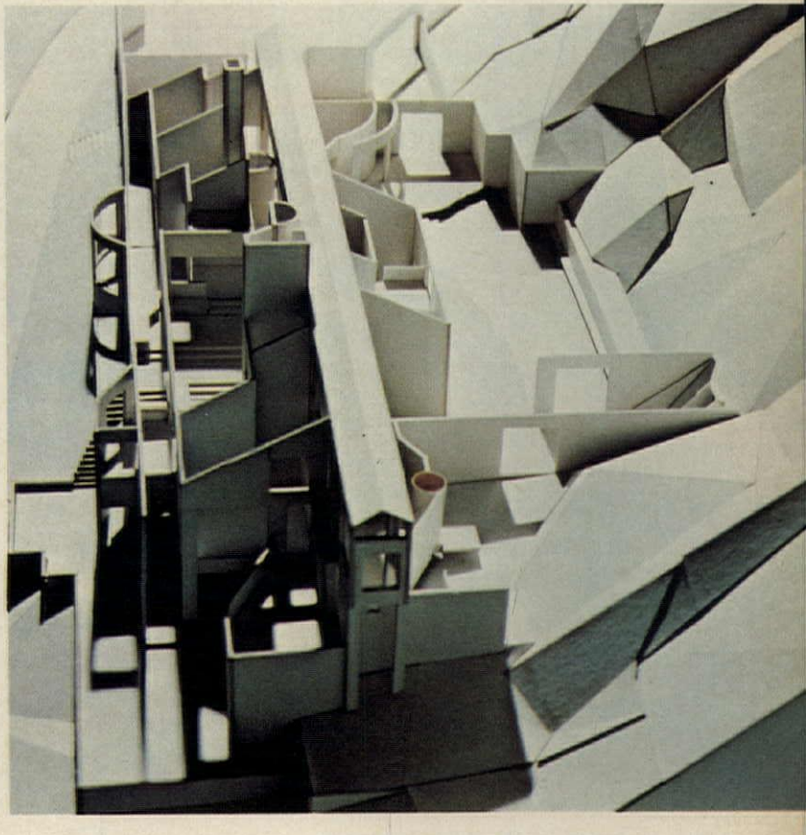


Nilsson House, worm's eye view.



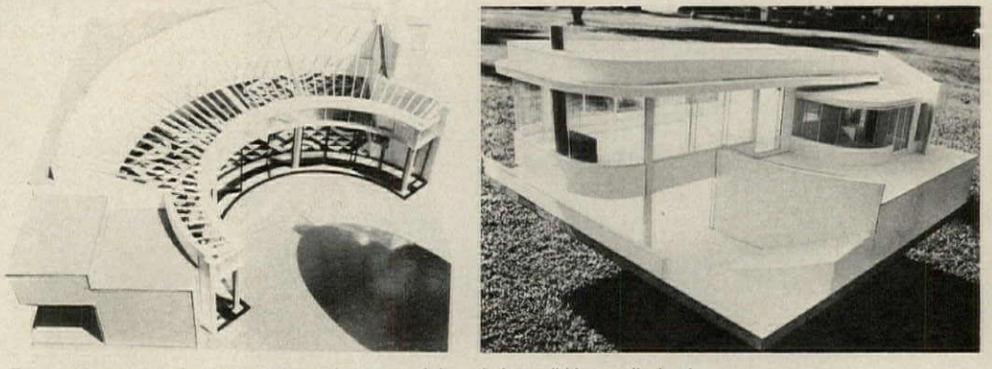
Nilsson House, bird's eye view.

Nilsson House



Gerald Ratto for KMLV

Regional shopping center, Hallendale, Fla.



Beatty House, garden room, screening room (above); Lowell House (below).

Vreeland

"None of these men is a true Southern Californian—12 years is the longest any of them has been in this city—so there is not a trace of the regionalism in their work that characterizes most Southern California architects. Their view of architecture is much more international; their sources and influences are world architecture, and usually from first-hand contacts.

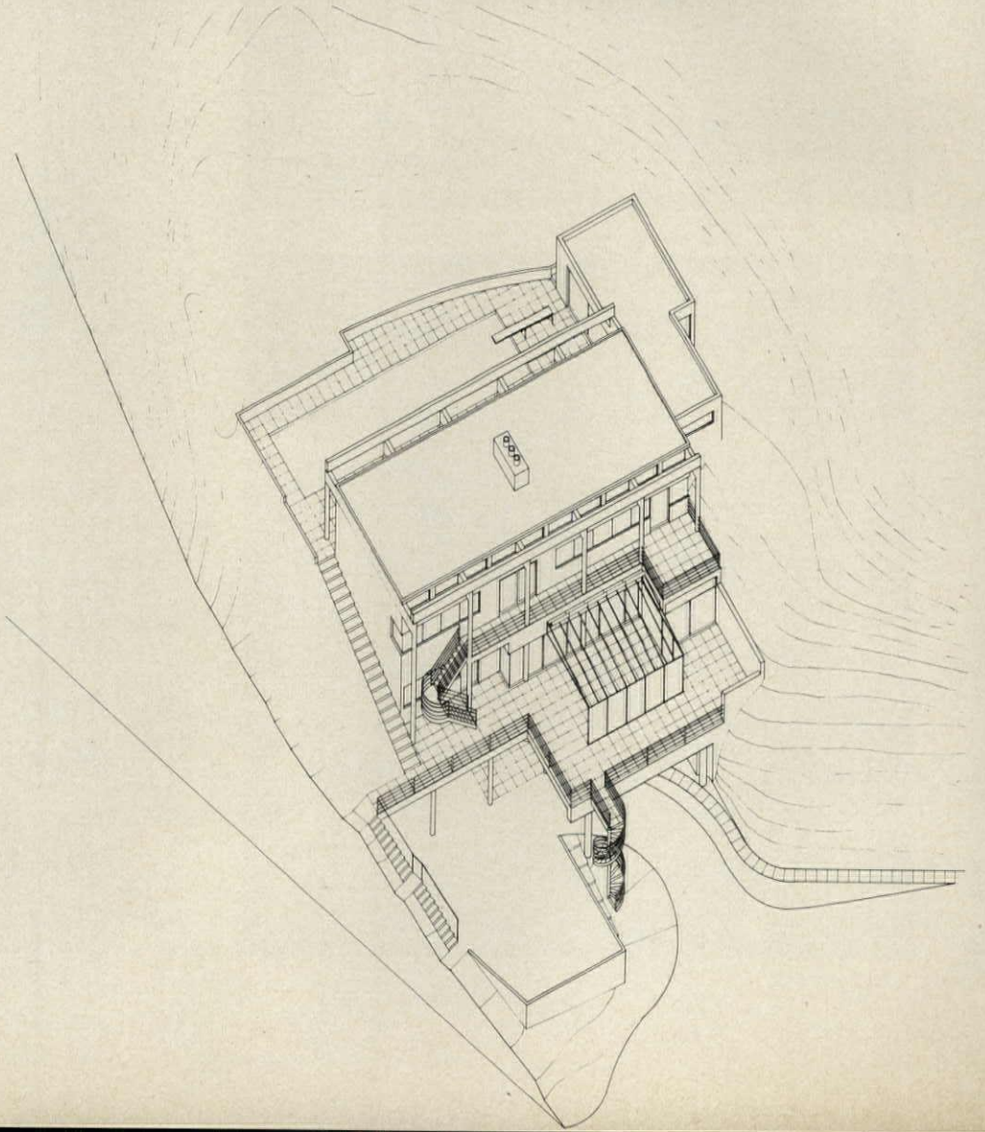
"If they have any cultural allegiance to the region it is to the *Arts and Architecture* Los Angeles of 20 years ago—the Case Study houses and the lightweight steel architecture of Richard Neutra, Charles Eames, and Raphael Soriano; and much earlier, to the architecture of Irving Gill, for its directness, simplicity and understanding of the technology of its days.

"In fact, what has attracted the Silver architects to Los Angeles is precisely the lack of cultural restraint, the freedom from a particular commitment that this place seems to promise, an escape from the orthodoxies such as cities like Chicago, New York, or San Francisco demand.

"By the time I got here I discovered to my chagrin that the historical tradition was all over, already passed into history. *Arts and Architecture* had folded; speculators' stud and stucco accounted for most of the building, and the rest were imitations of Sea Ranch; I had to begin all over again.

"But the absence of a prevailing tradition in architecture can be an asset. It provides the searching architect with a blank screen upon which to project his innermost images without interference. Los Angeles has always essentially played this role for the culture it has nurtured. It has encouraged fantasy—quick, easy fantasy, fantasy in a bean field like Beverly Hills—and instant tradition. Make believe is our chief product and export.

On the regional shopping center: "Discipline and fantasy; is it possible to achieve both in an architectural project? The discipline is exerted from the repetitive and undifferentiated steel bay system with air conditioning units punctuating the roof that shopping center economics requires. The fantasy is in response to the waterfront site and the colorful activity associated with shopping. . . . Once the controlling geometric pattern had been determined, all other design decisions could be made easily. Fantasy within discipline."



Dimster

"A major and common motivation in the group's efforts appears to be wide range . . . in a willingness to experiment, particularly in the traditional areas of architectural expression. The area of focus might change from one member to the next but everyone has shown in the past or is demonstrating now a pronounced willingness to participate in a capacity which allows him only limited areas of intervention.

"This optimism or naivete, which allows us to find expression through incremental improvements in a situation, allows participation in team efforts of large-scale projects. Regardless if the areas of aesthetic discretion are limited or comprehensive, they indicate roots in technological vocabularies tempered by a historic awareness and reinforced by a larger-than-regional concern.

On Johns-Manville Competition: "A spine running in an east-west direction up the slight incline of the hill connects the support facilities and office space provisions. The latter faces north and all spaces have views. It was our intention to demonstrate a way to build on the side of a hill or substantial incline without leveling the site totally or in part to simulate building in the flat areas."

On Houston Center (a 32-city-block area of Houston's CBD being developed by Texas Eastern Corporation as a multipurpose megastructure): "This (plan diagram) shows our earlier version of the first increment . . . black areas are the public areas above the present street level, which would still be attainable and, in my opinion, desirable without super-security. . . . There was a serious effort, on my part at least, to sneak in a participatory process which, if successful, could have been the most important contribution. The collage here is meant to give imagery to the idea of having a transportation node interchange in the project area on property owned by the client but not fully utilized."

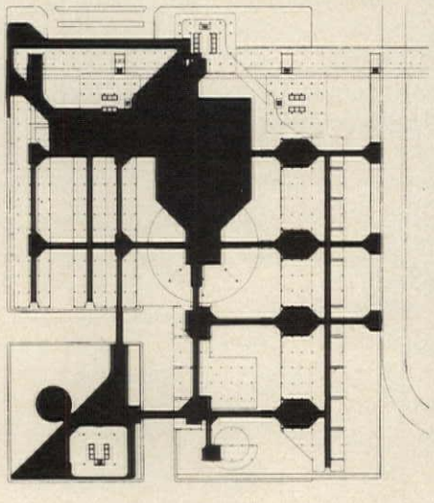
On recent residential designs: "I found that the 'two by' stud system is very flexible. . . . I must agree with Wachsman who said that 'there is nothing wrong with the 2 x 4; the problem is the nail!' I am trying to organize and design these houses so that they retain the maximum amount of flexibility in organization and the maximum amount of identity for all the users, and an extended life span (one should know what to do with the extra space when the kids are in school)."

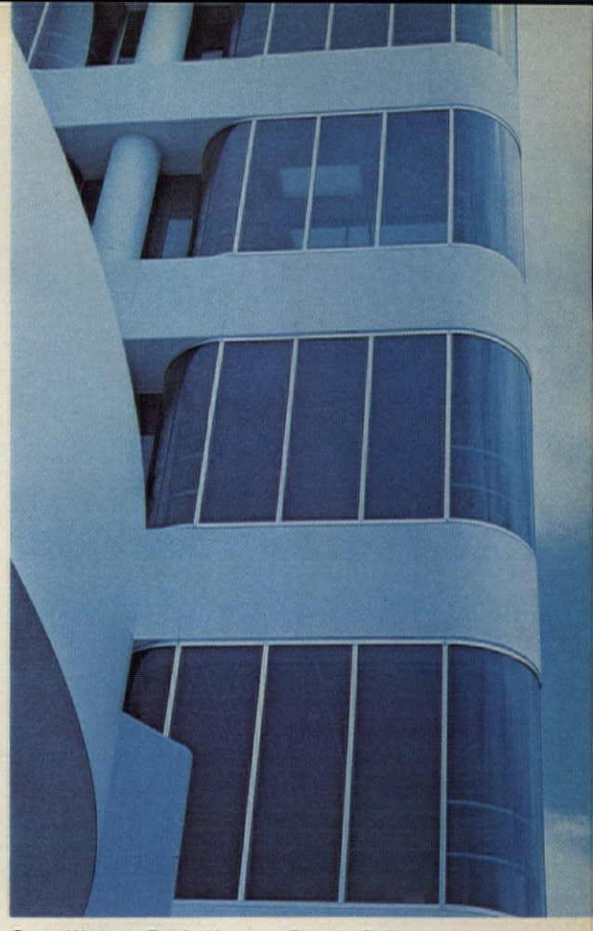
Wayne Thom

Houston Center, Houston, Tex. (above and below).

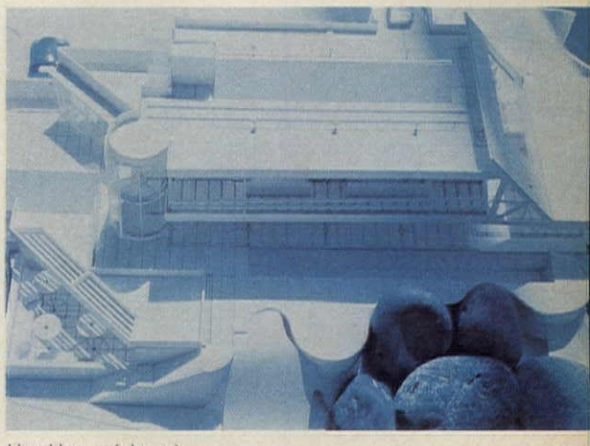
Wayne Thom

Houston Center, proposed pedestrian network.

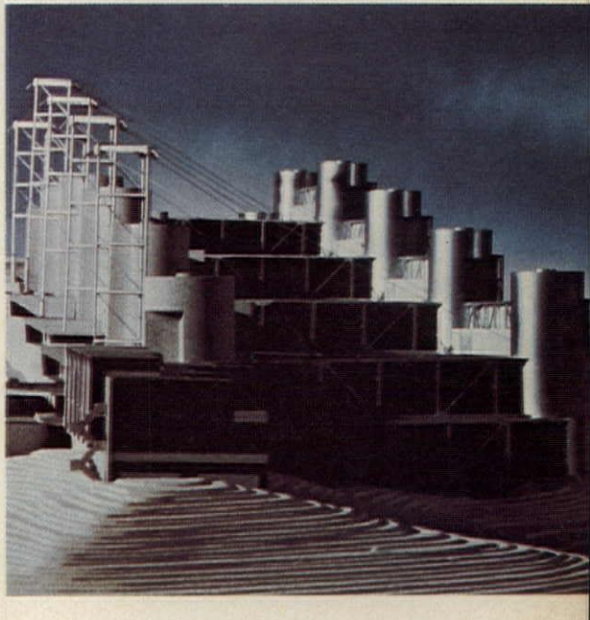




Great Western Bank, Newport Beach, Calif. (Frank Dimster for Wm. L. Pereira Assocs.).



Hux House (above).
Johns-Mansville competition (below).



Pacific Design Center, Los Angeles, Calif.

The blue bombshell

The huge, blue-skinned Pacific Design Center by Gruen Associates' Cesar Pelli is a dramatic presence in its low-scale Los Angeles neighborhood, and as time passes, affection for "the beast" seems to grow.

Pacific Design Center is a six-story blue presence that is felt from great distances, because it is seen in bits and pieces through buildings and trees in its two-story neighborhood. It is rather more a curtain than a building—like Christo's brief, intense and unstable orange curtain stretched across Rifle Gap. The four-and-one-half acres of glass make PDC a fitting home for an industry whose life blood is change—the contract and home furnishings field.

The 750,000-sq-ft blue-skinned building was a cause of concern as it rose on a 16-acre site vacated by a lumber yard, cement-mixing plant, small industries, shops, and homes. It was called the beached whale, the blue blimp, the blue submarine; it still is, but there is a growing affection for the beast, just as there is for scale-shattering wall paintings and other L.A. pop art.

Six blocks to the south is another new scale-breaker, the expanded Cedars-Sinai hospital complex. This and PDC form two giant nodes in the newest center for development on the west side, the area bounded by Santa Monica and Beverly Blvds., San Vicente and Robertson. The 1125-bed hospital (4500 employees) brings 10,000 persons a day to the area. Old houses converted years ago into furnishings showrooms are being emptied for conversion to doctors' suites, and new, high medical buildings are planned.

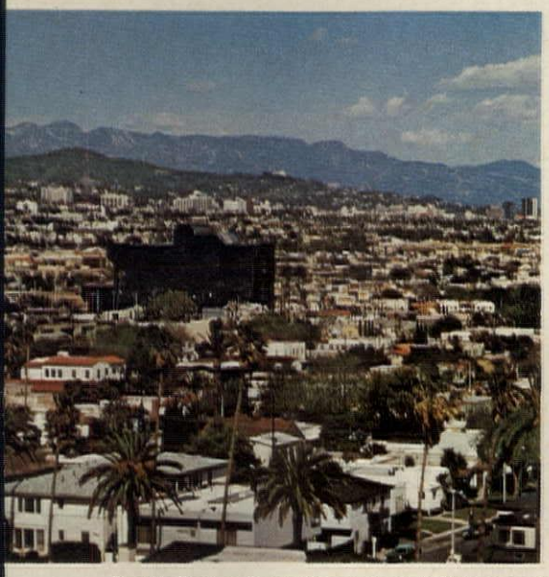
PDC, on the northern edge of the Melrose-Robertson furnishings center, gives the industry its first focus since the regional markets have reached such importance. The industry was at first fearful that PDC would gobble it up, but instead it has been a factor in pulling it together. Much of this is due to Gruen Associates' scheme, with its high ratio of public-to-rental space. The public spaces have responded to such a variety of uses that they have quickly become lucrative rental spaces. The building also has three ingredients in combination not present in any other on the west side of the city: parking for 1150 cars; a place where 2000 people can congregate; and a 400-seat auditorium equipped with 35mm and 16mm projectors, a portable stage, theater lighting, and multimedia capabilities. With the addition of a banquet room serviced by a restaurant, and a variety of meeting rooms, the adjuncts become as important as the building's primary use for showrooms. The present 40 percent occupancy and 60 percent of committed space tells less about the success of PDC and the growth of the regional market, however, than the decision in July to expand into the parking lot with a new 100,000-sq-ft Merchandise Mart building for trade shows, a 300-room hotel, and a parking structure.

An earlier attempt to give focus to the furnishings industry was Design Center on Beverly Blvd., which was planned so that showrooms could be converted to offices if it failed. It did; the industry was too much at home in one- and two-story buildings within easy reach of each other. The Los Angeles Home Furnishings Mart, open only on Fridays, appeals to schlock buyers who are different from the carriage trade that PDC attracts. As a furnishings exhibition space, the Convention Center in downtown Los Angeles is a dismal failure because of its distance from the Beverly Hills area for which the industry has an affinity.

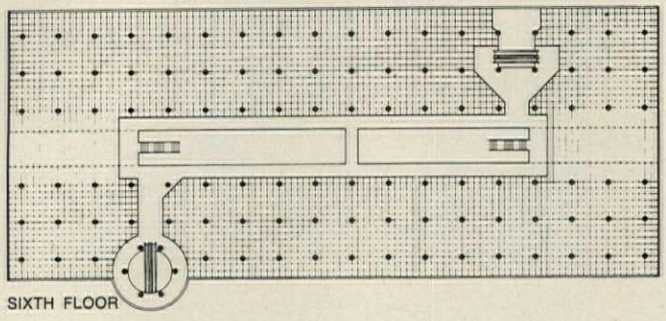
Site and context

The PDC site was already owned for the most part by Southern Pacific and was in uses which had reached an economic end; through their real estate arm, Sequoia Pacific, they began looking for a new use. While Sequoia was toying with the idea of a design center they called in Gruen Associates because of their experience in shopping centers and merchandise marts. Simultaneous with a feasibility study was some land acquisition and swapping; parcels on Melrose and San Vincente assured good frontage on the south and west, then frontage on Santa Monica Blvd. was exchanged with the Rapid Transit District for land on the east, the two negotiations producing a better shape but somewhat less acreage. There was one holdout on Melrose, which accounts for the cottage and tiny commercial building interrupting the flow of the south plaza. When a double curve in Melrose Ave. is straightened the holdout will disappear; in the meantime it is being "planted" out.

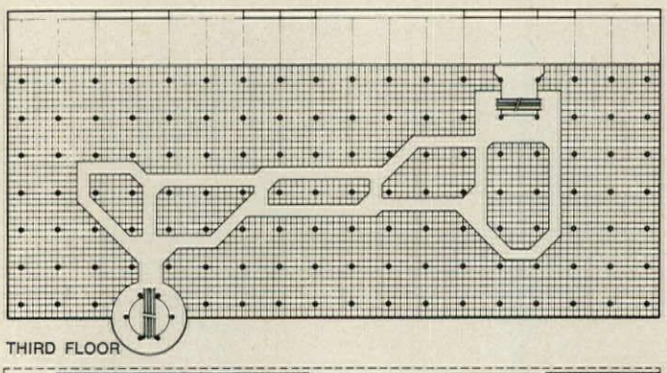
Edgardo Contini, engineer and planner at Gruen who was in on the project at an early stage, saw that the site lent itself to the conventional merchandise mart—a large mass



Pacific Design Center looms large in its low-scale setting, even though the 750,000-sq-ft home furnishings market is contained on just six floors.



SIXTH FLOOR



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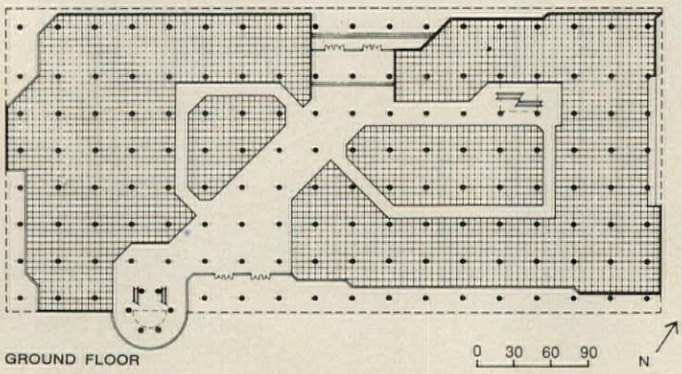
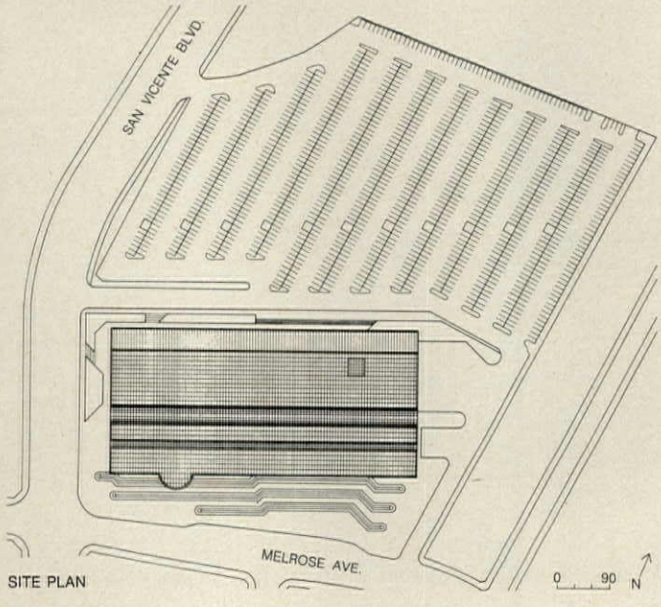


GROUND FLOOR



SITE PLAN

with optimum depth. But the building would be out of scale with the neighborhood; it would be a scale generator rather than a follower.

Some of the directness of the design of PDC, according to Cesar Pelli, came out of the initial uncertainty as to whether he was working on a building or feasibility study. What spurred the doubt was the scheme in another architectural office for a design center in Century City, which was later abandoned because of its distance from the center of the industry, the smaller site available, and higher land cost. Because of the uncertainty, the design proceeded in slow, easy stages, but from the beginning the form, skin, and color were treated as one. The strong extruded form, characteristic of other Pelli work, responded to the functioning of a merchandise mart, and his typical low relief mullions and wrapped skin would tend to minimize the bulk of a large mass.

Interior streets

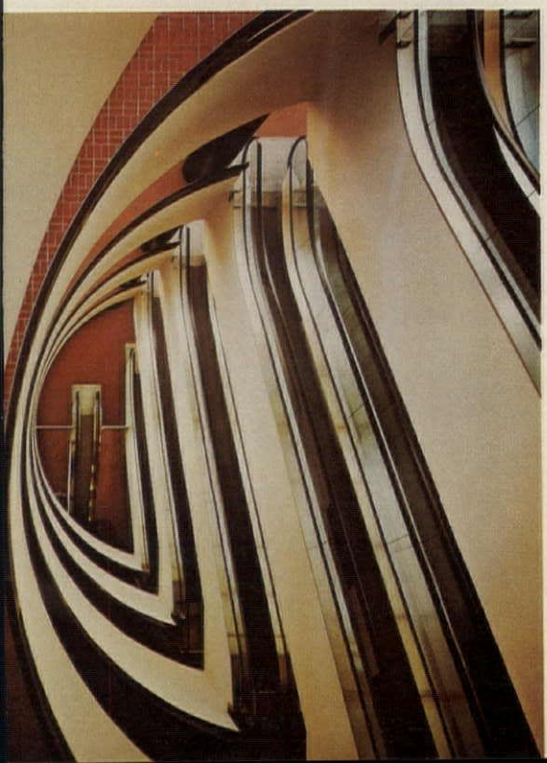
A merchandise mart is unique because it functions as layered industrial space and as "village streets"; it is a sophisticated loading dock with several hundred showrooms attached. (At PDC 14 vehicles can unload at once onto 10,000 sq ft of marshalling space which opens to freight elevators.) The interior street system has to accommodate the freight that in other markets goes in the back door, yet the streets are dressed for leisurely window shopping. With such a strict program, buildings design themselves—or do they? Mies remarked once that building codes left little for him to do; but what there was he put an indelible stamp on.

The Pelli stamp is on PDC. It is a smooth glass package, but unlike the typical one (going back as far as Pietro Belluschi's 1948 Equitable Building in Portland) no silver strings tie it up. The surface is sheer; it is not a pure cubic shape but an impure dynamic form expressive of unequal forces. In PDC the inner life pushes the profile into shapes that appear in factory design, and although Pelli is not one to play with historicism there is a strong memory of the Crystal Palace. There is a stronger memory of some of his own earlier buildings: the push and pull at the surfaces, the sculpturing, hollowing or punching out. Fingers project out of the main concourse at Teledyne; Comsat and Federal Aviation Administration (designed a year apart at DMJM, the latter with Anthony Lumsden) stretch the sheer skin over fat DC-3 curves.

Whether the form of PDC was manipulated or just helped along, there was the internal pressure of the circulation system in the shaping. Corridors varying from 30 ft to 120 ft in width have islands, or loops, and the grid is broken up by diagonals. Besides offering the exhibitor a choice, the varied layout of the 12½ acres of corridors distributed throughout the six floors created spaces for many types of social events.

What most affected the exterior form was the barrel-vaulted galleria on the fifth and sixth floors, and the obtuse-angled box which flanks it. The latter houses the mechanical services and was devised after the basement had to be omitted because of the high water table on the site. Less decisive in form-making is the handsome cylinder on the south for vertical circulation; more effective in breaking up the surfaces are the fifth floor cantilevers on the north and south, and the large terrace off the third floor on the north.

The Center's main entrance is on the south side where one of its distinguishing features, the huge circulation cylinder, connects all levels.



The galleria came out of an effort to develop a distinctive space at the top level, thus the two layers of shops facing a long promenade. When Contini, according to Pelli, said that the building "needed a destination at the top," it was roofed with a partially glazed barrel vault. For the sake of form, it was extended the length of the building, becoming its most distinguishing feature. The light is kind here because an angled surface is painted to catch and reflect the light, diffuse it, and to reduce the contrast. The glazing is a bronze-tinted acrylic sheet.

Vantage points

The cylinder of vision glass on the south side which houses the escalators is both attached sculpture and a neat circulation solution. The observation that merchandise marts, unlike office buildings, have a slow tempo accounts for the detaching of the two escalators from the main space and making an event of the trip up or down. (Elevators are tucked out of sight.) Spacious viewing platforms are developed at each landing for city watching; they are also good points from which to see the detailing of the opaque blue glass of the south wall, the fractured images in the angled glass and the long planting well (supported on lowered columns flanking the large structural ones). This may be the first time bougainvillea has been used architecturally above ground, and the effect should be startling when the red blooms appear on the trailing branches and are reflected in the blue glass.

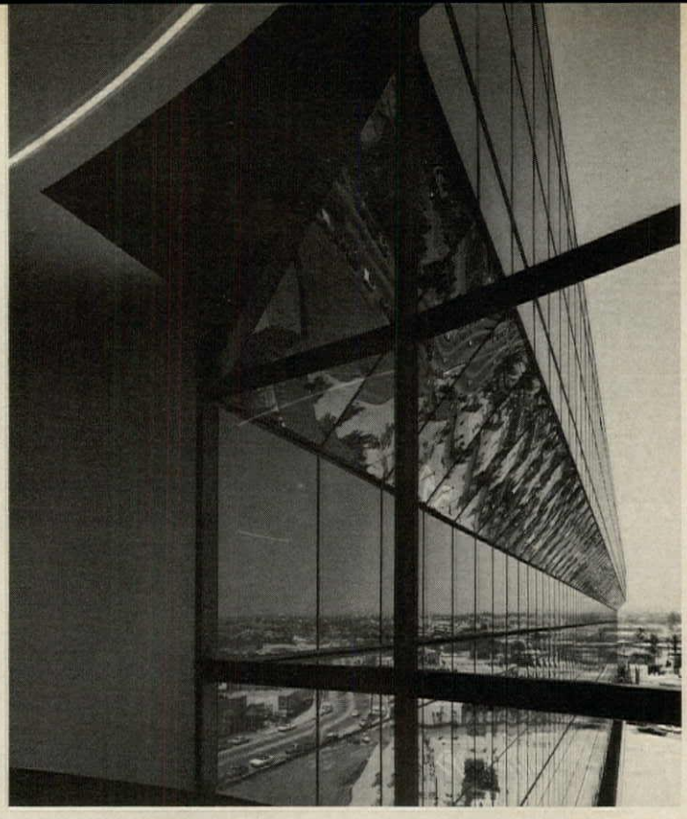
The color of the glass was an important decision, and the Gruen office went through various colors before settling on the blue. With such easy colors as white, gray, or beige the forms disintegrated and reflections were lost. The final choice was between a maroon and the blue, and during construction 12 shades of blue were tested. Pelli wanted a blue with as little green or purple as possible, and the blue selected was "as blue as spandrel-glass technology could make it," he said.

As rentals started before construction, numerous changes reflected the attitudes of renters. Two-story showrooms were eliminated, and the only existing ones now are those in which exhibitors rented the space above and cut through. A last minute change provided exhibition space in the lobby mall, which works well because of the spaciousness, the irregular layout, and the entrances from east, south and north. Imaginative uses have been found for the public spaces, and events are scheduled well in advance.

PDC got more than it bargained for, although Pelli regrets that full use has not been made of the acres of terraces, especially the one planned off the restaurant space; however, a small luncheon place on the Melrose side now spills wire tables and chairs onto the plaza at midday.

Spaces inside and out move freely through the 30-ft grid, except in the columnless spaces of the escalators and the galleria. The same design attitudes apply to the grid of the curtain wall.

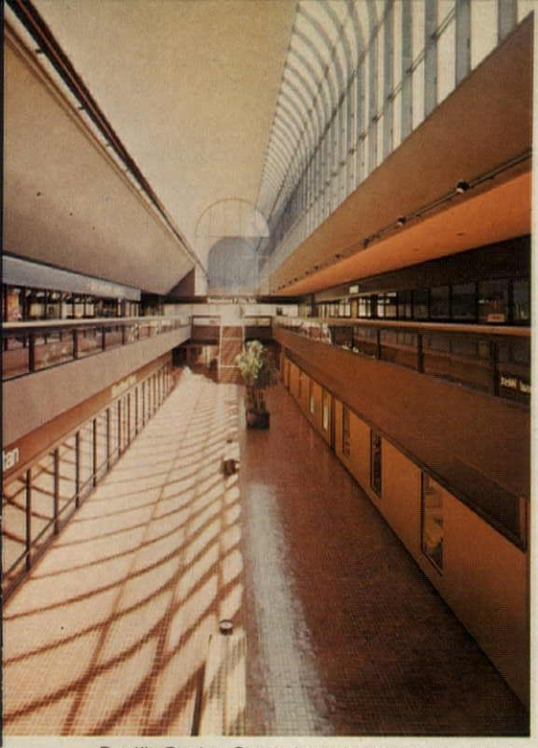
PDC is the first large building in Los Angeles to apply the new high-rise code for fires and earthquakes. The steel frame rests on a 30-in thick concrete mat, and the structural assemblies along 10 of the 18 column lines form rigid frames. Ionization-type sensors automatically start fire and smoke control systems and notify the fire department and security personnel. Control elevators are dispatched directly to fire floors, while passenger elevators have devices which prevent doors opening on fire floors; one stairwell is designed to function as a smoke-free shaft. To prevent glass from cracking or falling, sliding expansion joints occur at the corners of the building, at wall intersections and between floors. [Esther McCoy]



Looking at the south façade from the circulation cylinder, one sees sets of fractured reflections of the plaza, Melrose Ave., and the whole city.

Data

Project: Pacific Design Center, Los Angeles, Calif.
Architect: Gruen Associates, Los Angeles; Cesar Pelli, partner in charge of design; Edgardo Contini and Allen Rubenstein, partners in charge of project; Miloyko Lazovich, project designer; John Friedman, construction coordinator.
General contractor: Henry C. Beck Company.
Program: 750,000 sq ft mart building and design center serving the specialized needs of professional interior designers, architects, specifiers, decorators, and dealers involved in the contract and residential fields.
Site: 16 flat acres in mixed residential/commercial urban Los Angeles.
Structural system: designed to withstand earthquakes up to 8.2 on the Richter Scale, the structural steel welded frame is of high-strength ASTM A-572 grade 50 and normal strength ASTM A-36 steel, resting on a continuous 30 in. concrete mat.
Mechanical system: entire building is air conditioned (computer-controlled) using two centrifugal chillers from which cold water is pumped to air-handling units on each floor, and from there through ducts to 50 separate zones. Air is returned through ceiling plenums. Heating is by electric duct heaters. Sprinklers, fire and smoke detection systems are provided throughout.
Major materials: concrete, structural steel, steel deck with 2½ in. concrete fill, blue glass set in structural glazing gaskets supported by aluminum framing system, steel roof decking with insulating concrete roof fill.
Consultants: Gustav Molnar, landscape; Gruen Associates, interior of project, tenant showrooms handled on individual basis by tenant; Gruen Associates, mechanical, electrical, civil, structural engineering.
Client: Sequoia Pacific, a division of Southern Pacific Co.
Costs: $20 million. $26.60 per sq. ft.
Photography: Marvin Rand, except p. 79 top left, Eugene Kupper, bottom, Fred Clarke, p. 81 middle left, John Dixon, top right, Fred Clarke, p. 83 bottom, Gruen Associates.



Pacific Design Center's main attraction is the barrel-vaulted galleria (left) at the top, where many kinds of social events can be held.

The second major circulation area of PDC is at the East end (top). Throughout the Center, individual tenants such as Knoll (above) have been responsible for the design of their spaces.

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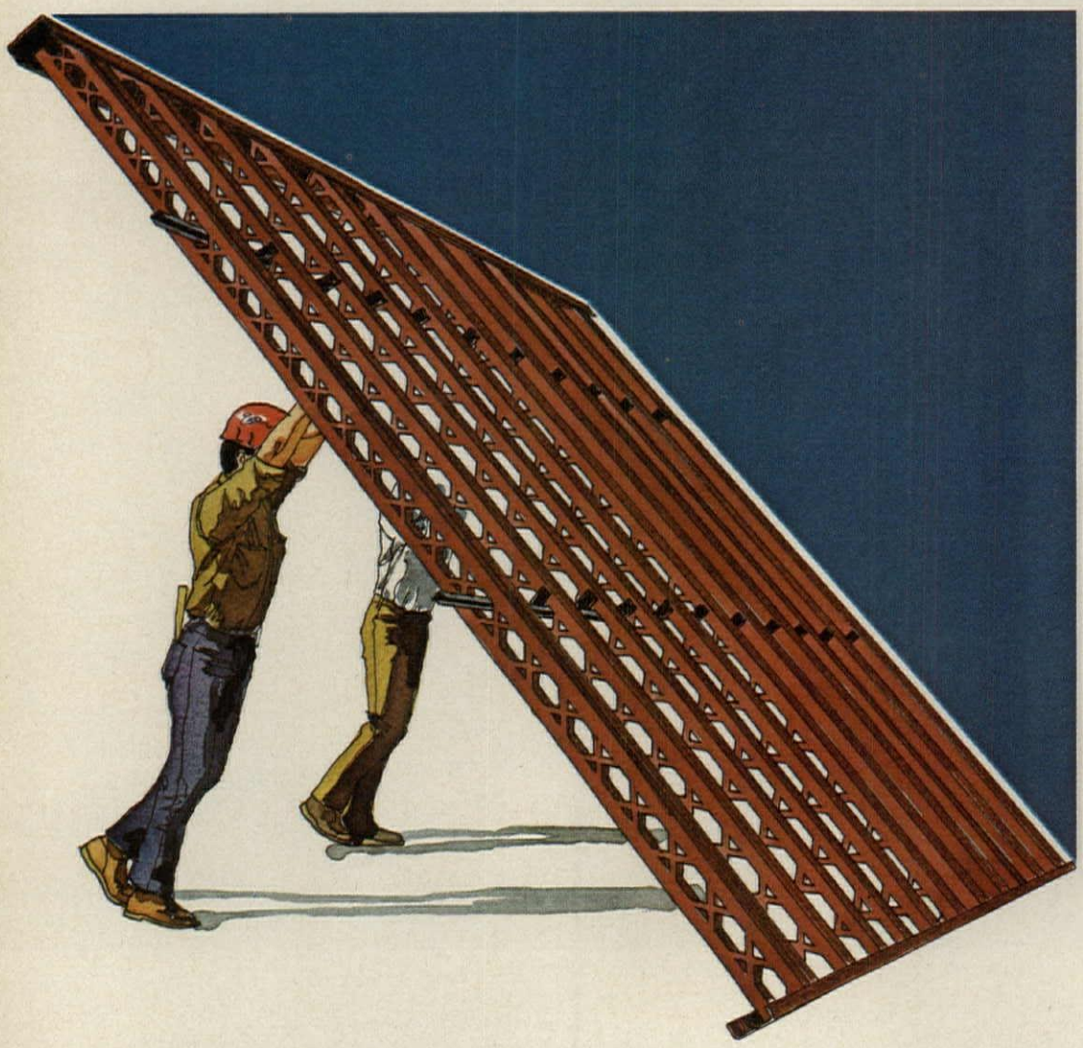

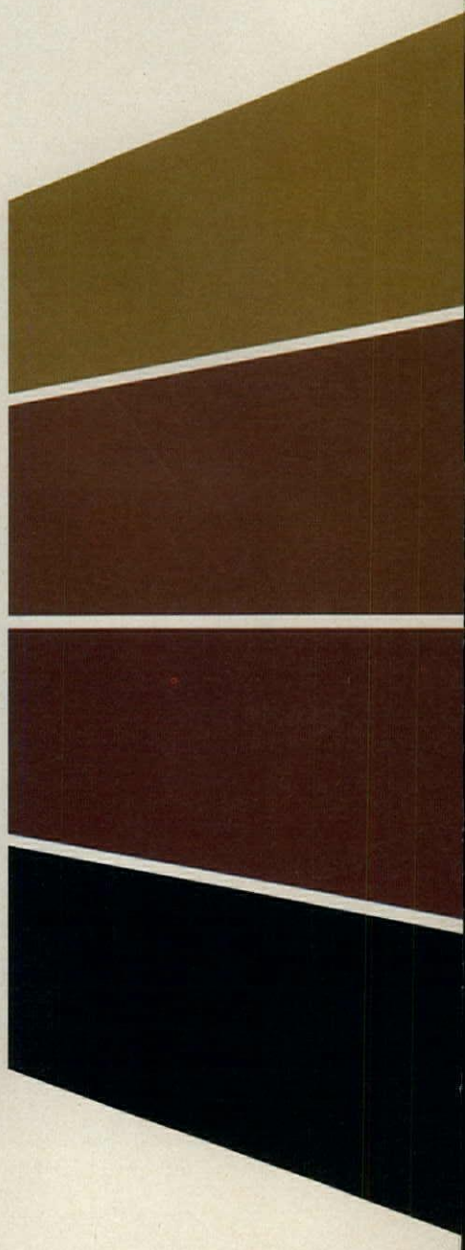

aggregate, simulated brick or stone—or may be brick veneer, metal panels, textured plywood or any other sheet material.

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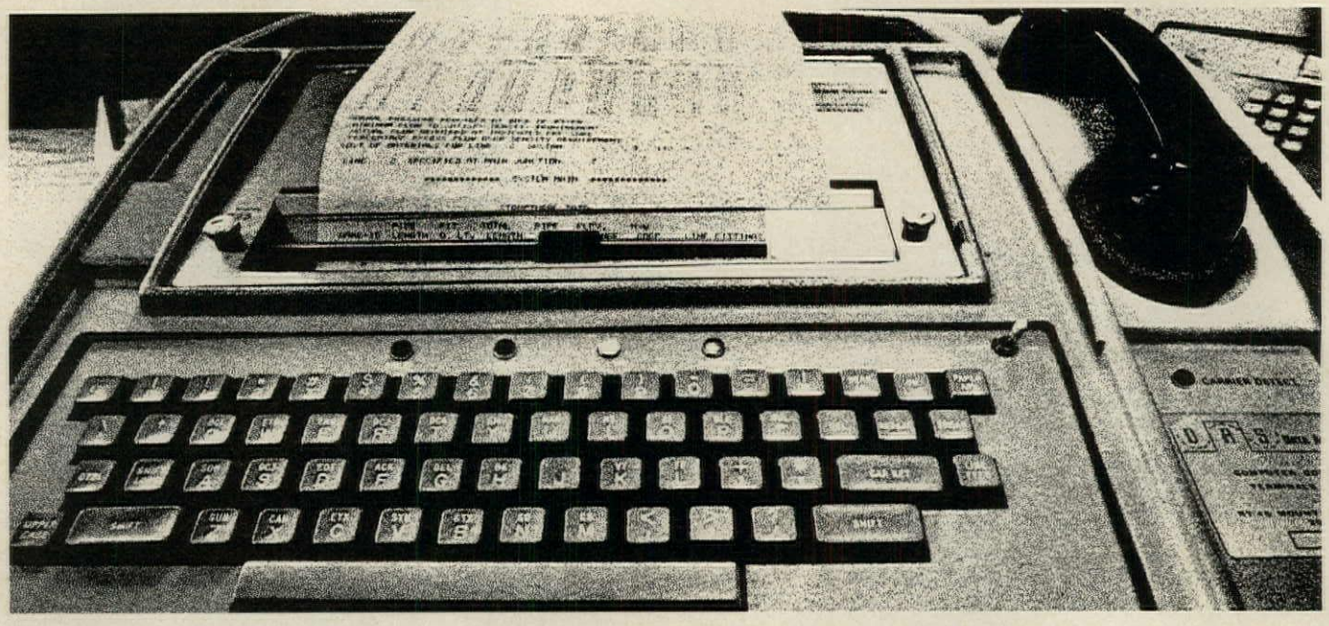

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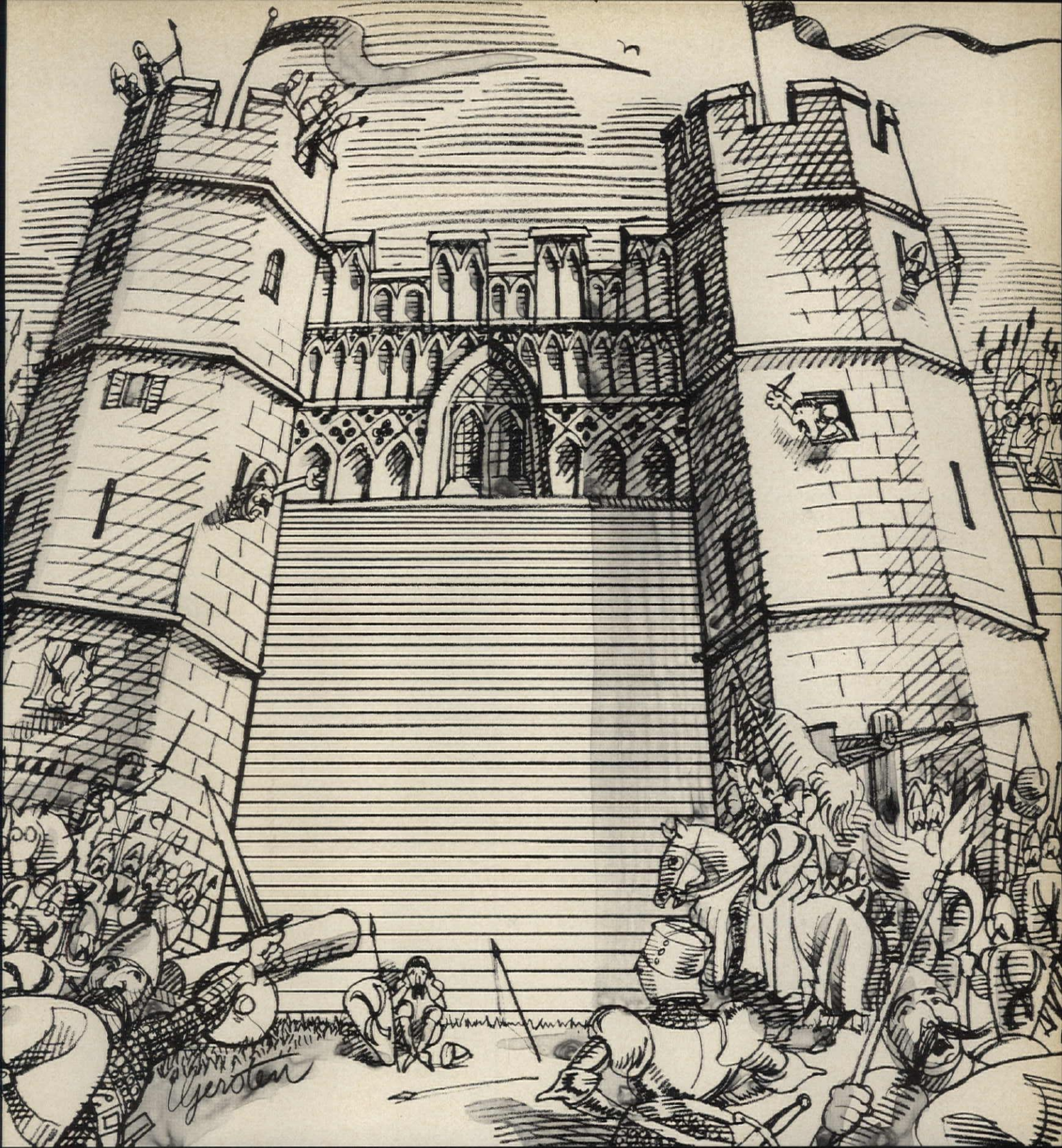

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The bright lights

Steady improvements in high-intensity discharge sources and luminaires are making energy-saving HID an even more versatile and interesting medium with which architect-designers may work.

HID, high-intensity discharge lighting, has become something of a buzz word among architects and lighting designers. Almost everyone has been exposed to HID, even without knowing it—those orange-colored highways and avenues, the brightly lit streets in crime-prone areas, the bejeweled cables of suspension bridges, the televised night games played on fields as light as day. There's good reason for HID in applications like these. You can get a tremendous amount of light from compact, long-lived, low-maintenance sources. What's more you get it at a relatively low energy cost, since HID sources have high luminous efficacy; that is, they give you lots of lumens per watt. Typically, HID sources have three, four, or five times the efficacy of incandescent sources.

The exciting new thing about HID has been the development in the last few years of new sources with improved color characteristics, for low as well as high wattages, and the availability of broad lines of attractive luminaires and fixtures. This, along with the continuing and growing emphasis on energy conservation, has persuaded many architects to take a second look—for some, a first look—at how HID can be used for lighting inside and outside architectural space.

A caution from lighting designer Jules G. Horton, president of the New York firm bearing his name, is appropriate here: While HID has obvious merit, it is not the solution to all lighting problems. It corrects some of the shortcomings of both incandescent and fluorescent light sources, but not without shortcomings of its own. In its proper place it can do an excellent job, as can any artificial light source.

Briefly, HID sources share the compactness and beam controllability of incandescent sources, but are far more efficient and longer-lived. However, they are not available in as many sizes or shapes, are still inferior in color versatility, require ballast, may be affected by temperature extremes, are sensitive to voltage fluctuations, and are slow to start and restart. Some HID's can be dimmed like incandescents, but most of them cannot be.

They share the efficiency and long life of fluorescent sources, but are compact and optically controllable, and are available in higher wattages. However, they are more expensive, may require more expensive ballast. Most HID's take longer to start and restart than most fluorescents.

In compact sources, the optical controllability may be built in (i.e., reflector lamps) or contributed by the luminaire or fixture. It enables the designer to put the light just where he wants it and more or less exclude it elsewhere.

Throwing some light

Although the lighting designer is interested primarily in what a source can do for him, it's useful first to take a look at how the different light sources work. The descriptions that follow are greatly simplified, omitting many of the details that are essential to illuminating and electrical engineers and the designers of equipment.

An incandescent lamp emits a continuous spectrum, just as the sun does, including considerable infrared radiation—heat. Light being the visible manifestation of the material's thermal agitation, the hotter a body gets, the more its emissions move toward the shorter—more energetic—wave lengths, from dull red to bright red, orange, yellow, white, bluish white, and finally blue.

In the temperature range in which tungsten filament lamps usually operate, the light is richest in red, orange, and yellow, accounting for their "warm" appearance. Other colors are obtained by applying a pigmented or ceramic coating to the bulb or by using colored glass. Since both of these methods block unwanted wave lengths, the color is obtained at the cost of lower luminous efficacy.

Fluorescent and HID lamps operate by electrical discharge rather than resistance heating. Both make use of an arc struck in (primarily) mercury assisted by a starting gas, but they're very different from each other.

In fluorescent lamps the arc, which fills the low-pressure gap between electrodes at the ends of the tube, is very rich in ultraviolet radiation but poor in visible light (mainly the blue-green lines of the mercury spectrum). The light we see results from UV bombardment of phosphors coated on the inside of the tube. Different phosphors or blends of phosphors produce different colors.

Short and bright

The light in HID lamps comes from the compact, intense arc itself, in a short arc tube containing a higher pressure than in a fluorescent lamp. The basic HID source, the mercury vapor lamp, produces the typical mercury spectrum and some invisible infrared and ultraviolet.

Other visible colors are produced in several ways. In metal halide HID sources, rare earth salts of iodine or other halogens are added to the mercury, enriching the spectrum; changing the additives or their proportions changes the color.

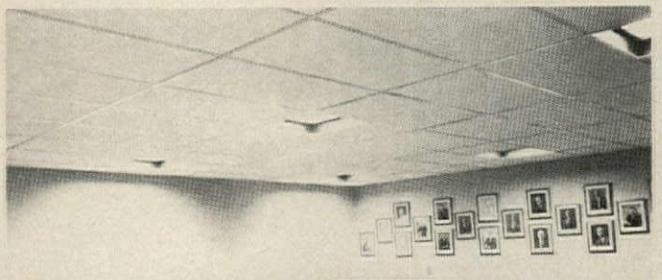
In sodium low- and high-pressure lamps, sodium is added to the mercury. Low-pressure sodium HID's produce a very bright, narrow band of sodium-orange light. These sources have the highest luminous efficacy of any lamps made, but the light is diffuse rather than compact, since the lamp is elongated like a fluorescent tube. In high-pressure sodium (HPS) lamps, the visible band is broader, more of a light gold.

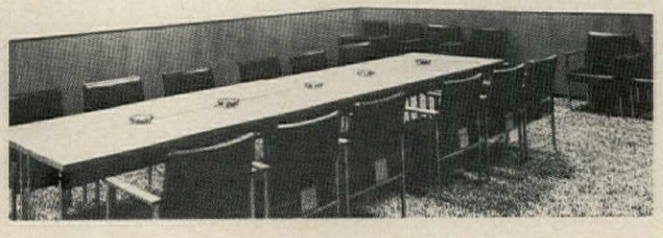
Most HID lamps are made with a double envelope and have a screw-in base. The inner bulb is a quartz tube that contains the arc. The outer bulb, glass, shields the arc tube from changes in temperature and filters out most of the ultraviolet radiation.

Unlike the continuous spectrum light of incandescent sources, the light from HID sources consists of only the spectral lines of the particular atoms which are excited. However, the inner surface of the outer bulb of mercury vapor and metal halide sources may be coated with phosphors, as is done with fluorescents, to produce new colors by UV bombardment. Sodium HID sources are poor in UV, so cannot use this color modification technique.

The phosphor coatings, which greatly extend the range of HID colors, at the same time make the light more diffuse

New HID lighting system, a Bicentennial birthday gift from Crouse-Hinds, puts four times as much light on the Lady at two-thirds the energy cost of the old system. Three types of HID sources are used. The golden flame is provided by three 400-watt HPS floodlights behind the torch's stained glass panes; one 150-watt HPS reflectorless fixture at the base of the torch lights the tip. The crown's blue-green gleam comes from 17 100-watt clear mercury lamps, 6 of them with reflectors to direct the light to areas where space was too tight for fixtures. The statue itself is lighted by 42 1000-watt metal halide lamps and the pedestal by 16 1000-watt metal halides and 11 400-watt HPS lamps.





and reduce its optical controllability. Nevertheless, the big news to architects is the steady advance in color quality.

Electrical discharge sources are obviously not as simple as incandescent sources in either construction or operation. A further complication is that they require a ballast unit to provide the necessary start-up voltage, regulate the operating voltage and limit the operating current. Once the arc is established, electrical resistance plummets and the resulting current could destroy the system if not limited.

Close voltage regulation is necessary because, unlike the incandescent lamp which merely becomes dimmer (and actually has its life extended) when supply voltage drops, HID's may extinguish if the voltage drop is large. This is certainly not desirable, because it may take them from four to twenty minutes to relight, depending on the type. Many HID sources incorporate a quartz incandescent lamp, to operate during these outages.

Although the ballast is usually a separate unit, a number of self-ballasted HID lamps are on the market; here the ballast is built into the lamp body. These may directly replace incandescent lamps in the same socket.

Various types of ballasts are available with different power factor and voltage characteristics. Generally, the better their characteristics, the higher their cost. Ballasts are not necessarily interchangeable among different HID lamps; it is necessary to follow carefully the manufacturers' recommendations.

The designer of a lighting installation has useful guides, such as the Illuminating Engineering Society's Lighting Handbook, which have distilled average responses to come up with numbers, formulas, factors, and coefficients for arriving at the appropriate quantity and quality of light for various spaces and tasks. The calculations and measurements—involving lumens, candlepower, foot-Lamberts, Visual Comfort Probability, Equivalent Sphere Illumination, Room Cavity Ratio, glare, and on and on—are laborious and generally time-consuming, but straightforward.

Main concourse of Grand Central Terminal (top) has recaptured much of its lost elegance through relighting. The client, New York's MTA, wished not only to enhance this historic interior and its zodiac ceiling, but to reduce energy and maintenance costs. The new installation aims for the terminal's original light ambiance (peripheral tall buildings now block much of the light that used to stream through skylights and windows) and to reunite visually the main barrel vault and the lower part of the hall. Two-light fixtures, each housing a clear metal halide and an HPS lamp, are used throughout; being clear, they are point sources, so require smaller fixtures. Indirect cove lighting from a pair of units (400 w sources) lights the decorative vaulted plaster bands at each end; additional indirect units (175 w metal halide, 150 w HPS) paint the undersides of the lunettes; indirect column sconces (250 w sources) light the mezzanine arcades. Cornice incandescent lamps were retained, but their wattage reduced considerably. Collaborators on the restoration were the Rambusch lighting design company and a team from Poor, Swanke, Hayden & Connell, led by Der Scutt, AIA. Photo by Norman McGrath. One of the first applications (middle) of HPS lighting for offices is this installation at the remodeled headquarters of Sola Basic Industries in Milwaukee. It was made practicable by the development of low-wattage HPS lamps, such as the 100 w and 150 w units used here. Prismatic glass lenses in the recessed 24 in x 24 fixtures add sparkle. Lighting requirements for this conference room (bottom) included control of veiling reflections (low glare) and dimming ability (possible with only some HID sources). This was accomplished with a Wide-Lite wall-box dimmer unit and a combination of vertical-lamp luminaires to light the conference table in the middle of the room with asymmetric-beam luminaires at the periphery of the room to wash the walls where material is displayed at meetings.

A matter of taste

Nevertheless, the comfort or effectiveness of an installation is very much a subjective matter. What pleases one is uncomfortable to another. Individual reactions to colors differ. There is also disagreement as to whether a high uniform level of lighting is preferable to a lower, non-uniform level, in which task areas get more light and general areas less.

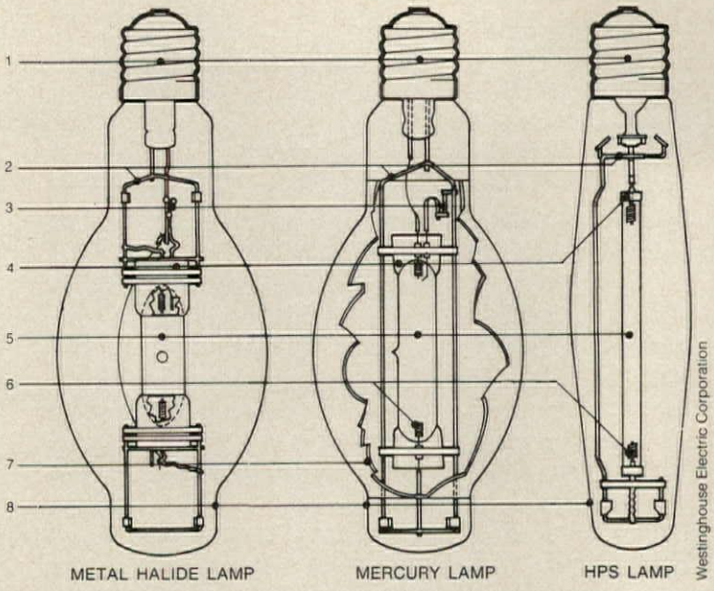
Decisions about quantity and quality of light are vital ones that the architect must make or approve, but they are not the subject of this article. We are concerned with the characteristics of light sources, particularly HID sources, that make them either more or less suitable for executing the decisions and complementing the architectural design.

High luminous efficacy translates into lower electric bills. Broadly speaking, HID sources are the most efficient in converting power into light, but there is some overlap with fluorescent sources. It's practical to speak only of ranges, because the efficacy of a particular lamp model depends on its specific design. Initial lamp lumen/watt ratios for HID sources range from 45 to 180; for fluorescent sources, 60 to 85; for incandescent sources, up to 24 (for the expensive tungsten-halogen lamp). Among the HID's the ranges are: mercury sources, 45-65; metal halides, 80-110; high-pressure sodium, 83-140; low-pressure sodium, up to 180.

Note that these are initial ratios; the light output of sources drops off with age, mercury and metal halides much more sharply than sodium. Manufacturers' lamp lumen depreciation (LLD) curves provide age/light data for each source. Good design practice is to base calculations on the light output at an appropriate point on the curve.

When making light-level calculations, it's also important to remember that lamp efficacy tells only part of the story. What matters finally is the light available at the working or target surface. This means that calculations must account for the part played by luminaires and fixtures and, for interior spaces, by room shape, dimensions, ceiling height, and surface reflectances. These factors are wrapped up in

Much light and low glare (top) make reading comfortable in the Waynedale branch of the Fort Wayne Public Library system. Children's area, shown here, is lit by seventeen 400 w mercury vapor deluxe white lamps in internal-louver luminaires on sloping ceiling at heights from 10½ to 14½ ft. Ballasts are special low-noise units. In adult area, eight lamps of the same type are mounted in pendent luminaires at 12 ft. Fluorescent lights illuminate the stacks (far room in this picture) and coves. Incandescents are used for highlights. Some of the HID luminaires incorporate emergency/auxiliary incandescent lamps. Wide-Lite photo. Compact 24 in x 24 in HID luminaires (middle) with regressed, black multigroove baffle trim contribute to ceiling-design freedom in University Federal Savings and Loan, Coral Gables, Fla. Holophane photo. For the office and design workshop (bottom) shared by the architectural firm of Samuel A. Haffey and Associates and Jules G. Horton Lighting Design, Inc., designer Horton aimed to create a comfortable environment, with the lighting adding a "homelike" touch—that is, each person would have individual light control in a large, partitioned common room. The lighting installation would also have low first and operating costs, be easy to maintain, offer wide flexibility for different tasks and be as responsive as possible to energy conservation. HID, fluorescent and incandescent sources are used to carry out the design aims. Low-glare general illumination is provided by the windows and mercury HID lamps in home-designed, box-shaped, low-brightness uplights reflecting from the ceiling; the lamps render color pleasantly and offer enough illumination for many daily tasks. Additional individual task lighting is provided by adjustable, swinging, combination desk lamps that house an incandescent bulb surrounded by a small circular fluorescent tube. The task-light sources may be lit separately or together for a variety of light effects and levels. Photo by Louis Reens.



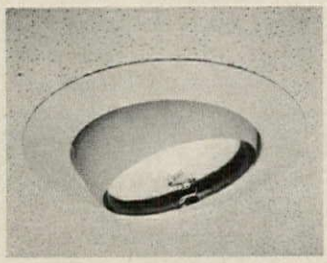
a coefficient of utilization, usually supplied by the luminaire manufacturer.

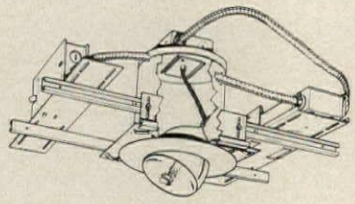
From the efficacy ratios, it's apparent that for a given illumination level, one HID source can replace several incandescent sources of the same wattage; this can compensate for the higher cost of the HID unit and its ballast. Although circuit installation may be more complicated by the need to wire in ballast, money may be saved on wiring and installation of the fewer fixtures. Also, it may be possible to reduce the sizes of lighting wire and cable because less power is required. However, steps must be taken to assure the stability of the power supply, since HID lamps are quite sensitive to voltage fluctuations.

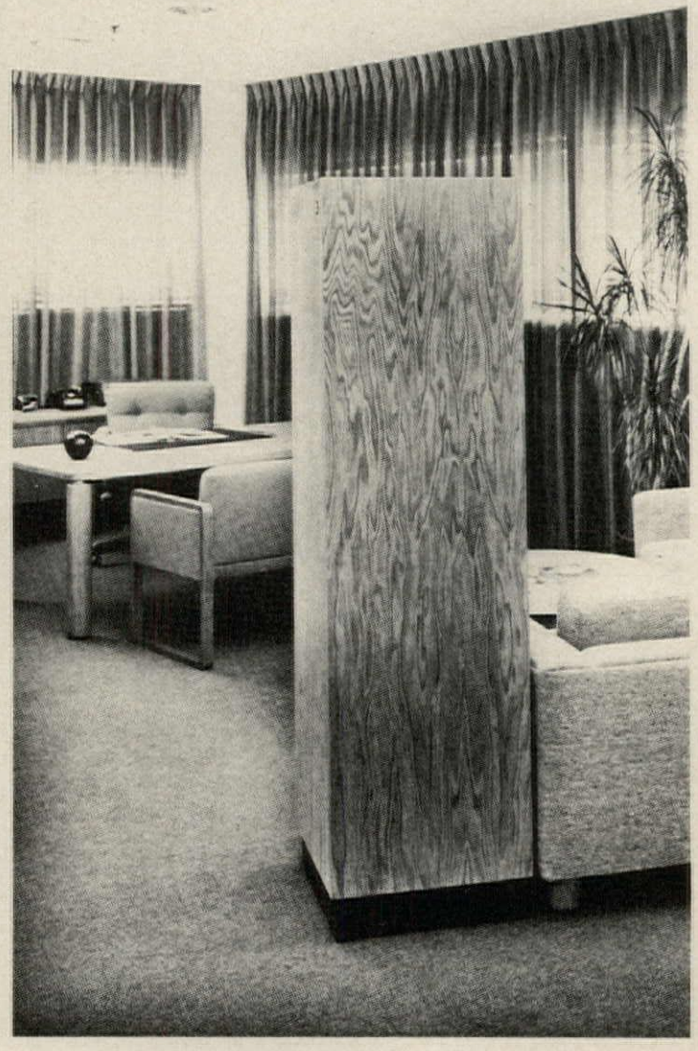
It may also take fewer HID sources than fluorescent sources to do the job where a high level of illumination is required in a large space, even though their efficacies may be comparable. This is because of wattage capabilities. The largest fluorescent tubes are rated at 215 watts, whereas HID's come in sizes up to 1500 watts.

The ability to do the job with fewer and/or more compact fixtures has obvious design implications. It may influence the building module because of its dimensions. It permits less cluttered ceilings, so that aesthetics may be maintained. It requires less plenum space for lighting equipment. It allows objects within a space to be better defined with shadows and highlights.

Electrical discharge lamps in general have extremely long lives. Some metal halide HID sources go over 15,000 hours, and mercury and sodium over 24,000 hours at rated wattages and for specified hours of operation between starts. However, useful life will be shorter than rated life in applications where it is desirable to relamp when lumen depreciation cuts the light output to an unacceptable level. The lives of HID sources will also be shortened by too-frequent start-ups and if the lamps are burned in other than their specified positions.







Internal construction (top) of typical HID lamps. 1 Base. 2 Arc tube supports. 3 Starting-current resistor. 4 Arc tube seal. 5 Arc tube. 6 Electrode. 7 Phosphor coating. 8 Outer bulb. Westinghouse Electric Corp. Adjustable-eyeball recessed round (middle) is one way of providing HID beam control. Markstone. Free-standing, portable uplight luminaire (bottom) for HID sources gives lighting flexibility in landscaped-office designs, simplifies rearrangement of space. Harbor Universal.

HID and fluorescent sources commonly used for interior lighting

Source	Initial Lumens	Rated Mean Lumens	Rated Lamp Life Hours (Thousands)	Rated Lumen Hours (Millions)	Input Watts W/Ballast	Mean Lumens/ Watt	Ballast Cost/ List	Lamp Cost/ List	Ballast Cost/ Million Lumen Hours	Lamp Cost/ Million Lumen Hours	Power Cost/ Million Lumen Hours	Total Cost/ Million Lumen Hours
Mercury												
50 W Deluxe White	1,680	1,330	16	2.128	74	18	12.00	18.00	.20	.85	1.02	2.07
75 W Deluxe White	3,150	2,450	16	39.2	93	26.3	12.70	18.35	.12	.47	1.52	2.11
100 W Deluxe White	4,500	3,350	24	80.4	118	28.4	14.20	14.25	.09	.18	1.41	1.68
175 W Deluxe White	8,500	7,560	24	181.44	205	36.9	18.85	11.45	.06	.06	1.08	1.20
250 W Deluxe White	13,000	11,000	24	264.00	285	38.6	22.00	18.75	.04	.07	1.04	1.15
400 W Deluxe White	23,000	20,100	24	482.4	454	44.3	31.65	15.50	.03	.03	.90	.96
Super Metalarc (Metal Halide)												
175 W Clear	15,000	12,000	7.5	90.00	210	57.1	21.22	36.60	.04	.41	.70	1.15
400 W Clear	40,000	32,000	15	480.00	455	70.3	42.80	39.50	.03	.08	.57	.68
High pressure sodium												
150 W Clear	16,000	14,400	16	230.40	188	76.6	75.00	56.00	.12	.24	.52	.88
250 W Clear	27,500	24,750	15	371.00	310	79.8	92.35	58.00	.09	.17	.50	.76
400 W Clear	50,000	45,000	20	900.00	465	96.8	109.00	60.00	.05	.07	.41	.53
Fluorescent					(2-lite ballast)		(Per lamp)					
30 W T12 WW	2,360	2,055	20	41.10	38	54.1	3.66	2.45	.04	.08	.74	.86
40 W T12 WW	3,200	2,850	26	74.10	46	62	2.70	2.07	.02	.04	.65	.71
40 ULamp WW	3,025	2,520	17	42.80	46	54.8	2.70	5.80	.02	.19	.73	.94
110 W 8′ - WW 800ma	9,200	8,000	17	136.00	121	66.1	7.50	4.45	.02	.05	.60	.67
215 W 8′ - WW 1500ma	15,000	10,880	13.5	147.00	228	47.7	13.00	8.25	.03	.08	.84	.95

Notes:

1. Million Lumen hours is an arbitrary point to allow meaningful cost comparisons.
2. Assumed ballast life for all sources is 15 years.
3. Lamp life based on 10 hours per start.
4. Power cost is based on $.04 per KWH.
5. Total cost includes only lamp, ballast, and KWH costs. Fixture *costs* or *efficiencies* are not considered.

(Chart compiled by James P. Cross.)

Picking a color

The question of what constitutes acceptable color from an artificial source is perhaps best settled by the designer following his own instincts and experience. It's widely felt that people are most comfortable under incandescent light, because it has a continuous spectrum like sunlight, but this may only be because they are used to it. Some designers find the narrow-spectrum golden light of high-pressure sodium very satisfactory; others find it displeasing; still others prefer to use it in conjunction with incandescent lamps, to fill out the spectrum.

The two basic color properties of light that must be considered are color temperature (chromaticity) and color rendering ability. The color temperature, given in degrees Kelvin, defines the spectrum emitted by a perfect radiator (a "black body") at that temperature. The color rendering index is a measure of how well a source renders colors compared with an incandescent source. All artificial sources tend to distort colors, even if only a little.

Lamps with emission throughout the spectrum, especially in the red regions, tend to render all colors well, points out Terry K. McGowan, General Electric lighting specialist. Constant improvements in the additives and phosphors of HID lamps, particularly metal halides, have brought their color performance to a very respectable level, but at some cost in efficacy.

A safety hazard associated with mercury and metal halide HID's has been in the news recently. When the outer bulb is shattered, say by vandals, intense, arc-generated UV radiation will escape and may cause severe burns. A safety mercury vapor lamp recently put on the market incorporates a tungsten wire in its circuit. When the outer shell is broken, the wire oxidizes in minutes, extinguishing the arc.

Much more could and should be said about HID's development from primarily an energy saving technique to its position as another useful color on the creative architect's palette. It's worth investigating further. [Henry Lefer]

Acknowledgments

We acknowledge with thanks the assistance of the following individuals and companies: Jim Anthony, Weekley & Penny, Inc.; Jack Christianson, Howard Haynes, Illuminating Engineering Society; Jules G. Horton, Julie A. Vogel, Jules G. Horton Lighting Design, Inc.; Terry McGowan, Lighting Development, GE Lamp Marketing Dept.; Viggo Rambusch, William T. Weber, Peter White, Rambusch & Co.; Der Scutt, AIA, Poor, Swanke, Hayden & Connell; Columbia Lighting Building Systems Group, Duro-Test Corp., Crouse-Hinds Co., GE Large Lamp Dept., GE Lighting Services Dept., GTE Sylvania, Guth Lighting, Harvey Hubbell Inc. Lighting Div., ITT American Electric, ITT Art Metal, Johns-Manville Holophane Div., Kim Lighting Mfg. Co., Markstone Mfg. Co., North American Philips Lighting Corp., Sterner Lighting Systems, Inc., Welsbach Lighting Products Co., Westinghouse Electric Corp. Lamp Div., WideLite Corp.

[Additional information on new lighting products and literature may be found in P/A's Products and Literature section, p. 106.]

Timeliness an important issue in damage claims

Bernard Tomson and Norman Coplan

Damage claims against architects have historically been subject to the shorter statute of limitations for malpractice claims. A recent court ruling casts doubt.

When a damage claim is asserted by an owner against an architect arising out of alleged errors or omissions, it often becomes a significant issue as to whether such claim was timely asserted under the statutory law of the state involved. In most states, the time within which malpractice actions must be instituted is much shorter than the allowable time for actions for breach of contract, and it has been considered settled law that claims against architects arising out of errors and omissions are subject to the shorter statute of limitations. However, a recent decision of the Court of Appeals of New York, the highest court of that state, has refused to follow established precedent and has cast into doubt the appropriate rules to be applied in this area (*Parver & Wildfoerster* v. *Catholic High School Association,* 175 NYLJ, No. 45, p. 1).

The facts as reflected in the decision of the above case were that the owner and the architects had entered into the standard form of agreement of the American Institute of Architects pursuant to which the owner was to be furnished professional architectural services in the construction of a high school. Shortly after the owner took occupancy, serious leaks developed in the building. The contractor, over a period of several years, attempted to correct the problem, but was unsuccessful. Approximately four years after the building had been completed, the owner engaged a waterproofing company to correct the leakage. This company reported that in its opinion, both the contractor and the architects were responsible for the condition.

The owner instituted an arbitration proceeding against both the contractor and the architects, and the latter sought a stay of the proceeding on the ground that it had not been instituted within three years from the date of the alleged errors or omissions and was thus barred by the Statute of Limitations of New York. The Court of Appeals, although conceding that under New York law a demand for arbitration will be ineffective if the claim asserted would have been barred by the Statute of Limitations if made in a court action, nevertheless held that the arbitration of the claim could be had even though the time in which to institute a malpractice action has expired.

The Court reached this conclusion by asserting that the right to arbitrate and the claim of the owner were contractual in nature and that, therefore, the six-year statute applicable to breach of contract claims should apply rather than the three-year statute applicable to malpractice claims. The Court said:

"The right to demand arbitration under the agreement was a contractual one. Thus . . . the demand was timely made within the six-year period of limitation insofar as the arbitration clause was involved . . . The claim in the instant case . . . is one for 'breach of contract' by the architects, 'by reason of defects in design and faulty supervision in the execution of their contract with the claimant.' "

In response to the architects' contention that regardless of the nomenclature of the claim, its essence was one for malpractice rather than breach of contract, and that legal precedent requires the application of the shorter malpractice statute of limitations, the Court stated:

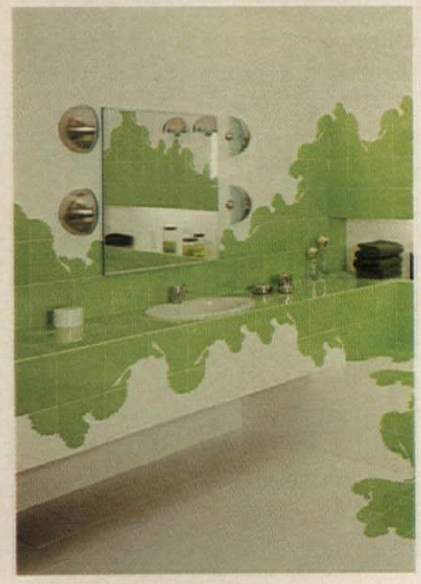
"To be sure, it has been said that the law in this State, in applying the statute of limitations, will look to the 'reality' or the 'essence' of the action and not its form . . . Thus, when the wrong complained of, although arising from a breach of a contractual obligation, essentially consists of a failure to use due care in the performance of that obligation, it has been held that the 'negligence' or 'malpractice,' and not the 'contract,' statute of limitations applies. (See, e. g., Webber *v.* Kerkimer & Mohawk St. R.R. Co., *109 N.Y. 311, etc.) Significantly, many of these cases were decided in the context of causes of action to recover damages for direct or underlying personal injury . . . In any event, whatever its validity today and whatever its relation to larger general principles, the rule of the* Webber *case and those in its wake should not be blanketed to cover arbitration, an area of dispute determination not confined to the forms and procedural channels of the law."*

The Court, in further justification of its conclusion, asserted that the boundary line between disputes in arbitration and in courts of law is that in arbitration, parties submit a complex of facts, not arranged in technical causes of action of law, and that the arbitrators should be free to fashion a remedy appropriate to the wrong, unconfined by formal causes of action. The Court said:

"A complex of facts in legal analysis may present a facet of contract law, or tort law . . . There are legal concerns . . . These are not the concerns or the boundaries of arbitrational dispute determination . . . The distinction between contracts and torts are not contained in the natural order but are the products of faltering legal grammar that men apply to the facts of life in order to make then tractable to verbalized rules. The distinctions, however, are not to be confused with pronouncements from Mt. Sinai."

The decision of the Court of Appeals was not unanimous and a strong dissenting opinion, challenged the conclusions of the majority. In any event, the determination of the Court, although relating to claims in arbitration, may, in the future be extended, under its rationale, to legal actions. This decision appears to enlarge the area of potential architectural liability, and if extended to legal actions, will further erode the architect's position. □

yesterday, today and tomorrow...



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Love among the ruins

Pueblo: Mountain, Village, Dance *by Vincent Scully. New York, Viking Press, 1975, 398 pp., illus., $19.95.*

Reviewed by Yi-Fu Tuan, professor of geography, University of Minnesota, Minneapolis.

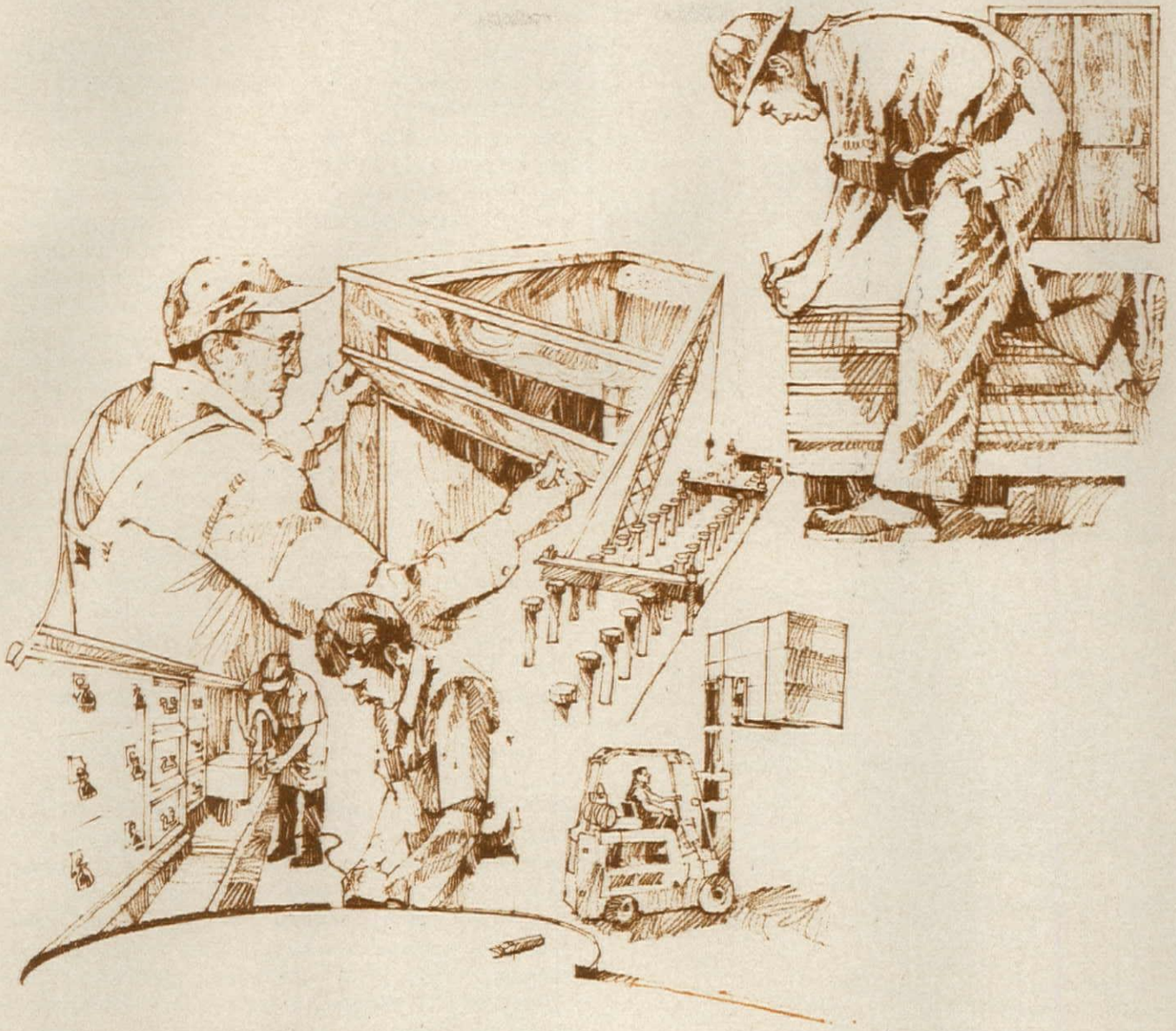
This big book of almost 400 pages and more than 500 pictures is a labor of love and a personal testament. In the preface, art historian Vincent Scully says that he wrote it "in love and admiration for the American Southwest and its people," and also that he could not avoid using the first person pronoun in this work as he could in other works. Superficially the American Southwest would seem to have little in common with Minoan and Classical Greece. For Scully, however, the study of pueblo landscape, architecture, and dance culminates his Greek studies. Ancient rituals from a distant time and civilization are now performed in the pueblos. "The chorus of Dionysos still dances there."

The ancient Greeks are dead. American Indians are very much alive and can presumably interpret their own world for us. But Scully chooses not to probe the Indians; he does not like to ask questions. He is, after all, not a field anthropologist but a humanist. His position is that of a sensitive and imaginative bystander, so full of sympathy for what he sees that he tends to discount the blemishes. The author has read and absorbed the scientific works. He could have given us an academic treatise. Instead he gives us something more exciting—his own interpretations of the scene.

The central theme is this. Indians in the American Southwest are at one with nature. Their religion is to promote life. Harmony with nature is visually manifest in the way pueblo buildings are adapted to the landscape. The plazas are generally oriented to the cardinal directions, and are inflected more strongly north-south where possible, like the Minoan palaces before them. But their main axes will depart from compass points in order to fit in with the landscape and to invoke its forms. Architecture and landscape present visual and rather static harmonies. What the ritual dance, the beat of footsteps, and the choral chant do is to give them a sense of pulsating life. Scully could have produced some grand generalizations concerning the Indian world-view with the help of structuralist analysis. He prefers, however, to take the major pueblos one by one and describe both the setting and the act with such fine, evocative detail that the reader feels he is right there with the author, two lonely figures burdened with excessive Occidental consciousness.

It is tempting to give long quotations. Here is how Scully sees the corn dance at Cochiti. Almost everyone participates. The dance is as much in praise of polis as of the life-

[continued on page 102]



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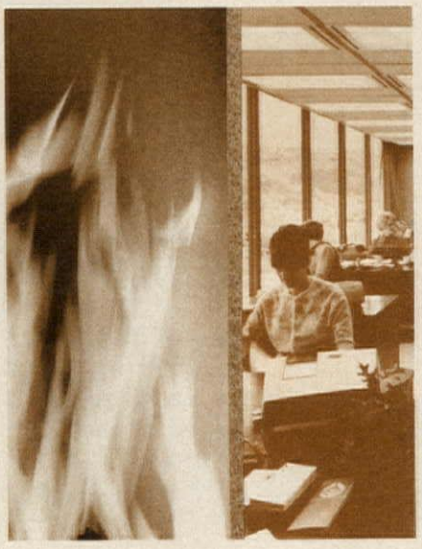

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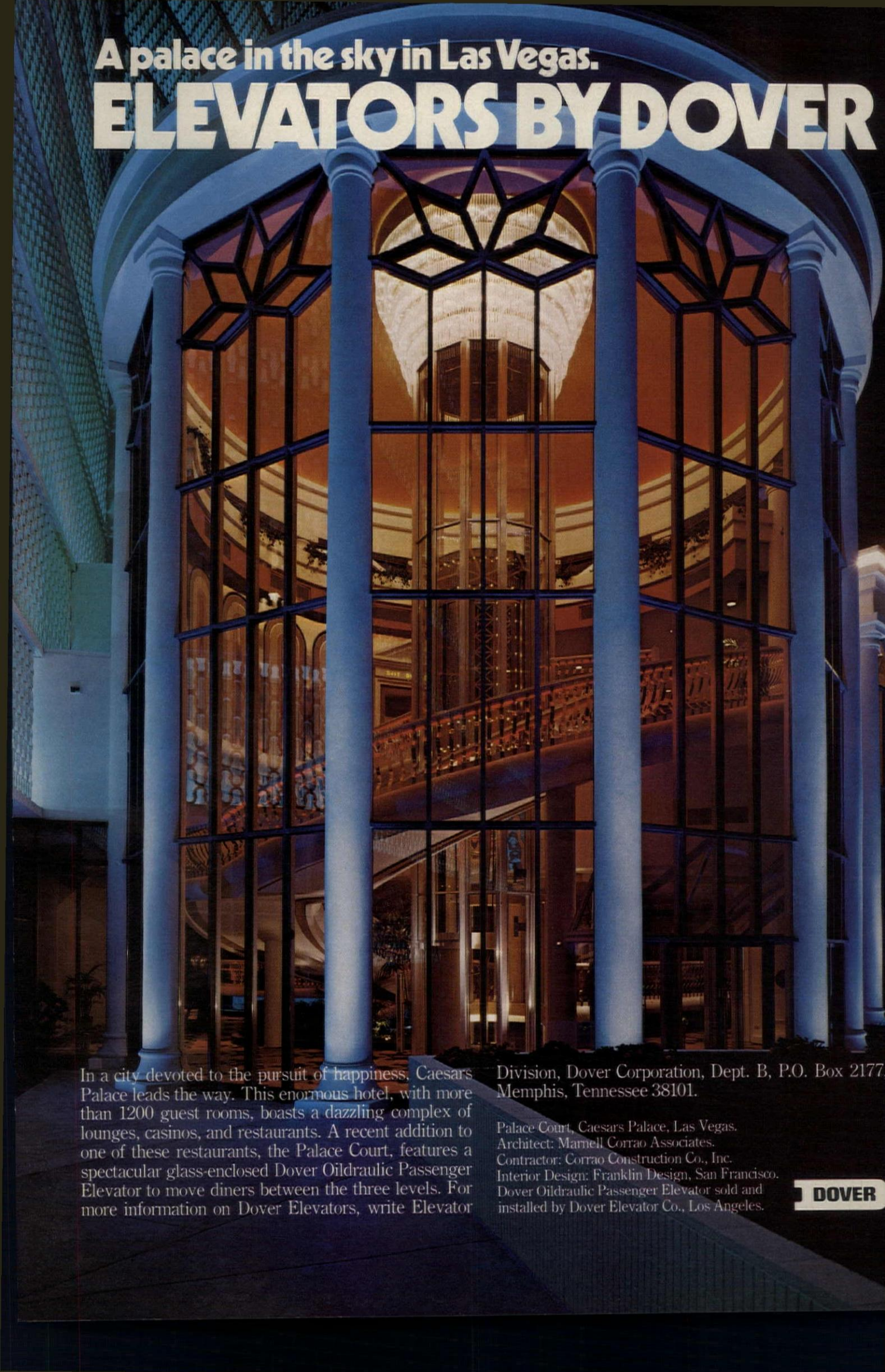
Books continued from page 100

giving forces of nature. "The plaza is never still. First one kiva dances, then the other, coiling around through it in a labyrinthine pattern, their banners passing each other as one group enters and one goes out. Sometimes they overlap. Sometimes . . . they dance together, so that the whole plaza is one sea of evergreen and cloud altars, with drum beat and singing, like an imperial cornfield growing in sun and wind between the houses." Some settings and dances are more somber. Scully sees Santo Domingo's hunting dance of late February as the continent's most searching mystery play, a Greek tragedy. "It was the grandest and most complete of all the animal dances. . . . The long plaza was crowned with its long cornices of watchers on the roofs in rich mulberry reds, purples, blues, and greens. The earth color of the adobe is thus set off and the architectural frame is finally completed as it is meant to be. Below, in the dance, the mood is Aeschylean. What occurs is truly awful. The proud kings are brought low, but worse than this, they betray each other and try to flee like the poor antelope, and in the end, weapons and all, are butchered like the others and carried as meat away."

In Scully's earlier study of the Aegean civilization he notes how power had moved from the earth, from topographical hollows and landscape features, to the man-made temple and the sky gods. In the American Southwest, however, the story seems to have been reversed. It is the prehistoric Great Houses of Chaco Canyon that express human control and power. They are symmetrical, abstractly shaped, and heroic in form. By contrast, the historical pueblos are loosely organized and seek to adjust to landscape forms. Scully describes San Juan as "coming apart." The solids "disintegrate; the pueblo suburbanizes." The architectural evidence suggests defeat, the loss of confidence, and a return to the reassuring hollows of mother earth. White men have encountered a civilization that has been in steady decline over the centuries. This possibility Scully carefully avoids. He eschews adverse criticism. The book, after all, is written in "love and admiration." One consequence is that, despite the author's eye for detail and expressive language, the Indian people and their world do not seem (to me) quite real. The book is itself a celebration, a festive corn dance rather than a buffalo ritual drama with dark Aeschylean undertones.

The white man, in the course of time, has done enormous harm to the world—but also much good. The Chinese never wrote a comprehensive history of their achievements in science and technology. It takes an Englishman, Joseph Needham, to show the Chinese the true sweep of their intelligence. The Indians never bothered to articulate their world-view so that its depth and scope—its lessons for humankind—are fully revealed. It takes a white man and a Yale professor to document, in photographs and text, the quality of a people and their ancient culture. When we throw rose petals at others some of the scent is bound to stick on ourselves. By praising the Indians with such sensitivity, Vincent Scully himself emerges as a most appealing person, and so the credit passes on eventually to the Western scholarly tradition which has made the humane perspective and the writing of the book possible. □



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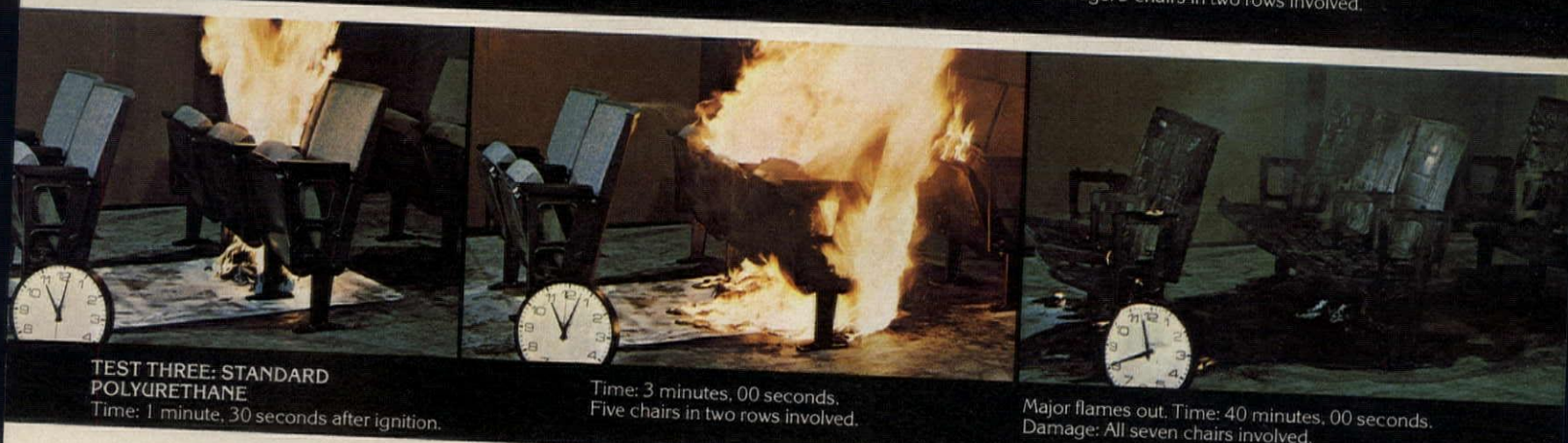
Time: 3 minutes, 00 seconds.
Center chair involved.

Major flames out. Time: 6 minutes, 00 seconds.
Damage: 1 chair involved, fabric melting and smoldering on two adjoining chairs.

TEST TWO: HR POLYURETHANE
containing flame retardants.
Time: 1 minute, 30 seconds after ignition.

Time: 3 minutes, 00 seconds.
Five chairs in two rows involved.

Major flames out. Time: 29 minutes, 30 seconds.
Damage: 5 chairs in two rows involved.



TEST THREE: STANDARD POLYURETHANE
Time: 1 minute, 30 seconds after ignition.

Time: 3 minutes, 00 seconds.
Five chairs in two rows involved.

Major flames out. Time: 40 minutes, 00 seconds.
Damage: All seven chairs involved.

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As the photographs above show, there was considerably less flame damage among the chairs cushioned with deep foam of Du Pont Neoprene than among those cushioned with other common cushioning foams.

The Test Chairs

Test #1 used cushions of Neoprene deep foam. Test #2 used cushions of high resiliency (HR) polyurethane foam containing flame retardants. The chairs in these two tests were otherwise identical, with upholstery fabric and plastic seat backs containing flame retardants.

Test #3 was conducted with a standard type polyurethane cushioning foam in chairs with untreated components.

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During each test, light obscuration by smoke was measured by photo cells six feet from the floor. Data gathered show the chairs cushioned with Neoprene produced less total smoke because only one chair was consumed by the fire.

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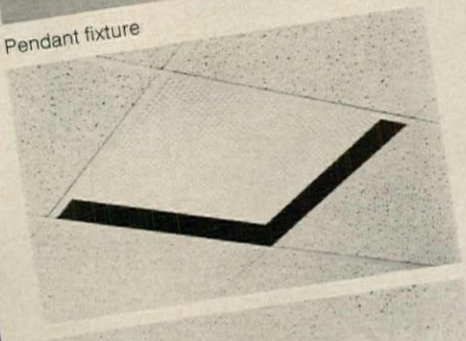
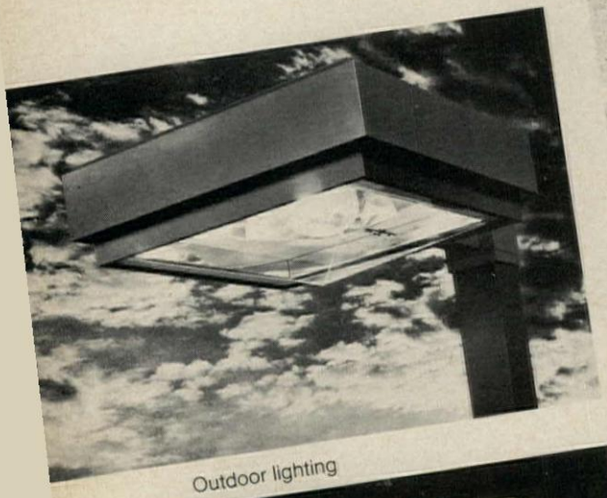
Products and literature

Pendant fixture



Multilume HID luminaires

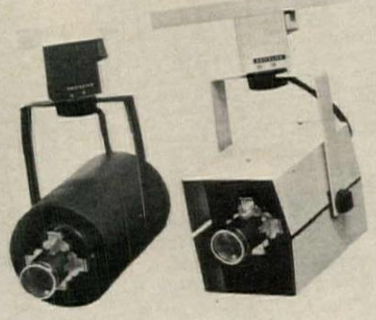


Outdoor lighting

Powdered soap dispenser

Powdered soap dispensers. Stainless steel, recessed or surface-mounted models can be attached to wall or counter. U.S. Borax.
Circle 100 on reader service card

Outdoor lighting. Compact cut-off luminaires are designed to accept a large variety of HID ballasts and lamps. Visual cut-off angle is 75 degrees. Optical system allows field directional orientation of illumination pattern forward or to the right or left of the luminaire. Injection molded pyramidal clear acrylic enclosure resists vandal attacks, provides low brightness delineating glow. Choice of black, bronze, and gray polyurethane finishes. Prescolite.
Circle 101 on reader service card



Framing projectors

Pendant fixture. Made of heavy gauge spun aluminum, the cylinder shape flares to a 14 in. dia. at the bottom and is 13¼ in. deep. Matte white inner surface provides reflectance for a 300 w lamp. Outer finishes are polished chrome or brass, white, black, satin bronze, and "wet" red. Three pendant mountings are available. Habitat.
Circle 102 on reader service card

Multilume HID luminaires for commercial interiors are compact, enclosed, 2′x2′ luminaires that use mercury, metal halide, or high-pressure sodium lamps. They are available for recessed or suspended ceilings, and surface or pendant mounting. Options include choice of low brightness Refractive Grid lens, cone prism lens, or dropped pyramidal lens with an uplight component; lay-in or positive-latch door-framed lenses; choice of frame trims and colors; 2-in. deep black multi-groove baffles; tempered glass; wire-guard; "Hi-Lo" circuit for switching 400 w mercury to 275W. Features a durable polyester powder-coated finish that resists chipping, cracking, and discoloration. Holophane.
Circle 103 on reader service card

Ultron nylon carpet fiber. Its polymer system with a conductive element added to the yarn bundle enables Ultron to keep static build-up to a minimum, states maker, who further says that tests indicate that carpets with 100 percent Ultron nylon pile, when constructed in accordance with company's recommendations, will effectively keep static build-up well below the 3000 volt human shock level, at a relative humidity as low as 20 percent. It is also abrasion resistant and has excellent soil-hiding ability. Monsanto Textiles Company.
Circle 104 on reader service card

Fluomeric. A self-ballasted lamp that screws into any standard incandescent socket, is said to have the color quality and long life of fluorescent and the intensity of mercury vapor. Supplying up to 20,000 user hours, it is said to be ideal for medium bay, high bay, or pole lighting; withstands rain, sleet, and snow. It is available in white and clear. Reflector power-lite has specular aluminized finish with high-temperature phosphor coating on interior so that bulb requires no luminaire. The Safe-T-Vapor is a mercury lamp that contains Tungsten wire which quickly extinguishes the arc tube if bulb is broken, eliminating the possible emission of harmful ultraviolet radiation. Duro-Test Corporation.
Circle 105 on reader service card

Framing projector casts a sharply edged beam of light on any square or rectangular surface, thereby illuminating the total area without any light spill, states maker. Light is controlled by four adjustable shutters and an advanced optical system. Unit uses a high-intensity Tungsten Halogen lamp. Available in four styles varying in lamp wattage and fixture design. Finishes are black, white, and gray. Swivelier Company, Inc.
Circle 106 on reader service card

HID downlights. Recessed OPTI-LUME series furnishes optimum luminosity for low, medium, and high ceilings, states maker. Designed for commercial installation, the group of mercury and metal halide recessed downlights are in 175, 250, and 400 watt sizes. The series is being offered in minimum trim and for 2′x2′ grid ceilings. Conoid (inside finish) is available in bronze, black, or Alzak finish. The Rambusch Company.
Circle 107 on reader service card

Correction: Multables. In the August issue of P/A, p. 83, Circle No. 104, we referred erroneously to Multiples as new work surface units. It should have said "Multables" which is a registered tradename of Hauserman, Inc.

[continued on page 108]

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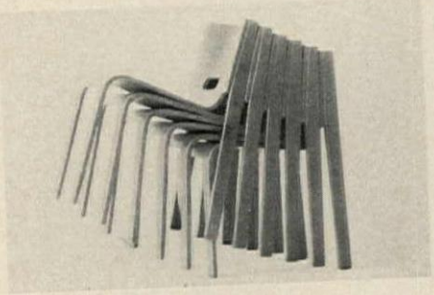
Circle **No. 327**, on Reader Service Card

Low on the totem pole.

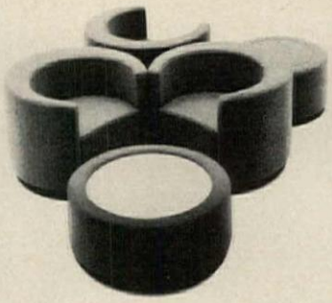
Products continued from page 106

High pressure sodium lamps. 150w, 55 volt Ceramalux lamps have been added to company's lamp line. They burn in any position which eliminates the need to stock both base-up and base-down types. Westinghouse.
Circle 108 on reader service card

dining chairs



stacking chairs



Circle Seating Group. Each piece features molded foam over a tubular steel and plywood inner frame, covered in choice of wool or polyester in a wide range of colors. Optional concealed grouping devices hold clusters in place, disconnect easily. Table, 34½ in. in diameter, has upholstered sides and portion of top with insert table surface in choice of white, black, or walnut plastic laminates. American Seating Company.
Circle 109 on reader service card

Dining chair. The frame is ash in natural or stained finish. Seat is a woven cord or is upholstered in any of the company's leathers, suedes, fabrics, or vinyls. Stendig Inc.
Circle 110 on reader service card

Stacking chair is molded of plywood and is available in natural birch, and red, blue, orange, or green stains. Ambiant Systems Limited.
Circle 111 on reader service card

Tennis court lighting. Low-mounted luminaires with metal halide lamps are said to be more efficient than incandescent or fluorescent lamps and use less energy. Lamps are expected to last three years under tournament or heavy recreational use. Chevron Asphalt Company.
Circle 112 on reader service card

Industrial lighting fixtures for High Pressure Sodium and Metal Halide lamps are said to give more light for each watt of electrical energy consumed, thus requiring fewer fixtures to obtain desired lighting levels. Complete line includes single and twin, open and enclosed units in varied reflector sizes for broad indoor application. The Miller Company.
Circle 113 on reader service card

Flood lights. "Trim-Flood" is a complete lamp, fixture, and ballast package suitable for wall, pole, or ground mounting. Where weight or wind load is critical, the ballast may be remotely mounted. 400 w high pressure sodium lamp is available in 120, 240, 277, or 480 volt design. Trimblehouse Corporation.
Circle 114 on reader service card

Stainless steel fibers have been developed for use in concrete where applications demand a high degree of rust and corrosion resistance, states maker. Fibers are available in standard lengths of 1.3 in. and .75 in., special lengths on order. Ribbon Technology Corporation.
Circle 115 on reader service card
[continued on page 111]

Jennison-Wright Kreolite Wood Block Floors are adding new life to all sorts of establishments. The naturally beautiful effects of wood, and particularly end grain wood, have captured the imagination of eclectic owners, architects and designers. Though end grain wood blocks were originally created for industrial floors and have served that purpose long and well (for over 60 years) our new process using a clear, transparent preservative has opened up many new fields for this handsome product. (Developers of shopping centers, book stores, restaurants, etc., please take notice) It not only enhances its environment with mellow warmth and charm, but it also offers extreme durability and relaxing "softness" for tired feet—and jangled nerves. This is truly a luxury floor that deserves the acclaim it is receiving. We'll welcome your expression of interest. Please write us .

blocks blend beautifully at Abercrombie and Fitch, too!

The Abercrombie & Fitch Store, Oak Brook Plaza in Oak Brook, Illinois

The Jennison-Wright Corporation, P.O. Box 691, Toledo, Ohio 43694 . . . you'll find us in Sweet's Catalog and in the Yellow Pages

Lincoln Park School, Somerville, Mass.
Architect: The Architects Collaborative, Inc., Cambridge, Mass.
Integrated Ceiling Contractor: The Cheviot Corporation, Needham, Mass.

Integrated Ceiling Systems from Johns-Manville. Ceilings that work as beautifully as they look.

J-M integrated ceilings are designed for appearance and engineered for function. So you're assured of an attractive system that economically combines lighting, sound control and air handling.

New modular grid suspension system.

This year we're introducing a structurally superior grid suspension system with mitered flanges and a thru-regress at all intersections. It looks good and it's versatile, too. Air boots go anywhere on any runner and wiring is easily dropped through.

Single source responsibility.

Plus, you get the advantages of single source responsibility. The acoustical panels, Holophane® lighting fixtures, air handling equipment and suspension system are all supplied and backed by Johns-Manville.

Call us now.

Learn more by calling your local J-M office, consulting Sweet's, or write: Johns-Manville Sales Corporation, Holophane Division, Dept. PA-10, P.O. Box 5108, Denver, Colorado 80217.

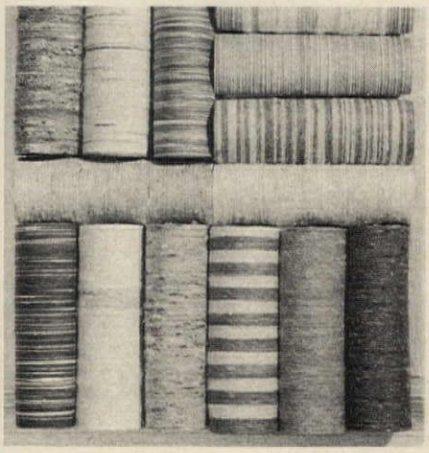
Johns-Manville

Circle No. 366, on Reader Service Card

Products continued from page 108

Outdoor/Indoor telephone booth. Compact unit is constructed of aluminum with bronze finish. The perforated aluminum acoustical back panels and the open bar shelf are anodized aluminum. Tempered glass side panels are bronze tinted. The four-way lighted signing and interior fluorescent lighting are standard. Exterior colors of anodized aluminum or black are also available. Booth projects only 13 in. from the wall, is 21¼ in. wide and 34⅜ in. high. Acoustics Development Corporation.
Circle 116 on reader service card

Wallcoverings feature Belgian linen yarns applied to vinyl. Twisted and bulky textures are created from spun yarns in all shades of natural, brown, gray, and white. Each of the 18 patterns is designed for horizontal and/or vertical applications. Collection can be flameproofed upon request. Belgian Linen Association.
Circle 117 on reader service card



wallcoverings

Stucorock. A permanent exterior wall coating that is a compound of a water clear non-yellowing flexible plastic base with chalk resistant colors and fillers. Stucorock adheres to masonry, concrete, asbestos board, wood, aluminum, and galvanized steel, including primed finishes and certain plastics. It is complete and does not need additives. In addition, it can also be used as a ready-mixed, trowelable joint and seam filler. Coating Laboratories.
Circle 118 on reader service card

Literature

HID Lighting. Four-color brochure describes and illustrates various types of luminaires for specific purposes, includes photometric data and technical data. Markstone Mfg. Co.
Circle 200 on reader service card

Dimming and automatic level/energy control for HID lamps. Equipment controls 250, 400, and 1000 watt metal halide and high-pressure sodium lamps. By adding a photocell sensor and suitable electronic control circuitry, dimming can also be extended to Automatic Energy Control (AEC) operation. A brochure explains the principles and gives typical savings made possible. Wide-Lite Corp.
Circle 201 on reader service card
[continued on page 112]

Literature continued from page 111

Environmental lighting. The wide-throw cut-off luminaire is specifically designed to provide broad illumination at low mounting heights (8′ to 16′), while controlling glare through light cut-off at high angles. Brochure gives specifications. Photometrics, and quick reference charts for area and roadway lighting. Kim Lighting, Inc.
Circle 202 on reader service card

High-Pressure Sodium line of lighting system. Literature includes 11 two-page data sheets containing specifications and options available on building mounted and site lighting products. Brochures describe the no-glare systems, give photometric data, and show dimensional drawings and photographs. Moldcast Lighting Inc.
Circle 203 on reader service card

'Efficiency is the Message.' A brochure that points up the energy and cost savings possible with the low-pressure sodium "SOX" light source. It is replete with illustrations, dimensions, photometric and technical data. North American Philips Lighting Corp.
Circle 204 on reader service card

'There's more to lighting than meets the eye.' Brochure contains recommended illumination levels for wide range of outdoor and indoor general areas and for sports. It also contains chart giving savings and improved values that are possible if you convert to more efficient lamps, and contains questions and answers for rating your own lighting system.

Magnuform. Brochure illustrates features of this contemporary outdoor light source, gives electric data in chart form, photometric charts, and color guide. Harvey Hubbell Inc.
Circle 205 on reader service card

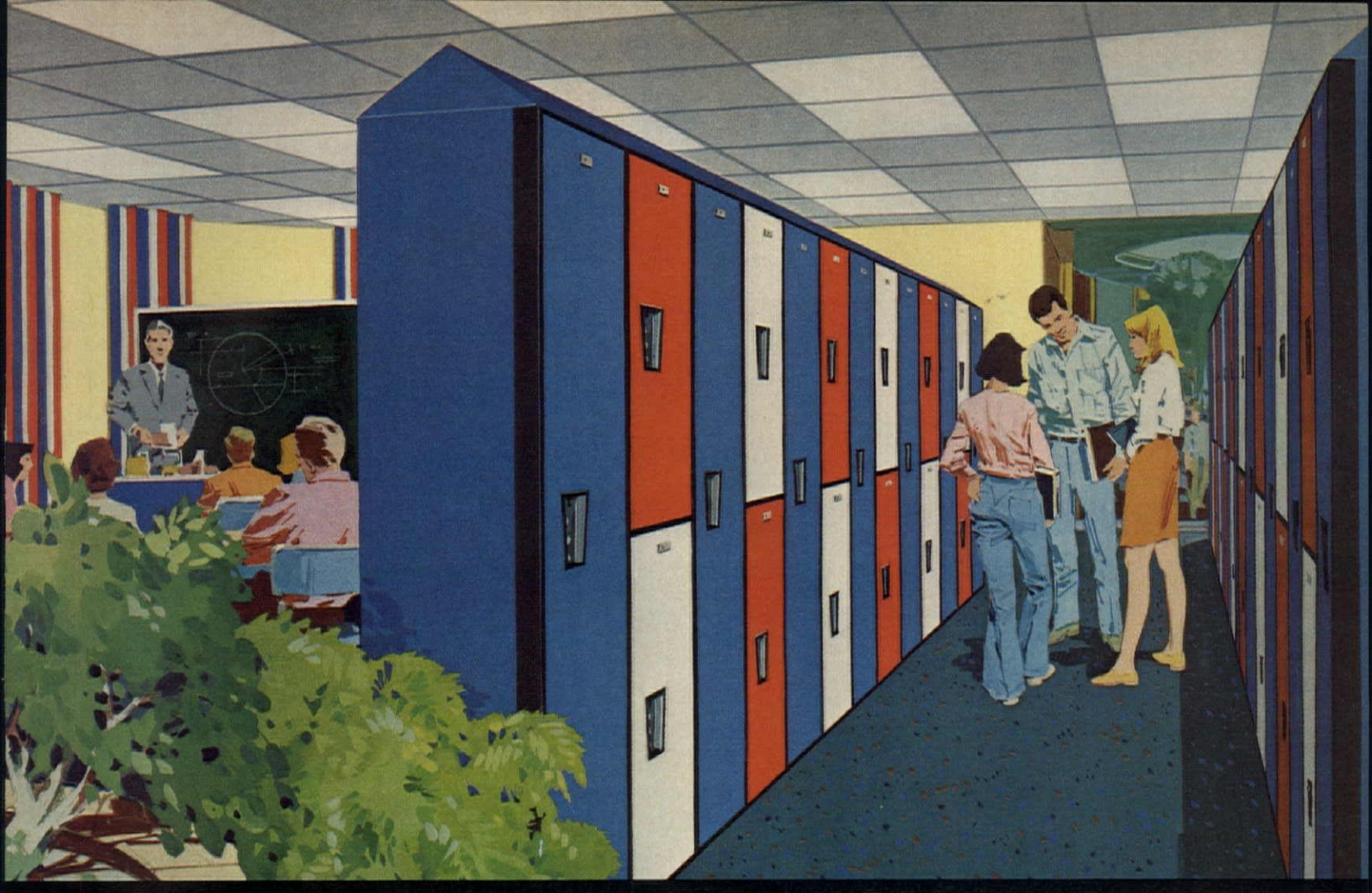
Luminaires. Three brochures present three types of units. The RSL series are cylindrical units which offer a wide choice of HID lamp-type/wattage combinations, and a unique optical system with reflector components that can be factory or field adjusted to produce a variety of light distributions. The ASL luminaires offer controlled-cutoff lighting and a wide choice of HID lamp-type/wattage combinations and light distributions. Units in both series are constructed of a one-piece extruded aluminum side and sheet aluminum top with clear, flat tempered glass lens. The CLX Precise Light is designed for low-energy-using 400 or 1000 watt high pressure sodium lamps, but can also use metal halide HID lamps of similar wattage. It is optically engineered to cut off light at a designated angle to eliminate wasted light and glare. Crouse-Hinds Company.
Circle 206 on reader service card

Free-standing luminaires. Harbor Light® is a task oriented luminaire which is self-contained and fully portable. Glare-free illumination is achieved through reflection from ceiling, floor, and walls. Units are available in hand-rubbed oak or walnut as well as in colored enamel metal cases. "HB Office Landscape Presentation Package" includes technical and application information, and foot-candle calculator. Harbor Universal, Inc.
Circle 207 on reader service card

Explosionproof lighting. Mercury vapor and incandescent explosionproof lighting is described in 20-page catalog. Fixtures for 100, 175, and 250 w mercury vapor and up to 300 w incandescent are featured in bracket, ceiling, and pendant mountings. Hazardous locations design information and UL test data is included; also complete cross reference chart for all equivalent lighting equipment in this field. RAB Electric Manufacturing Co., Inc.
Circle 208 on reader service card

Synthetic rubber floor covering. Said to be non-slip, rugged, anti-static, and fire and chemical resistant, the flooring comes in wide choice of colors. Literature is available. Wesphere Inc.
Circle 209 on reader service card

Sidings. Design ideas, new approaches to siding applications, special detailing, and other finishing touches are included in 1976 brochure. Both Ruf-Sawn redwood plywood and Ruf-Sawn 316 overlaid plywood are described in the 12-page full-color brochure. Simpson Timber Co.
Circle 210 on reader service card
[continued on page 114]



Lockers have been put into walls and halls for 70 years.

Now you can make walls and halls out of lockers.

New Flush-Front, Low Decibel

MONDRIAN

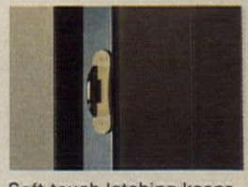
LOCKERS

First to combine everything you want in lockers, everything you want in walls. MONDRIAN* Lockers make a wall of lockers a work of art. And soft-touch latching with air-cushioned rubber bumpers combine with sound-deadening panel fillers to make the new MONDRIAN Lockers twice-as-quiet — ideal for use as area divider wall. In five styles, five depths, two heights, 19 colors. Send coupon for complete product information.

*MONDRIAN is a trademark of Republic Steel Corporation.

Circle No. 339, on Reader Service Card

Verti-Vent ventilates without exterior louvers.



Soft-touch latching keeps MONDRIAN Lockers twice-as-quiet. Rattleproof.

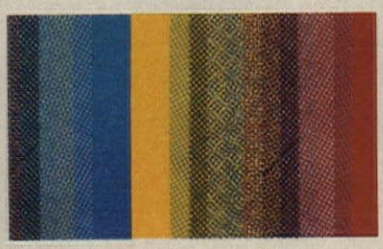
Cross frame members are stronger than kids. Welded for rigidity.

Recessed latching and locking is safer, looks trimmer.

Republicsteel

Industrial Products

FREE when you send the coupon! Receive a full-color framing-quality reproduction of "Mondrian Series RS," an original painting by world-famous artist John Pearson.



REPUBLIC STEEL CORPORATION
Industrial Products Division, Dept. PA
1038 Belden Avenue NE
Canton OH 44705

- ☐ *Please send information on flush-front, low decibel MONDRIAN Lockers.*
- ☐ *Please have a salesman contact me.*
- ☐ *Send "MONDRIAN SERIES RS" Reprint.*

Name_____

Address_____

City_____

State_____ Zip_____

Literature continued from page 112

'Spectrums of Light' catalog illustrates, describes, and gives technical data on recessed fluorescent troffers, surface, pendant, and wall-mounted fluorescents, commercial HID, and incandescent fixtures, outdoor and area lighting, industrial lighting and environmental ceiling system. Guth.
Circle 211 on reader service card

'Lighting Fixtures and Posts.' Brochure illustrates both traditional and contemporary street lights and posts to blend with either contemporary or historical surroundings. Fixtures can accommodate high-pressure sodium vapor, low pressure gas, incandescent and HID lamps. Welsbach Lighting Products Company, Inc.
Circle 212 on reader service card

Floodlights. High-intensity floodlights are shown in pamphlet which also includes beam data, specifications, and features. Mercury vapor, metal halide high pressure sodium series are illustrated, photometric data given in second pamphlet. ITT Landmark Lighting.
Circle 213 on reader service card

Metal halide Lamps. Performance characteristics of this type of lamp manufactured by three different makers are compared in an easy-to-read format. GTE Sylvania.
Circle 214 on reader service card

'Lighting is more than footcandles.' A guide to commercial indoor HID lighting design which contains charts, graphs, and tables covering all necessary data for the proper selection of lamps and fixtures. It also includes a number of case studies. Widelite.
Circle 215 on reader service card

Professional audio systems supply background music, electronic tower chimes, and carillons. Company produces several background music systems to fit professional applications. Descriptive literature is available from Tape-Athon Music, Inc.
Circle 216 on reader service card

'Carpet Accents' is the name of a 36-page four-color design workbook that is available to architects and interior designers to assist them and their clients in the design of custom carpeting. Illustrations include overall designs, perimeter treatments, corner motifs, and isolated medallions. Design suggestions are derived from authentic ethnic, period, and contemporary sources. Berven of California.
Circle 217 on reader service card

Laminated beams and laminated wood decking. Products are described in separate color brochures which include load conversion charts, application information, heat loss coefficient data, properties, and suggested specifications. Boise Cascade.
Circle 218 on reader service card

'Phase II Lighting for Ecology.' Brochure illustrates EKG series luminaires that have been designed to prevent light spillage. It also contains photometric charts and specifications. Kim Lighting, Inc.
Circle 219 on reader service card

Pressure treated wood. Full-color brochure and technical data sheets describe the characteristics, qualities, and applications of wood that is pressure treated. Literature will serve as an aid to those interested in this type of product to better understand the different types of preservatives and their qualities. Osmose Wood Preserving Co. of America, Inc.
Circle 220 on reader service card

'Aluminum Roofing & Building Products.' A color brochure that illustrates these products in use, gives suggested specifications, and assembly details. Kaiser Aluminum Building Products.
Circle 221 on reader service card

Clay roofing tile. Literature illustrates the tile in use, gives specifications, and method of application for both natural red clay and color glazed oriental style tile. San Vallé Tile Kilns.
Circle 222 on reader service card

Ice rink accessories. Brochure contains complete line of equipment, accessories, and supplies for installation and maintenance of ice rinks. Holmsten Ice Rinks, Inc.
Circle 223 on reader service card

The more you have to put up, the less you should have to put up with.

Monumental ceilings can cause monumental headaches.

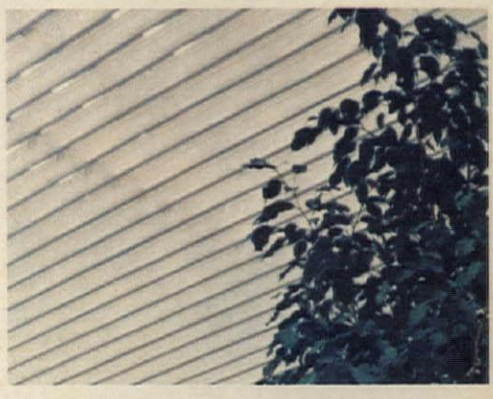
So many things have to work together just right: the ceiling panels, the lighting fixtures, the air diffusers, the acoustical insulation, the subcontractors. Especially the subcontractors.

When everything comes from different sources, the chance for monumental foul-ups goes up.

Enter the Alcan Planar® Ceiling System. A total system. Complete and uncomplicated. Because you can specify the panels, the fixtures, everything, from one source. From Alcan. You can even specify polywrapped acoustical blankets for pools or food processing plants.

Everything is worked into our ceiling system, so you'll have fewer limitations to work around. Just light-weight, durable, maintenance-free Alcan aluminum that gives you the freedom to execute a monumental idea. Beautifully. And the silicon polyester finish of the Alcan Planar Ceiling lets you carry a total design concept through to exterior soffit treatments.

The Plenum Mask is a unique concept in ceiling design that provides effective screening of the mechanical, wiring and piping in the plenum area. It does not achieve full closure and therefore requires no extra costs for special air distribution diffuser, lighting, or sprinkler fixtures. The Plenum Mask achieves a crisp, lineal appearance that produces a pleasing, monumental effect.



If you want less to put up with, you ought to look at our Planar Ceiling System. Write for details to Alcan Aluminum. Dept. IA. Box 511. Warren, Ohio 44482. Or check specification information in *Sweet's Catalogue*, Section 13.5.

Alcan Building Products
Division of Alcan Aluminum Corporation

ALCAN

Circle No. 306, on Reader Service Card

Notices

Appointments

Barbara Gray has been named a vice president of William L. Pereira Associates, Los Angeles, Calif.

Jeffrey Brown has been appointed head of the architectural design department for Kirk, Voich & Gist Architect-Engineer, Fort Worth, Tex.

Frederick Johnson has joined Design Associates, Chicago, as vice president for architecture.

Robert C. Armbruster has been named to the Board of Directors of The Wold Association, Architects, St. Paul, Minn. **David Kroos** is a new associate of the firm.

Walter Schieron, AIA has joined Carl N. Swenson Co., Inc., San Jose, Calif., as principal architect.

Robert F. Krohn has been appointed president and chief operating officer of Henningson, Durham & Richardson, Omaha, Neb.

David Sierens has been appointed vice president of operations and administration for Daroff Design, Inc., Philadelphia.

Linn Smith, FAIA has joined Ellis/Naeyaert Associates, Inc., Detroit, Mich., as vice president, architecture.

Charles G. Kanner, AIA has been named senior vice president, director of planning and design for Charles Luckman Associates, Los Angeles.

Charles D. Smith has been elected to the Board of Directors, and **Gil Negendank** was named an associate of McCarty Bullock Holsaple Architects, Inc., Knoxville, Tenn.

Jess Berkman has joined Office Design Associates, Inc., New York City, as vice president in charge of administration and production.

John Terry Cox, Willard M. Scribner, and **Robert Winthrop** are new associates of Glave Newman Anderson & Associates, Inc., Architects and Planners, Richmond, Va.

Frank W. Munzer has been named administrative partner of The Eggers Partnership, Architects and Planners of New York City. **C. William Eilers, Jr.** has been appointed associate.
[continued on page 118]

Fidelity

from DESIGN GROUP I

Leathers and woodgrains in Design Group I feature patterns in painstaking detail. Look like the real thing. It's the fashionable way to get the expensively luxurious look — on a realistic budget.

We'd like you to take a look at the entire Design Group I line — a dazzling illustration of Wilson Art's leadership. In addition to leathers and woodgrains, you'll see solid colors, marbles, slates and patterns. Design Group I—the most exciting collection of laminated plastic from 1976's design leader, Wilson Art.

Contact your Wilson Art representative. You'll like what you see.

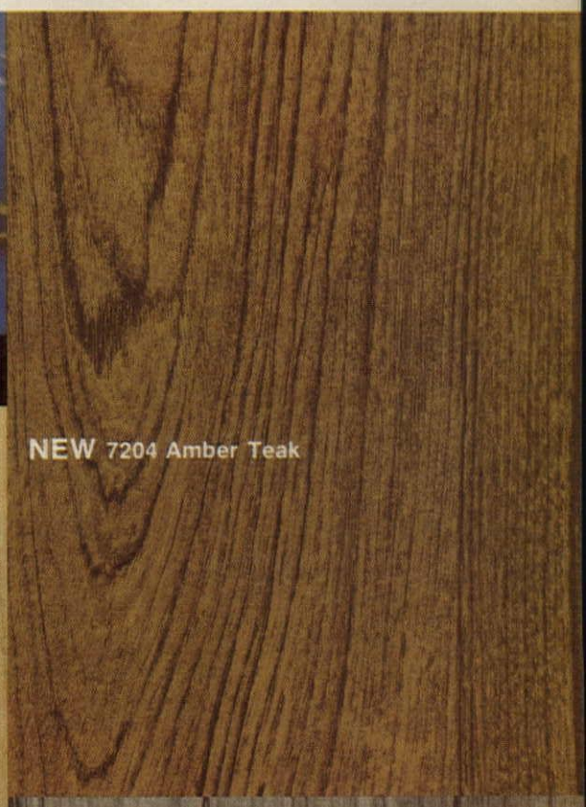
Circle No. 347, on Reader Service Card

Tomorrow's design innovations today

WILSON ART™

WILSON ART BRAND LAMINATED PLASTIC

Wilson Art — manufacturers of Wilson Art high-pressure laminated plastics — Chem-Surf, Tuf-Surf, Dor-Surf, Metallic Laminates, Wilsonwall and adhesives.

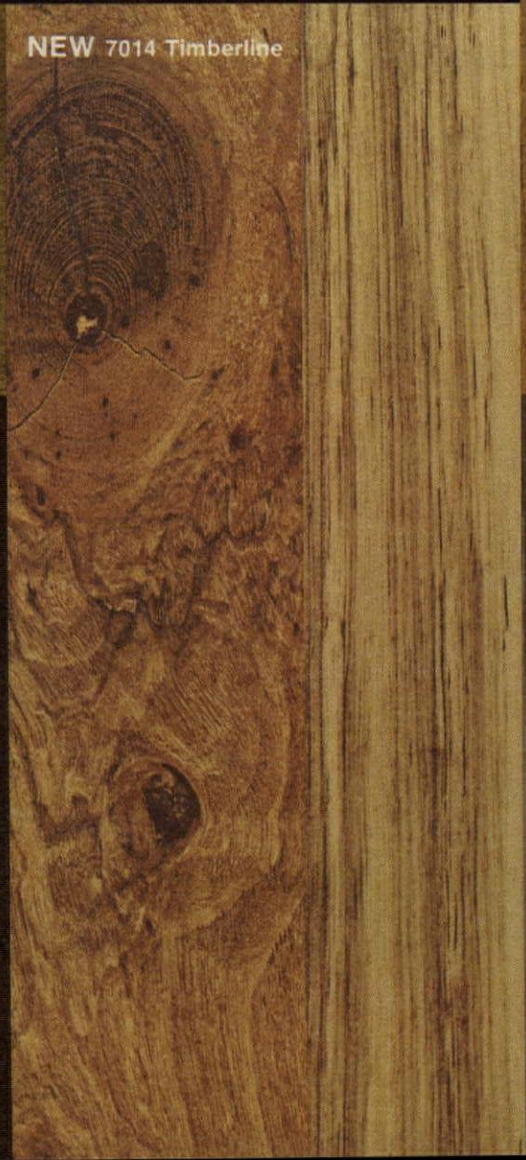


2931A Brown Leather

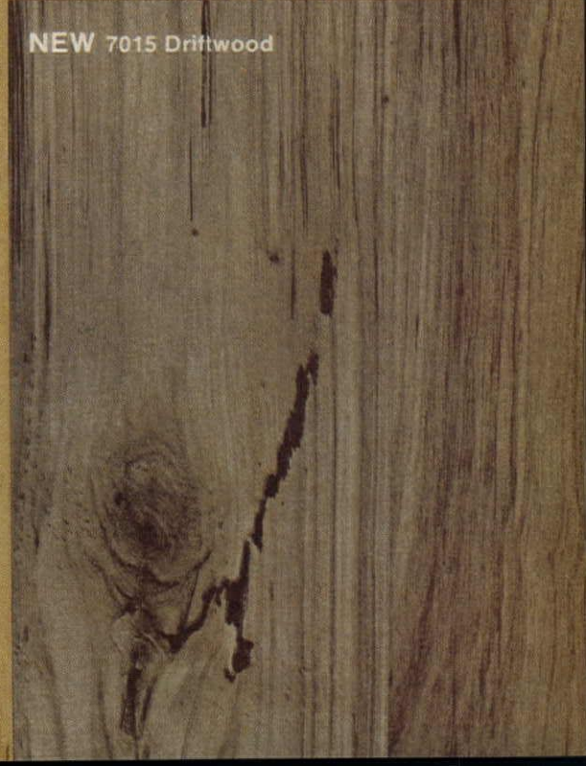
NEW 7014 Timberline

NEW 7204 Amber Teak

2934T Spanish Leather



NEW 7015 Driftwood



RWP

WILSON ART
RALPH WILSON PLASTICS CO.
DART INDUSTRIES INC

Notices continued from page 116

C.A. Carlson, AIA has joined the San Francisco regional office of Hellmuth, Obata & Kassabaum, Inc.

James J. Ewers and **John C. Terry** have been named associates of J.N. Pease Associates, Architects, Engineers and Planners, Charlotte, N.C.

Charles M. Toner, Jr., AIA has been elected vice president of Schwab & Twitty Architects, Inc., West Palm Beach, Fla.

Alan Gallion, AIA has joined Welton Becket Associates as director of interior design in the Los Angeles office.

Philip A. Nicholas, AIA has joined Albert Kahn Associates, Inc., Architects and Engineers of Detroit, Mich. as manager of marketing.

New addresses

Linn Forrest Architects AIA, 800 Glacier Ave., Juneau, Alaska 99801.

Design Associates Incorporated, 180 N. Michigan Ave., Chicago, Ill.

Russell Gibson von Dohlen Inc., Avon Park North, Avon, Conn. 06001.

Hutton + Rostron, Architects, 213 Washington St., Gloucester, Mass.

New firms

Michael R. Goldasich and William Derek Howard have formed **Goldasich-Howard, Architects and Planners,** 525 W. Jefferson St., Springfield, Ill. 62702.

Kenneth G. Ebert, Architect, has established **Design Alternatives,** 217 S. Wind, Manhattan, Kan. 66502.

Noel S. Musial and James R. Guerra have formed **Musial/Guerra AIA, Architects-Planners,** 125 Broad St., Elizabeth, N.J. 07201.

Leslie E. Formell and James I. Lammers have established **Centrum Architects Inc.,** 300 Clifton Ave., Minneapolis, Minn. 55403.

Joseph Griggs, Steven Lee, Bill Ruff, and Stewart Ankrom have formed **Griggs-Lee-Ruff, Architects,** Portland, Ore.

Jack K. Bailey, Jr., AIA, Philip E. Vrooman, AIA, and Francis J.P. Allégret, AIA have established **Bailey Vrooman, Allégret,** Atlanta, Ga.

Harry L. Cummings, AIA, CSI and Gerald R. Schlatter, AIA, AIP have established **Cummings/Schlatter Associates,** 220 First St., Kirkland, Wash.

[continued on page 120]

Even the toughest customers are sold on vinyl building products.

That's because building products of BFG Geon® vinyl are not only beautiful, they also live a long, virtually care-free life.

They won't warp, rot, peel or absorb moisture.

Which means vinyl gutters and downspouts don't rust or corrode. Vinyl shutters, siding and soffits won't need painting. Vinyl trim, baseboards and flooring are attractive, yet durable.

Products made with Geon vinyl can provide year 'round comfort, too.

Vinyl siding helps to insulate. Vinyl clad windows and vinyl weather stripping fit snugly to do a better job of preventing heat loss and minimizing condensation.

Vinyl products are easy to install.

But most of all, vinyl in building products gives homebuyers more good reasons to buy. And you won't find a better reason than that.

Not in a dog's age.

For information about building products made with Geon vinyl, write: B.F.Goodrich Chemical Company, Dept. P-2, 6100 Oak Tree Boulevard, Cleveland, Ohio 44131.

B.F.Goodrich B.F. Goodrich Chemical Company

Circle No. 364, on Reader Service Card

Notices continued from page 118

Organizational changes

Smith, Hinchman & Grylls Associates Inc., Detroit, has formed a Value Management Division at its new Washington, D.C. office, directed by Alphonse J. Dell'Isola, PE.

Sasaki Associates, Inc. has opened an office at 800 Douglas Entrance, Coral Gables, Fla. 33134. The office is directed by Richard F. Galehouse and managed by William J. Anglin.

James McGranahan Associates, Tacoma, Wash., is the new name of the firm formerly known as James R. McGranahan, AIA.

Loebl Schlossman & Hackl is the new name for Loebl Schlossman Dart & Hackl, architects and engineers of Chicago.

Cimini & Meric & Associates, Inc., New Orleans, La., is now Cimini Meric Burns Counce, Inc., Architects Engineers Planners.

Adrian Wilson Associates of Los Angeles has formed a joint venture, KAWA, with the Kaki organization of Saudi Arabia to provide architectural, engineering and planning services in Saudi Arabia and Egypt.

C. Randolph Wedding, AIA of St. Petersburg, Fla. and Allott & Lomax, consulting engineers of Manchester, England, have formed Wedding/Allott & Lomax, a professional association headquartered in St. Petersburg, Fla. to offer joint a/e services.

Building materials

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

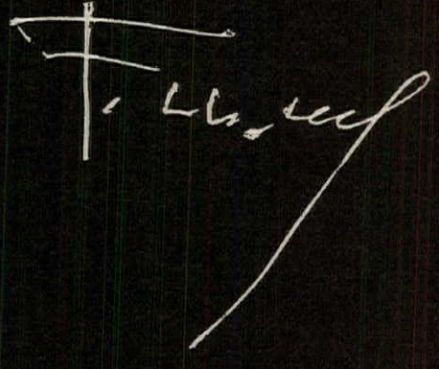
Pacific Design Center, Los Angeles, Calif. (p. 78). *Architects: Gruen Associates, Los Angeles, Calif.* Structural steel: Bethlehem Steel Co. Steel deck: H.H. Robertson. Spandrel glass: Libbey-Owens-Ford. Carpet: Bigelow, Jorges Carpet. Metal pan ceiling: Donn Products. Roof decking: C.E. Buggy Co. Insulation: Zonolite. Roofing: Johns Mansville. Partitions: United States Gypsum, Sanymetal Products. Bronze vision glass: Libbey-Owens-Ford. Hardware: Eaton Corp., Sargent & Co., Schlage Lock Co. Doors: Pacific Rolling Door Co., Von Duprin Inc. Interior paint: Sinclair Paint Co. Elevators and escalators: Westinghouse. Lighting fixtures: Lightolier Inc., Halo Lighting. Plumbing and sanitary: Bobrick Corp., Eljer Plumbing Ware. Heating: Brasch Mfg. Co., Inc. Air conditioning: Trane Co.

Nearly two decades have passed since the late Frank Lloyd Wright's comment on Follansbee Terne was first published. No comparable product has ever received such an endorsement from such a source, and we reprint his statement here in the belief that time has not lessened its fundamental impact or its relevance to contemporary design.

FOLLANSBEE
FOLLANSBEE STEEL CORPORATION
FOLLANSBEE, WEST VIRGINIA

Circle No. 361, on Reader Service Card

Imaginative new conceptions in architecture can frequently trace their origin to a basically simple idea. One of the oldest types of roofing, terne metal, thus lends itself to many dramatic new applications in the contemporary idiom. Because of its inherent adaptability in both form and color, Follansbee Terne permits the visible roof area to become a significant part of structural design. Thus by re-discovering and re-interpreting a time-tested material, we make out of the very old the very new. I have furthermore found terne superior to other roofing metals in economy, color-adherence, heat-reflection, permanence, workability, and low coefficient of expansion.



Job mart

Situations open

Architects/Planners: Needed for Peace Corps projects in Latin America, Africa, Asia: VISTA projects in U.S. Housing projects, design of schools, hospitals, community centers, rehab., university teaching, regional planning, etc. Expenses paid: travel, medical, vacation and living. U.S. citizens, singles or couples only. Information: Cynthia Poindexter, ACTION, Box A-2 Washington, D.C. 20525.

Assistant Professor: The Department of Architecture, University of California, Berkeley, seeks candidates for an Assistant Professor appointment in energy resource management and environmental control. Applicants should be able to assume the diverse responsibilities of teaching at the undergraduate, graduate and doctoral levels, and of administering and conducting research programs. Previous teaching experience, research work, and professional achievement are desirable. Applicants should have had experience in aspects of building design concerned with energy resource management and environmental controls. Applicants should have the capacity to work with other faculty in related areas of design. Interested persons should contact the Secretary of the Faculty Search Committee, Department of Architecture, University of California, Berkeley, California 94720, for further information and application forms. The final date for filing completed applications is December 1, 1976. Minority and women candidates are encouraged to apply. An equal opportunity/affirmative action employer.

Correctional Facilities Architect/Planner: A Syracuse, New York Architectural/Engineering firm is seeking a person experienced in correctional facilities master planning and design with a proven track record. This position will require architectural registration and a minimum 10 years experience. Send resume and salary requirements to Box 1361-980, *Progressive Architecture.*

Electrical Engineer: Immediate opening for Project Design Engineer to accept complete responsibility for design of electrical systems for major building projects, industrial and power. Potential for Chief Engineer. Daverman Associates, Inc., Architects/Engineers, 200 Monroe Avenue N.W., Grand Rapids, Michigan 49503 — 616/451-3525. An equal opportunity employer, M/F.

Faculty: The Department of Architectural Engineering, University of Petroleum and Minerals, Dhahran, Saudi Arabia, will have faculty positions open for the Academic Year 1977-78 starting 1 September 1977. Qualification includes Master's degree plus teaching and/or practical experience. Candidates with PhD degree in Architectural Engineering are desirable. English used for instruction. Minimum regular contract for two years, renewable. Competitive salaries and allowances, free air conditioned and furnished housing, free air transportation to and from Dhahran each two year tour. Attractive educational assistance grants for school-age dependent children. Local transportation allowance in cash each month. All earned income without Saudi taxes. Ten-month duty each year with two-month vacation paid and possibility of participation in University's ongoing Summer Programs with adequate additional compensation. Apply with complete resume on academic and professional background, list of references, publications and research details, and with copies of degrees/testimonials, including personal data, such as, home and office addresses, telephone numbers, family status (names of children, age and sex) to: University of Petroleum and Minerals c/o Saudi Arabian Educational Mission, 2223 West Loop South, Suite 400, Houston, Texas 77027.

Partner Income Level: Opportunity for professional with marketing record and expertise. 40 person diversified A/E firm with solid 12 year growth record seeks to develop second generation support. Individual should be able to develop marketing program, select target markets, screen leads, cultivate prospects, obtain contracts. Travel essential. High energy level, flexibility, poise, pragmatism, affability, personal stability, and ethical standards. R.A. or P.E. with 8-12 years broad experience preferred. Income incentive structured; range $25,000 to $75,000. Strong benefit program. Location near N.Y., Phila., Wash., at Pocono Mtns. Please send resume to E. E. Loewe, Burns & Loewe, 326 Adams Ave., Scranton, Pa. 18503.

Project Architect With Industrial Experience: A Syracuse, New York Architectural/Engineering firm is seeking a person experienced in industrial facilities. This position requires architectural registration and a minimum 10 years experience. Send resume and salary requirements to Box 1361-981, *Progressive Architecture.*

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Architect-Designer, Physical Planner: Finnish Architect, M.A., 24 years experience, 15 years architectural design, 9 years physical planning. 18 years in Finland, own office and govt. employed, 2 years in Jamaica with UNDP, 4 years in Ethiopia as bilat. expert. Physical plans for resorts, towns, regions. Architectural design for housing, schools, clinics, factories, offices, hotels, resorts, shops etc. Project checking, construction supervision. Interior decoration for buildings, vessels. Productive, imaginative, artistic, creative ability, design quality. Seeks permanent position in U.S. For resume, references, write: Knut von Troil, c/o Harold Bolton, 52 W Fairwood Drive, Lakewood, N.Y. 14750.

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[continued on page 124]

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WEDNESDAY, NOV. 17, 1:30-3:15 P.M.
KEYNOTE ADDRESSES

Richard I. Morris, W.R. Grace & Company and President, Producers' Council and General Chairman of the BUILDING & CONSTRUCTION EXPOSITION & CONFERENCE Planning Committee.

Elliot L. Richardson, U.S. Secretary of Commerce, whose long-standing advocacy of the private enterprise system is well known in the business community will speak for Government.

Dr. Michael Tenenbaum, Pres., Inlaid Steel Company, will discuss industry's role as the key influence on our national economy now and in the future.

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SPECIAL PRESENTATION
PERSPECTIVES ON ENERGY
Presented Friday, Nov. 19, 9:00 A.M.

Our energy dilemma is far from being resolved and usage vs conservation will continue to be one of the construction industry's hottest buttons. In this ENERGY KEYNOTE session, Dr. Robert C. Seamans, Jr., Administrator of the U.S. Energy Research and Development Administration (ERDA) provides an overview of where we stand today and what we can expect in the years ahead.

Special Note: *This Energy Keynote session will be preceded by a Continental Breakfast — complimentary for all conference registrants at McCormick Place from 8:00 — 9:00 A.M.*

THURSDAY, NOV. 18, 9:00-10:45 A.M.

THE COMMERCIAL MARKET — PART 1
The Owner Speaks Out

Today's building owner is a **new breed.** He is more alert to new construction techniques . . . more knowledgeable about products . . . more conscious of his building's design, construction management, lessor's needs, energy considerations and life-cycle costing. Understanding this **new breed** of owner makes it easier for the architect, engineer and contractor to design professionally and to respond effectively to his needs.

THE RESIDENTIAL MARKET — PART 1
Designing, Selling & Financing

Today's—and tomorrow's—successful residential developer must observe three cardinal rules:

Design what buyers want and can afford;
Effectively promote, advertise and sell;
Learn about new sources of money and how to tap them.

This session identifies the do's and don'ts in creating for-sale and for-rent housing.

NEW PROFIT IN OLD BUILDINGS
Making the Decision to Remodel

Deciding between modernizing an old building and staying put or moving to a new building has many ramifications—structural considerations, neighborhood, design specifications, energy consumption, plumbing, public facilities, financial performance, and many, many others. Knowing the pros and cons makes it much easier to arrive at a logical decision. In this extensively illustrated session, experienced practitioners review the facts architects, engineers, designers and others must know when talking with owners.

THE INTERNATIONAL MARKET: Its Profit Potentials & Pitfalls

Discussions on the pros and cons of overseas construction—including help available from the U.S. government, and problems common to this diverse marketplace—lead to an analysis of whether the profit is worth the risks involved.

ENERGY—RAMA

. . . IS A SPECIAL Exposition-floor feature for those visitors desiring an in-depth understanding of the status of new energy sources and innovative energy conservation methods. Presented in a continuous series of half-hour papers during non-Conference Exposition hours, attendance at one or more ENERGY—RAMA presentations is free to all Exposition and Conference attendees. ENERGY—RAMA performances are scheduled as follows:

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THURSDAY, NOV. 18, 1:30-3:15 P.M.

THE COMMERCIAL MARKET — PART 2
The Investors' Viewpoint

Money is construction's turnkey and, contrary to popular belief, more of it is available now than at any time in recent history. However, underwriting practices today are more rigid than ever before and require documented evidence as to a building's financial performance. In order to promote and sell a building project, it is vital that every member of the Building Team understand what this evidence must be; how it is assembled and presented. Highlighted by an outstanding case history, this session features concise, layman's language discussions by a lender, an appraiser and an accountant.

THE RESIDENTIAL MARKET — PART 2
Coping With Restraints

Codes . . . regulations . . . inspection . . . environmental impact . . . now-growth policies . . . are among a veritable laundry-list of restraints on new residential developments as acreage for them rapidly diminishes. In this session an entrepreneur with vast experience in meeting these obstacles head-on leads a panel of experts on how to overcome them.

NEW PROFIT IN OLD BUILDINGS
Recycling: The Hottest Game in Town

There's a new public understanding of the value of old buildings in preserving the character of our cities and towns. And, there's growing evidence that recycling old buildings makes a great deal of sense. One of the pioneer architects in finding new uses for old buildings leads a discussion on how the deal goes together, how the design problems differ from new work, and the unusual and sometimes frustrating construction problems that arise.

MARKETING YOUR SERVICES . . . PROFESSIONALLY

Considering the high cost of doing business today and rapid changes in the marketplace, few architects, engineers, designers, contractors or builders can remain solvent very long by just waiting for building projects to happen. Tomorrow's successful practitioners must be able to professionally promote their services and effectively sell themselves. In some instances, they must actually assist in making projects happen. In this session, successful industry principals provide first hand reports on their techniques.

FRIDAY, NOV. 19, 9:00-11:30 A.M.

PERFORMANCE & PROFITS IN ENERGY CONSERVATION

Energy conservation has an enormous potential—immediate and long-range—as a market for all parts of the building industry. Potentially, it is the biggest opportunity in the construction industry for design professionals, developers, product manufacturers and building owners.

In this session, experts in the energy-efficient design of non-residential, residential and recycled older buildings describe the designs properties to achieve energy efficiency.

THE COMMERCIAL MARKET — PART 3
Sensible Money-Saving Techniques

Cost cutting vs maintaining quality vs building faster vs life cycle costing is a constant challenge to every commercial building owner/architect/engineer/designer/contractor. Knowing how to meet this challenge is essential to designing and building profitably in today's marketplace. In this fact-filled session, long-time practitioners share their expertise.

THE RESIDENTIAL MARKET — PART 3
Modernization: The New Market Boom

Home remodeling—from rec room to roof, kitchen to carport—is a burgeoning multi-billion dollar market. Knowing how-much-is-being-spent-for-what, by both professional contractors and do-it-yourselfers, is a boon to distributors, suppliers, manufacturers—in fact, anyone interested in profiting from home modernization. In this session, successful remodeling contractors reveal how they have refined the art

PUBLIC BUILDINGS
Getting Your Piece of the Action

Public project bidding methods and procurement procedures are changing rapidly. Staying abreast of these changes, knowing how to go after public building contracts and learning how to deal with the government client—federal, state and local—at all phases of the commission, particularly under the new ground rules, is essential to success in this highly profitable field. In this session, practitioners on both sides share their views and expertise.

MAKING THINGS HAPPEN IN YOUR HOME TOWN

Eradication of urban blight is essential to reversing the economic and structural decay of our cities, and case histories of how this has been accomplished are numerous. In this session representatives from four cities of varying size briefly present their own. . . and highly successful . . . case histories.

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