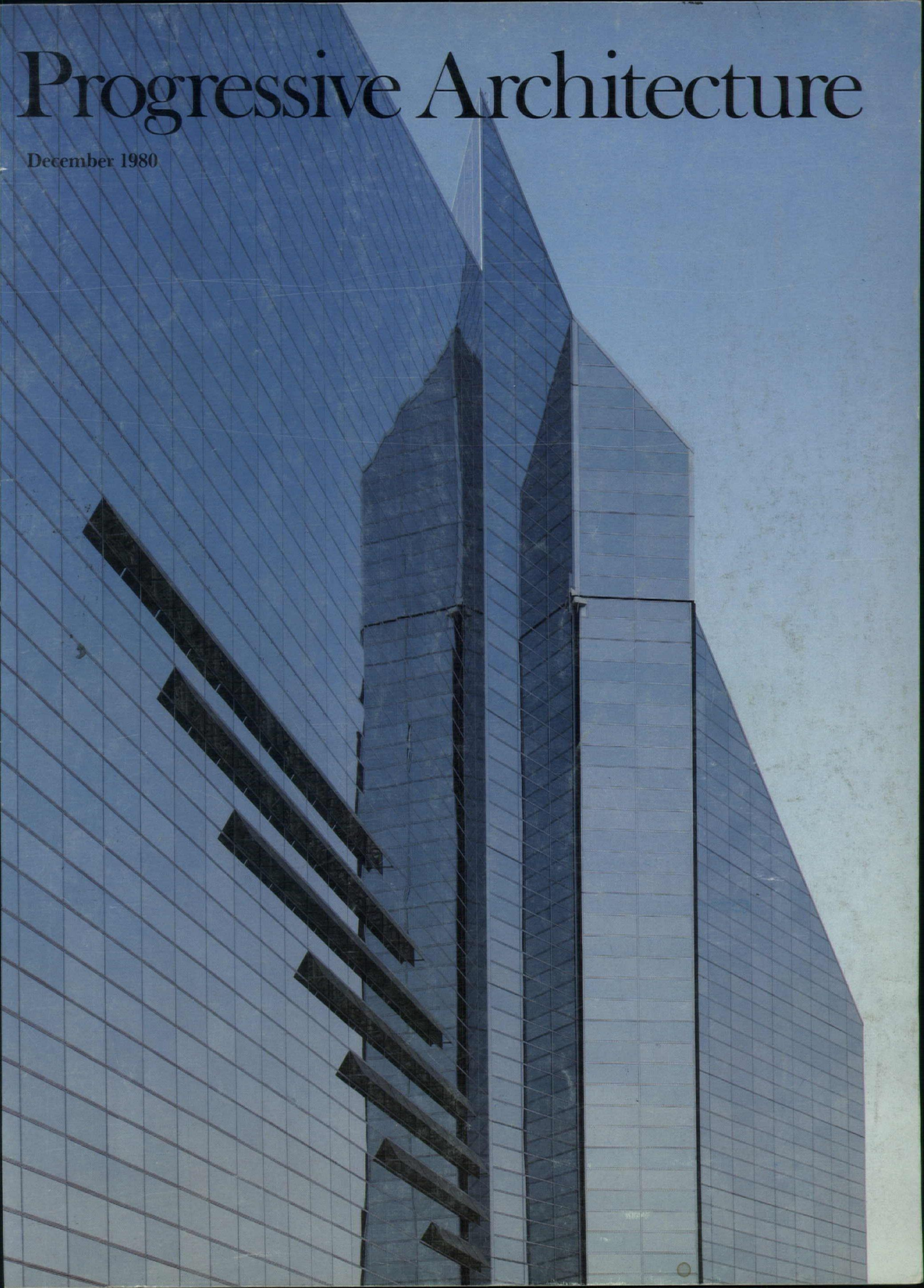
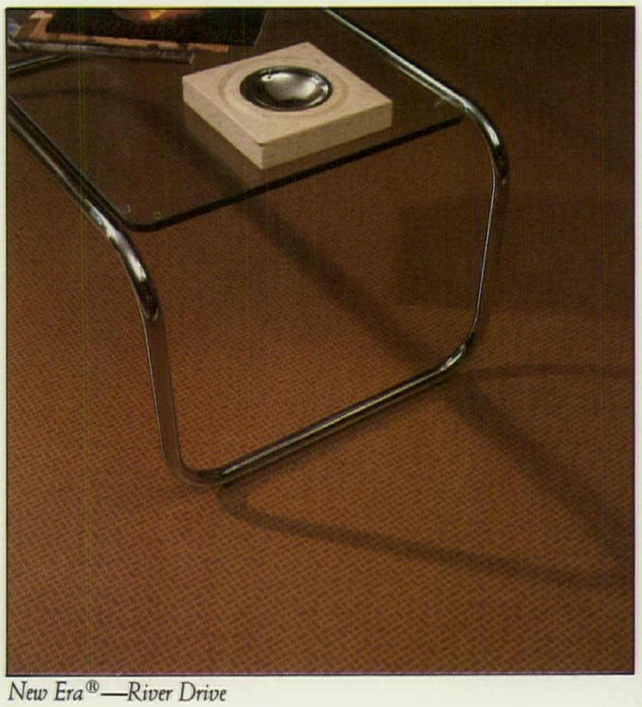
Progressive Architecture

December 1980



Armstrong gives you another reason to specify commercial Geometric patterns.



New Era®—River Drive

Now you can choose a vinyl floor for more than its durability. Armstrong New Era Vinyl Corlon® flooring lets you specify a totally new look in commercial floors. Because New Era is the only inlaid vinyl flooring with geometric designs.

So you get all the advantages of sheet vinyl flooring along with the option to use the small-scale geometric which works in almost any setting or a bolder design based on the popular hollow-square concept.

And there's a wide range of distinctive colorways that coordinate with contemporary interiors to insure New Era's harmonious relationship with your design.

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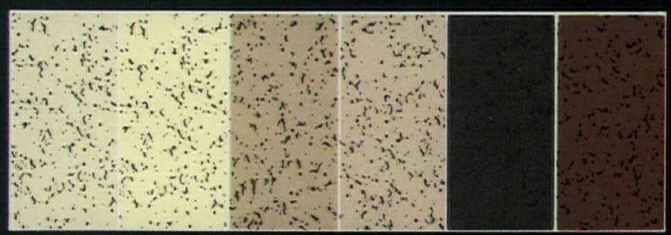


Parchment Chablis Adobe Driftwood Onyx Coffee

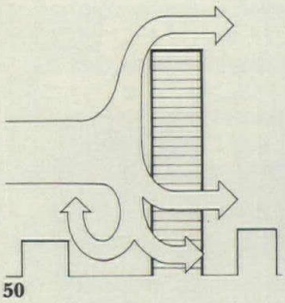
FROM THE INDOOR WORLD® OF

Armstrong

Circle No. 311 on Reader Service Card

December 1980

Progressive Architecture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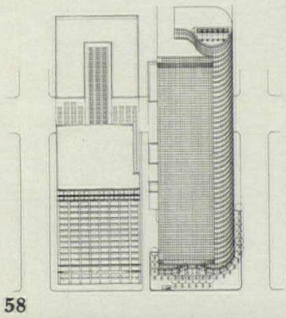
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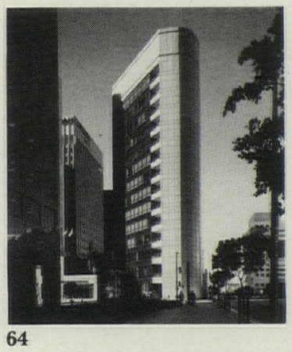
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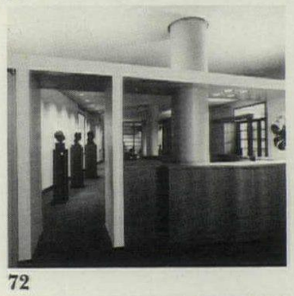
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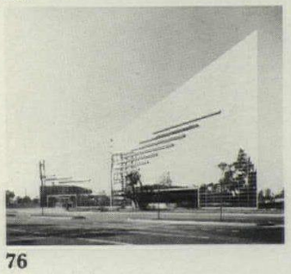
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Cover: *A detail of the north side of Johnson/Burgee's Crystal Cathedral (p. 76) in Garden Grove, Ca, shows the massive pair of doors in open position. Photo: Marvin Rand.*

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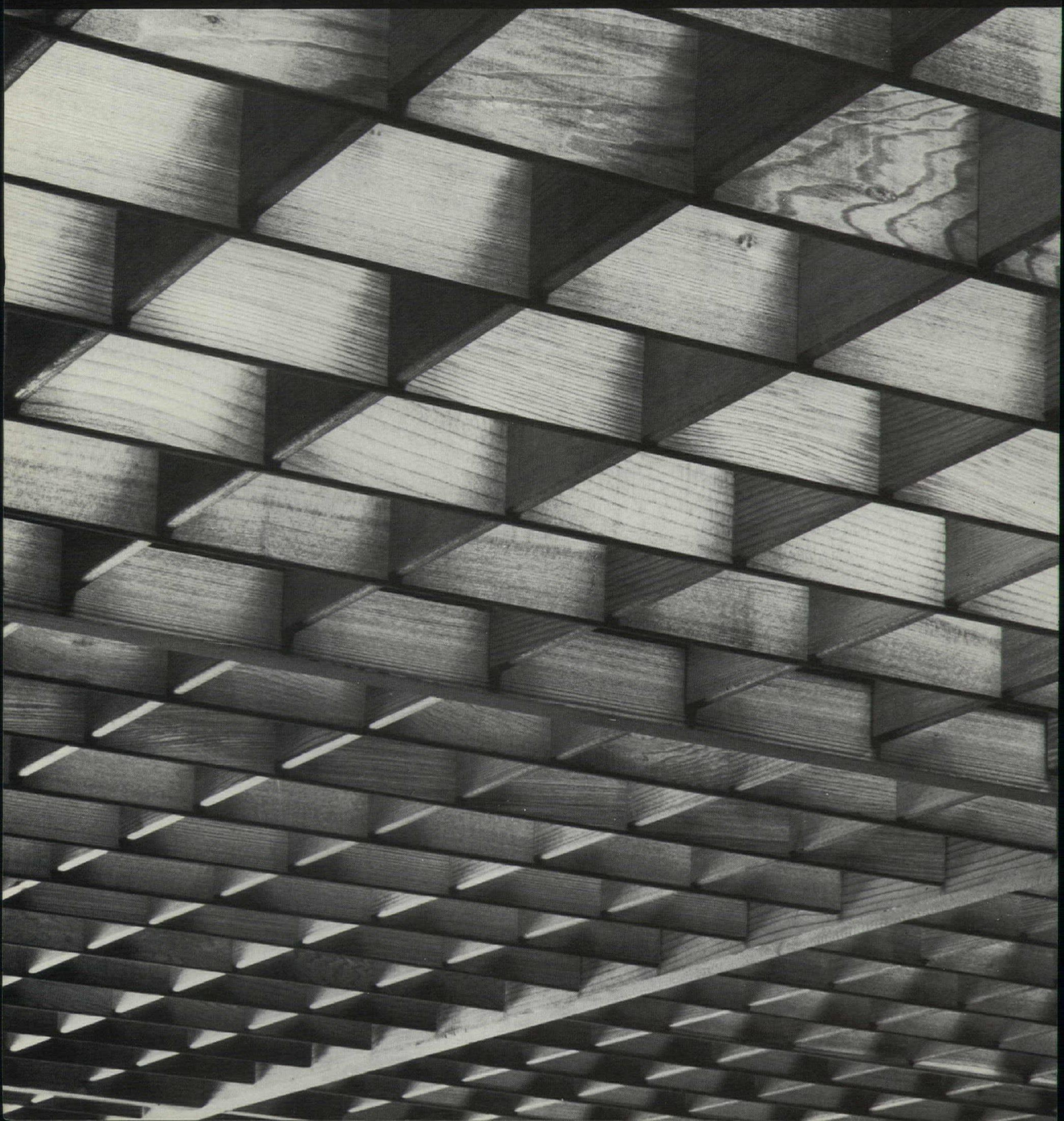


Plans for the new year

On the brink of a year in which almost anything may happen, P/A confronts unpredictability with an editorial calendar that identifies key design and technics features for 1981.

The issue you are holding began to evolve in the spring of 1979—before the Iran hostage crisis or the recent election campaign, before the Picasso exhibition or the eruption of Mt. St. Helens. In the spring of every year, the editors of P/A begin collecting and exchanging editorial ideas. By July, we have agreed upon a basic calendar for features that can benefit from long periods of planning and inquiry, those that are not tied to events such as the completion of a building.

Why so early? Because magazine editors do not really live in the present, but in a timeframe of overlapping months. If you are reading this in mid-December, editorial work on the January issue will be just about completed (we hope!) except for reviewing various stages of proofs from the printer. Major articles for February should be written and in the process of layout, assignments and page allocations for March determined, major subjects for April decided, and editorial pieces falling into place throughout that 1981 calendar.

How do we arrive at our calendar subjects? Each year, scores of subjects are proposed by P/A editors—reflecting, of course, suggestions from readers, correspondents, and other outside contacts. We try to choose subjects on which there is really something new to say, of current interest to readers. We try to balance these so that there will be the least apparent overlap and the broadest range of examples by size, place, building type, etc. And we place them in the calendar—around certain annual theme issues—to yield variety and to reflect our best guesses on completion dates of examples we would like to feature.

Take the "tall buildings" features in this issue, for instance. By early 1979, we were impressed with the unexpected comeback of office construction, including the numerous tall buildings under construction or proposed. We understood that the technical considerations in supporting tall buildings were being reconsidered and refined. Although a minority of architects gets to work on such jobs, we felt tall buildings remain innately interesting to all design professionals—even those who oppose them. We scheduled the subject for December—the farthest outpost of our calendar, because we estimated (correctly in the case of the Xerox building, at least) that this would be the earliest month certain new buildings could be properly shown. Since we expected the examples to include new buildings, of middle-of-the-road Modern design, by established firms, we thought that the subject would be a good one to follow an issue on preservation and remodeling and precede the annual awards issue—an all-projects issue that tends, historically, to include few high-rise buildings.

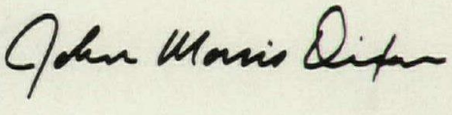
Our 1981 calendar is built around the four major theme issues we decided early to continue from previous years: Awards (January), Energy-conscious design (April), Interiors (September), and Remodeling/reuse (November). Major design features for other issues include three covering areas of practice —Export/import architecture (March), Architectural research (August), and Architect as Developer (December)—one focusing on a timely building type—Shopping centers (July)—and two taking up approaches to design itself—Regional/vernacular design (June) and the new Classicism (October).

For our Technics series in 1981, articles are scheduled on Moisture control (February), Plastics (March), several energy-related subjects (April), Design for safety (July), Codes and regulations (August), Windows (September), Restoration of concrete (November), and Design for durability (December). Interior technics articles are planned on Indoor planting (May) and Daylight control (November). Other technics articles may be developed during the year to fill calendar gaps deliberately left for them.

We are planning to report in January (next month) on the latest house design competition cosponsored by P/A, Better Homes & Gardens, and the American Plywood Association; in May, we will present the results of the P/A-sponsored furniture competition (which will be displayed at NEOCON, Chicago, in June).

During the year, we hope as well to publish profiles of two or three firms that we feel to be of exceptional interest. And we plan to present a series of feature reports on development efforts in certain cities, where the urban whole seems more significant than the architectural parts.

Planning ahead six to 18 months is, of course, risky. So bear in mind that these are intentions. Circumstances may suggest altering our calendar, or we may just change our editorial minds.



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In 1978, Thonet introduced Petitt Ply in both arm and side chair models. In 1980, which marked our 150th anniversary, we proudly added the Petitt Ply Conference Chair to this popular collection.

St. Francis Yacht Club, San Francisco. Photograph by Chuck Ashley

N E T

Made of fine oak face and core veneers, the Petitt Ply frames are produced on the only molded plywood press of its kind. This unique technology allows the formation of the group's sculptural, jointless arm/leg configurations.

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Views

Neo-Rationalism: one perspective
The work of Aldo Rossi and the Neo-Rationalists (P/A, Oct. 1980, pp. 49–65) conjures too many images of Italian Fascist architecture to be dismissed as mere coincidence or public ignorance of history. Philosophically, Rossi may choose to align himself with the socialist roots of Gruppo 7, but in practice he has endeavored to revive the axial monumentality and pompous formalism characteristic of this group's projects for the Mussolini regime.

In fact, it is the work of such architects as Piacentini, Pagano, Guerini, Padula, and other Mussolini collaborators that serves as a basis for Rossi's formal devices. Those stark façades with oppressively repetitive windows and colonnades, those Neo-Classical volumes stripped of symbolic ornament had their origins in such notorious projects as the University of Rome, the EUR facilities, and the Palace of Labor. To add insult to injury Rossi depicts his forms with haunting surrealist graphics à la de Chirico, thereby creating the most disturbing images the profession has seen since World War II.

The most dangerous aspect of Neo-Rationalism, however, is not its embarrassing historical connection to Fascism, but its fundamental rejection of humanism and empiricism as philosophical bases for design. To the Neo-Rationalist the intellectual search for ideal geometric types precludes all input from psychology and sociology; people become mere abstractions to be neatly fitted into platonic forms, or in Rossi's case, like broken statues in a surrealist painting.
Moshe Dinar, Architect
Arlington, Ma
[The article itself answers these objections, if not necessarily to Dinar's satisfaction. One of Rossi's objectives is to "unload" Italy's 1930s buildings of their Fascist connotations.—Editors]

September's bounty
WOW! Barragán and Legorreta in one issue. They are my heroes and you gave me a two for one. Needless to say, I enjoyed your Sept. '80 publication.
David Hale, AIA
San Francisco, Ca

On the Portland square
In your September 1980 News Report of the Pioneer Courthouse Square Design Competition, there is an inference that the judging of the five schemes was contingent upon satisfying a Federal Grant requirement. I would like to clarify for your readership that the Design Program did not include any requirement for compliance to any federal grant restrictions—nor was the Jury allowed to consider any such requirement in their deliberations. To infer that the "out-of-town" designers missed a requirement is to degrade their program evaluation capabilities. Each and every design was an appropriate and excellent response to the design program and was judged as such.

The federal grant in question is a matching grant for acquisition of the city block which is to become Pioneer Courthouse Square. Specifically, it is a Heritage Conservation and Recreation Service Grant (H.C.R.S.) for development of public open space. The grant regulations do not preclude structures per se, but do require structures and their activities be subservient to, and intensify, the outdoor recreation capability of the Square.

The City Council, in their decision to undertake the competition process, specifically determined not to encumber the design program with federal regulations or restrictions. The Council was prepared to return any and all funds allocated from the federal grant if a design was selected that did not fit within the federal guidelines.

Irrespective of financing, the most significant point in the Jury's decision is the commitment to a major "open" square as the major feature in the center of our city—not a structure or building. This type of thinking is the reason why designers should come to visit our city, enjoy our commitment to preserving the quality of life of Oregon, and then return to their own areas to try to emulate our efforts and successes.
Donald J. Stastny
Stastny/Graham Architects
Portland, Or
[Mr. Stastny's explanation is well stated. The fact remains, however, that some participants were encouraged by the competition program to include considerable enclosed space. If it was the jury's "commitment to a major 'open' space" that shaped the decision (rather than financial factors), that "commitment" was at odds with the options the competitors were offered.—Editors]

Bunker Hill: last battle?
The recent article on Bunker Hill Development (Sept. 1980, p. 42) was an interesting and informative annotation of the solutions offered and the selection process for the project. But I fear a most important point was missed entirely.

There are three important assets of the Maguire Proposal offered which may have been overlooked. One, the project was sufficiently excellent in design that it would probably have significantly increased the city's tourist and convention trade. Two, it would have given Los Angeles a unique skyline of human dimension, one that you don't have to always be on an airplane or freeway to appreciate. Three, the project would have been an independent source of civic pride and inspiration to the Los Angeles community. It's the kind of art that gets a second look even after you've seen it for years and years.

If the design community believes the Maguire Proposal was the best, then they should be making noise. The group that produced the best design should have had the first opportunity to build, and if financing was thought to be a problem, the city should have made contractual arrangements for release if that team could not build.

To make selections on the basis of proven performance is not good enough, because it inhibits new ideas. Track records will seldom be broken if no one else is really given the opportunity to run.
Paul C. Womack, Principal
Construction Dynamics
San Jose, Ca
[Two points: This was not a design competition, as such, but a competition among development proposals, including their economics. "Track record" does not seem to have been a decisive difference. The "design community"—at least that part that we are in touch with—does not seem to be as committed to the Maguire Proposal as is the writer.—Editors]

Credit extended
Stephen Bonitatibus and Ronni Rosenblatt were codesigners and corenderers for John Blatteau's Les Halles project (P/A, Sept. 1980, p. 39).

Credit correction
The MARTA transit project pictured (P/A, Sept. 1980, p. 222) is the Avondale Station designed by Miller Waltz Diedrich, Architects and Associates, Inc., rather than as credited.

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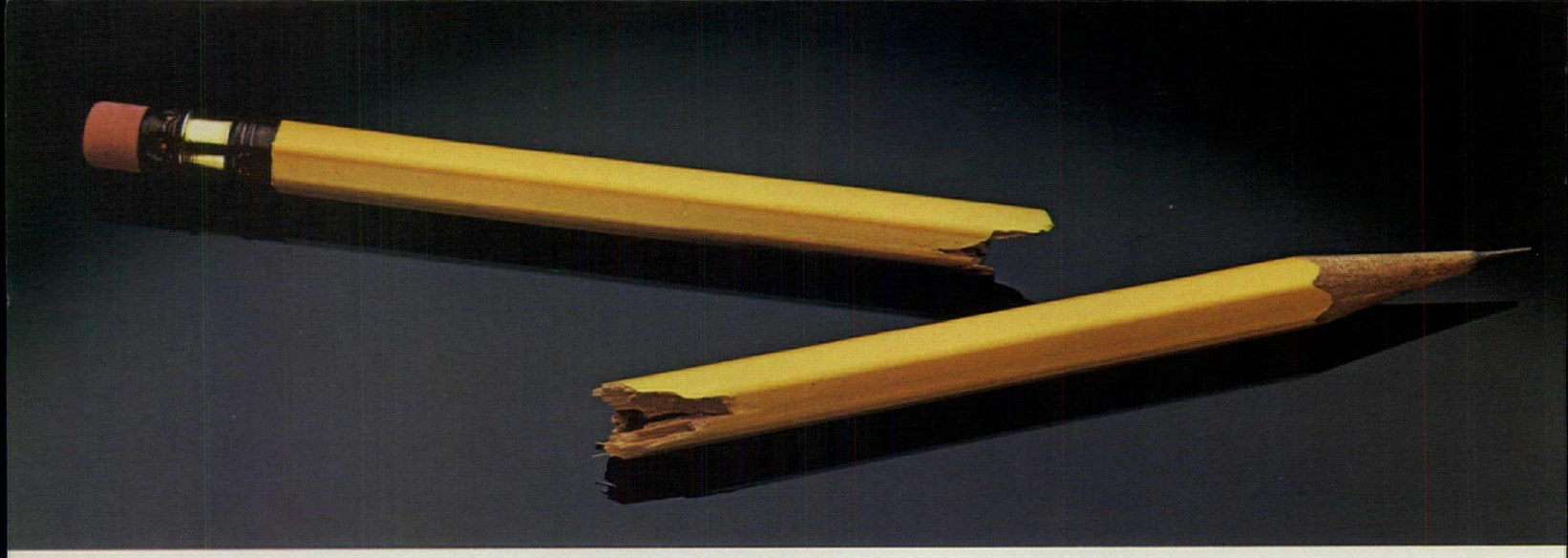

End of an era in client billing.

Keeping track of client phone charges by manual logging is notoriously ineffective. In fact, industry estimates show that the average architectural or engineering firm absorbs 10 to 15 percent of those charges—simply through doubts about their proper allocations. There's another loss, too—of professional and clerical time spent in the month's-end allocation process.

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This competition will recognize outstanding furniture and lighting design proposals not yet connected with a particular manufacturer. It is intended to give the design profession a forum to express ideas about the next generation of furniture design. Designers are encouraged to consider the aesthetic and ideological implications for furniture design implied by the current concerns within architecture and other design disciplines. Physical feasibility must be considered, but the design need not be constrained by existing production or marketing practices.

Winning projects will be published in the May issue of P/A and displayed at NEOCON 13, the annual interior design products show at Chicago's Merchandise Mart, June 16-19, 1981. Awards will be presented to winners in an evening program attended by press, designers, and NEOCON manufacturers. A traveling exhibit of winning projects to major cities is also planned.

In addition to the exposure afforded the submissions, the competition will encourage further discourse between the entrants and respected furniture producers. Any ongoing discussions will, of course, be up to the individual designers and manufacturers, but benefit to both is anticipated.

Submissions are invited in all categories including chairs, seating systems and sofas, tables, desks and work stations, storage systems, lighting and miscellaneous furniture pieces. Designations of **award** and **citation** may be made by the invited jury, based on overall excellence and advances in the art.

Jury for the competition

Emilio Ambasz, architect, graphic and industrial designer, former curator of design at The Museum of Modern Art, New York;
Martin Filler, editor, *House and Garden*, New York;
Mildred S. Friedman, design curator, Walker Art Center, Minneapolis, and editor, *Design Quarterly;*
Michael Graves, FAIA, architect and Professor of Architecture at Princeton University;
Lella Vignelli, architect and designer, Vignelli Associates and Vignelli Design, New York.

Judging will take place in New York City during the month of February. Winners will be notified—confidentially—before March 15. Public announcement of the winners will be made at the presentation ceremony at NEOCON 13 and in the May 1981 issue of P/A. P/A will arrange for coverage of winning entries in national and local press.

Eligibility
1 Architects, interior designers, industrial designers, and design students from all countries may enter one or more submissions.
2 Design must be original, not known to be substantially identical to any existing product design. (continued on next page)

The First Annual

International Conceptual Furniture Competition

sponsored by

Progressive Architecture

with winning projects to be displayed at

NEOCON 13

June 16-19, 1981
The Merchandise Mart
Chicago

Entry form:

International Conceptual Furniture Competition

Please fill out all parts and submit, intact, with each entry (see paragraph 10 of instructions). Use typewriter, please. Copies of this form may be used.

Entrant:

Address:

Entrant phone number:

Category:

Entrant:

Address:

Designer(s) responsible for this submission (identify individual roles if appropriate):

I confirm that the attached entry meets eligibility requirements (paragraphs 1–4) and that stipulations of publication agreement (paragraphs 5–6) will be met. I verify that the submission is **entirely** the work of those listed on this form (or an attached list as necessary).

Signature _____

Name (typed) _____

Furniture Competition

Progressive Architecture

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Your submission has been received and assigned number:

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Address:

(Receipt)

3 Designer must not be under contract to or in negotiation with any manufacturer for this design. Design is not to be submitted to any manufacturer until after P/A announces winners.
4 Design must not have been executed for academic credit.

Publication agreement
5 If the submission should win, the entrant agrees to make available further information, original drawings or model photographs as necessary, for publication in the May 1981 P/A and exhibition at NEOCON in Chicago and other major cities.
6 P/A retains the rights to first publication of winning designs. Designer retains rights to actual design.

Submission requirements
7 Drawing(s) and/or model photo(s) of the design should be mounted *on one side only* of one 20″ x 30″ foamcore board presented horizontally.
8 There are no limits to the number of illustrations mounted on the board. No actual models will be accepted.
9 Each submission *must include* a 5″ x 7″ index card mounted on the front side of the board with the following information typed on it: intended dimensions of the piece of furniture, color(s), materials, components, brief description of important features, design assumptions and intentions. This information is to be presented in English.
10 Each submission must be accompanied by an entry form, to be found on this page. Reproductions of this form are acceptable. All sections must be filled out (by typewriter, please). Insert entire form into *unsealed* envelope taped to *back of submission board.* P/A will seal stub of entry form in envelope before judging.
11 For purposes of jury procedure only, projects are to be assigned *by the entrant* to a category on entry form. Please identify each entry as one of the following: Chair, Seating System, Sofa, Table, Desk, Work Station, Storage System, Lighting. If necessary, the category *"Miscellaneous"* may be designated.
12 Entry fee of $10 must accompany each submission, inserted into *unsealed* envelope containing entry form (see 10 above). Make check or money order (no cash, please) payable to *Progressive Architecture.*
13 To maintain anonymity, no identification of the entrant may appear on any part of the submission, except on entry form. Designer should attach list of collaborators to be credited as necessary.
14 Submissions become the property of P/A and *will not be returned.*
15 **Deadline for mailing** is January 26, 1981. Other methods of delivery are acceptable. Entries must show postmark or other evidence of being en route by deadline. Hand-delivered entries must be received at the address shown here by January 26. In any case, entries sent by mail or other means not received at P/A by February 13, 1981, will be disqualified.

Address entries to:
International Conceptual Furniture Competition
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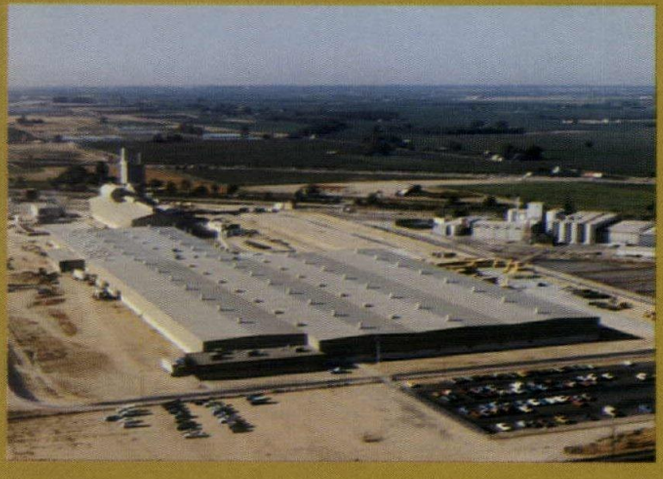

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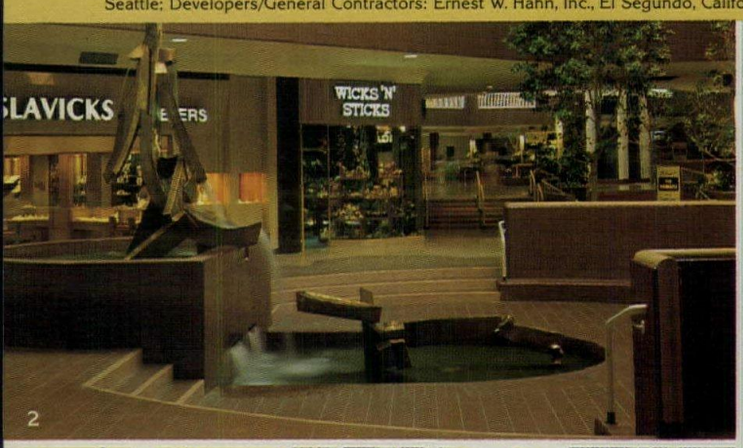
Shown above: 1. Greenwood Park, Indianapolis, Ind. Over 93,000 Sq. ft. of Gail Unglazed Brickplate installed; Architects: Charles Kober Associates; Developers: Melvin Simon Associates, Inc. 2. The Meadows Shopping Mall, Las Vegas, Nevada; Over 45,000 sq. ft. of Unglazed Brickplate (English Red and Leather) specified for floors by architects, Charles Kober Associates; General Contractor: Ernest W. Hahn, Inc. 3. Lougheed Mall, Vancouver, B.C., Canada Architects: Dirrassar, James & Jorgensen; Developers: Trizec Corp., Ltd. 4. Woodland Hills Mall, Tulsa, Oklahoma Architect: Charles A. Kober Associates; Developer: Dayton-Hudson Properties. Gail Unglazed Brickplate on floor surfaces. 5. Capitol Mall, Olympia, Washington; Architects: John Graham & Co., Seattle; Developers/General Contractors: Ernest W. Hahn, Inc., El Segundo, California.



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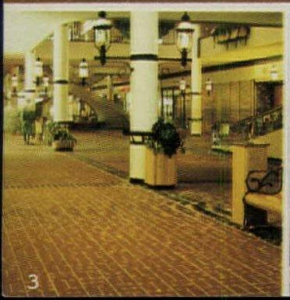
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P/A News report

New York: Tightening up on tall buildings

It could make *Women's Wear Daily*'s In and Out list: Incentives are Out, Mandated Controls are In; "Covered Pedestrian Spaces" are Out; "Activity Spaces" are In; Plazas are Out, Setbacks are In. All these and other features actually represent important revisions in the zoning regulations for Midtown Manhattan now being formulated by New York's Department of City Planning.

The searching reassessment the city is undertaking comes during one of the most intensive building booms to occur in Manhattan since the late 1950s. Right now approximately 16 highrises are going up in Midtown Manhattan, with six more planned. The specter of taller and bulkier buildings on smaller sites has caused the same sort of hue and cry that greeted the building of The Equitable Building in 1915. Then the 40-story building of 1.44 million square feet at 120 Broadway cast a shadow for seven acres (three blocks). The complaints of outraged occupants to the north spurred the writing of the first zoning ordinance in the U.S.

Current critics argue that the two essential amenities that the 1916 zoning sought to protect for the urban environment—sunlight and openness—are now being threatened by the more "advanced" incentive zoning regulations introduced over the last 20 years.

The 1961 zoning amendments sought to relieve the monotony the ziggurat or stepped-back configuration fostered by the 1916 zoning. Its tower-with-plaza pattern, where height was indirectly limited by Floor Area Ratio, soon started another kind of repetition. The varied incentives of the late 1960s sought to expand the notion of "public amenities" from plazas and arcades to retail malls, "covered pedestrian spaces," "through-block arcades" and even theaters. But buildings got taller, with less light and open space available to the street. Also these "public amenities" were often located inside of buildings where they were harder and harder to find by the public.

The near bankruptcy of the city in 1975, however, resulted in tax breaks and a further loosening of constraints. The special review procedures that were meant to offer a check on incentive zoning allowed the building owner to go after special waivers on setbacks, bulk, and extra floor area. These indulgences, along with the practice of allowing zoning lot mergers for easier land assemblage and air rights transfers to new construction next to landmarks, began to show severe side effects: the "shoehorning" of taller and taller buildings of high density on comparatively small lots and, even more dramatic, the "piggybacking" of new construction on top of buildings not using their full FAR.

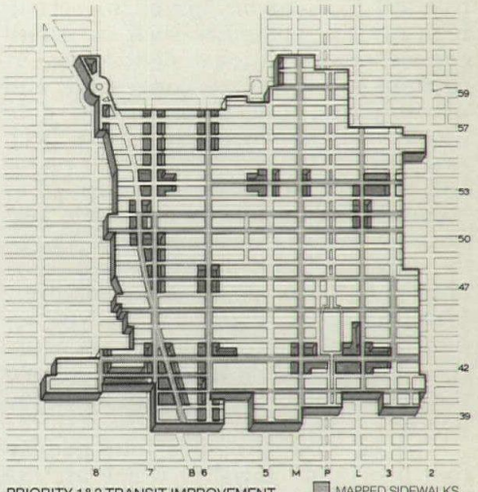
Another building pattern also became apparent during the last five years—the building of high towers on narrow cross streets. The 1916 setback zoning, calculated on a ratio of building height and street width, had encouraged highrise towers on the wider avenues. While the FAR measures introduced in 1961 were still lower for the cross streets, recent land pressures have prompted developers to begin encroaching there, aided by zoning lot mergers from higher FAR districts.

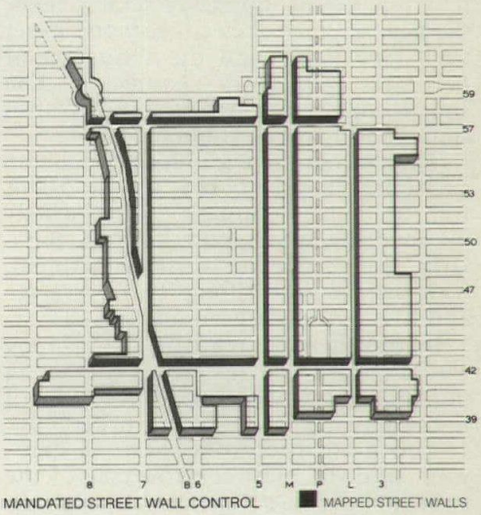
Yet another recent incentive to assess the city's zoning rules was the realization that "special district" legislation had some intrinsic flaws. For example, the "Special Theater District" legislation of the late 1960s—devised to keep the theater district intact—was paradoxically resulting in *old* theaters being torn down for new towers with larger theaters, geared to only the most commercially successful productions.

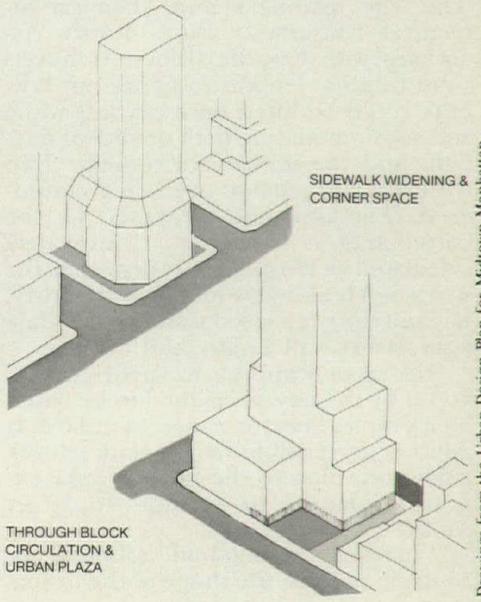
The complaints and criticisms of recent zoning measures, from citizens' groups as well as members of the City Planning Department, prompted the reassessment. The report was sponsored by the city and the Rockefeller Brothers Fund, the Fund for the City of New York, the J.M. Kaplan Fund, the New York Community Trust, and the Robert Sterling Clark Foundation.

Now what

To relieve some of the pressure from the east side of midtown, where most of the blockbuster development is occurring, the city planning report calls for encouraging new development west-







Drawings from the Urban Design Plan for Midtown Manhattan by Michael Parley of the Manhattan Office CPC

News report continued from page 21

ward and southward of midtown, particularly along certain "corridors" like 34th Street west, or Eighth Avenue north. At the same time, the prime east-side core between 40th Street and 60th Street from Third to Sixth Avenues will be "stabilized" through tighter zoning regulations.

The proposed regulations affecting stabilization will allow the normal FAR of 15 to go only to 18 with bonuses, instead of the 21.6 allowed now in special areas. The bonusable FAR of 3 over the base of 15 is to be limited to certain high-priority amenities such as transit connections, additional pedestrian circulation space to ease congestion, and urban parks. But these will have to occur in areas where they have been "mapped." Elevated and sunken plazas and public gallerias will be dropped as bonusable items. For the currently permissible slew of public amenities known as "through-block arcades" and "covered pedestrian space," a serious overhaul is in order. William H. Whyte, author of the recently published *The Social Life of Small Urban Spaces,* has advised the city on changes in the standards and bonuses.

The city also proposes four mandatory provisions, three of which are not bonused. These proposals call for the maintenance of significant retail streets, the maintenance of existing strong street walls (see map), and the reduction of pedestrian/vehicular conflict. The fourth mandatory provision for transit stations will receive a bonus.

The path of through-block circulation corridors already begun in the 1970s will be kept, although more strictly mapped for appropriate location. Similarly, open space areas will be mapped, with high priority along Third Avenue and for mid-block locations.

In the theater area, the new zoning will attempt to devise means for saving the old theaters, although that section of the report has *not* yet been worked out.

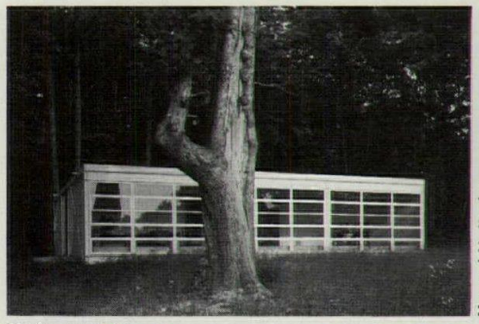
The most interesting part, in many ways, and the most controversial of the zoning revisions concerns bulk controls. The city planners and their architectural consultants Davis Brody Associates with Kwartler/Jones Architects went to great lengths to figure out how bulk could be fitted onto city lots while still accommodating both quality of daylight and the immediate context. Two different approaches are being considered. The first one, proposed by the consultants, is based on an intricately calculated performance system that the proposed building would have to satisfy, beyond the prescribed standard for daylight, street wall length, and height.

The second approach, apparently favored by the city, is claimed to be based on a simpler "performance" standard. It defines permissible height and setback rules according to the familiar "sky exposure planes" in relation to street width.

Whatever the method adopted for controlling bulk, the shape of the towers will be affected: controls will, it seems, encourage shorter, squatter buildings with more notches, chamfered sections, and setbacks. In the transfer of air rights, the FAR will be based only on the actual "footprint" or ground space the building occupies, not on land occupied by buildings lending their unused FAR to the new tower.

There will still be a lot of bulk. After all, an 18 FAR is not low-rise, low-density zoning. And there will be continued development along cross streets, except in several isolated instances where blocks will be downzoned. But it seems the "as-of-right" controls could keep the whole game between developers and city more in check.

God is still in the details: we must see how the final report is fleshed out before we can make any accurate predictions. Then we will see what sort of buildings emerge. By that time, of course, the landscape of Midtown will have been changed drastically by current construction. [SS]



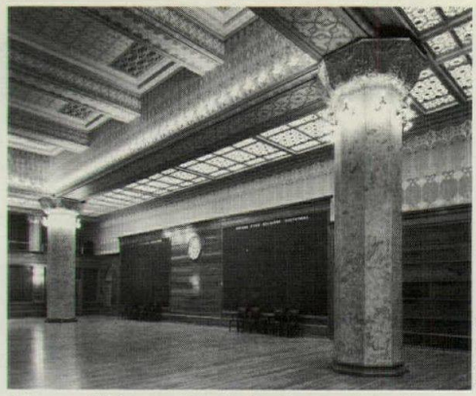
Howard N. Kaplan

Fultz residence.

Chicago AIA bestows its Annual Awards

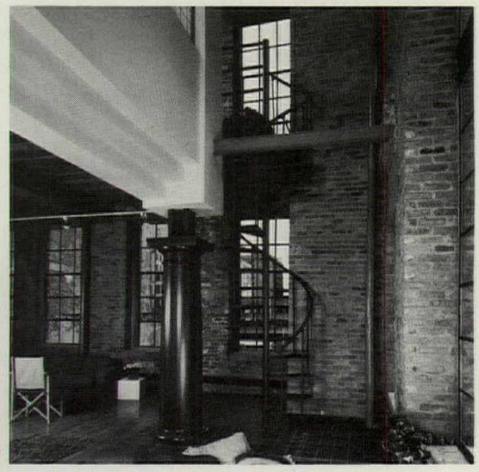
This year, the Chicago AIA Awards Program modified its structure and its emphasis. It allowed participation by any architect (not just AIA members), limited project location to the metropolitan area of Chicago, gave only six awards, and stressed the examination of each building's sympathy with, and enhancement of, the urban context, and its satisfaction of social, cultural, and economic expectations. The contextual preoccupation was, at least in part, a response to the controversy over the heavily Post-Modern partiality of last year's jury.

The 1980 jury members were Lee Copeland, FAIA, dean of the University of Pennsylvania Graduate School of Fine Arts; Myron Goldsmith, FAIA; Harry C. Wolf III, FAIA; and James Wood, director of the Art Institute of Chicago.



Bob Thall

Above: Chicago Stock Exchange Trading Room.
Below: Mergenthaler Linotype Loft.



And the winners are:

The Distinguished Building Award: The Fultz Residence, by Hammond Beeby & Babka.

Honor Awards: Steel and Glass House, by Krueck & Olsen Architects; the Tri-State Center I, by Hammond Beeby & Babka; and the Xerox Centre, by C.F. Murphy Associates.

Honor Awards for Restoration: the Trading Room from the Chicago Stock Exchange Building at the Art Institute of Chicago (original architect Adler & Sullivan), restoration by John Vinci-Lawrence Kenny; and the Carson, Pirie Scott & Company building (original architect Louis Sullivan), restoration by John Vinci.

In addition, the Twenty-five Year Award was given to Crown Hall, the Illinois Institute of Technology, by Mies van der Rohe (with Pace Associates); and Service Awards were bestowed upon Alfred Caldwell, Carl W. Condit, Franz Lipp, Matthew L. Rockwell, and Paul Theobald & Company.

For the first time, the Chicago AIA awarded Citations of Merit for interior architecture. These went to Tilton & Lewis Associates for three completed projects—their own offices, the restoration and remodeling of Wright's Johnson's Wax Administration Building in Racine, Wi, and law offices in Chicago; to Kenneth A. Schroeder Associates for the Mergenthaler Linotype Lofts; to O'Donnell Wickland Pigozzi Architects for the Poplar Creek Public Library interiors; and to Harry Weese & Associates for the Steelcase Showroom in Chicago.

[*News report continued on page 26*]

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News report continued from page 22

Atlanta's new air terminal stresses efficiency

Atlanta is one of the most important land-locked transportation centers in the world. Transportation has always been the reason for its existence: first, in the 1850s, the railroads intersected at the southern toe of the Appalachians; then the major highways were built parallel to the rails; and finally, the major southern air transportation link was located here, at Hartsfield International Airport. To accommodate a volume of passengers second only to Chicago's O'Hare Airport, the Midfield Terminal officially opened in September of this year, on schedule, under budget, and boasting a 30 percent participation by minority-owned businesses.

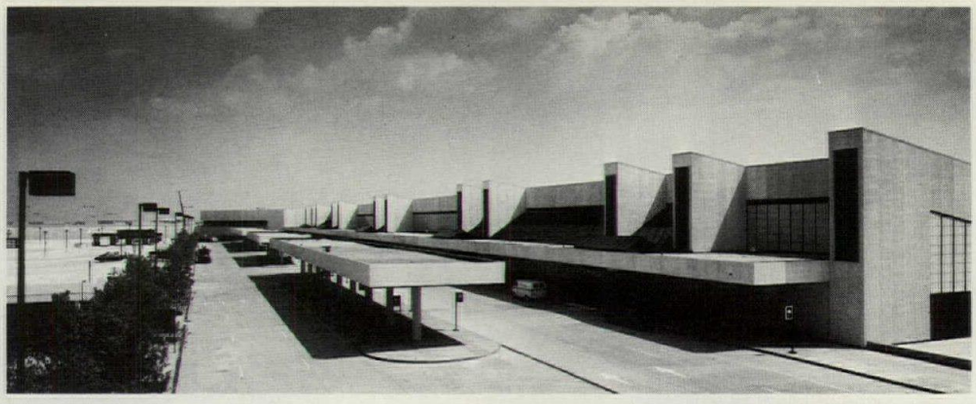
A terminal is a place where people and things make a transfer from one mode of transportation to another, and the many interfaces (arrival, ticketing, security checks, baggage disposal, and departure) must be made as smoothly and efficiently as possible. The airport design team of Stevens & Wilkinson/Smith, Hinchman & Grylls/Minority Airport Architects & Planners of Atlanta has creatively approached these many necessary interfaces. They have placed the terminal between the airport's two major runways, thereby making the landing-to-gate transition efficient. They have collected the gates along four linear concourses, perpendicular to the runways and spaced 1000 ft apart, allowing two full-sized planes to pass each other while docking occurs on both sides.

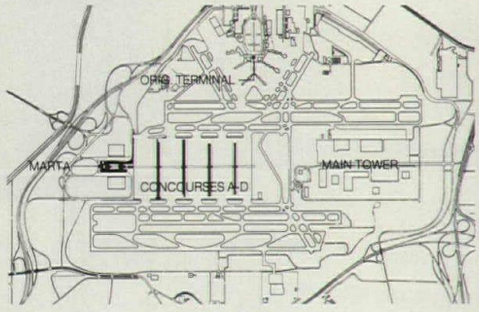
A 4000-ft-long underground spine, alive with passageways, subway cars, and passenger and baggage conveyor belts, connects these four concourses, and at the end of this spine are located the parallel arrival and departure terminals. This arrangement has resulted in a clear definition for the transition from air to ground transportation and gives ample room for the loading and unloading of cars, taxis, and buses. The plan also allows for an interface with rapid transportation: the station for MARTA (Metropolitan Atlanta Rapid Transit Authority) has been built at the end of the terminal, and the rail connection will be activated in 1985.

While the transition from air travel to ground transportation is a clear one, it is also lengthy. In fact, the layout works best for transferring the 72 percent of the passengers who never leave the concourses; the other 28 percent, those who use the arrival and departure terminals, must cover thousands of feet between concourses and terminal.

The art program

A $450,000 art program has collected works by internationally known artists, including Richard Smith, Lynda Benglis, and Stephen Antonakis of New York; the prominent black artist Sam Gilliam of Washington; and Curtis Patterson and Sam Bruno of Atlanta. The works of art are located where they have a captive audience, in the main ticketing and baggage claim lobbies and over the escalators. Unfortunately, the lighting and placement of some of the pieces are disturbing: in the escalator wells the artwork, inadequately lit, is seen only while in constant motion, a frustrating experience; and in the main lobbies the art is placed above the windows, and must compete with the sun's glare.





Top: Vehicular approach to terminal. Bottom: Arrivals terminal interior.

The image of an airport

Critics bemoan Midfield Terminal's blandness and lack of human scale, and they nostalgically point to the grandeur of earlier transportation centers, such as McKim, Mead & White's Pennsylvania Station in New York. But while architects at the turn of the century deemed the Baths of Caracalla an appropriate symbol for railroad transportation, we must search anew today for inspirational precedents to symbolize the superhuman power and speed of air travel.

Pier Luigi Nervi expressed a superhuman scale in his New York Port Authority bus terminal at the end of the George Washington Bridge: aerial views show it ready to catapult up the cables of the bridge and over the river! Eero Saarinen gave flight eloquent expression at Dulles Airport: its catenary slings invert the vaults of Caracalla. But the Atlanta architects, aiming for (and achieving) an airport completed on time and under budget, were more concerned with efficiency, technology, and simplicity than with poetry. Indeed it may be argued that at an airport, where the passenger experiences many tense situations (anxiety over finding the proper gate, arriving on time, and, perhaps, the dangers of flying), the reassuring expression of efficiency, technology, and simplicity may be the most appropriate tone to take.

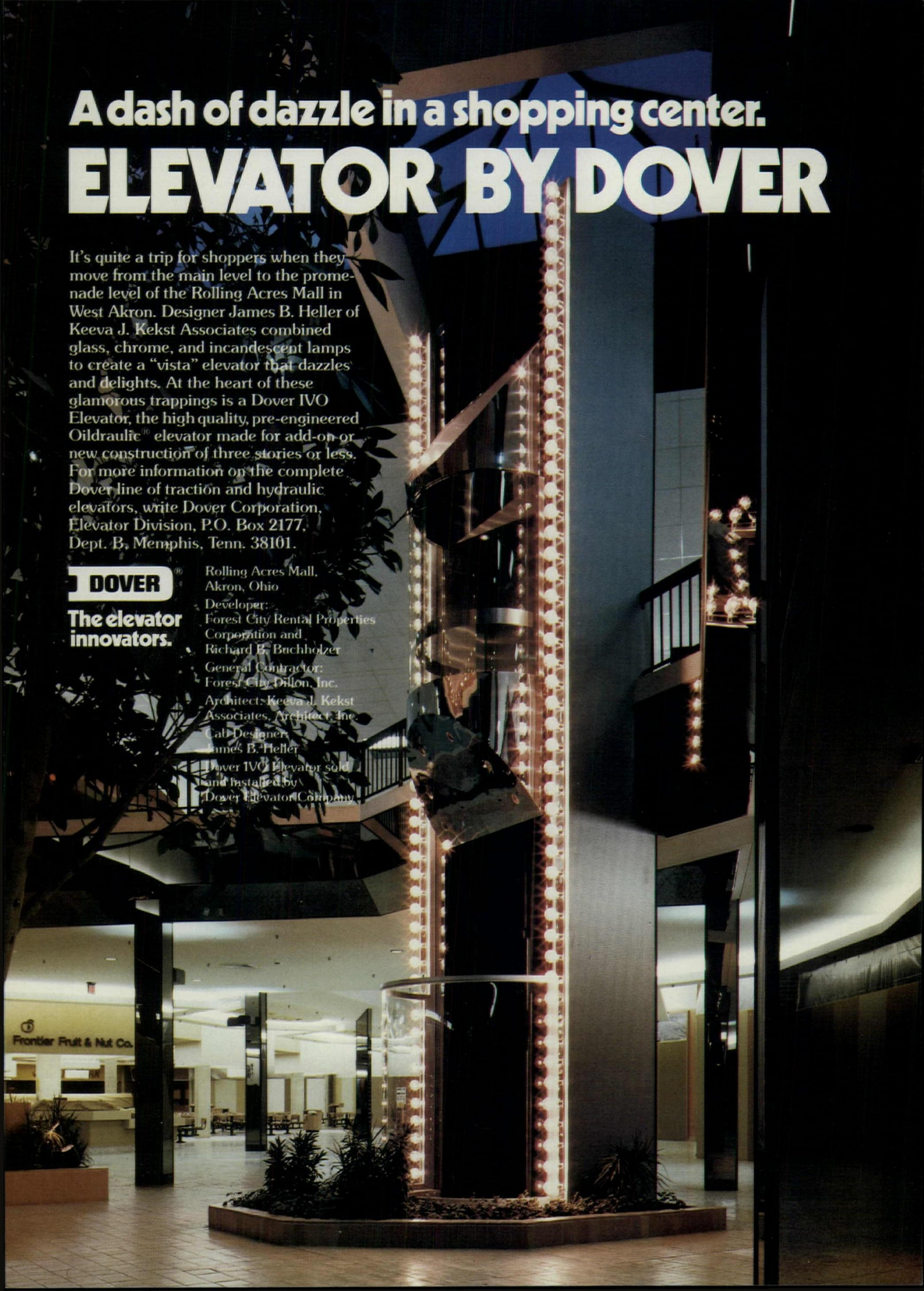
The concept of the Atlanta airport is as monumentally simple as its program is complex. Its scale can best be understood from high altitudes, while moving at great speeds; at ground level and at walking speed, the scale cannot be grasped. But the linearity of the plan, while relentlessly drawn out, is reassuring and reminds the passenger of a highway, where variations are few but are of major importance when they occur. That association is comforting, because it assures the passenger that the destination, even if unseen, can definitely be expected.

The main terminal building at Atlanta projects an image of a great winged object ready to take off from the deck of a huge carrier, but in the rest of the complex the symbolism is based upon 20th-Century technology: like a computer, the brilliance of the work is hidden beneath the "casing" of the concrete runways.

Midfield Terminal, a complex whose top priority is efficiency, will be judged by how it serves the 42 million users anticipated this year. In an age of concern over the consumption of energy and the expenditure of public funds, an effort to seek an unobtrusive, simple, and efficient solution to a complicated program should be commended.

[Jon Hayes Carlston]

[*News report continued on page 28*]



A dash of dazzle in a shopping center.

ELEVATOR BY DOVER

It's quite a trip for shoppers when they move from the main level to the promenade level of the Rolling Acres Mall in West Akron. Designer James B. Heller of Keeva J. Kekst Associates combined glass, chrome, and incandescent lamps to create a "vista" elevator that dazzles and delights. At the heart of these glamorous trappings is a Dover IVO Elevator, the high quality, pre-engineered Oildraulic® elevator made for add-on or new construction of three stories or less. For more information on the complete Dover line of traction and hydraulic elevators, write Dover Corporation, Elevator Division, P.O. Box 2177, Dept. B, Memphis, Tenn. 38101.

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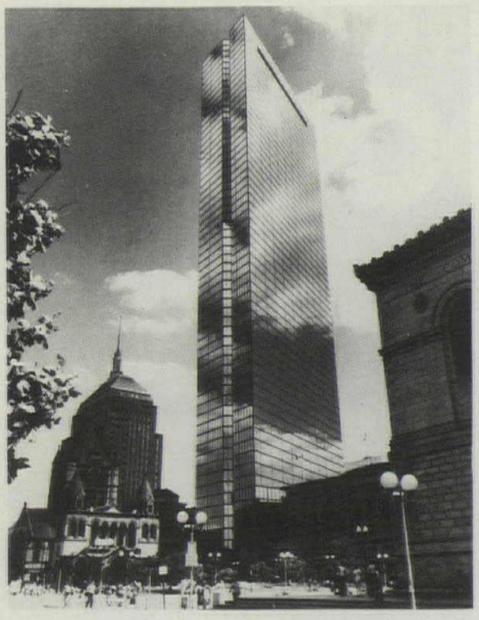

Love and hate for trouble-plagued tower

Boston's love/hate affair with the John Hancock building still smoulders, eight years after the first mysterious fracture of its placid glass façade.This fall, the insurance company added to the ongoing saga of I.M. Pei's 52-story structure, by installing 10,344 electronic sensors, one per window, to keep tabs on the wayward glass. Until the arrival of these mechanical monitors, a small battery of building watchers colored Boston's streetlife by standing with telescopes to spot the change in tone that forecasts a popping window.

Now this job is done electrically. The sensors, each about the size of a 50-cent piece, alert a control center to the danger (about 55 fractures have occurred in the last five years). If the sensors are activated, the building crew bounces to the rescue: they reverse the air-conditioning system, thereby drawing the glass inward.

Problems caused by the excavation for the building still persist, as the digging disturbed the foundations of nearby structures in Copley Square. The John Hancock Insurance Company ended the dispute with the Copley Plaza Hotel by buying it, but the elders of H.H. Richardson's Trinity Church still pursue their $4-million suit, claiming that foundation disturbance caused cracks in the masonry, and that the wind-tunnel effect brought about by the presence of the tower damaged landscaping. There are other environmental complaints. Says Trinity congregation member John Norton, "We no longer get direct sun through the south windows during morning services."

Citizen reaction to the architectural and urban implications of the structure remain mixed. Preservationists and urbanists remember the property as the first testing ground of height-restriction laws in the United States, and they note with irony that a 900-ft building now stands on the site where a hotel was once penalized for surpassing, by a few feet, the old 90-foot height limit.

Nevertheless, architects tend to be beguiled by Pei's pristine sculpture. And while many find the glass tower intrusive among the lower, predominantly masonry structures of the Back Bay area, and all object to the windswept effect it induces, still many appreciate and point with pride to the cool blue shaft which catches the sparkle of the Boston sky and reflects the architecture of the neighborhood. [Jane Holtz Kay]

Jane Holtz Kay is a Boston journalist and author of Lost Boston.

Urban Land Institute: Choices for the 80s

The October meeting in New York of the Urban Land Institute was the occasion for the unveiling of the semifinal version of the organization's report and recommendations on "Development Choices for the 80s," drawn up with support from the U.S. Department of HUD. An organization primarily of developers, U.L.I. invites numerous government officials, architects, planners, and academicians to participate in its activities. The "council" that drafted the "Choices" report included all of these and was co-chaired by Harold S. Jensen of Metropolitan Structures, Chicago, and Governor Bruce Babbitt of Arizona.

After a series of analyses, forums, and site visits carried out all over the country, the council came up with several succinct objectives for "the nation's communities": they should be more compact, both in newly developing areas and in existing urban areas; land uses should be arranged with an eye to access by public transit, walking, and other means; the revitalization of existing urban areas should be accelerated; a balance should be sought between employment and residential uses, both in existing centers and in new satellite communities.

The objectives may be hard to fault, but the required policy changes will be up to literally thousands of government bodies at all levels. So the recommendations are full of political implications. They do not, for instance, directly challenge the right of suburbs to limit development—residential, industrial, or both—though obstructions in this area came up inevitably in discussion of the recommendations at this meeting. (Jensen observed that "an adequate supply of developable land" be made a goal of local governments, but he did not define "adequacy.") No direct attack was made on environmental regulations, either, though these were mentioned as overly restrictive of development.

Jensen spoke of the current "havoc" in the financial markets, which diverts money away from real estate financing, thus making development more difficult and expensive. Governor Babbitt stressed the social implications of this situation, which is causing a whole generation of young people to be "dealt out of the housing market." There were no illusions that the good old days of easy development were natural or that they would return; Babbitt and others made clear that development was once encouraged by road-building, loan, and tax programs that are now receding into history. Water supplies and the need to preserve farm land were cited as realistic and pressing constraints on development.

HUD Secretary Moon Landrieu stressed the importance of bringing state governments back into the shaping of development programs that have been too long worked out directly between municipalities and Washington. He urged the audience to face the fact that center cities have irretrievably lost certain functions—for instance, heavy industry, and even much retail activity—and that discrimination is still a crucial obstacle to effective development and redevelopment processes. He cited the risk that we might rebuild our cities "so that they look better," a futile gesture unless we can generate a "healthy spirit for people who live there."

Architect Beverly Willis of San Francisco, one of the few design professionals on the council, emphasized that innovative, sensitive planning and design were crucial to the "urban village" kind of development the council was advocating. Without good design, she warned, such developments could be "disaster."

Among the many workshops held during the three-day conference, one entitled "Fight or Flight" was particularly revealing of the current dilemma. The session focused on three very different situations in the New York Metropolitan area (which conference attendees had had opportunities to tour): the burgeoning old suburb of Stamford, Ct; the retail core of Brooklyn, struggling to revitalize; and the all-new privately sponsored satellite community growing up in the Hackensack Meadowlands of New Jersey.

Another workshop focused on "An '80s Dilemma: Can the South Bronx be Saved?" Edward J. Logue, former president of UDC and executive director of the South Bronx Redevelopment Project, reported on the goals and the accomplishments of the project, and leaders of interest groups in the area presented their views as to what still needs to be done. Father Gigante, president of the SEPCO Development Corporation, which has helped develop 669 new and renovated apartments, stressed the pressing need for housing. While 550 units are presently under construction, and 1600 units within a square mile

[*News report continued on page 32*]

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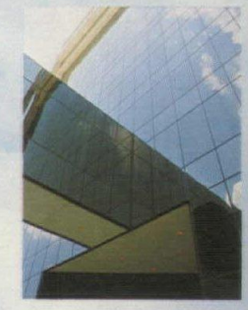

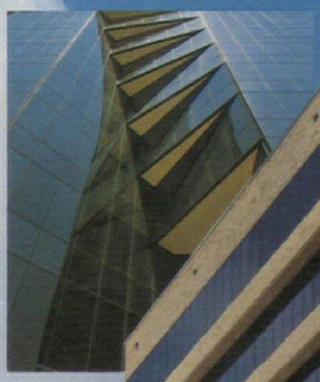

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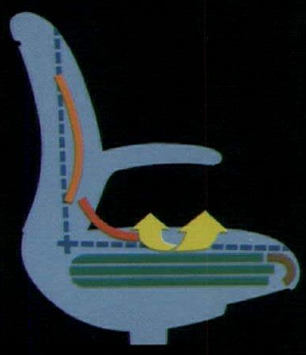

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ConCentrx is available in a choice of manager's or operator's model in sixteen styles, six shell colors, six monochromatic color combinations. You can choose from three arm options in the manager's model, cantilever arm or armless in operator's model, and more than 250 fabrics, including the new Steelcase Counterpoint Collection.

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News report continued from page 28

area are expected to be completed in the next three years, Father Gigante expressed doubts about real governmental commitment, despite grandiose promises. On the other hand, Jessie Rattley, councilwoman from Newport News, Va, denounced the continual carping about governmental shortcomings and made a plea for positive action. Edmund Bacon, one of the panel moderators, closed the session with a speech about the importance of the South Bronx Project.

Other workshops included a discussion on trends in recreational transportation patterns; plan analysis sessions on Leareno in Reno, Nv, the Village at Squaw Valley, Ca, and the town center of Radisson, NY; and a panel on historic preservation/downtown redevelopment. [JMD]

Exhibit of Paul P. Cret drawings

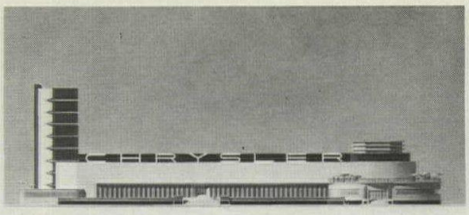
An exhibition of original drawings on tissue from the office of Paul P. Cret, architect for the Century of Progress Exposition of 1933, will open in Philadelphia at the AIA on December 8. The exhibit, which will run through January, originated at the Rhode Island School of Design. It was prepared by Elizabeth Grossman and Judith Wolin with the special cooperation of John F. Harbeson. The thirty drawings in the show are on loan from H2L2 of Philadelphia.

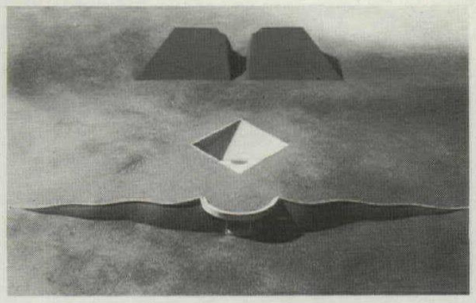
The current exhibition includes preliminary site plans for the fair and early schemes for Cret's Hall of Science building. Most of the works, however, are design development drawings for the Hall of Science, done in colored pencil at scales varying from 1/16 to ¼ in. per 1 ft.

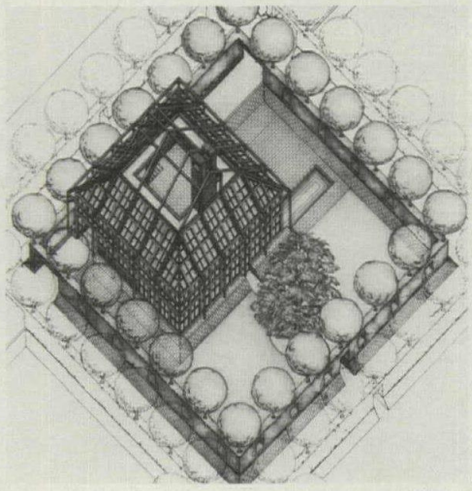
Planning for the Century of Progress Exposition, Chicago's Second World's Fair, began in 1928. The Fair's organizers assembled a group of nationally known architects—from New York, Harvey Wiley Corbett, Raymond Hood, and Ralph Walker; from San Francisco, Arthur Brown; from Chicago, Edward H. Bennett, Hubert Burnham, and John A. Holabird; and from Philadelphia, Paul P. Cret—to plan the layout and design the major exposition buildings.

To judge from the coverage in the architectural press, the 1933 Century of Progress Exposition was the most provocative event of its decade. Opening in the depths of the Depression with jazz-modern buildings striped with neon and Joseph Urban's polychromy, the $30-million exposition provided a high-budget, high-profile diversion for critics and public alike. In its five-month run, the fair attracted 39 million visitors to its educational exhibits, futuristic product displays, and the thrills of the Skyride and Sally Rand's fan dancing.

The theme of the exposition was "Progress Through Science," and Paul







Top: Paul Cret's Chrysler Building drawing.
Middle: Emilio Ambasz' berm house.
Bottom: O.M. Ungers' House Within A House.

Cret received the commission for the Keynote building. His Hall of Science was strategically sited at a major entry to the fair grounds, which stretched from 12th to 37th Streets on Lake Michigan's waterfront park. To attract the crowds from center city, Cret designed a 175-ft tower bristling with neoned fins and crowned by a Deco torchère. Cret's study drawings show a gradual development away from the symmetry and solidity of his civic buildings, towards a freer composition of elements and a more whimsical Art Deco ornamental scheme drenched in rich and subtle color.

Compared to Cret's other work, the Hall of Science is uncharacteristically flamboyant. Yet, if its dramatic silhouette, syncopated rhythms, and exuberant details are unique in his *oeuvre,* so was the program of the building. Cret made his reputation as a designer of civic architecture, not fair buildings. In fact, the Century of Progress was his only exposition work. Cret, ever concerned with appropriate character, insisted that fair structures be designed and judged by other criteria than permanent buildings. Exposition architecture, he said, must create a "festive stage set," an "unreal world." [Elizabeth Grossman]

Castelli: It ain't necessarily so

It was a catchy idea, to market buildable architecture for after-the-fact clients, and it caught the publicity and newsmagazine coverage now becoming standard in the New York architectural world, with its two-dimensional display. But it is an exaggeration to claim that *Architecture II: Houses for Sale,* the fall show at New York's Castelli Gallery, broke new ground in its clientless, siteless approach to design.

Eight architects—Charles Moore, Cesar Pelli, Emilio Ambasz, and Peter Eisenman of the United States; Oswald Mathias Ungers of Germany; Arata Isozaki of Japan; Cedric Price of England; and Vittorio Gregotti of Italy—were asked by organizer Barbara Jakobson to prepare drawings of prototype houses which can be bought and completed, for about $250,000, on a one-acre or larger site (not included in the price) of the client's choice.

There were several potential advantages to this approach, which can be summed up as follows: "What you sees is what you gets"; "Bridging the gap between the Visionary and the Real"; and "Public education and inspiration."

What you sees is what you gets. The idea is clever. The client buys a house "off-the-rack," avoiding unknown costs and lengthy interactions with a headstrong architect. But, practically speaking, it ain't necessarily so. The traditional scenario: you see a house you like; you commission its architects; the architect designs a house for your site, satisfying your needs, keeping in mind the existing house that you liked, a long production. The new scenario: you buy a design you like; you have the architect make a few minor adjustments for your site. End of story? Probably not. You ask for a few more changes, and a few more (for that price, after all . . .) Costs escalate, disagreements occur. *Plus ça change. . . .*

The Visionary meets the Real. Here lay the most exciting possibilities for achievement, but only two of the architects were able to trip the fantasy switch while keeping practicality in mind. Ambasz' "Arcadian Berm House" is lyrical and graceful; and Ungers' "House within a House," a stone winter core surrounded by a glass summer enclosure, with an enveloping frame for vines, feels comfortably "house-y," yet

[*News report continued on page 36*]

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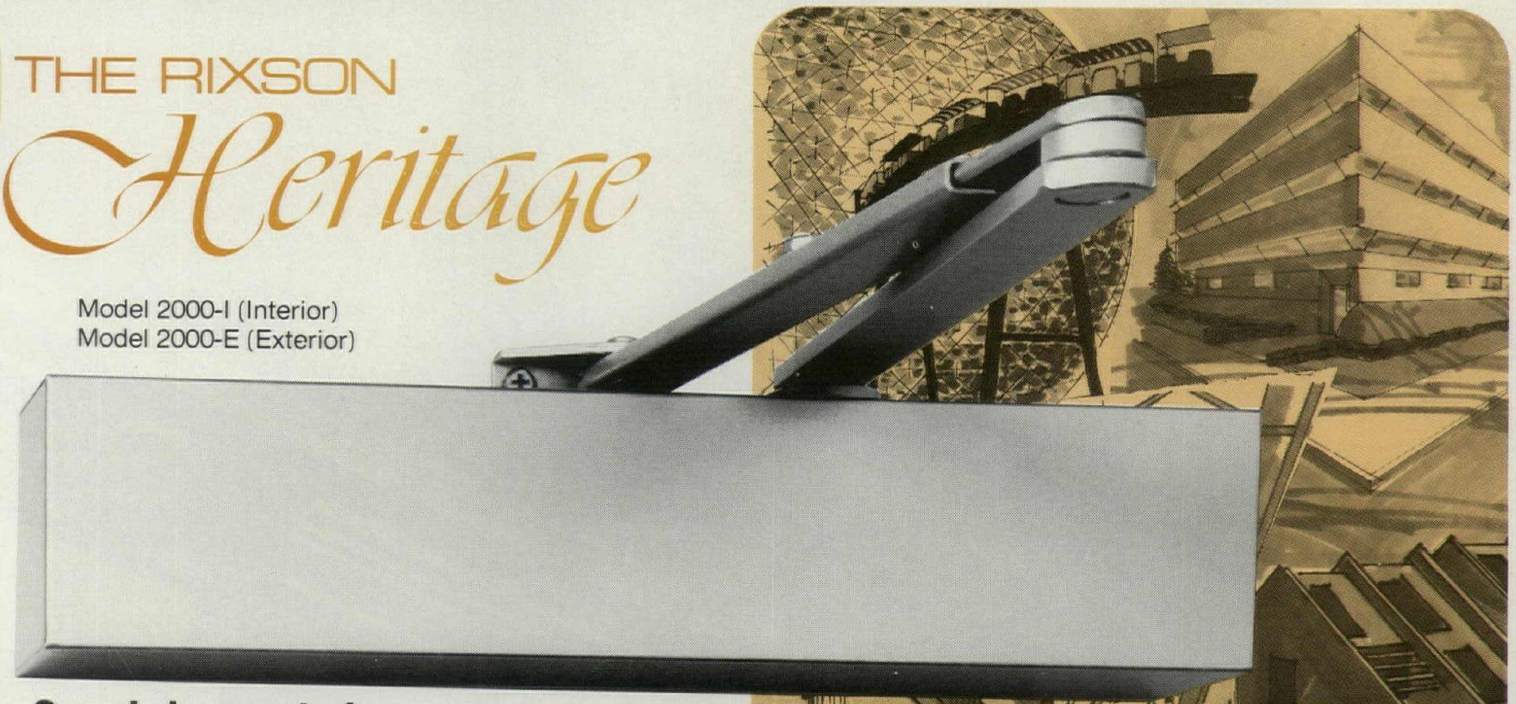

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News report continued from page 32

new in its relationship to the environment. The other architects either need the challenge of real life to pull the best out of themselves, or need the total freedom of unreality to produce visionary work. Pelli, for example, a master at rising to occasions, obviously felt he had little occasion to rise to, and designed a set of toys. Moore's house was more paper-thin than usual. Price's Archigram design certainly was not visionary. Gregotti's house is hardly worth mentioning. Eisenman's design was for sculpture, and he has produced better sculpture. And Isozaki's house would have been beautiful, with breathtaking spaces, if he had not had to pack it with the "real" necessities of living. Perhaps, to these architects, this was just another drawing show, and while their presentation methods have increased in sophistication (witness Moore's shadow box technique, and Isozaki's gorgeous cast lead plates) their architectural ideas displayed here have not.

Public education and inspiration. Here, in fact, lies the show's greatest accomplishment. Nothing is so electrifying to many as consumerism, the possibility of acquiring goods. In finding a new method to market the idea of architecture, the *Sale* organizers have increased the public's involvement in architecture. Education and inspiration = publicity: mission accomplished.
[Susan Doubilet]

Calendar

Exhibitions

Through Jan. 18. Expressionism—a German Intuition, 1905–1920. The Solomon R. Guggenheim Museum, 1071 Fifth Ave., New York.

Through March 31. Holabird & Roche and Holabird & Root: The First Two Generations. The Chicago Historical Society, Clark St. at North Ave., Chicago.

Dec. 5–Jan. 10. The architectural photography of Ezra Stoller. Max Protetch Gallery, 37 W. 57 St., New York, NY.

Dec. 6–Jan. 10. Project show by Richard Fleischner, site sculptor. Max Protetch Gallery, New York.

Jan. 16–Feb. 7. The work of Leon Krier, Max Protetch Gallery, New York.

Through Mar. 15. Japanese exhibit and lecture tour honoring Walter Gropius began in November in Tokyo and is continuing as follows: **Dec. 9–21:** Fukuoka City Museum, Fukuoka; **Jan. 12–24:** Osaka City Modern Museum, Osaka; **Mar. 4–15:** Hokkaido Modern Museum, Sapporo. For information contact Diana Miller, The Architects Collaborative, 46 Brattle St., Cambridge, Ma 02138.

Competition deadlines

Dec. 19. Registration deadline for participation in competition to design a Vietnam Veterans Memorial in Washington, DC. For more information write Vietnam Veterans Memorial Fund, Attn.: Design Competition, Suite 806, 1730 M Street, NW, Washington, DC 20036.

Jan. 1. Entry deadline for the American Wood Council's Western and Southern Regional design awards program for nonresidential wood buildings. Information is available from the American Wood Council, Suite 500, 1619 Massachusetts Ave., NW, Washington, DC 20036.

Jan. 26. Mailing deadline for International Conceptional Furniture Design Competition, sponsored by *Progressive Architecture.* For information see p. 15 or contact Furniture Competition, Progressive Architecture, 600 Summer St., Stamford, Ct 06904.

Conferences, seminars, meetings

Jan. 18–20. Architects' Seismic Seminar, sponsored by the Northern Nevada Chapter of the AIA and the Graduate School of Architecture, University of Utah, limited registration. Contact Raymond Hellmann, 137 Vassar St., Reno, Nv 89502 (702) 329-4641.

Jan. 23–25. The 37th convention of Alpha Rho Chi, the national professional architectural fraternity, at the University of Houston. Contact R.W. Burford, AIA, 3333 Eastside St., Suite 142, Houston, Tx 77098.

Apr. 1–6. The 34th annual meeting of the Society of Architectural Historians, Empress Hotel, Victoria, BC. Contact The Society of Architectural Historians, 1700 Walnut St., Philadelphia Pa 19103 (215) 735-0224.

[*News report continued on page 40*]

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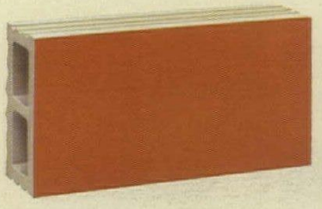

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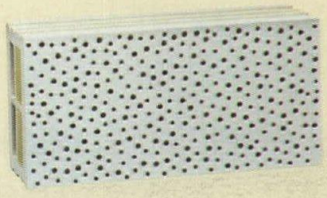

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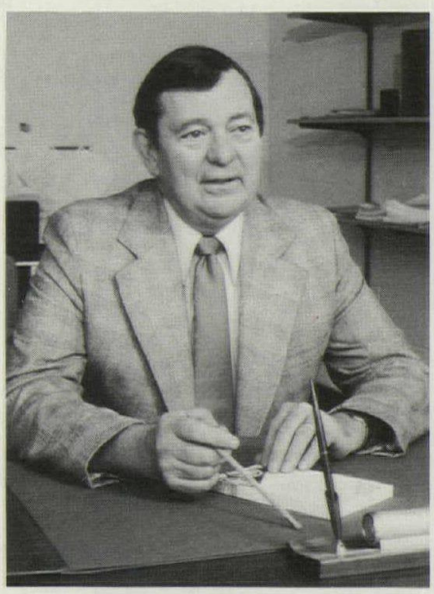

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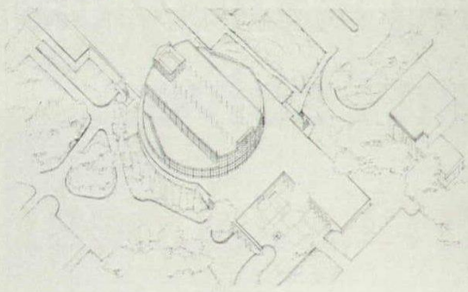
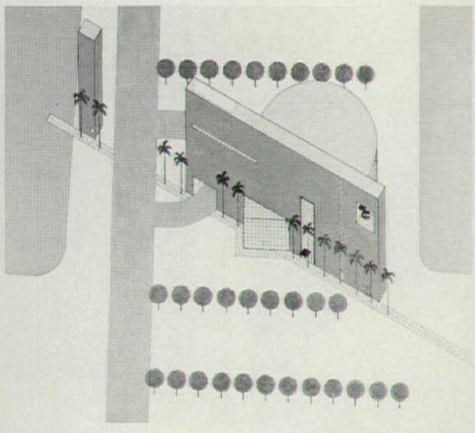
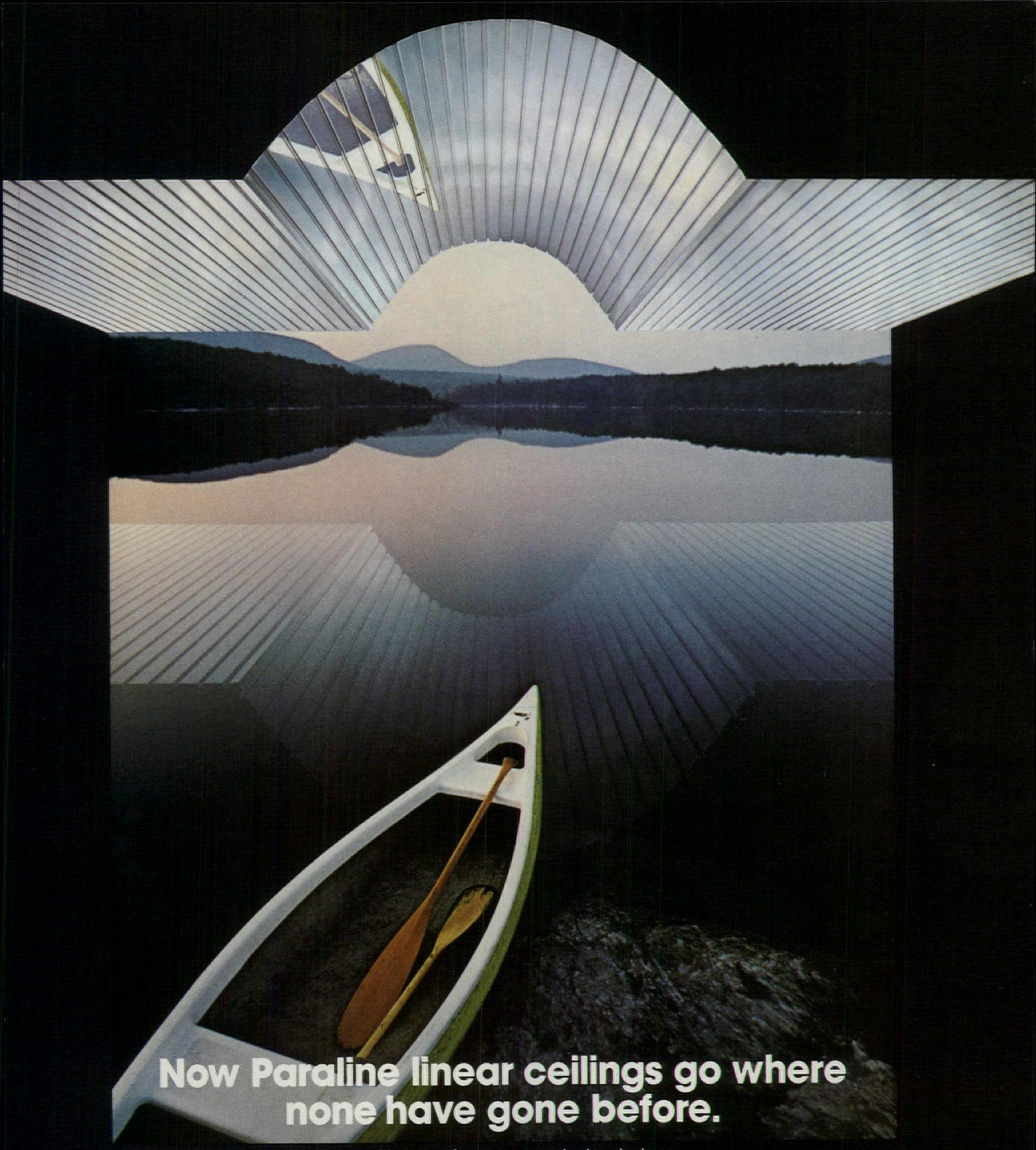
In progress



Theater, Long Island University, Greenvale, NY. *Architects: Mitchell/Giurgola Architects, New York.* In February 1978, a storm caused a roof collapse at the 1970 auditorium/field house of the C.W. Post Center, Long Island University. The University decided to rebuild the "Dome," as it was called, with greater performance potential, and while the circular plan and perimeter walls are being retained, the building will now hold a multipurpose hall seating 2200. The acoustical shortcomings of the circle will be overcome by the use of a series of angled walls, reflective "ribbons" overhead, and acoustical treatment of the perimeter walls. Tiered and sloped seating, two major building columns on stage, and special lighting will provide visual focus. Proscenium arch and other masking controls will enable modification of the stage configuration. Construction is steel frame clad with aluminum panels, enlivened with red joint lines between panels, blue trim, and runway lights atop the building.



The Overseas Tower, Miami, Fl. *Architects: Arquitectonica International Corp., Coral Gables, Fl.* This six-story, 38,000-sq-ft office building will serve as headquarters for an international trading and finance company. It is located at the entrance to one of the man-made peninsulas in a new industrial park, Fingerlakes Commercenter, near Miami International Airport. The main organizing element of the building is a brightly colored, 12-ft-thick wall containing the service core. A small section of the wall occurs on the other side of the peninsula access road. On the front, a glass triangular prism houses a 24-hour teller and forms the entrance to the bank lobby. On the lake side, a glass cylindrical segment contains the office spaces. The entrance to the office lobby is an oversized glass doorway in the front façade. At the ground level, a cutout in the thick wall accommodates a drive-through teller, and at the fifth floor, a two-story cutout provides a terrace for office employees.



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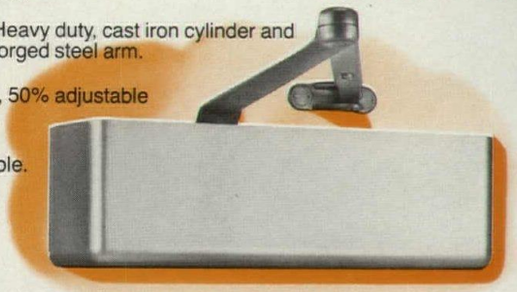

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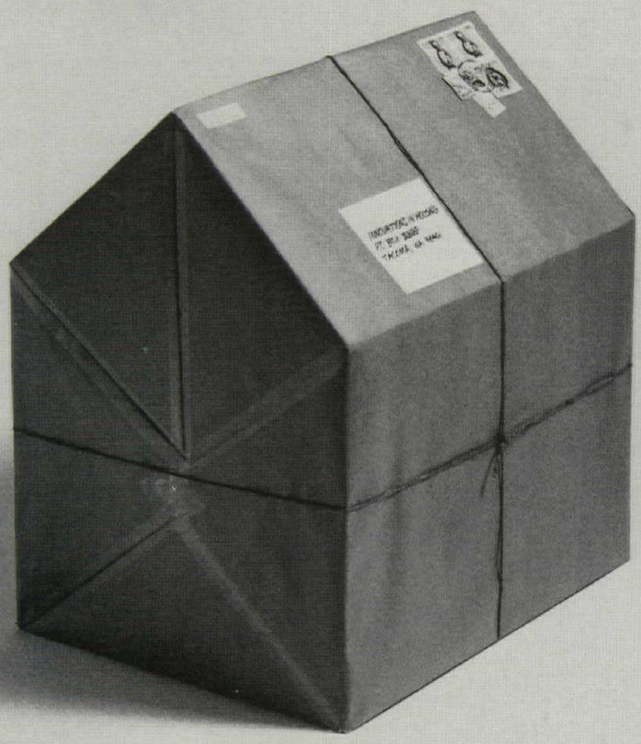

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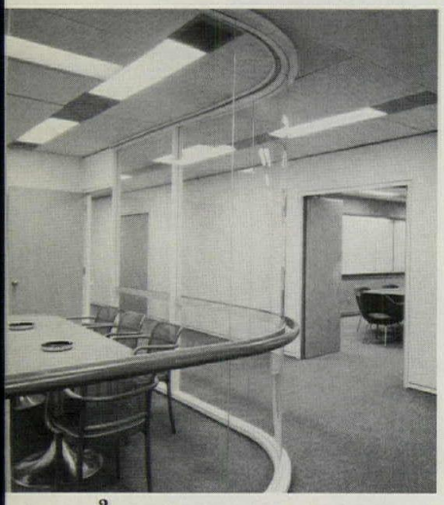
Curved glass walls (above) enclose central executive offices, stepped back for views and draped for privacy.
Extruded aluminum light fixtures (right) are suspended over the corridor, which culminates in a storage cabinet.

Alcan Aluminium offices, Montreal

1



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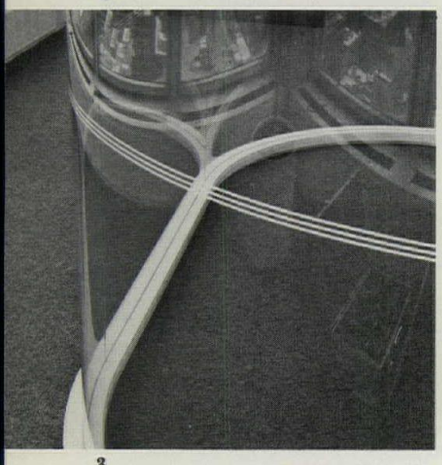

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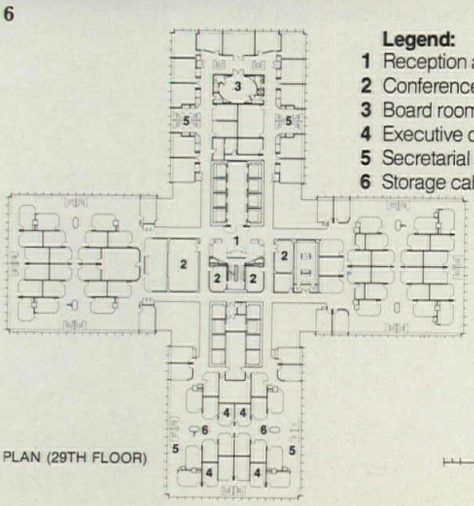
6

*Glass walls around **1** offices and **2** small conference rooms allow views and light penetration. **3** Wood frame for special curved glass. **4** Executive offices. **5** Boardroom. **6** Corridor with rounded wood molding and reflector lights. **7** Reception area, with burgundy leather seating, custom-designed desk, and logo on hand-etched aluminum panel. **8** Secretarial stations surround glazed offices.*



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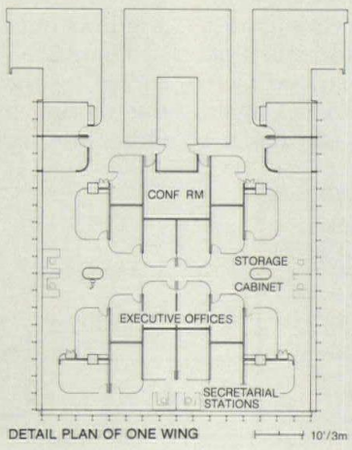
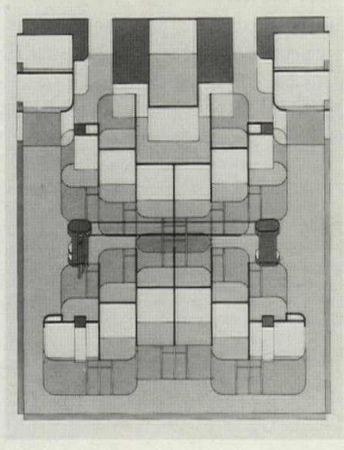
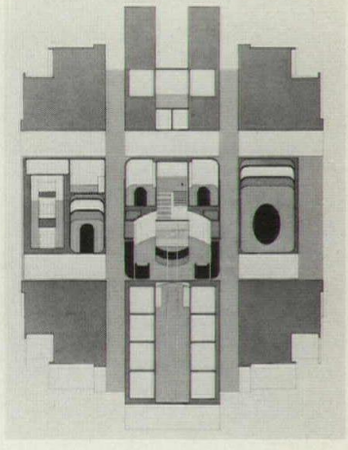






Data

Project: *Alcan Corporate Headquarters, Place Ville Marie, Montreal, Quebec.*

Architect: *A.J. Diamond Associates, Toronto, Ontario.*

Program: *interior renovation of 72,000 sq ft on the 28th and 29th floors of I.M. Pei's 1960s office building, providing general and executive offices, reception area, and conference rooms.*

Major materials: *glass in wood frames, gypsum board, carpeting, drapery, existing fluorescent lighting fixtures, and custom-designed suspended aluminum reflectors. New and refinished white birch desks. Etched aluminum sign and custom-designed aluminum hardware.*

Client: *Alcan Smelters & Chemicals Ltd.*

Consultants: *mechanical & electrical: Rybka Smith & Ginsler; acoustical: Davidson & Associates.*

General contractor: *P & R Desjardins Construction Inc.*

Costs: *$15 per sq ft, exclusive of carpet and furniture.*

Executive offices, New York

On the square

Paul Segal Associates weaves together the intersecting grids of New York in high level offices that are themselves arranged as an urban intersection.

In an almost literal interpretation of the design-interiors-as-if-they-were-miniature-cities approach, these offices are modeled after an Italian piazza. The idea is hardly odd, as Classical architecture from the Renaissance on generally conceived of urban design in architectural terms with the sky as an imagined roof.

The Segal-designed offices are on the top floor of a 1917 Albert Kahn building in New York. The elevator opens directly onto the piazza, a lobby area occupying the entire middle of the floor. This piazza is paved in slate, and the rooms around are treated as if they were buildings. The walls are articulated in long, horizontal gray panels like the rusticated stone bases of important Classical buildings, with niches as windows.

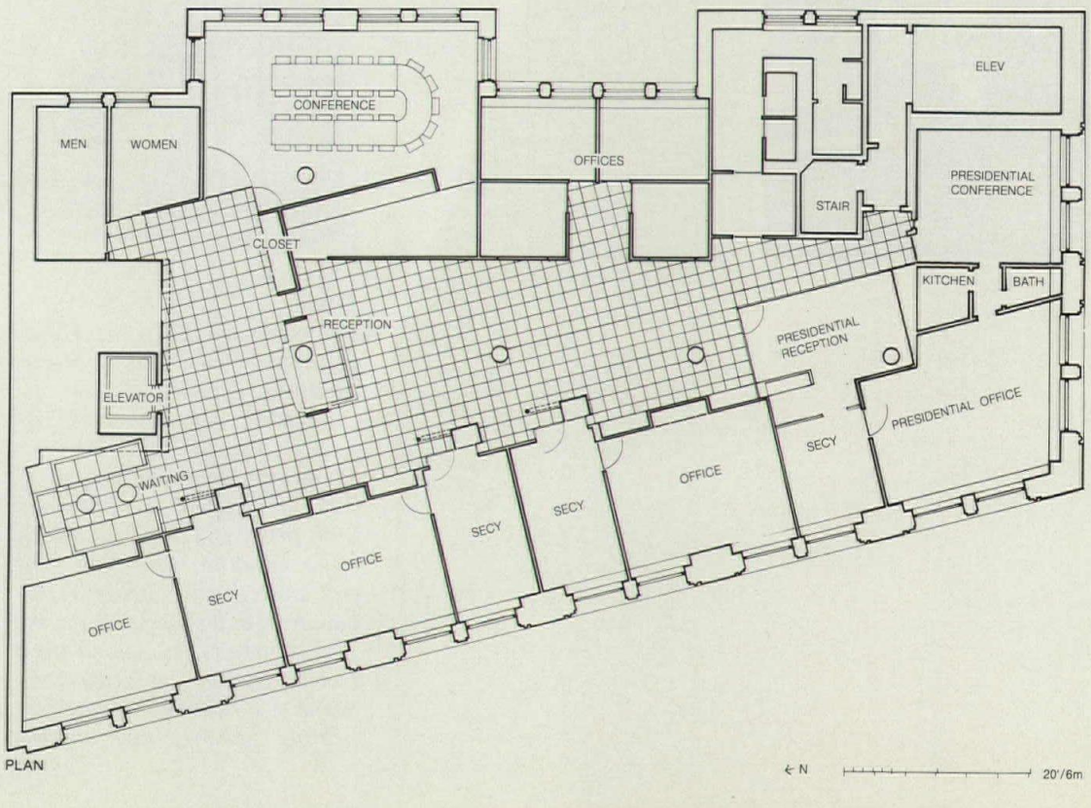
The entrances to the three senior officers' suites are abstracted façades. Each is composed of a section of wall, a column, a beam, and a light box that stands for both door and window. These are assembled to accentuate the distinctiveness and thus symbolic value of each element. The wall is natural oak and actually consists of two walls meeting at a corner. The column is round and rust color. The beam is square and oak, separated from the wall by a reveal. The light box is framed in pale gray-green steel that in fact has the identical section as the window walls of Wright's Falling Water and owes the same debts to Chareau and Corbusier. Each "façade" stands slightly in front of the wall, marking each suite as a separate building.

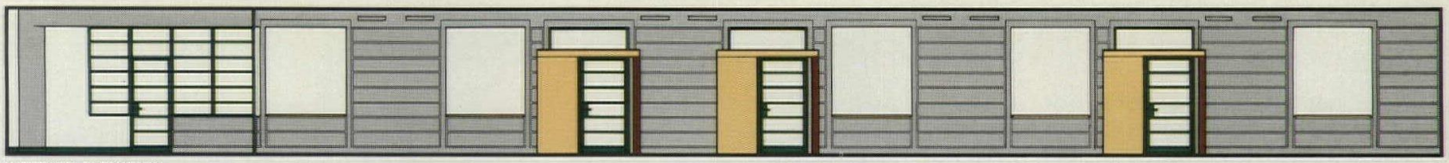
The same elements are played large for the presidential suite at the end. The propylea becomes an entire reception room, edged in window wall. Its whole side, which is the entrance to the rest of the suite, becomes a play on the little gateways, but in reverse, with a full-size column, window-wall entry into the next office, and duct "beam." The rusticated paneling of the piazza, meanwhile, has eroded into the receptionist's desk. (The rest of the presidential suite was unfortunately furnished in typical model home style by another designer.)

Other elements facing or in the piazza are treated similarly. The elevator wall is given a cornicelike molding. The main reception desk and guest closets are embraced in an overall frame. The smaller assistants' offices, across the piazza, are grouped together with a tiny vestibule and large, framed translucent windows onto the square.

There are no lighting fixtures in the piazza except for the small grids of downlights over the waiting area and main reception desk. Otherwise, light comes from the "buildings"

Facing page: A visitor's first view when leaving the elevator is a generous public space in the spirit of an urban piazza. Directly in front, the receptionist can guide him either to the large conference room or to the appropriate officer's suite.





INTERIOR ELEVATION

Norman McGrath

in a reversal of inside and outside. Hidden bulbs within the cornice molding wash the elevator wall with light. More hidden bulbs fill the niches with light and aim rays up from the gateways. Real sunlight comes in from the offices through the light boxes.

City within a city

Complicating the urban imagery are the very real urban constraints of its location at one of the intersections of Manhattan's rectilinear grid and its one major diagonal, Broadway. The two grids within the building make for angles of intersection largely taken up by bathrooms, kitchens, corridors, and the triangular form of the piazza itself. But at each end the architects have dealt with the configuration in a clear and public way.

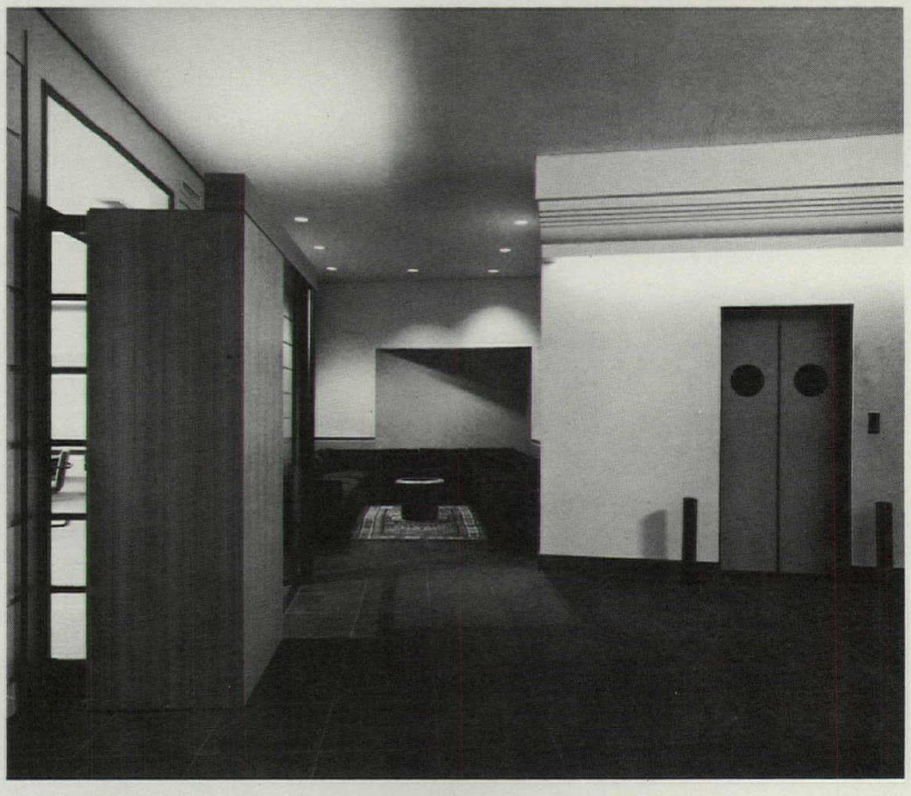
Next to the elevator is an alcove acquiring one edge from the diagonal and one from the rectilinear grid. The waiting area is inserted here. Incisions cut into the walls, creating shelves, allow both grids to be simultaneously expressed. (The effect is also to pull the walls away from the furniture, making the alcove seem roomier). At the other end, the two grids are resolved in a single pivot point, the last column.

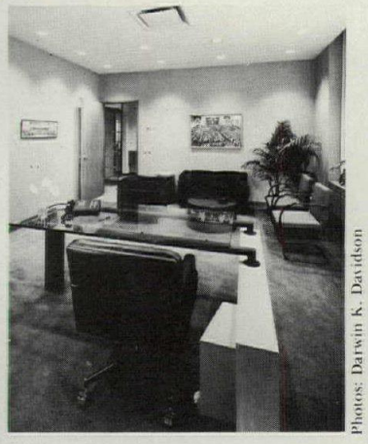
Making that column the pivot point required that the interior partitions of the offices line up with it. What this added in generosity of proportion to the piazza and geometric serenity, it subtracted in space from the offices. The protruding gateways serve to move closets and doorswings into the common area, thereby permitting side chairs in the secretarial offices. The thick zone between piazza and offices, almost corrugated by niches and closets, is intended to have acoustical advantages as well.

The colors—black slate, pinkish cream walls, pale green steel and baseboards, mauve radiators and window frames, rust decorative columns and gray actual columns, wool wallcoverings and carpeting inside offices—are of the increasingly popular palette revived and tuned by Michael Graves. "We chose color," says one of the project designers, Michael Canter, "for an association with traditional elegance. We wanted the air of having stood still since just after World War II."

All in all, the piazza is a strong symbol for the organization (which wishes to remain anonymous for publication) whose top officials are housed here, and the niches will be filled with old photographs and memorabilia from its illustrious and colorful past.

The design intentions and vocabulary are rather different from the Segal firm's earlier work and represent the growth of the firm from two partners to 13 architects and Segal's policy that each should be allowed to follow his own direction. These offices have been on their boards for 2½ years, through innumerable designs. The built one is largely the concept originally of James Biber, a graduate of Cornell; and later Michael Canter, a graduate of Cooper Union. [Nory Miller]





Photos: Darwin K. Davidson

This page: The lobby waiting area (top) fits into an alcove next to the elevators, expressing both rectilinear and diagonal grids. Bottom: Gateway to an executive office.

Facing page: Where elements intersect with the lobby, they are detailed as buildings on the square. Reception desk and guest closets are embraced by a frame (top) that defines them within the space. The elevator wall (middle) is given a cornicelike molding. Bottom left: The gateway to the president's suite, his reception area, is a blown-up version of the other gateways. Bottom right: Executive office with desk designed by the architect.

Photos: Darwin K. Davidson

Data

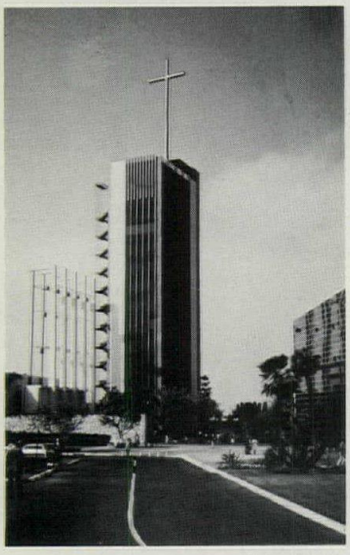
Project: *offices, New York.*
Architect: *Paul Segal Associates, New York. Michael Canter and Richard Lewis, project managers; James Biber, William Derman, Kenneth R. Davis.*
Program: *executive offices and conference room on top floor of 1917 Albert Kahn building.*
Major materials: *gypsum board, slate floor, oak, steel frame window wall.*
Consultants: *Flack & Kurtz, mechanical and electrical. Robert Silman, structural.*
Contractor: *H.S. Hochberg & Son.*
Costs: *withheld at request of client.*
Photography: *Darwin K. Davidson, Norman McGrath.*

Crystal Cathedral, Garden Grove, Ca

New Crystal Palace

Barbara Goldstein

The most talked of building of the year is Johnson/ Burgee's Crystal Cathedral, which has just been completed in California.



The original church (above) was designed by Richard Neutra in 1959, with the bell tower designed by Dion Neutra in 1967. The new space created between the two churches now forms a forecourt where congregants stroll before and after service.

God, if you want it built, provide the cash and I'll take the criticism.—Rev. Robert H. Schuller.

On a busy commercial strip amid the fast-food restaurants, shopping centers and crackerbox houses of Orange County, Philip Johnson has created a masterpiece, an inspiring new church for a remarkable and visionary patron. The Crystal Cathedral, designed for the Reverend Robert H. Schuller's Garden Grove Community Church, is as contemporary and forward-looking in its approach to architecture as is its minister's approach to religion. The building is simple, elegant, and spectacular, a tribute to a lively Christian congregation in the heart of Southern California.

Reverend Robert H. Schuller moved to California in the early 1950s, an Iowa farmboy with a vision of building a Christian congregation in Southern California. He began preaching his message from the snack-bar roof at the Orange Drive-In Theatre; but by 1959 his congregation was large enough to need a major building, the Garden Grove Community Church, designed by Richard Neutra. This was a tasteful linear structure of wood, steel, glass, and stone, flanked by a reflecting pool. Soon the congregation grew, and new buildings grew around the church, forming a lushly landscaped courtyard dominated by a 14-story campanile, the Tower of Hope, designed by Dion Neutra.

In the early days of his ministry, maintaining the tradition of drive-in religion, Schuller encouraged those who could not come into the church to worship from their cars. Maintaining this tradition, the Crystal Cathedral has 300 parking spaces for congregants who wish to worship in their cars.

Schuller's message is simple: he believes that the basic human problem is lack of self-esteem, and that communication is the key to human understanding. He calls his followers Possibility Thinkers. A psychologist by training, he takes a populist approach to religion and has an astute awareness of the power of the media. Beginning as a minister of the highways, he has graduated to the airways; his television audience is in the millions and the Hour of Power is broadcast in 177 cities. His home congregation numbers 10,000.

In 1975, when the Garden Grove congregation had outgrown the 1400 seats in the expanded Neutra building, Schuller thought of building a new church. He had read a magazine article about Philip Johnson's Fort Worth water gardens and went to see them. Initially Schuller thought that Johnson was a landscape architect who might design the grounds around the new church, but when he later learned that Johnson was an eminent architect, he commissioned him to design the building.

Johnson had never heard of Schuller, either, but their meeting was providential. Here was the marriage of two great optimists, patron and architect—a match made in heaven. Johnson now describes the commission as "a fantasy building for a fantasy client."

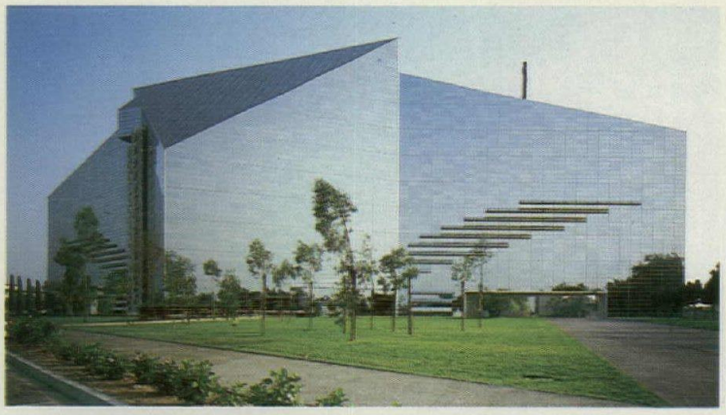
Reverend Schuller believes that architecture is basically "anti-human," that it is an intrusion. He feels that man's basic problem is that he is out of his natural habitat, the Garden of Eden, and that this situation prevents trust and communication. He feels that a church should "tranquilize"; it should awaken the senses, uplift the spirit, and allow the individual to see the heavens above. The ideal church would be a park where people could sit in communion with nature.

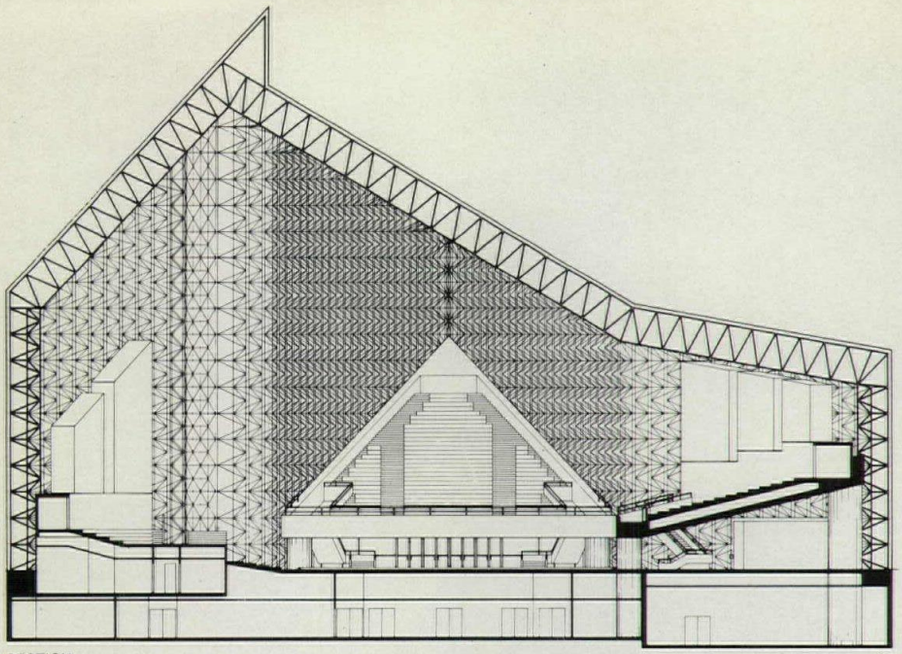
Schuller described his attitude to Johnson, encouraging him to let his imagination soar. In fact, Schuller considered Johnson's original proposal of a church with only a glass *roof* to be too conservative. He urged Johnson to redesign it with completely transparent cladding, stating that the view of traffic and surrounding life was all part of God's world. He knew about the Crystal Palace, and this convinced him that his dream was possible.

The Crystal Cathedral, with its lacy transparent structure and its mirror-glass cladding, certainly fulfills much of Schuller's dream. It allows its congregants to see the sky as well as the world around them. Its great pivoting doors admit the breeze and the fog, and its huge embracing space promotes a sense of community. Wihout a doubt, the soaring space, enclosed by a uniform web of white space-frame trusses, inspires a sense of awe. Being inside this building is literally an uplifting experience.

The exterior of the building succeeds on a symbolic level, too, at least when seen at a distance. It is a building rich in imagery and metaphor despite its seemingly abstract geometry. First sight of the Cathedral is the view from the freeway; from there it appears like two glistening pyramids stacked against

The massive pair of doors at the north side of the church (right and below) are not an entry, but a "window" that allows worshipers, who listen to the sermon in their cars outside, to see the Reverend Schuller inside.





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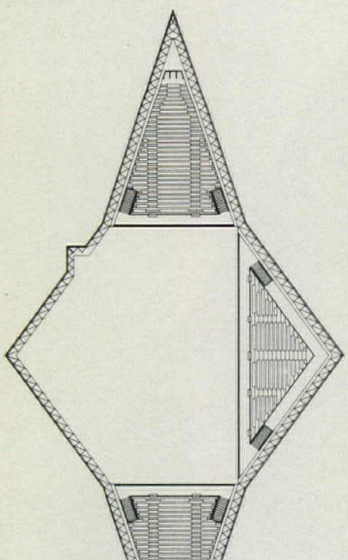
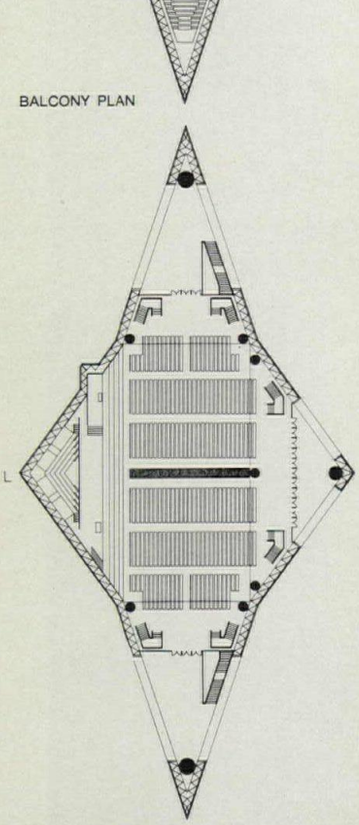


BALCONY PLAN



GROUND FLOOR PLAN ←N

one another, the downward slope of the north roof reflecting a triangle of sky, a subliminal reference to the Trinity. As one draws closer, the building appears like a mirrored tabernacle, with invisible guy wires pulling it taut against the earth. Its surface color and pattern constantly change, reflecting the conditions of the atmosphere: in early morning it glitters, by noon it seems opaque. Although its cladding is in the commercial vernacular of the area, it is unmistakably a church. The embracing nature of its forms and the cross of the Neutra campanile peaking above give clear indication it is a place of worship.

The Cathedral presents continually changing meanings as one drives past it on the surface roads. The downward sloping wings of the north and south elevations and the sharp angles of the east and west corners exaggerate its scale, creating an illusion of greater length. From across the street, the high, blank north façade recalls the rear of a drive-in screen, its flat surface facing away from the road. Once the gigantic doors begin to part, however, they can only be seen as the tablets of the Ten Commandments—that's strong archetypal imagery for an abstract construction!

The building also recalls airplanes and spaceships. The chevron patterns of the vent windows and the downward pitch of the wings create an impression of flight. The building looks as if it might take off any second, an appropriate gesture for a ministry of the air. In fact, the building utilizes space technology to the extent that the pivotal doors use the same opening mechanism as the doors at Cape Canaveral.

Inside, the image of upward motion is further reinforced by the sweep of the triangular balconies. The seating and aisle pattern describes arrows pointing up to the sky; and these carry the vision ever upward to the ridge of the roof and beyond. Overhead, 11,000 Mylar stars, suspended from the frame, catch the movement of the sun, each commemorating a building donor.

The plan

The church is also unusual in plan; rather than being a cruciform plan with an extended nave and short transept, the plan is reversed. The building's perimeter describes an elongated four-pointed star, and the 207-ft nave comprises the short axis, while the transept is twice the length at 415 ft. Straight rows of seating on the ground floor and the frame formed by the balconies reinforce the square space of the lower-level seating. The plan is both formal and symmetrical, and the space presses in toward the pulpit, creating a surprisingly intimate effect within such a vast volume.

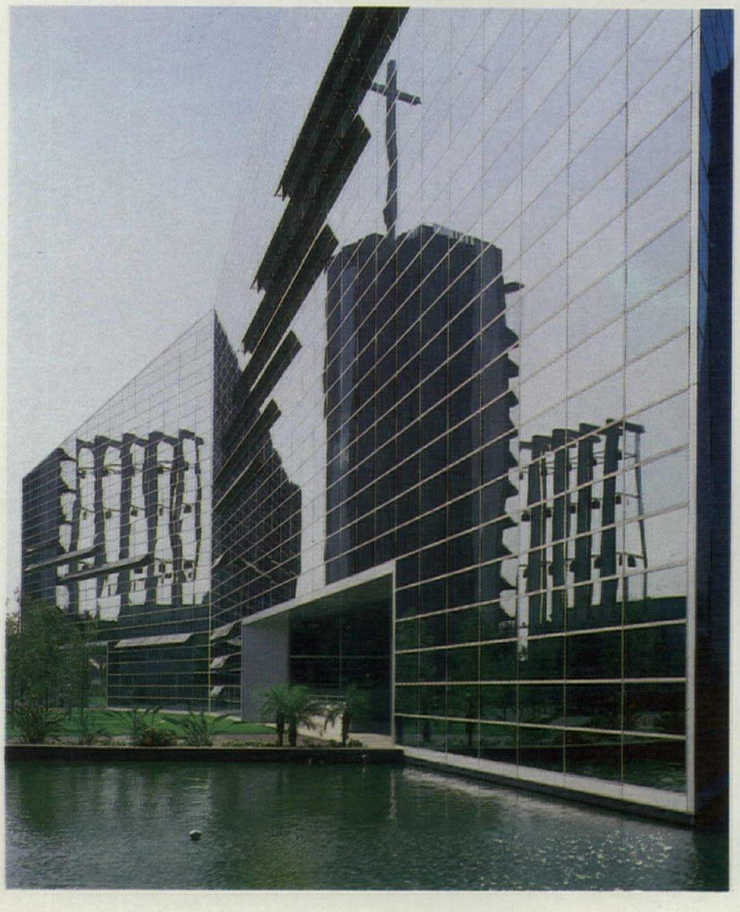
The juxtaposition of the Crystal Cathedral at a right angle to the Neutra Church creates a monumental forecourt, where people can stroll from their parked cars into worship services. Although this façade is far less interesting than the façade that faces the road, it *is* enlivened by the fractured reflections of Neutra's church and the Tower of Hope. There is just enough room between the street façade and the road to accommodate 300 drive-in congregants. The location of the opening doors on this side of the building not only offers them a limited view into the cathedral, it also bathes the Reverend Schuller in a flattering morning light, enhancing his image on television.

The Crystal Cathedral is unquestionably modern, a reassuring gesture from Philip Johnson; and its simplicity and conceptual clarity make it one of his most successful buildings. Certainly it is the most magnificent interior space he has designed. Whereas in Pittsburgh he is building a Gothic cathedral for commerce, here he has created an entirely fresh but unambiguous form for religion.

Design sources

There are some interesting sources for the design of this building, which Johnson has synthesized into far more than the sum of their parts. In describing the building he has referred to both Norman Foster's Sainsbury Centre for the Visual Arts (P/A, Feb. 1979, p. 49), and Mies Van der Rohe's Friedrichstrasse, the triangular glass office tower proposal in Berlin. Viewed from certain sides, the elongation of perspective resulting from its prismatic plan *does* give the cathedral a striking resemblance to Mies's building. A lesser known predecessor, and one of which Johnson may have been unaware, is Bruce Goff's 1950 design for the Crystal Chapel in Norman, Ok. Here, Goff proposed an all-glass roof, based in plan on a three-pointed star. Like the Crystal Cathedral, it was ventilated by drawing hot air up through the peaked roof; it also proposed cooling the air by the use of outdoor pools. The Crystal Cathedral, however, is unique in its internal volumetric organization, and that is the outstanding aspect of its design.

The building is innovative in both appearance and environmental systems; it is "high-tech, low energy." Like the Sainsbury Centre, it uses a triodetic steel frame to support the roof and walls, a system of reflective panels to reduce solar gain, and it is naturally cooled. However, here the comparisons stop. Whereas Foster's structure relied on a Miesian philosophy of structural minimalism, the



The south side of the church faces the major parking area and the earlier church and administration building, which are reflected in the mirrored façade. Major pedestrian entries are at the extreme east (immediate left) and west (directly above) points of the church (see plan left).

Crystal Cathedral rejoices in its extravagant use of structure. As Johnson stated, "What's important is what we have done *with* structure, not what structure has done *to* us."

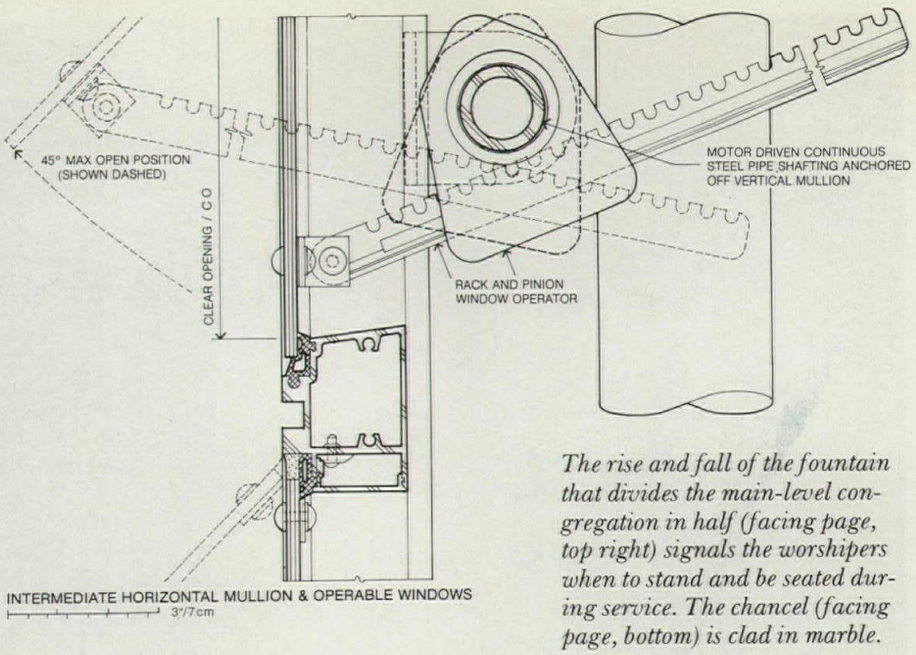
Environmental systems

The environmental systems, too, are very sophisticated. There is absolutely no mechanical heating or cooling system in the main auditorium of the church, although the acres of basement office and rehearsal spaces are climate controlled. The cathedral space operates as a solar chimney, and the ambient temperature within it derives entirely from its form and engineering. The mirror-glass cladding reflects most of the sun, admitting only a small amount of heat and light. The roof of the cathedral's north wing rises high above the south slope, forming a vented vertical face. This heats up the top area of the building, in turn drawing the cool air up from the bottom and out, like a chimney.

The atmosphere inside the building is very pleasant as a result of the filtered sunlight and movement of air. The mirror glass admits only eight percent of the sun's rays, bathing everything in a warm glow. In spring and autumn, the morning fog rolls into the building, creating a cloudy veil over the congregants. On stormy days, there will be both the sight and sound of rain (perhaps a mixed blessing). On the hottest summer days, the interior will undoubtedly be warm, but it will be cooler than the outside air.

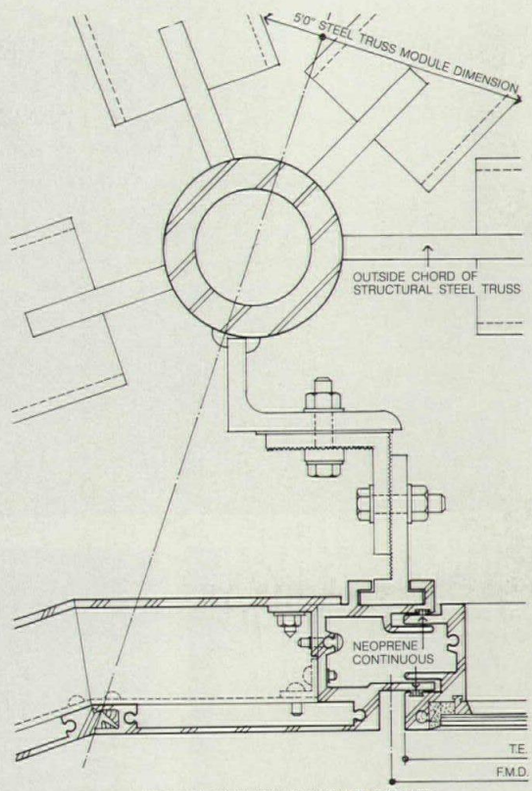
The interior

Many aspects of the building's interior are inspired, and the overall sensuality of the space is almost overwhelming. The concrete framework that supports the seating is clean and elegant, its sparkling, bush-hammered surface making it seem as if it were rough hewn from marble. The balconies are entirely independent of the steel lattice structure, and their insertion into the corners of the building, forming entrance canopies and vestibules along their undersides, is masterful. In fact,

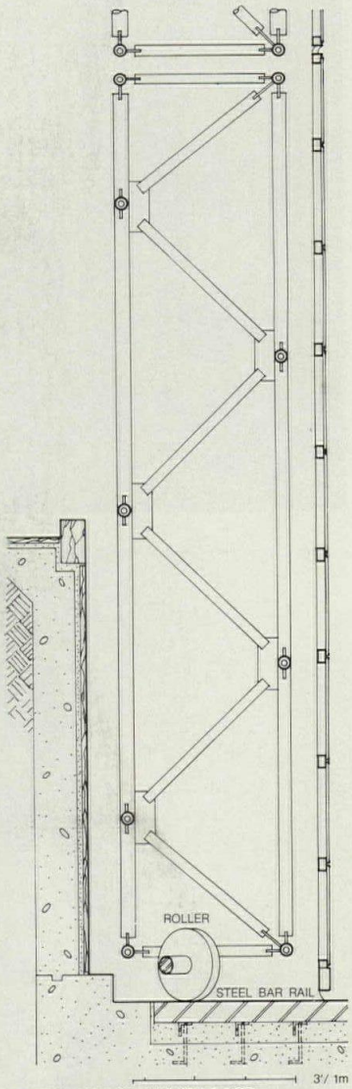


INTERMEDIATE HORIZONTAL MULLION & OPERABLE WINDOWS
3"/7cm

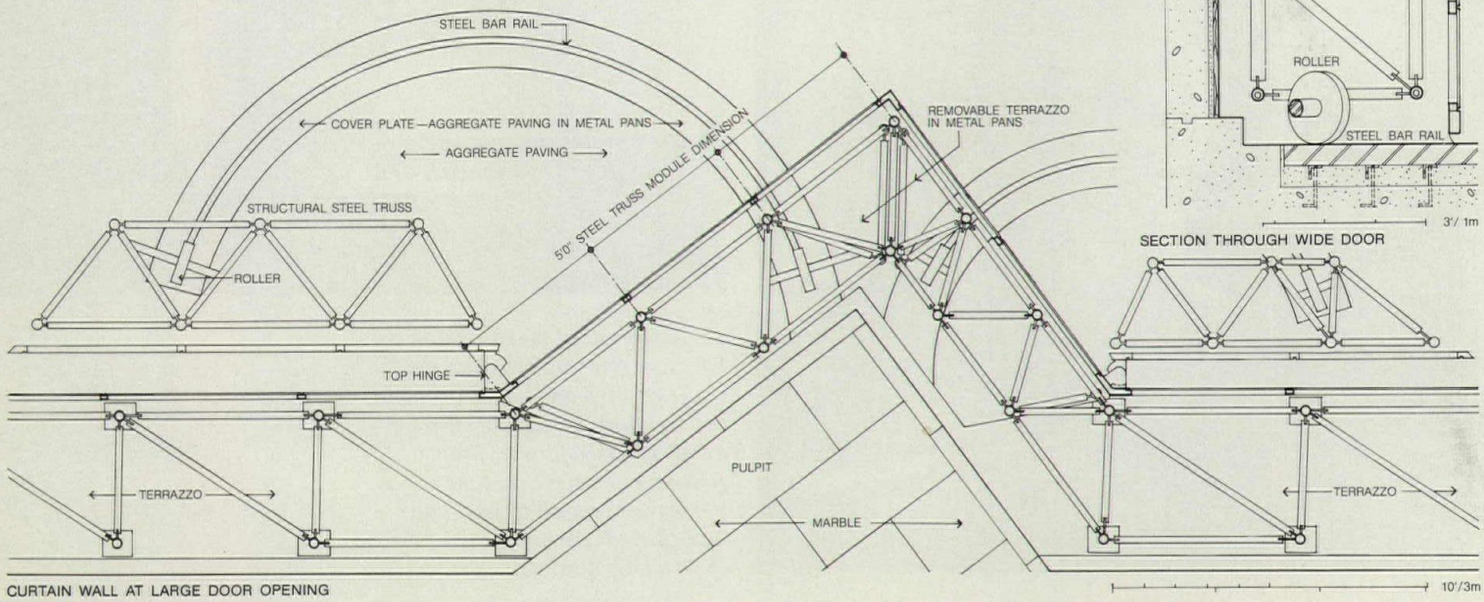
The rise and fall of the fountain that divides the main-level congregation in half (facing page, top right) signals the worshipers when to stand and be seated during service. The chancel (facing page, bottom) is clad in marble.



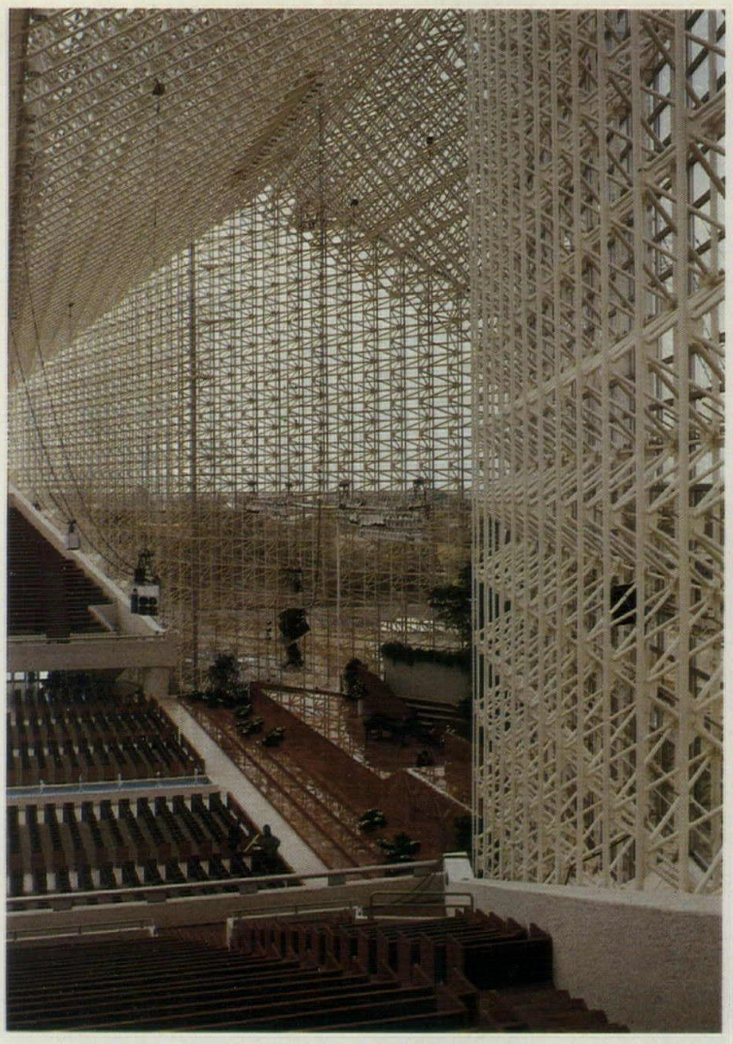
CURTAIN WALL VERTICAL MULLION AT INSIDE CORNER

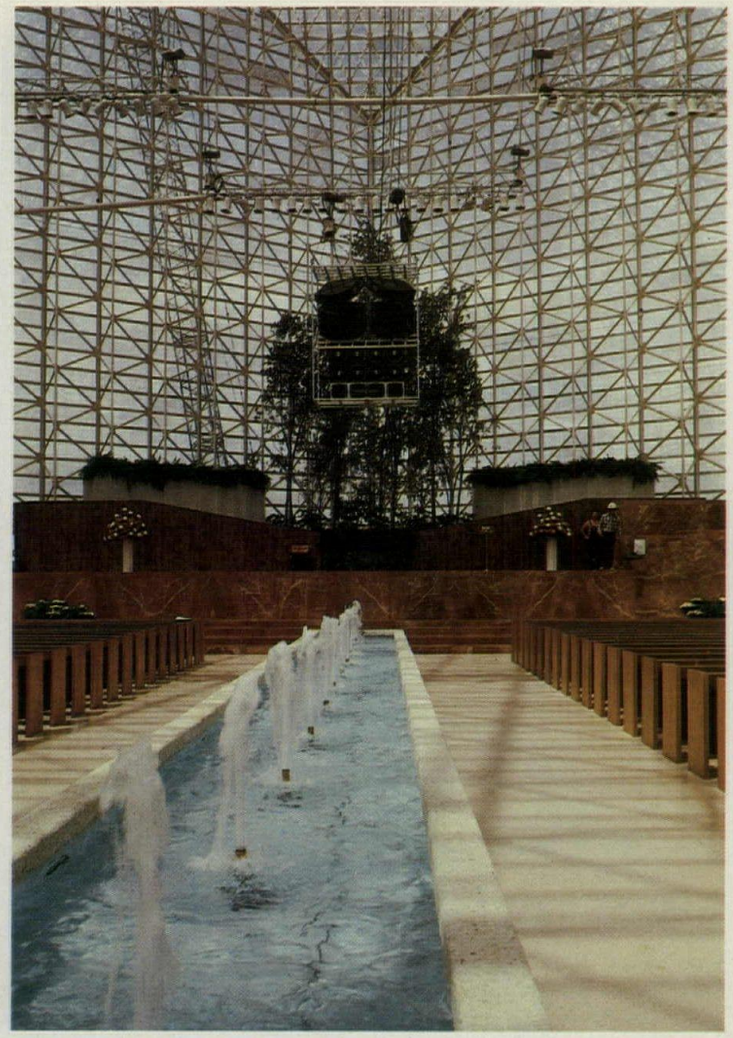


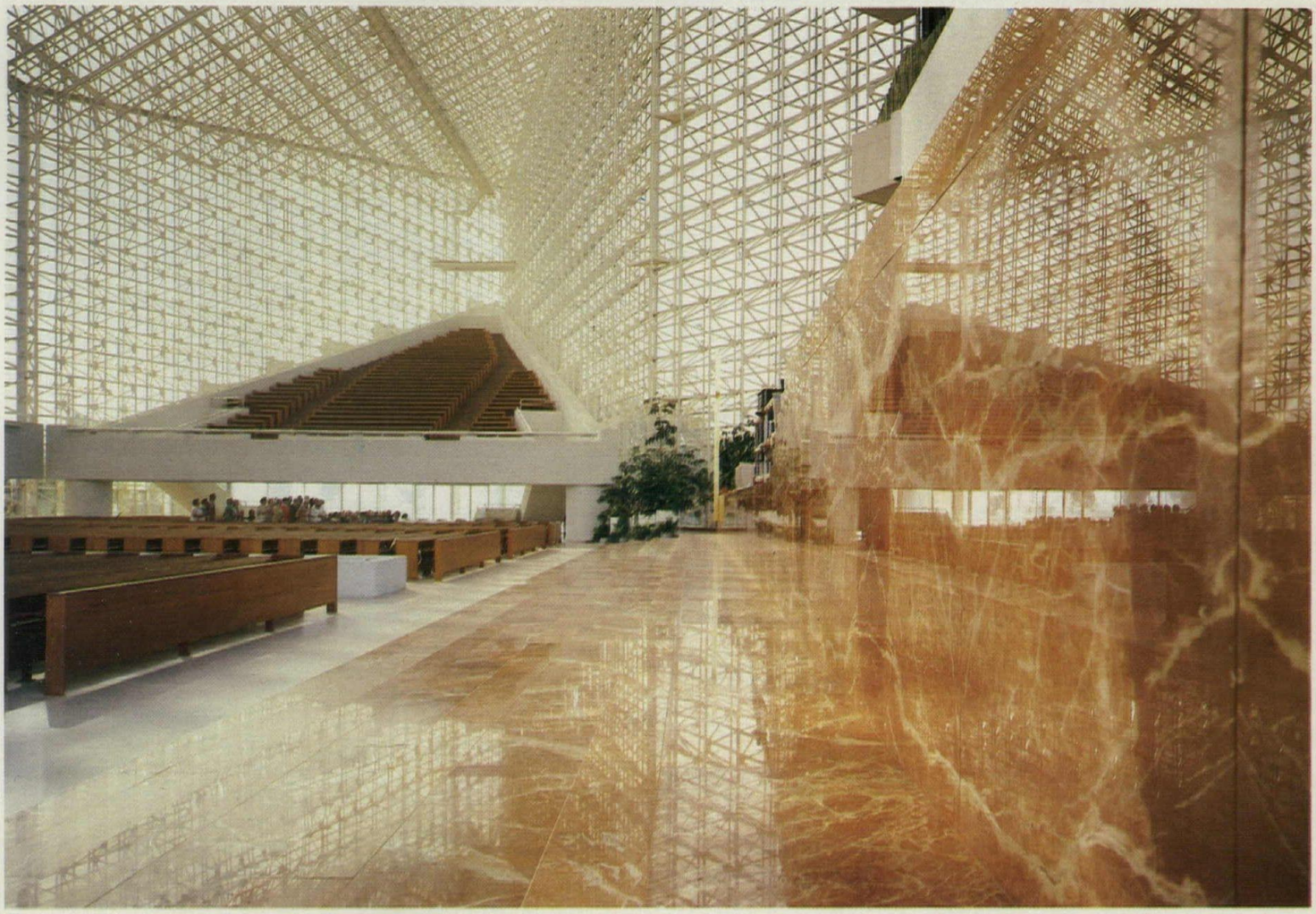
SECTION THROUGH WIDE DOOR



CURTAIN WALL AT LARGE DOOR OPENING







the entrance sequence is beautifully designed to prepare congregants for the space to come. On approach, one is dwarfed by the surface and scale of the building, its flat, shiny walls pressing down toward the plaza. The entrance slots are inviting, however, and passing through their wide openings, one is in an entry zone of shifting, lacy shadow patterns playing on the terrazzo floors and massive concrete columns. The canopy overhead slopes down, pulling the participant into the larger space.

The interior surfaces create a sense of warmth in what might otherwise seem like an ice palace. All the surfaces are tinted in pale, earth-related colors. The sand-colored terrazzo floors and pale oak pews are delicate and subtle, while the rose-colored granite chancel is almost erotic in its veined fleshiness. The polished-granite altar furniture, recalling that of Aalto's church at Riola (P/A, March 1979, p. 57), help adjust the eye to the scale of the minister and choir.

Criticisms

This is a building designed to facilitate spectacle; the religious services are choreographed to perfection, fitting well the format of televised replay. Before the services, the outside fountains dance in front of the massive doors. The choir files in, begins a chorale and *these* fountains subside. The massive doors swing open, the *inside* fountains rise in response; Reverend Schuller raises his arms to the congregants in their cars and begins the morning prayers. So theatrical is the nature of the ritual and space, that the congregation applauds the organist and weekly guest vocalist.

The shape of the auditorium provides excellent views of the entire chancel area, and the three entries allow for an orderly change of congregation between the two services. The seating, which consists of about 3000 individual theater seats rather than pews, reinforces the concept of church as theater. In fact, the church was designed with concerts and performances in mind. However, a major shortcoming is the tremendous reverberation level inside the auditorium. Although the echoes seem to enhance the quality of the bell ringers and choir, they render the extreme rise and fall of Reverend Schuller's voice virtually inaudible, especially from high in the corners. There are low-level speakers behind each seat, but the number of hard surfaces to reflect sound tend to exaggerate the echo. With the introduction in March or April of the massive Hazel Wright organ, conceived by organist Virgil Fox, this problem may prove acute and will undoubtedly need attention. At present, the only area of the church that escapes reverberation is the standing-room section under the balconies.

Although Schuller was very specific in his desire for a building within a garden, the cathedral is not really well integrated with nature. The foliage in the chancel is dwarfed by the scale of the interior and seems like an afterthought. The space within the building is an ideal greenhouse, and the garden dream could surely have been better realized with more lush interior planting. The central linear fountain trough, with its turquoise blue interior, divides the central space awkwardly and looks out of place. A more recessed fountain, or brook, or stream would have been more subtle. Additional attention to the interior planting and waterworks would not only have enhanced the impression of garden, but would have improved the microclimate in the summer.

The outside landscaping, too, while well manicured, makes the cathedral seem as if it is sitting on a green handkerchief. Both the planting and reflective pool seem puny in relation to the building. This is a monument that needs to breathe, and it seems that if God could provide the money to build it, He could also provide a parking structure that would liberate part of the forecourt for more extensive landscaping.

The exterior of the building is clumsy, particularly on close inspection. While Johnson and Burgee have encouraged the comparison between the structural finesse of their building and Gothic cathedrals, their exterior hardly sings to the glory of the interior frame. The pattern of the fenestration, not to mention the required mirror-glass surfaces, virtually obliterates the structure and even the shape of the building. Close up, the building is confusing; on smoggy days, it is ponderous. The only time the structure is visible from the outside is when the doors are open or when the building is illuminated for the occasional evening event.

The proportions of the windows and the pattern of fenestration invite unflattering comparisons to the spec-built office blocks within sight of the cathedral. This *could* be interpreted as intentional irony, but that's not a good enough excuse. Surely a pattern of glazing could have been devised that would have been more expressive of the glorious structure within. The sheer awkwardness of the top panes of glass, sliced at an angle to meet the abutting roof planes, is an insult to the thought that went into the rest of the building's planning.

Conclusion

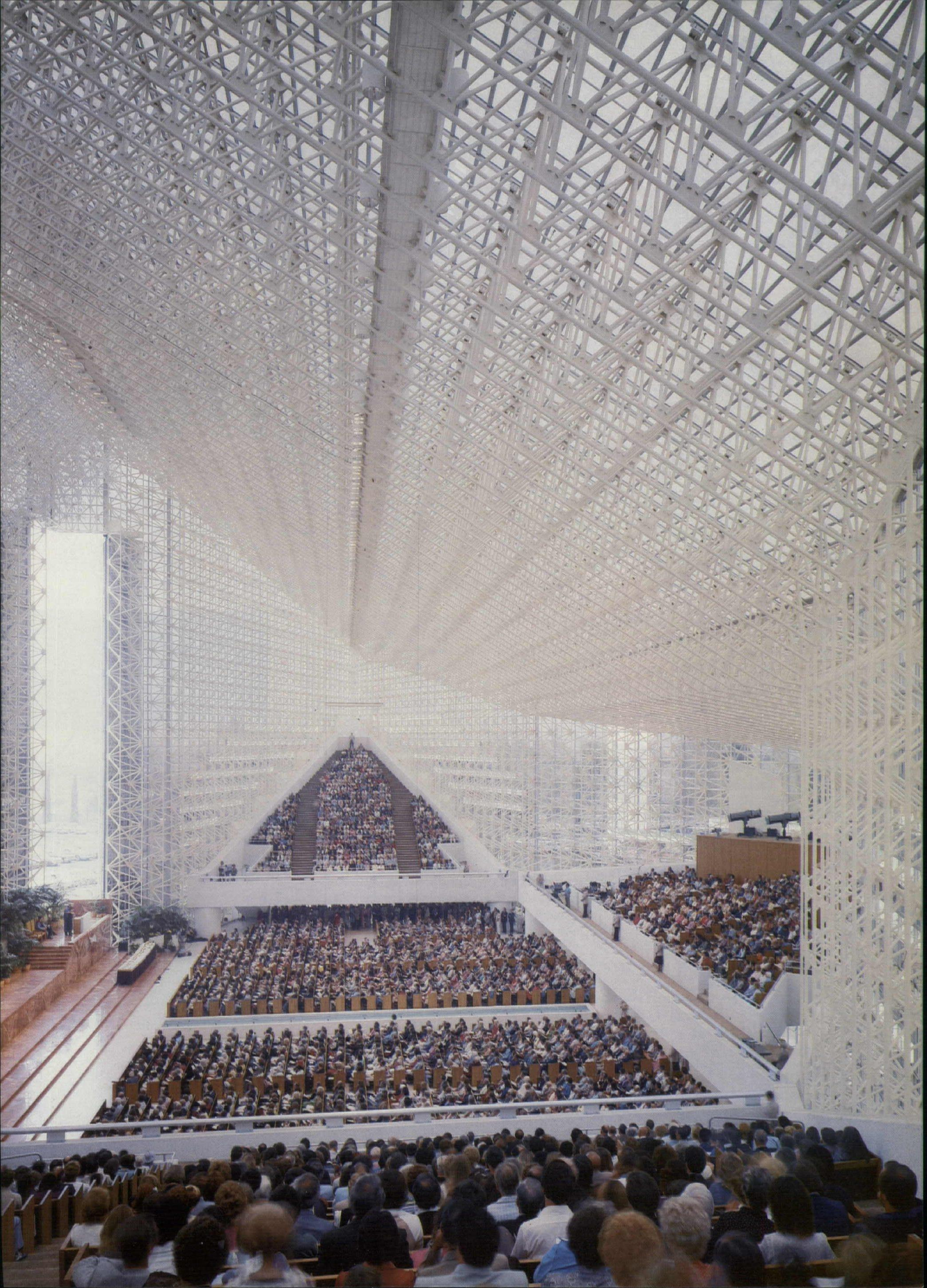
It has been said that a cynic is a person who knows the price of everything and the value of nothing. It would be easy to criticize the Crystal Cathedral because of its cost, extravagance, or monumentality, but this would be inappropriate. It is true that the building cost $16 million; however, it was built by an enormous congregation, which donated its money to see this monument realized. The funds were raised bit by bit, with congregants "subsidizing" commemorative windows, "pillars of steel," seats, and Mylar stars. And it serves its congregants as a symbol of hope, dreams and possibilities.

Philip Johnson has been quoted as saying that he would work for the devil if he were offered a good enough commission. It seems that he's better when working for God. □

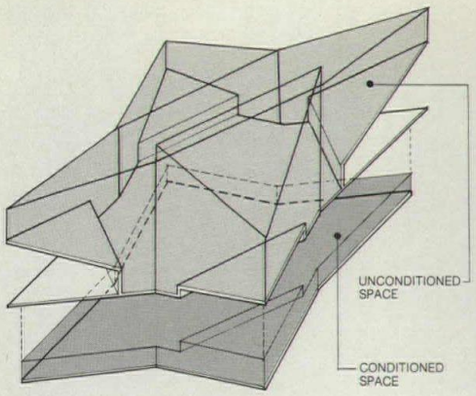
Data

Project: *Garden Grove Community Church (Crystal Cathedral), Garden Grove, Ca.*
Architects: *Johnson/Burgee; Albert C. Martin & Associates, consulting.*
Site: *19⅓ acres in flat, residential development.*
Program: *church sanctuary of nontraditional design, in which services are videotaped for international distribution. Section of exterior wall facing parking to be capable of opening. Auxiliary services on lower level.*
Structural system: *exposed steel space frame on reinforced concrete foundation.*
Major materials: *aluminum frame with reflective glass curtain wall; architectural concrete for balconies; rosso-alicante marble and oak panels in platform area.*
Mechanical system: *sanctuary partially heated with warm air; natural ventilation with operable vents in lower wall and clerestory. Lower level air conditioned with variable air volume; gas-fired hot water boiler; 70-ton chiller.*
Consultants: *Johnson/Burgee, the Richard Beeson Co., landscape; Johnson/Burgee, interiors; Severud-Perrone-Sturm-Bandel, structural; Cosentini Associates, mechanical; Klepper Marshall King Associates, acoustical; Claude R. Engel, lighting; A.C. Martin & Associates, civil and architectural.*
General contractor: *C.L. Peck Contractor-Morse/Diesel, Inc.-Koll, a joint venture.*
Client: *Garden Grove Community Church.*
Costs: *$16 million excluding fees.*
Photos: *Marvin Rand.*

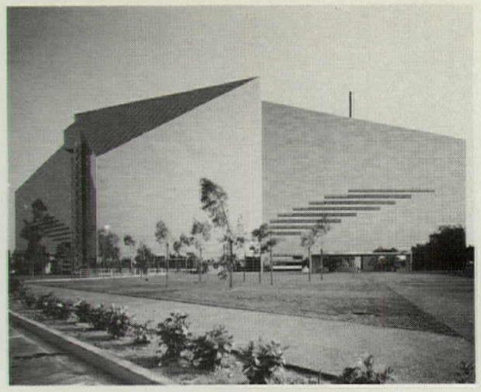
Looking directly east (facing page) one sees the altar and great pivoting doors to the north. The church holds 3000 congregants on a main level and three balconies, which are entirely independent of the steel structure.



Energy analysis



THERMAL ZONING: CRYSTAL CATHEDRAL



This analysis was prepared in the Center for Planning and Development Research, College of Environmental Design, University of California, Berkeley; Vladimir Bazjanac, Ph.D., Project Director. The work is funded by the U.S. Department of Energy.

The analysis of the Crystal Cathedral in Garden Grove, Ca, focuses primarily on the performance of the glass-enclosed nave, which is not conditioned. It examines the temperature fluctuation inside this space and compares it to ranges of comfort for the congregation. It also investigates different strategies of natural ventilation and the impact of different glazing types on occupant comfort.

The unconditioned portion of the building provides an environment thermally more comfortable than the outside, except when the outside temperature is excessively high. The temperature outside during periods of use is often below 65 F. The temperature inside the nave is consistently higher than the temperature outside. The extent of this difference depends on the season (it is greater during cold days than during hot days), and on the strategy of opening the windows and the tall, revolving door, which are employed for the natural ventilation of the building. Besides being higher, the inside temperature follows the fluctuations in outside temperature quite closely, because of the relatively low overall thermal mass of the building.

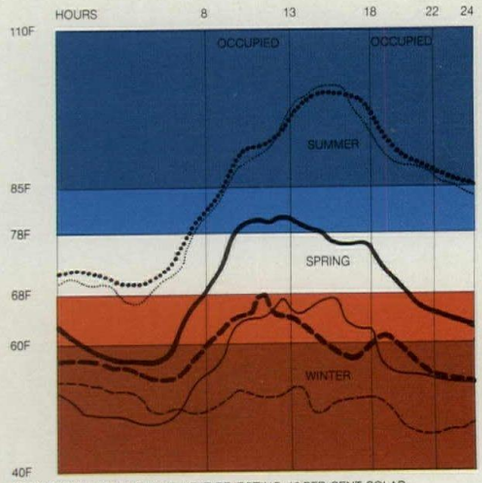
The building is occupied during two separate periods of the day: in the morning and in the evening. Services are held only on Sundays, and occasional speaking engagements and rock concerts are planned for weekday evenings. The analysis of thermal comfort during hours of service is extended to every day of the year to account for all circumstances in the annual variation of weather.

The nave is more likely to be too cold than too hot; space heating may be required at times to improve the comfort of the congregation. The probability that the inside temperature will fall within the comfort range of 68–78 F is 41 percent during morning service hours (between 8 A.M. and 1 P.M.). The probability for the same comfort during evening service (between 6 P.M. and 10 P.M.) is 42 percent. If the comfort range is extended to 60–85 F, the probabilities increase to 88 percent and 83 percent during morning and evening service hours, respectively. These probabilities take into account the changes in weather for a full year during the morning and evening service hours. They are also based on the use of the best strategy for natural ventilation.

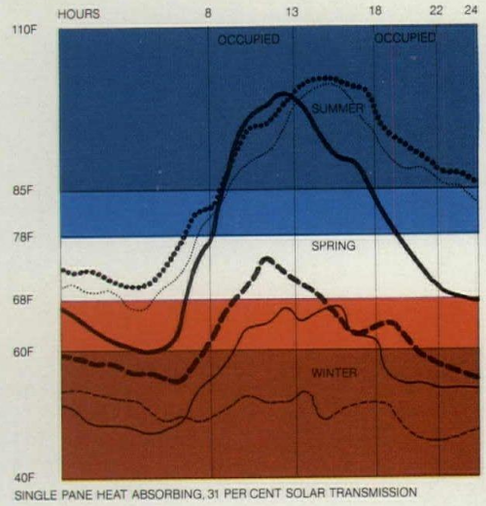
The analysis of natural ventilation examines three typical strategies of operating windows and the tall door: daytime-only ventilation, nighttime-only ventilation, and 24-hours-a-day ventilation. The last of these strategies performs best, as it offers the highest probabilities of comfort during service hours. The venting strategies are assumed to be in effect only during the cooling season (May through October). Venting during the heating season would further increase the need to heat the space.

The analysis of the performance of different glazing types examines three glazing solutions. Glazing as built is single-pane, state-of-the-art heat-rejecting glass with 10 percent solar transmission. The other two investigated alternatives are a single-pane, heat-absorbing gray glass with 31 percent solar transmission, and double-pane assembly (blue-green on the outside, clear on the inside), with 5 percent total solar transmission. The comparison of performance of different glazings is shown for three Sundays.

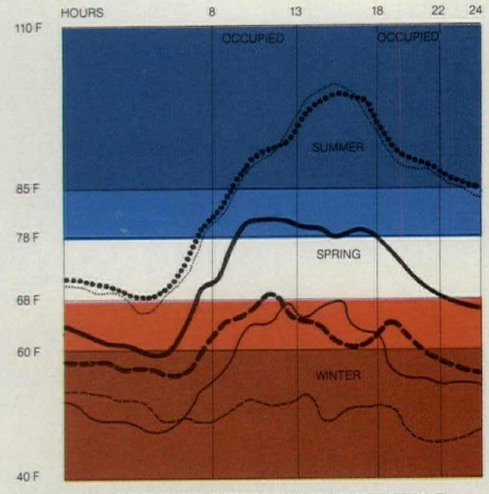
The blue-green glass (as built), which allows the transmission of only 10 percent of solar rays, effectively eliminates the need for exterior shading devices. While the structural frame provides additional shading of the nave, this addi-



AS DESIGNED, SINGLE PANE HEAT REJECTING, 10 PER CENT SOLAR TRANSMISSION



SINGLE PANE HEAT ABSORBING, 31 PER CENT SOLAR TRANSMISSION

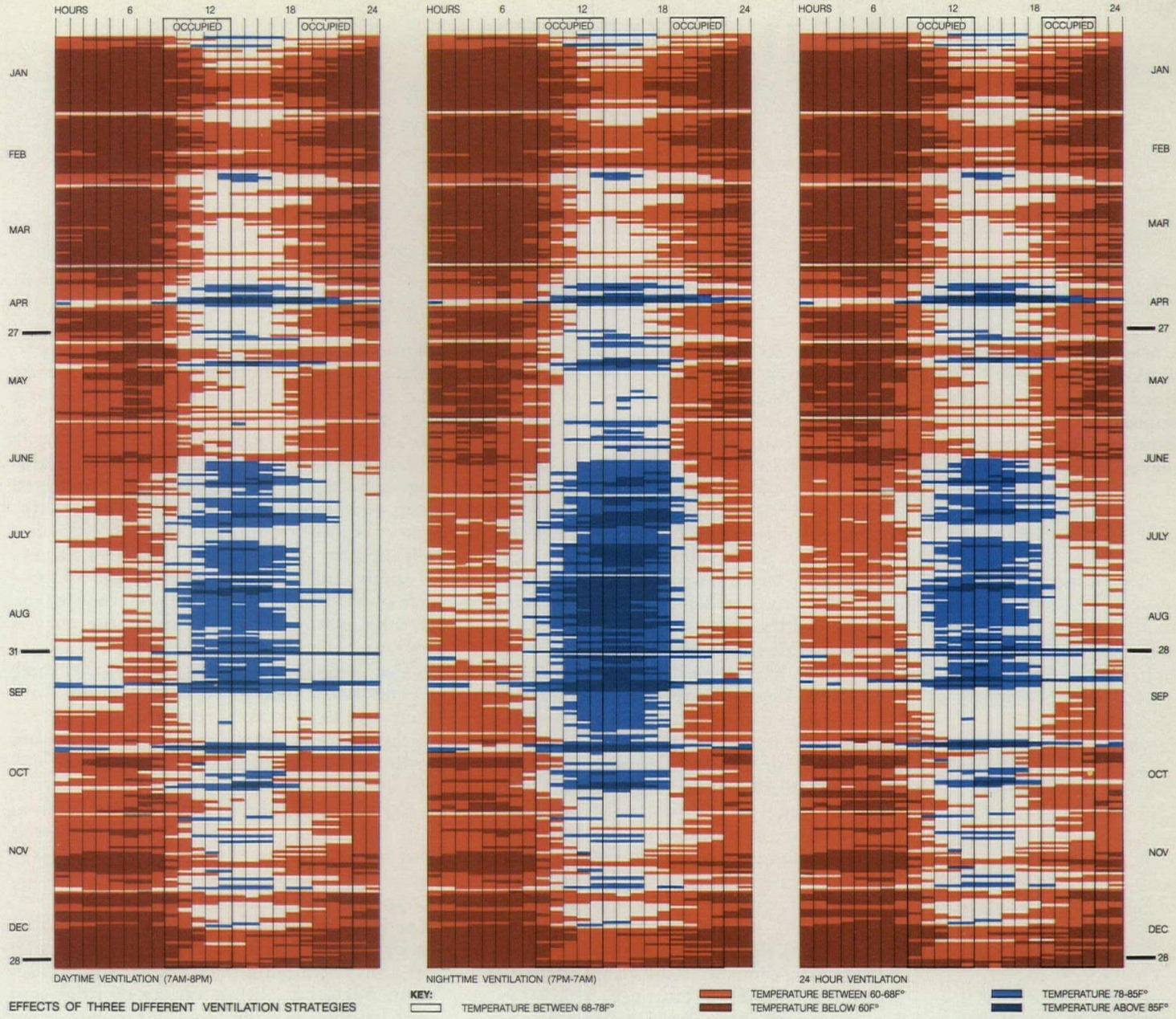


DOUBLE PANE, HEAT REJECTING EXTERIOR PANE, CLEAR INTERIOR PANE, 5 PER CENT SOLAR TRANSMISSION

EFFECTS OF THREE DIFFERENT TYPES OF GLAZING

TEMPERATURE KEY:

APRIL 27	INSIDE	———	OUTSIDE	———
AUGUST 31	INSIDE	·····	OUTSIDE	·····
DECEMBER 28	INSIDE	– – – –	OUTSIDE	– – – –



EFFECTS OF THREE DIFFERENT VENTILATION STRATEGIES

tional shading is not considered in the simulation of the thermal behavior of the building. The steel space frame has no appreciable thermal mass and is located inside the glass skin of the building. It potentially has a positive impact on the feeling of comfort during warm periods.

Daylighting in the building is excellent. The light is diffused and no artificial lighting is needed in the nave during daylight hours, except special lighting for TV during televised events.

The Cathedral is practically surrounded by a large parking lot. The asphalt surface of the lot obviously increases the temperature of the environment that surrounds the building. This effect was not modeled in the simulation of the building's thermal performance. Instead, the CTZ weather tape for Santa Ana was used unmodified to simulate annual weather conditions in the surrounding environment.

The reported temperatures are dry-bulb temperatures. As such, they are only a partial measure of thermal comfort. The actual feeling of comfort during cold periods may be considerably enhanced by widespread sunlight and long-wave radiation from the building itself. Changes in relative humidity in interior space during warm periods may affect the feeling of comfort more than dry-bulb temperatures would indicate. The excessive height of the space will cause some interior vertical circulation of air. The reported temperatures represent the temperatures of the lower areas of the space.

All conditioned spaces are in the basement. They follow a basic officelike schedule of use (9 A.M. to 5 P.M. daily, Monday through Friday). The combined load for heating, cooling, artificial lighting, and user-operated equipment is 778 million Btu, which translates to 50,612 Btu/sq ft of conditioned basement area. If this load is distributed over the entire floor area of the building, it becomes 11,243 Btu/sq ft.

The analysis of the energy performance of this building does not include the performance of mechanical systems in the building. It is based on annual simulations with DOE-2.1, using custom weighting factors. Its accuracy is limited to the accuracy of DOE-2.1 in representing the building's thermal behavior and does not necessarily conform to all of the details of the actual performance of the existing building (P/A, April 1980, p. 100). A detailed report is available upon request.

Shining brow

A long, low house set into a south-facing slope, under broad copper-clad eaves, embodies several ideas about building components, energy use, and lifestyle.

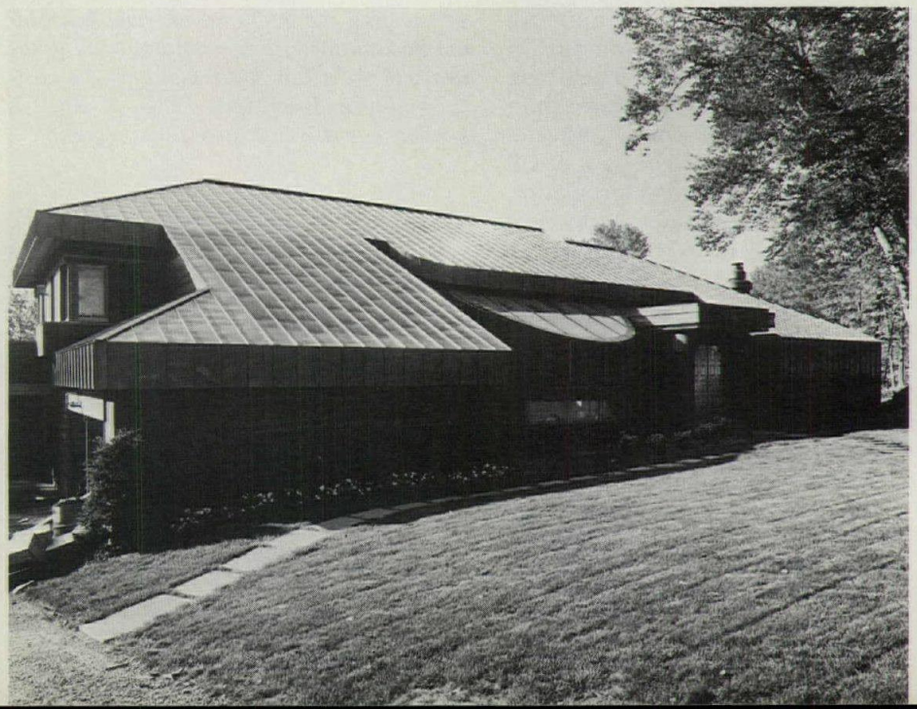
From the street side, it appears to fit discreetly into its suburban Connecticut site, but behind its unassertive front (below) is a house built to challenge prevailing standards in the use of materials and energy in home-building. As a demonstration house, the project was intended to incorporate a variety of active and passive energy devices, as well as a number of building components by certain producers. As architects, the Berkus Group of Santa Barbara responded with a design that challenges, as well, the prevailing lifestyle of the Northeast.

Although the exterior form and color of the house have some relationship to the oldest New England saltboxes, the expansive, fluid spaces inside suggest instead the lifestyle of Southern California. Berkus feels, however, that unconfining interior space is particularly needed in northern climates, providing an interior "landscape" for the cold months, one that varies visually with daily and seasonal light changes. He relies on tall and variable ceiling heights as a relatively economical way to get more volume and play of light from a given floor area. And he dramatizes vertical extensions of space by presenting them all to the visitor immediately inside the low main entrance.

In apportioning interior space, the architects have broken sharply from the conventions of the Northeast. The main floor is divided largely into two zones: a master suite that is large and luxurious for a house of this size and a public zone with as many levels and alcoves as a modern stage set. It is easy to relate the master suite to West Coast lifestyle, but in energy terms, the master suite is seen as a private living space to be maintained at normal comfort standards; for the larger public space, intended mainly for entertaining, less demanding comfort standards are acceptable much of the time. Berkus sees this space as an exceptional setting for parties, relishing the dramatic views between clusters of guests in various corners of the space—drawn by the fireplace, the greenhouse, the viewing platform at the top of the curved stair, and the bar tucked beneath it.

The two bedrooms located on the small second floor, though certainly ample—with their own deck—take a relatively minor place in the whole scheme. This house, according to Berkus, is not meant for the conventional family with kids, whose mother stays home—a shrinking group in any case—but primarily for people whose children or guests visit occasionally.

Standing-seam copper roof swoops low over redwood walls on the north—entrance—front. Variety of roof levels and position of the few visible openings hint at spatial complexity inside.

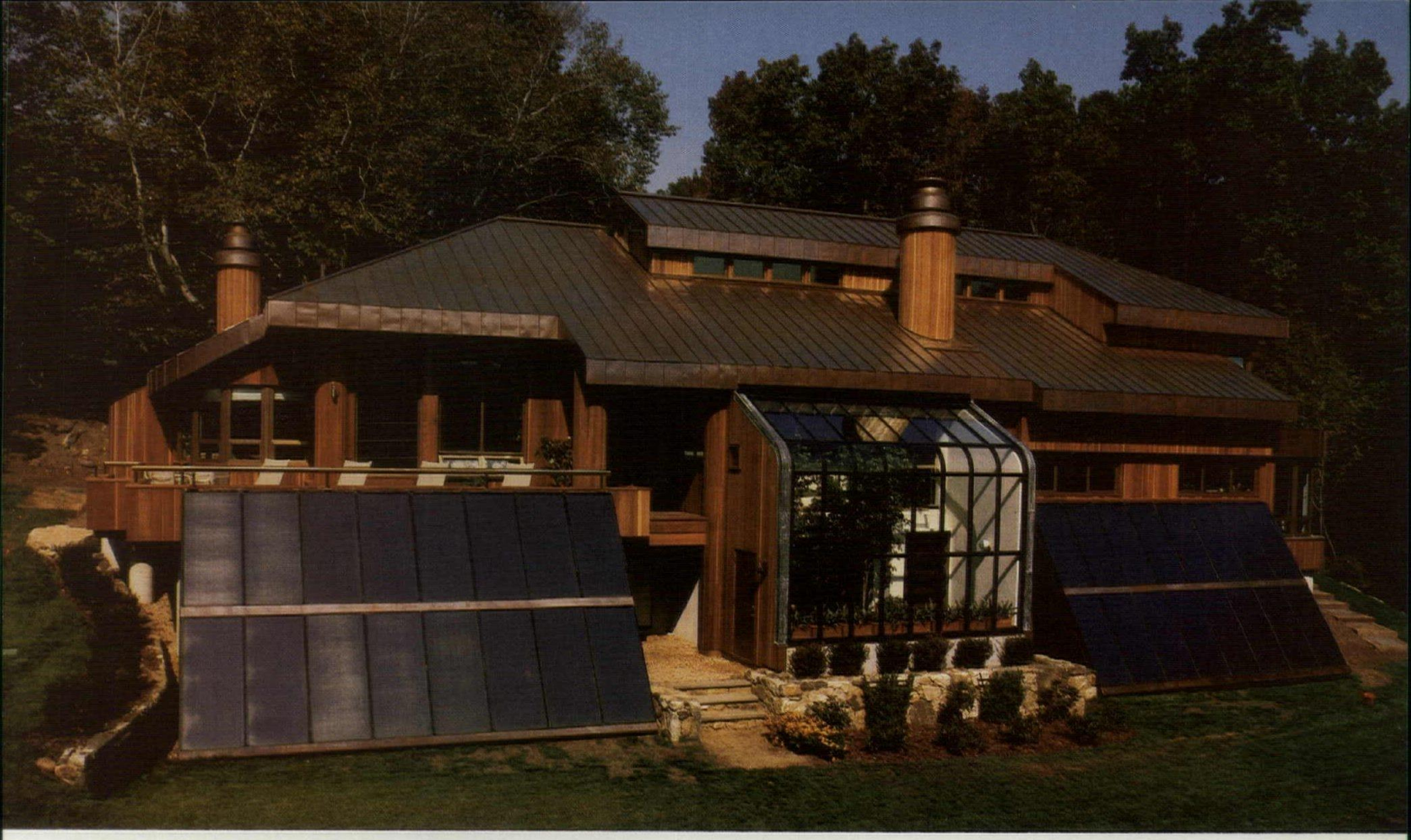


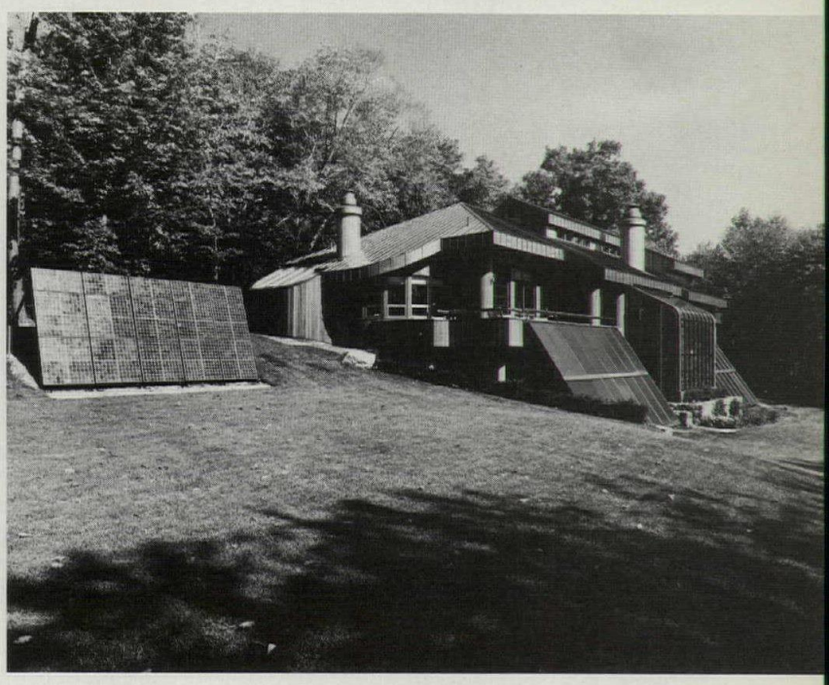
Copper angles, redwood curves

The architects have adopted a limited vocabulary of forms and applied it freely. Reigning over all is a standing-seam copper roof of uniform pitch, but with a variety of ridge and eave heights, extending out in browlike eaves toward the south and folding over the wall toward the ground on the low north walls. The vertical redwood walls chosen to complement the copper break out in several places into cylindrical extensions—most notably at the library and master bath, which slip out from under the roof, revealing their own skylight lids. Cylindrical forms are also taken up in a set of columns, announced in the abstracted Classical pavilion at the entrance; plaster-coated versions are distributed through the main living space—on no regular module—and wood-clad versions appear again in columns on the deck and in the fireplace chimneys.

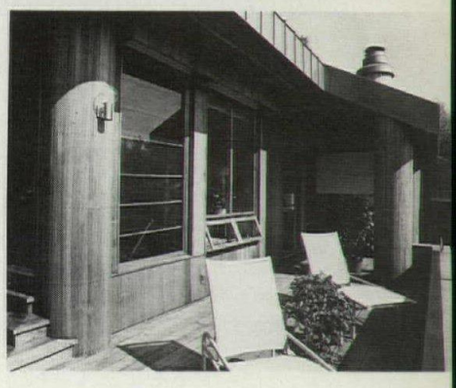
Soaking up the rays

In keeping with its demonstration objectives, the house incorporates a variety of active and passive systems. The major active components are two banks of flat-plate collectors, 32

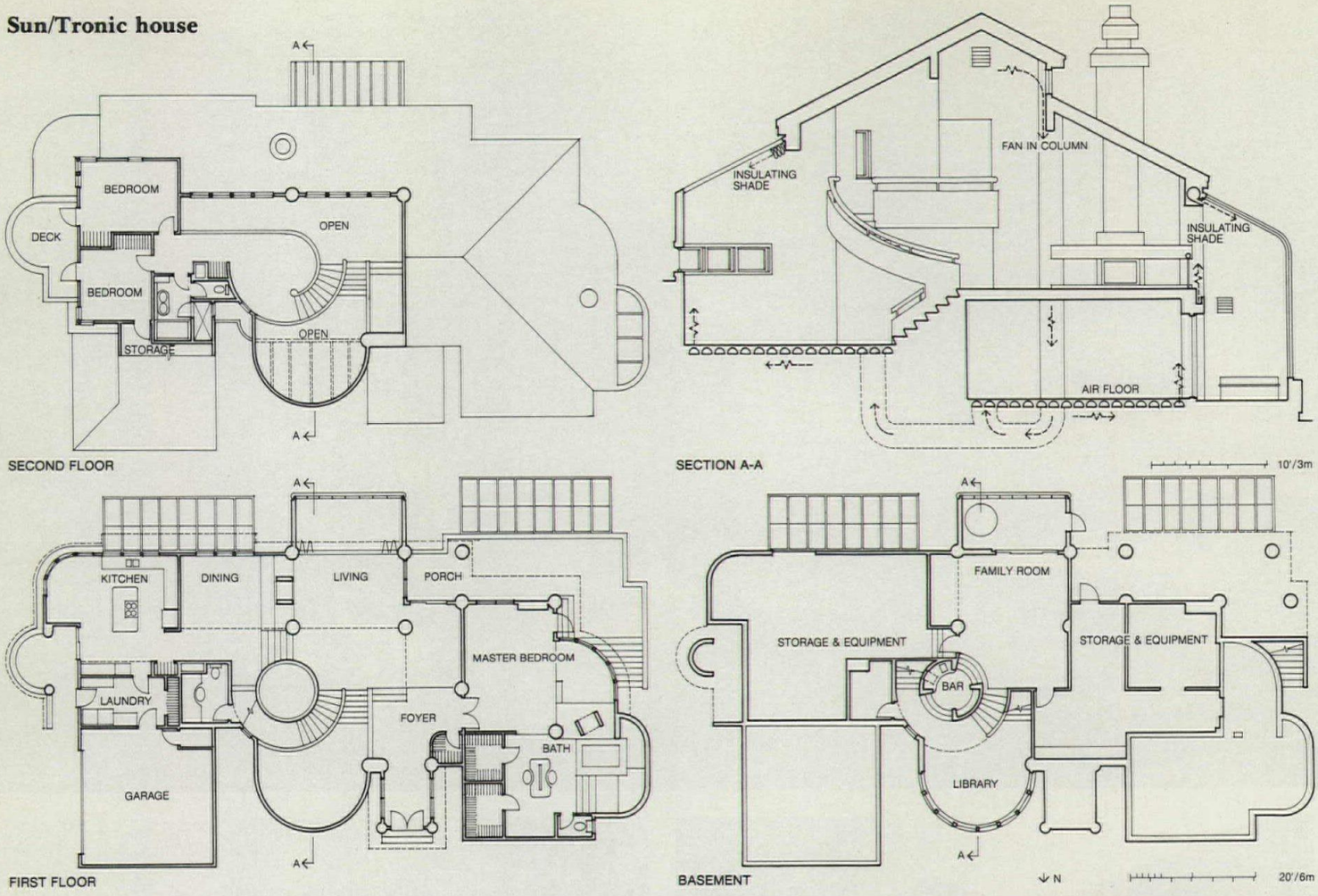




South-facing rear of house (top) displays greenhouse and solar collectors. Photovoltaic bank stands free of house (above). Front entrance (above left) has redwood columns and "capitals" for indirect lighting under distinctive fascia. Columns reappear on rear deck (left, right). Insulating security shutters (right) drop from redwood valances above major south windows.



Sun/Tronic house



panels totaling 640 sq ft—using copper plates—that are predicted to serve about 45 percent of the house's space heating and hot water needs. Their placement against the lower portion of the south side, rather than on the roof, allows a 55-degree pitch—favorable at this latitude—and eases maintenance. The 1000-gallon solar-heated water tank can be directed to coils in the domestic hot water tank and in the discharge ducts of the air-to-air heat pumps, which are the principal backup system for both. Electric resistance heaters provide a further backup for both systems.

The principal passive heating device—expected to meet 15 percent of space heating demand—is the greenhouse, 17 ft wide, 8 ft deep, and 15 ft high with well-insulated masonry masses in its floor and end walls. A redwood hot tub and an array of copper tubes, holding 1200 lbs of water, add thermal storage.

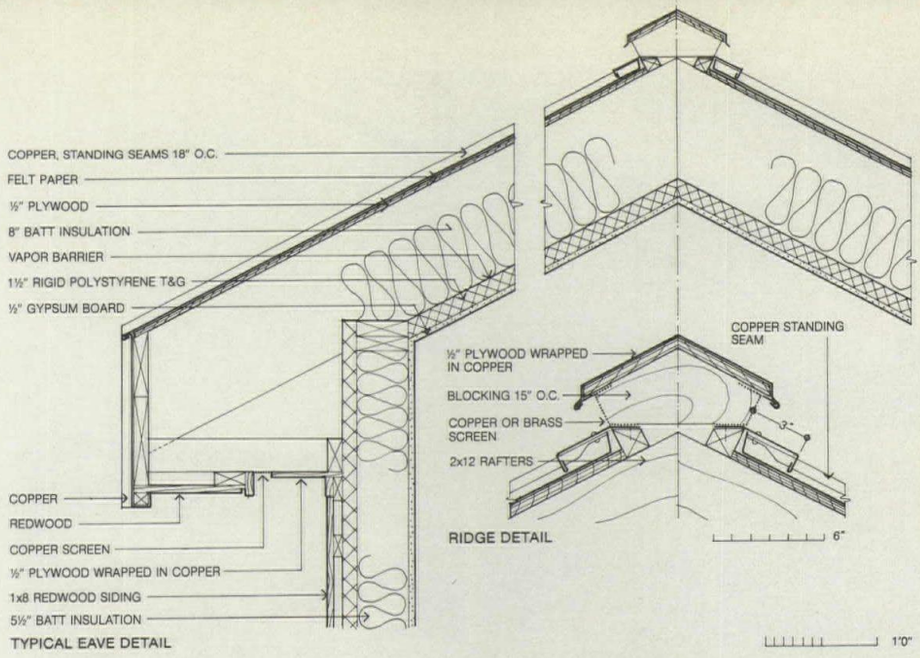
The greenhouse can be separated from living areas by doors at the lower level and an insulating shade above. When used for heat gain, however, it is integrated into a thermal circuit involving the adjoining living spaces on both floors. Warmed air is allowed to rise to the peak of the space, where a fan (activated when the peak air is 80–90 F) draws it down an "energy column" and circulates it through cavities in the floors of library and family room before expelling it through grilles. In warm weather, air at the peak can be ejected by an exhaust fan.

The south wall of the master bedroom incorporates a small prototype of a nonmechanical collection system, with pipes for freon embedded in a copper sheet. When the freon vaporizes (at 95 F), it rises up a pipe and through an insulated barrier (R-12) into one of the stack of dark copper tubes that are exposed in the bedroom. As the freon gives up its heat to water in these tubes, it liquefies and flows back to the collector plate. The system is self-regulating, transferring heat more rapidly as solar input increases, and allows transfer one way only. Performance estimates point to a capture of 40–50 percent of incident energy.

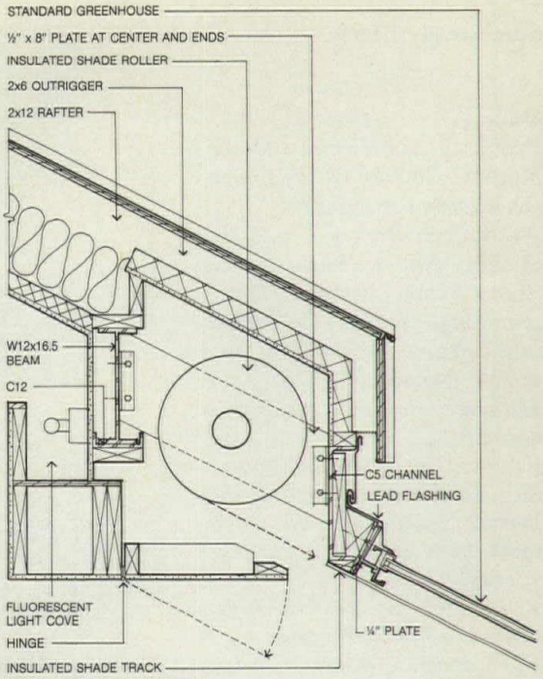
Another solar device demonstrated here is the bank of photovoltaic cells mounted on the grounds. It supplies electricity for pumps in the flat-plate solar collector system (producing power just as the system needs it—when the sun shines); any additional capacity of the 1.5 kW array is used to operate other heat distribution fans and pumps. The array also charges a set of lead-acid batteries in the basement, which supply standby power for security systems, emergency lighting, control systems, and heat distribution fans.

Crucial to the energy systems of the house is its exceptional insulation: walls have a combined R-value of 26, and roofs 40; floors, especially those used for heating, are heavily insulated; windows are all double-paned, with thermal-break frames. Large glass areas, most of which face south, are protected by

Pivot point of main living areas is bar and wine cellar in circular, domed space under stair landing.

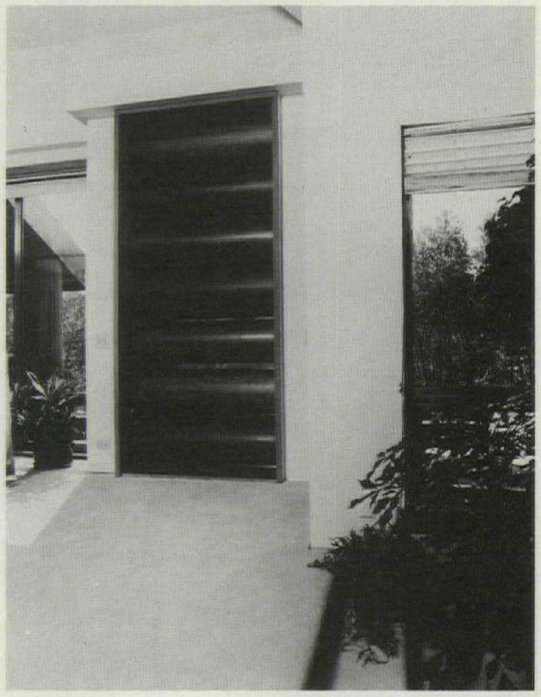


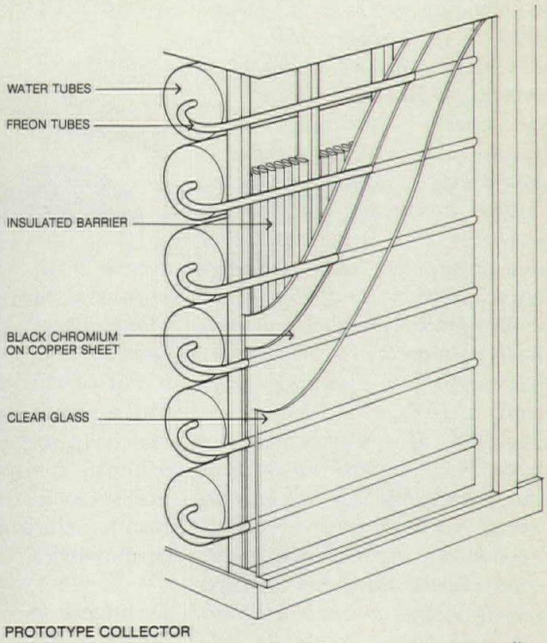
TYPICAL EAVE DETAIL



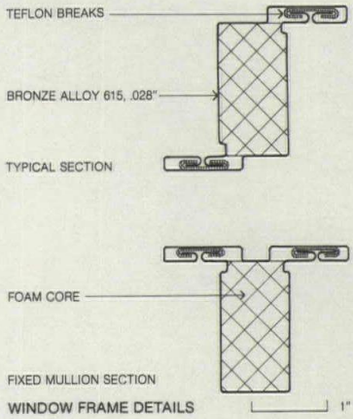
GREENHOUSE-EAVE DETAIL

House was an opportunity to work out details (shown here) for use of copper and for passive solar devices. Nonmechanical collector (photo and drawing, right) uses freon to heat copper tubes which are exposed in master bedroom; made of copper finished dark brown, the stack of 12-in. tubes, 4 ft long, is treated as a sculptural feature.

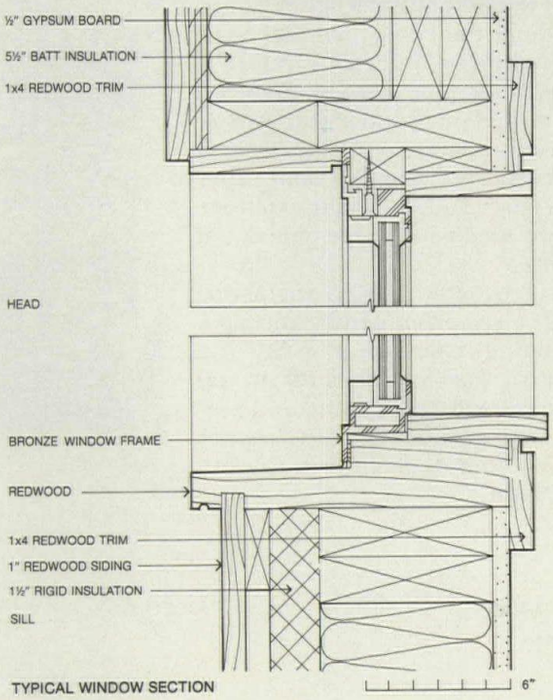




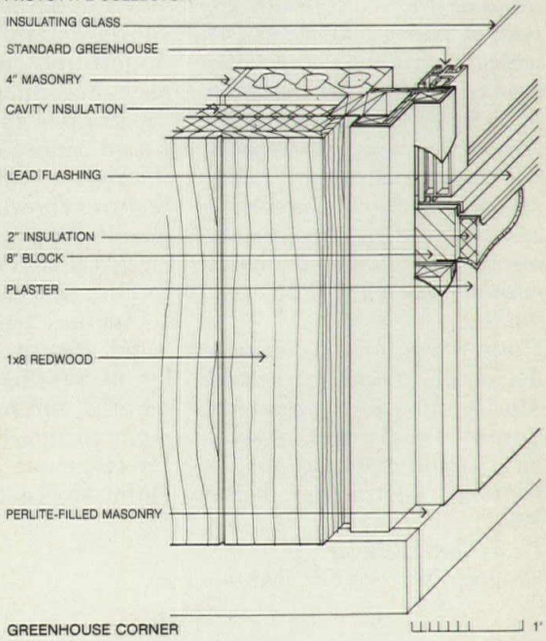
PROTOTYPE COLLECTOR



WINDOW FRAME DETAILS



TYPICAL WINDOW SECTION



GREENHOUSE CORNER

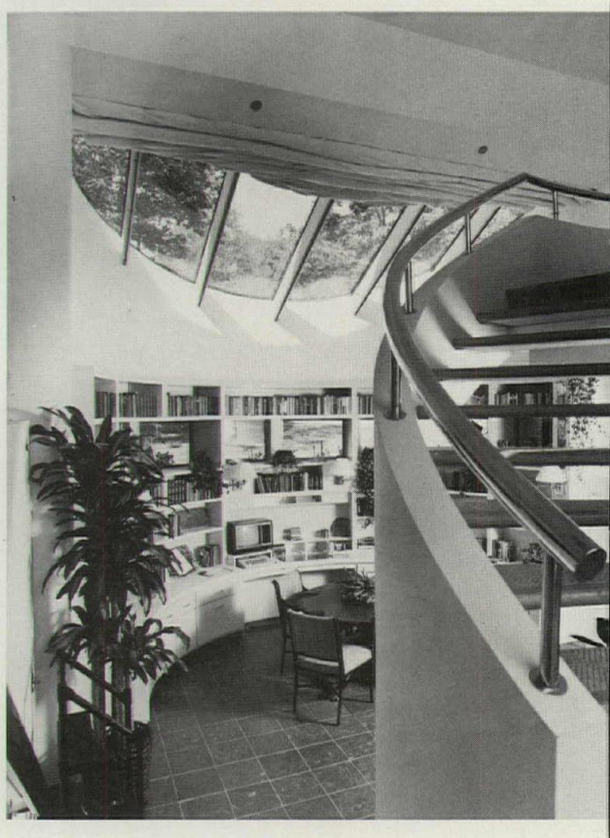
Sun/Tronic house

Data

Project: *Sun/Tronic House, Fairfield County, Ct, by Copper Development Association.*
Architects: *Berkus Group Architects, Santa Barbara, Ca (Barry Berkus, Richard Thorne, conceptual design; Chris Lessard, design development and project management; Jeff Love, Michael Parlier, production documents).*
Client: *George Hartley, trustee.*
Site: *3 acres at end of cul-de-sac; limited buildable area; slope south from access point to lake; wooded.*
Program: *free-flowing living areas to exhibit various products and energy features. Indoor living area, 4500 sq ft. Greenhouse: 157 sq ft. Decks: 600 sq ft. Garage: 450 sq ft. Mechanical space (for exhibit of systems): 1500 sq ft.*
Structural system: *wood frame; some steel pipe columns and beams; plywood shear walls.*
Major materials: *redwood siding over 1-in. rigid insulation and fiberglass batt; standing-seam copper roof; double-glazed copper-framed windows; interior walls gypsum board, with plaster on curves (see Building materials, p. 108).*
Mechanical system: *solar hot water heat, backed up by heat pump and electrical coil heating ducts; passive features include greenhouse, thermal mass floors, copper water-filled tube arrays; recycle system through air-floor for heat from greenhouse and peak of interior; fireplaces with separate air supply and room-heating ducts; copper water supply, single-stack waste and fire sprinkler systems; photovoltaic system to power solar energy pumps and charge batteries for emergency power; computer control of mechanical and electrical systems, alarms, shades, and shutters.*
Consultants: *Mac II, interiors; Myers & Nelson, structural; Mueller Associates, mechanical; Copper Development Association, various aspects.*
General contractor: *Walter Smith.*
Costs: *not available.*
Photography: *Robert Perron.*

motorized, roll-down insulation-security shutters. Sloping skylights and greenhouse glass have roll-down insulating interior shades.

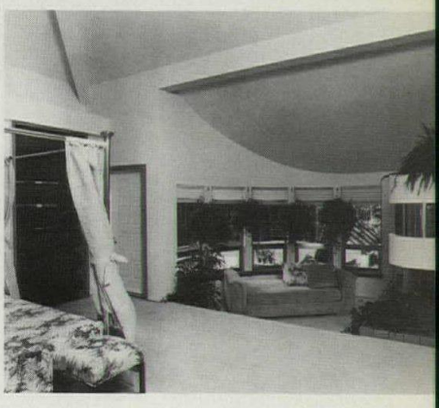
All of the operable devices are controlled and monitored through a central microcomputer, which coordinates preset schedules, input from temperature sensors, etc. It can also be applied to various uses from family shopping lists and accounting to homework.



Domestic showcase

The Copper Development Association, which conceived and built the house, has taken the opportunity to display numerous effective uses of copper, brass, and bronze. Beneath the durable and symbolic copper roof can be found bronze window and door frames, brass railings, a brass-encased fireplace and other features shown here in photos, plus extensive use of copper in mechanical, sprinkler, and electrical systems.

The products of 20 other participating companies are also prominently incorporated. (See Building materials, p. 108, for a list of producers.) For a period of several months, the house will be open by appointment to interested groups. Contact Copper Development Association, Stamford, Ct.
[John Morris Dixon]



Full view of tall, clerestoried living space (top, opposite) is seen from front entrance. Roof swoops down over conversation area (above left) overlooking greenhouse and separated from dining room by 14-ft-long brass fireplace. Semicircular, glass-roofed library (facing page, bottom) is half level below main floor. Kitchen (upper photo, above) has brass gripping insert in sleek white cabinets. Master bedroom (above) has sunken sitting alcove. Adjoining bath (left) shares two-way, glass-enclosed fireplace; separate air supply to fireboxes and circulation of room air through cavities around them makes fireplaces energy effective.

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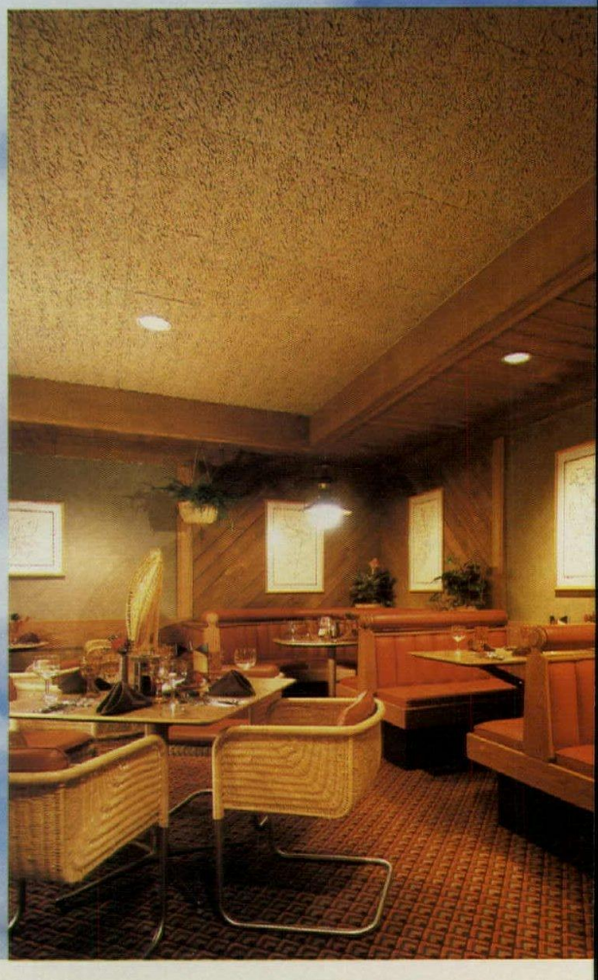
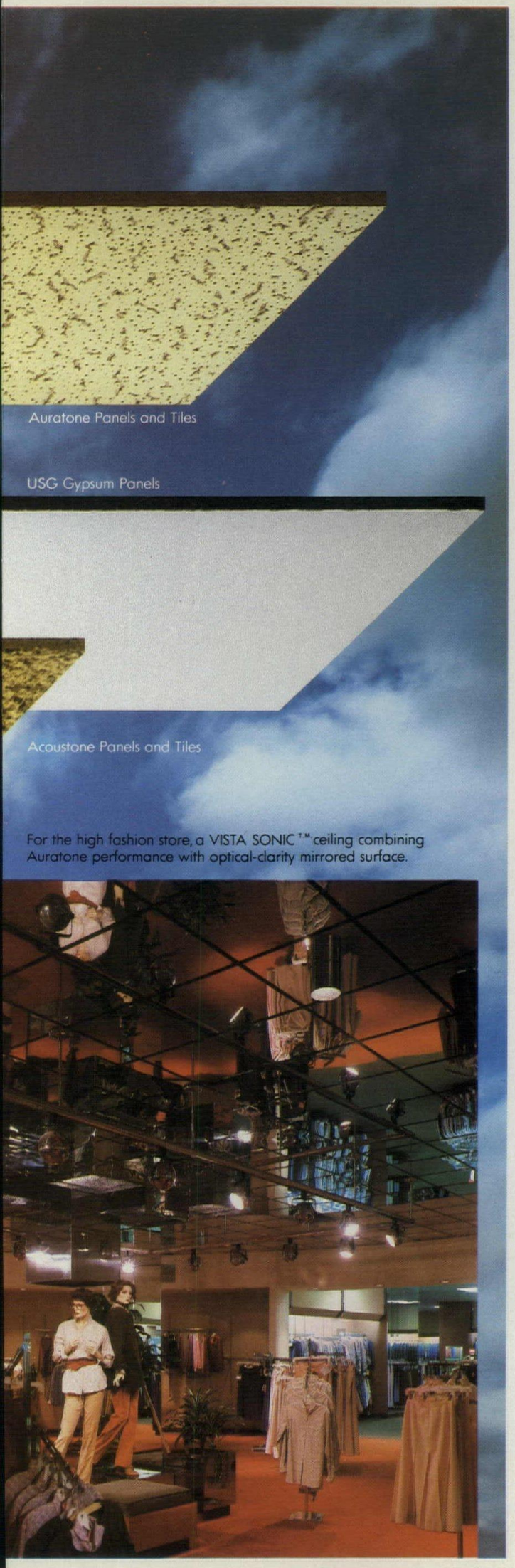


Acoustone ceiling in dramatic earthtone.



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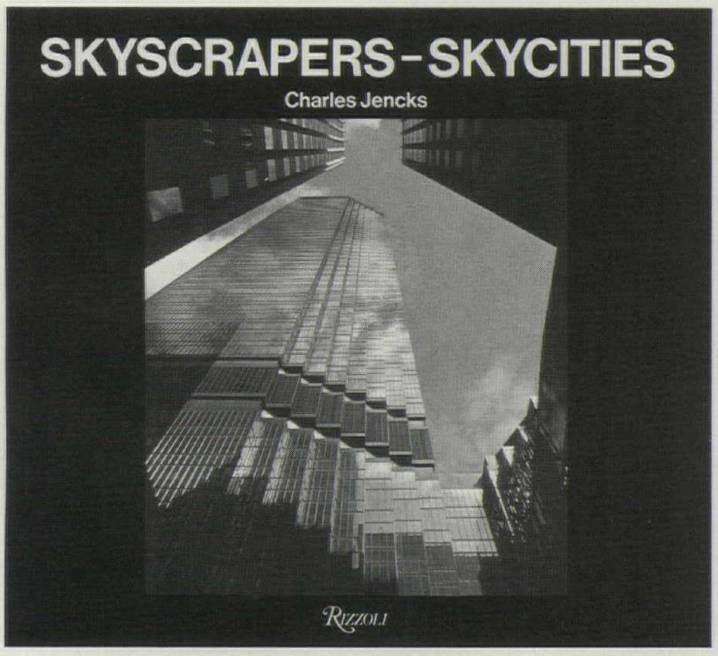
High Jencks

Books



Skyscrapers—Skycities *by Charles Jencks, New York, Rizzoli International Publications, Inc. 1980, 80 pp., illus. $12.50.*

The modern high-rise, faithfully expressing its programmatic, technical, and formal conditions, has been dumped for not expressing enough in terms of human scale, existing context, or visually and spatially appealing ideas. The current reaction, however, is to *mask* the tall building, covering it with reflective skin slipcovers, pasting on historically allusive appliqués, or sheathing it in sculpturally notched and chamfered casings.

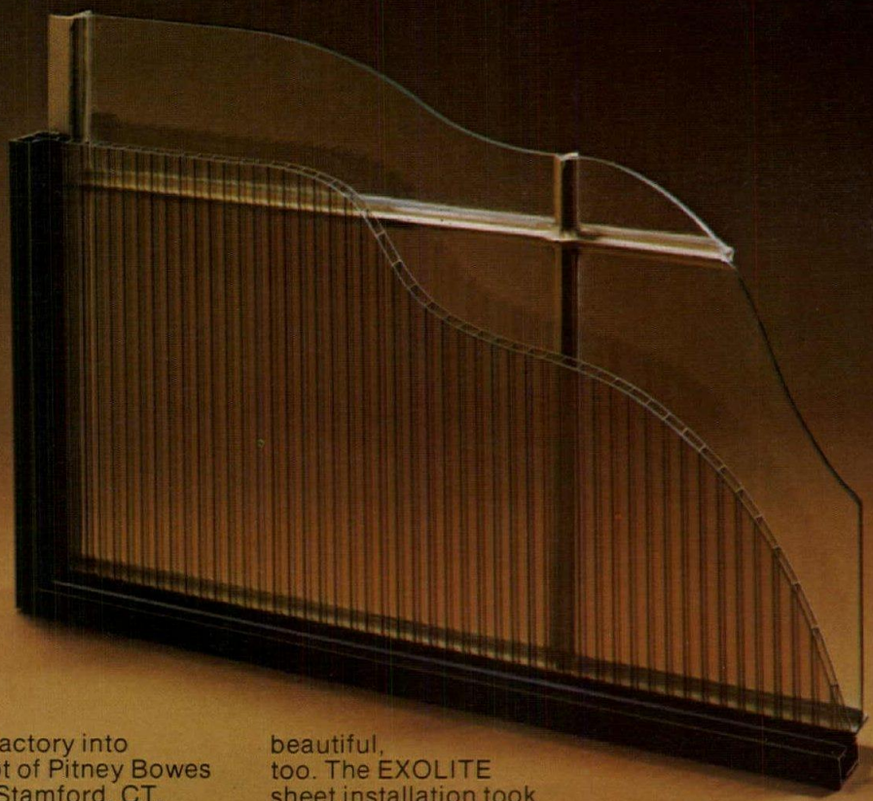
The crisis does seem to center on the *expressive* qualities of the skyscraper. If we don't want skyscrapers to reflect so closely their structural facts or economic realities, what formal solution should emerge? Analyzing the history of the skyscraper as an expressive or symbolic artifact, as well as a technical and economic product, could provide the necessary understanding for a course of action. Charles Jencks begins to undertake this exploration in his book *Skyscrapers—Skycities*. But he doesn't go much farther than the classification of past

[*Books continued on page 99*]

THE DIFFERENCE IS LIKE NIGHT AND DAY.

Before. When the cost of energy started to soar, complaints about cold were second only to those about heating costs. Something had to be done, quickly.

After. Installing EXOLITE™ double skinned sheet inside existing windows cut heat loss drastically, stopped complaints even on the coldest winter days.



Converting a factory into offices left a lot of Pitney Bowes employees in Stamford, CT, complaining about drafts and the cold.

When EXOLITE double skinned acrylic sheet was installed over existing windows the difference in the temperature was like night and day.

"Before EXOLITE sheet was installed, it was extremely difficult to maintain building temperature," explained Walt Westcott, manager — plant maintenance.

"Now the EXOLITE sheet eliminates drafts and looks beautiful, too. The EXOLITE sheet installation took only three days, and shutdown of operations was avoided because the original window casements did not have to be removed."

EXOLITE sheet has an installed cost that is substantially less than many glazing alternatives. Available in clear or bronze, it installs quickly and easily, inside or outside the building.

With a U factor twice as good as single pane glass, EXOLITE sheet is the ideal reglazing material for rugged Northern winters.

How does Walt Westcott sum up the reglazing? "The results have been fabulous," says Walt. "The difference is like night and day."

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Books continued from page 95

and present formal expressions of tall buildings. The taxonomic urge is harnessed to sift through visual similarities and differences and to arrange his photographic panoply accordingly. After the photographs, the terms "morphology," "metaphor," and "typology" are the most prevalent components of the book. Tall buildings adhere to three basic metaphors based on their plans, their massing, and what they do to the sky—"skypricker," "skyscraper," and "skycity." Jencks argues that most of what we call skyscrapers are often "skyprickers," single shafts pointed into the sky, which emanate from a centralized type of plan with circulation at the core. "Skyscraper" as a label has been demoted in the Jencksian taxonomy and is used only to describe buildings generated from the longitudinal type of plan where circulation points are located off-center and near the ends. If every "skypricker" wants to expand into a "skyscraper" because of economic and formal pressures, the "skyscraper" wants to become a "skycity," Jencks's third category. The plan type for "skycity" is a compound one with circulation points located here and there and accommodating all sorts of configurations of towers.

In case we want images and attributes ordered scientifically, there is The Chart. The chart is to a Jencks book what a reflective glass skin is to a tall building: Simple facts are complicated in order to be then clarified. Here we see the end product, the metaphor (skycity, skypricker) results from a combination of ingredients: morphology (e.g., square, round towers, slabs); surface articulation (e.g., reflective vs absorptive skins); style (Classical, Neo-Gothic); activity (commercial); technology (steel frame); and motivation.

The book attempts to explain the appearance of the tall building as determined by more factors than the usually favored "technical determination" argument. Yet the history of the technique is the most fascinating part of its evolution simply because the early buildings that were contributing to the rise of the modern high-rise often bore few signs saying "skycraper to come." Thus Jencks's brief section recapitulating some of Francisco Mujica's points in his *History of the Skyscraper* written in 1929 or Winston Weisman's essay on skyscrapers in *The Rise of an American Architecture* still provide the most meat in his lead essay.

As Mujica pointed out in 1929 and Montgomery Schuyler (who is not mentioned by Jencks) in 1909, the initial factor encouraging the breeding of these monsters was not the steel frame, but the passenger elevator. The platform elevator, invented in 1850, was first installed in the famous cast-iron Haughwout Building in New York in 1857. The first "passenger" elevator, Schuyler notes, was installed in the Fifth Avenue Hotel on 23rd Street in 1859. It was not until the Equitable Life Insurance Building was erected in 1868 to 1870 in New York that the building design—by Gilman & Kendall and George Post—was affected: the building soared to seven stories instead of the usual easy-to-climb five or six.

In 1873, two New York buildings not only rose higher, but didn't try to hide height behind scale manipulations of the façade. They were the ten-and-a-half-story Western Union Telegraph Building by George Post and the nine-story Tribune Building by Richard Morris Hunt. Of course, advances in steel construction were necessary so that masonry buildings bolstered by wrought iron pieces could give way to the cheaper, more easily fire-proofed, lightweight structures of steel. The Bessemer process allowed transition in framing from "cage" construction to "skeleton" construction to occur. With cage construction, the metallic frame bore only the weight of the floors, with exterior self-supporting masonry walls; in skeleton construction, walls would rest on the frame as well. Schuyler agrees that while William Le Baron Jenney's Home Fire Insurance Company was the first building (1884) to freely use skeletal metal frame construction, George Post's interior court for the Produce Exchange in New York showed " 'skeleton' construction had already arrived."

Mujica doesn't count the Produce building because its skeleton was not executed for a tall building, but rather to support four "nearly fireproof" stories. He and others still vote for Home Life as a "first," a building others see as impor-

[*Books continued on page 101*]

WE SAVED THE WORLD TRADE CENTER $240,000.

(And you're just using ordinary lighting?)

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Books continued from page 99

tant for its early use of steel in beams above the sixth floor.

The first full vision of a skyscraper Mujica credits to Frederick Baumann, who circulated his scheme in a pamphlet in late 1884. Similarly, a Minneapolis architect, Leroy Buffington, published a 28-story continuous frame scheme in *Northwestern Architect* in 1888. Buffington, who never built his tower, took out a patent on it in 1887 and claimed he was the "inventor" of the skeletal frame. Art historical disputes followed later.

In 1889, Burnham & Root's 10-story Rand McNally building in Chicago was erected—the building Mujica points to as the first *all steel* frame skyscraper in the world (although the mullions in the court wall are evidently cast iron). Meanwhile, Bradford Gilbert had designed the 11-story metal frame Tower Building going up in New York in 1888. Because Burnham & Root's Old Masonic Temple, built in 1892 in Chicago, went to 20 stories, Mujica places it as the "most important" steel skyscraper to that date—the first to go taller than the norm established by masonry with cast-iron construction.

Even the formal expression of buildings in those days was subject to "first" disputes. While Chicago was developing its own straightforward formal solutions to the skyscraper, George Post and Bruce Price had adopted the column analogy for a tripartite division in the composition of two of their towers. Post's Union Trust Building, completed in 1889, was considered a "first," but Bruce Price's American Surety Building (now Bank of Tokyo) has been considered the clearer example of the column analogy.

Incidentally, Post was to have second thoughts about the skyscraper: In 1894 he proposed at The Architectural League of New York that a law be passed against the skyscraper, which was becoming an eyesore and made the streets unhealthy. In December that year he published this sentiment in the *Tribune,* saying that skyscrapers would destroy the beauty of cities.

While Jencks's text deals with the mechanical and structural innovations that allowed the tall building to evolve, the excerpts or passages taken from the writings of Mujica and Weisman often need further elaboration. For example Leroy Buffington's design is mentioned without the added information about place, date, or emphasis on the point that the project was not realized. Jencks also omits any serious discussion of zoning legislation and how it affected the configuration of tall buildings. Except for a quote from Weisman in which setback configuration is related to the 1916 zoning law, there is no other discussion about its effects on "morphology," or morphology's effects on it. The impact of the second Equitable Life Assurance Company building of 1915 is a case in point. The bulk of the 40-story block that replaced the above-mentioned 7-story 1870 Equitable building cast a shadow on the surrounding neighborhood so large that it became a cause célèbre leading to the 1916 zoning legislation. Then too, there is the influence of the design of the Seagram Building on the 1961 revised zoning. Form begets constraints which beget form.

The structural history is interesting because what seemed to be the most appropriate expression of the tall building—the glass and steel tower—was eventually to emerge out of these technical forays. When this expression no longer serves us, it raises fundamental questions about the relation between form and structure. Can a formal expression for the tall building evolve that goes beyond the limitations of merely expressing function and technique? Can that expression still acknowledge its basic constitutent facts of its structural make-up rather than to masking them over? These questions are not explored in *Skyscrapers—Skycities.* Rather it remains an exercise in verbally getting on top of a visually diverse landscape through categorization. Although there are a good many photographs and lively captions, nice color reproduction and paper stock, a "quick-take" attitude underlies the book including photographs taken without a perspective control lens and the many typographical errors. [SS]

Products and literature

Products

Balans Activ seating consists of a forward-leaning seat and a leg cushion to prevent sliding. It is said to provide a more comfortable and natural open angle between the torso and legs. The seat allows free mobility while the leg cushion provides a variety of positions for feet and legs. It is easily assembled without tools. HAG USA, Inc.
Circle 100 on reader service card

Leonardo contract chairs, designed by Paul Tuttle, have self-skinned polyurethane foam molded to the seat and back. The foam has self-healing characteristics and is completely washable, making the chairs suitable for restaurants and similar heavy use seating. The three-part chair and four-part stool assemble easily, with parts fastened by screws to a heavy-gauge steel frame. The chairs can be shipped knocked down to reduce shipping costs. Atelier International.
Circle 101 on reader service card

Desks and credenzas in the 1100 series are offered with tops of genuine oak or plastic laminate. Desks are single- or double-pedestal style with full modesty panels. Credenzas come in three sizes with a choice of four storage inserts. The Worden Company.
Circle 102 on reader service card

4500 Seating, which will be available in January 1981, includes swivel-tilt and high-back models, secretarial chairs, and arm and armless side chairs. Frames come in seven powder coatings and chromium, with tufted or nontufted cushions and resilient arm caps, either upholstered or unupholstered. Harter Corp.
Circle 103 on reader service card

Geriatric Personal Furnishings System, designed by Joseph A. Koncelik to promote independence of the elderly, includes panel systems, bolsters, overbed table, storage module, desk, and overbed light. The open plan system is intended to encourage those living in nursing homes to help themselves to the extent they are able. Bolsters, which are mounted on each side of the bed, for instance, aid patients in transferring to wheelchairs; they also protect them from injury in the event of a fall against the side of the bed. JG Furniture Systems.
Circle 104 on reader service card

The pop/art collection of giant items, such as crayons, pencils, can opener, cup and saucer, and many others, can be used as freestanding or wall-hung sculptures. They are all hand finished to look like the original objects. Pop/Eye Products, Inc.
Circle 105 on reader service card

Work stations for CRT/VDT and word processing terminals, with prewired electrical raceways, are offered in a wide choice of sizes and options such as flat tops, dropped keyboards, and angle offset keyboards. The individual work stations have height adjustments and come in left- or right-hand models. Structural Concepts.
Circle 106 on reader service card

A gypsum-impregnated flexible wall-covering system, consisting of wall-covering, adhesive, and optional anti-graffiti coating, has a Class A flame spread rating according to ASTM E 84. It is said to be especially suited to installation over masonry surfaces. The manufacturer says that tests indicate that it is suitable for use on thermal mass walls. Flexi-Wall Systems.
Circle 107 on reader service card

The Dantsu Rug Collection is handmade in Japan of 100 percent wool, tufted of six individual strands of yarn. The cut pile is approximately ¾-in. deep. There are 20 designs available in stock colors and in sizes from 2.3′ x 3.9′ to 12′ x 15′. Design shown is Ryusui Kaede Mon, an interpretation of maple leaves on a mountain stream. Bowater Carpets, U.S.A., Ltd.
Circle 108 on reader service card

Av-Com® audio-visual systems, self-contained in a compact cabinet, can be used freestanding or built in. The unit is front loaded and controlled, eliminating the need for a booth. It can be operated in a lighted room such as a training or conference room, library, or classroom. The optical system is preset, and there are a speaker, a relay system for control of projection equipment, and a projector. Jerome Menell Co.
Circle 109 on reader service card

Drop-in range 58AN-2CXW has an overlapping cooktop for easy cleaning and elimination of dirt-catching cracks between range and cabinet. Surface units have ten heat settings, large and small elements; self-cleaning oven has self-locking racks, a two-piece broiler pan, and an oven timer that can be set to start and stop cooking automatically. Magic Chef, Inc.
Circle 110 on reader service card
[*Products continued on page 104*]

Here are two of the best elevator operators in the world.

In their day, white gloved elevator operators were the best way to get from one place to another. Times changed. So much so, that even the mechanical programmers designed for the first automatic elevators became inadequate.

Twelve years ago, Schindler Haughton replaced mechanical programmers with integrated circuits. The equipment was so advanced that this electronic chip could analyze more than 27,000 possible service combinations (and select the best one) in 10 milliseconds. It took our competitors a decade to catch up. Now we have even more advanced microprocessing equipment. It's the best of its kind.

Today, Schindler Haughton is part of the world's second largest elevator company with a full line of geared, gearless and hydraulic elevators and escalators. Each supported by systems that dramatically improve passenger service and reduce operating expenses.

Times have changed. And so have we. But we're still committed to delivering white glove service in a push button world.

We're #2 in the world and going one better.

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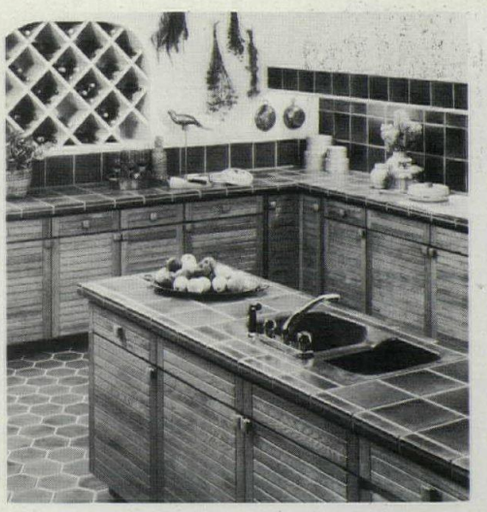
Schindler Haughton
ELEVATOR CORPORATION
Toledo, Ohio 43609

Products continued from page 102



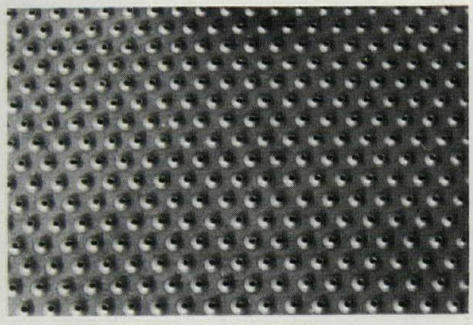
Cerámica Coordinates for custom kitchens coordinate the color of enameled cast-iron sinks with ceramic tile. They are designed so that the sink fits flush with the tile. Sinks are 32″ x 21″ x 16″ double-compartment models punched for spray attachment and suitable for disposer units. American Olean's Encore tile comes in 8″ x 8″, 8″ x 4″, or 4″ x 4″ sizes with color-coordinated grout and bullnose trim. There are four colors available: Sand, Seal, Wheat, and Blue. Eljer Plumbingware.
Circle 111 on reader service card

Cabinets for use in kitchen or bath are offered in a wide choice of styles in light and dark woods, laminates, and wood/laminate combinations. There are base and wall cabinets and drawers, with pulls or knobs to suit cabinet style. Wall cabinets are approximately 26 in. high; working height of bases is 29½ to 36 in. with base setbacks of 4 in. to allow foot room. Poggenpohl USA Corp.
Circle 112 on reader service card

Lossnay air-to-air total heat exchanger, constructed of cross-laminated plates and fins, is said to recover up to 70 percent of heat normally lost through ventilation. The system is described in a 16-page brochure that provides installation drawings and technical data comparing different systems. The heat exchanger can be used in residential, institutional, commercial, and industrial buildings. Mitsubishi Electric Industrial Products.
Circle 113 on reader service card

AFS power and lighting distribution, compatible with all access floor systems, uses flexible plug-in wiring. Since AFS can be plugged in and unplugged under electrical load, building occupants are not disturbed by power shutdowns. The system, which makes the entire floor area accessible to wall outlets, floor boxes, or electrified furniture, has the capacity to handle future expansion or personnel relocations. 3M Co., Electro-Products Div.
Circle 114 on reader service card

Watt Watcher electronic ballast for energy-saving fluorescent lighting is planned for production beginning early in 1981. The single ballast operating a three-lamp energy-saving fixture is expected to use 30 percent less electrical input than the two ballasts required for standard fixtures operating three lamps (20 percent less than standard fixtures converted to energy-saving lamps). It also operates cooler than a standard fixture by 40 degrees F and weighs 10 percent less than a three-lamp fixture equipped with two standard ballasts. Energy savings are expected in the reduced air-conditioning load and in the ceiling structure required to support the lighter weight fixtures. Thomas Industries, Inc.
Circle 115 on reader service card

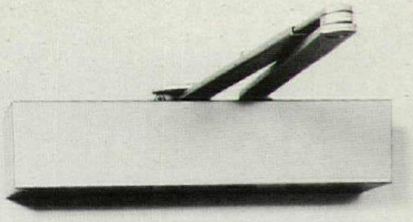


Perf-Grip Safety Floor plate, with holes spaced about ½-in. apart, provides slip-resistant gripping action in all directions. It is available in 16-, 14-, and 11-gauge carbon steel sheet in sizes up to 36″ x 120″, and in special sizes to fit customer requirements. Applications include such areas as stair treads, inclined ramps, dock plates, landings, work platforms, and walkways. McNichols Co.
Circle 116 on reader service card

Sunwood® is wood pressure treated with Osmose K-33 to which brown has been added. It produces a red-brown color as an alternative to the gray-green resulting from the use of the preservative without added color. Pressure treating protects the wood against termites, rot, and decay. Uses include fencing, decks, and landscape projects such as terracing, planters, and retaining walls. Osmose Wood Preserving Co.
Circle 117 on reader service card

Interior fire doors, UL rated for ¾, 1, and 1½ hours, have mineral cores, hardwood crossbands, and wood veneer or laminate faces. They are suitable for vertical shafts and room and corridor partition openings. Algoma Hardwoods, Inc.
Circle 118 on reader service card

Composite core firedoors have a perimeter edge system of laminated layers of high density, fire-resistant wood fiber that carries a Class A flame-spread rating. The edge construction makes the doors resistant to splitting and hinge-screw pull-out. Hardware reinforcing blocks within the door are also available. Ratings are ¾, 1, and 1½ hours. Cal-Wood Door.
Circle 119 on reader service card



'Heritage' door closers for interior or exterior use have a field adjustable backcheck that can vary between 65 degrees and full door opening. Resistance to opening force and closing force is also adjustable. The closers have one-piece cast iron bodies and cold-rolled straight steel arms. Rixson-Firemark.
Circle 120 on reader service card

Del Norte drop-in ceiling panels, made from natural wood segments laminated to a sound-absorbing, noncombustible substrate, are available with a Class A fire spread rating. The 2′ x 2′ panels are designed to fit into a suspended grid system. They come in natural wood colors in a choice of designs. Finlay Research.
Circle 121 on reader service card

Keraion ceramic tile can be used for walls, ceilings, floors, or façades. The hand-glazed tiles, fired in tunnel kilns, come in sizes ranging from 1′ x 1′ to 4′ x 5′. They are colorfast, nonfading, frost-proof, acid-proof, and shock resistant, according to the manufacturer. Buchtal U.S.A.
Circle 122 on reader service card

PyroDor sliding fire doors are rated for a rise to 250 F maximum temperature in 30 minutes on the side not exposed to fire. They have a solid mineral or fiberboard core enclosed in zinc-coated panels. The doors are available in single-slide or bi-parting styles. Mesker Industries, Inc.
Circle 123 on reader service card

Literature

Ground Mount Precision Uplights are factory prewired and of watertight construction. Below-grade exterior surface is coated for protection against corrosion. Light source can be incandescent, low-voltage incandescent, or HID (mercury vapor, metal halide, or high pressure sodium). Lenses are convex, flush or convex with guards, or domed. A 12-page brochure shows the styles and has detail drawings of the units along with product descriptions. Prescolite, Div. of U.S. Industries, Inc.
Circle 200 on reader service card
[*Literature continued on page 108*]

THE DOOR FOR MORE REASONS

Pre-fit to specs

Manufactured to NWMA specs

Countless patterns and colors

Four fire ratings

Five core selections

Matching edge band

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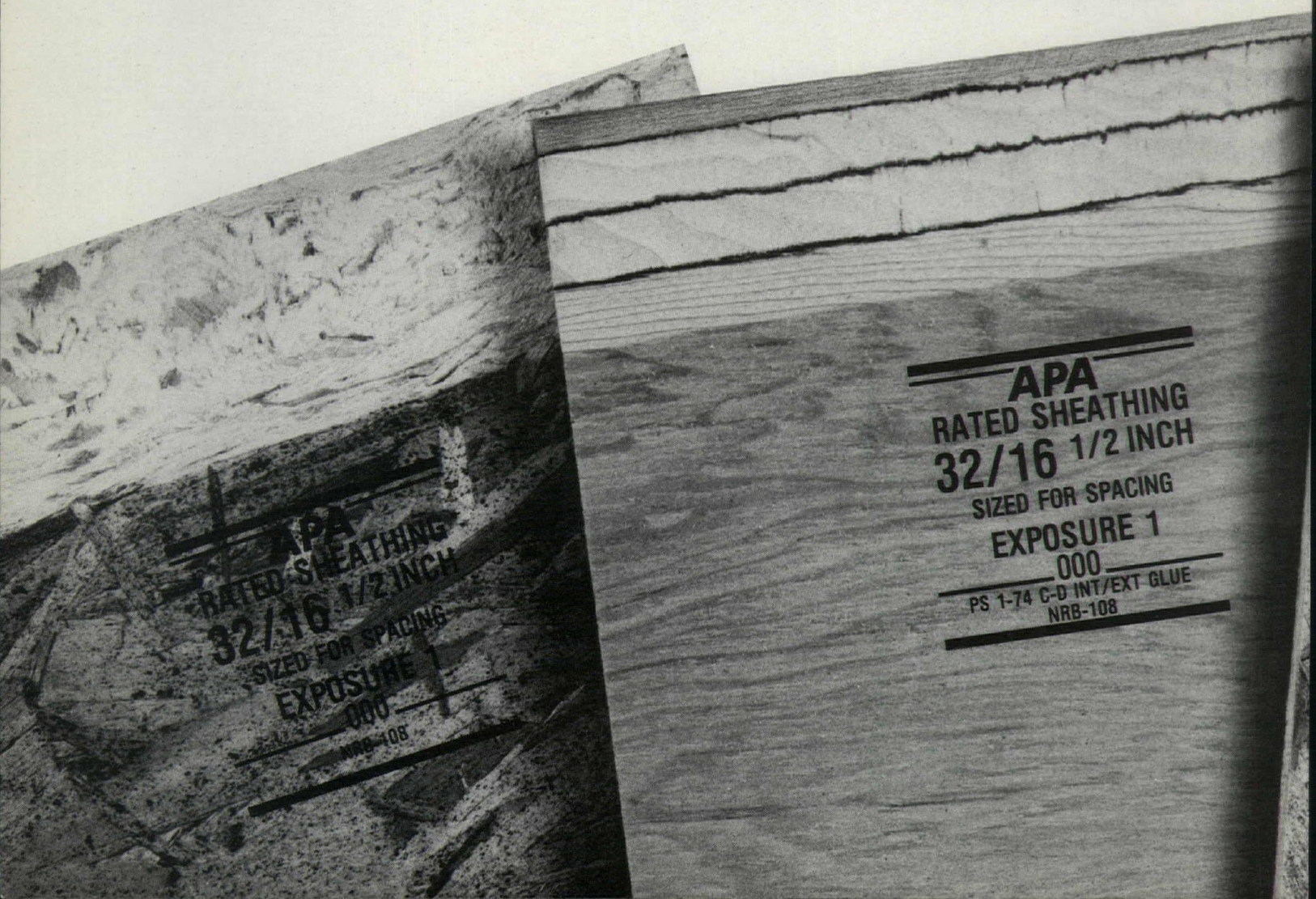

But regardless of composition, all APA Rated panels are manufactured in accordance with APA's exacting end-use standards. So you can depend on them to perform as they say they will.

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This is only the beginning. APA is testing and evaluating other panel products. Concrete form panels and siding, for example. In the future they'll join Sturd-I-Floor® and Performance-Rated Sheathing.

So whatever your needs, look for and insist on the APA trademark. Because it's your assurance that the manufacturer is committed to APA's rigorous program of testing and quality control.

If you'd like more information on APA Performance-Rated panels, write us at Dept. PA-120, P.O. Box 11700, Tacoma, Washington 98411.

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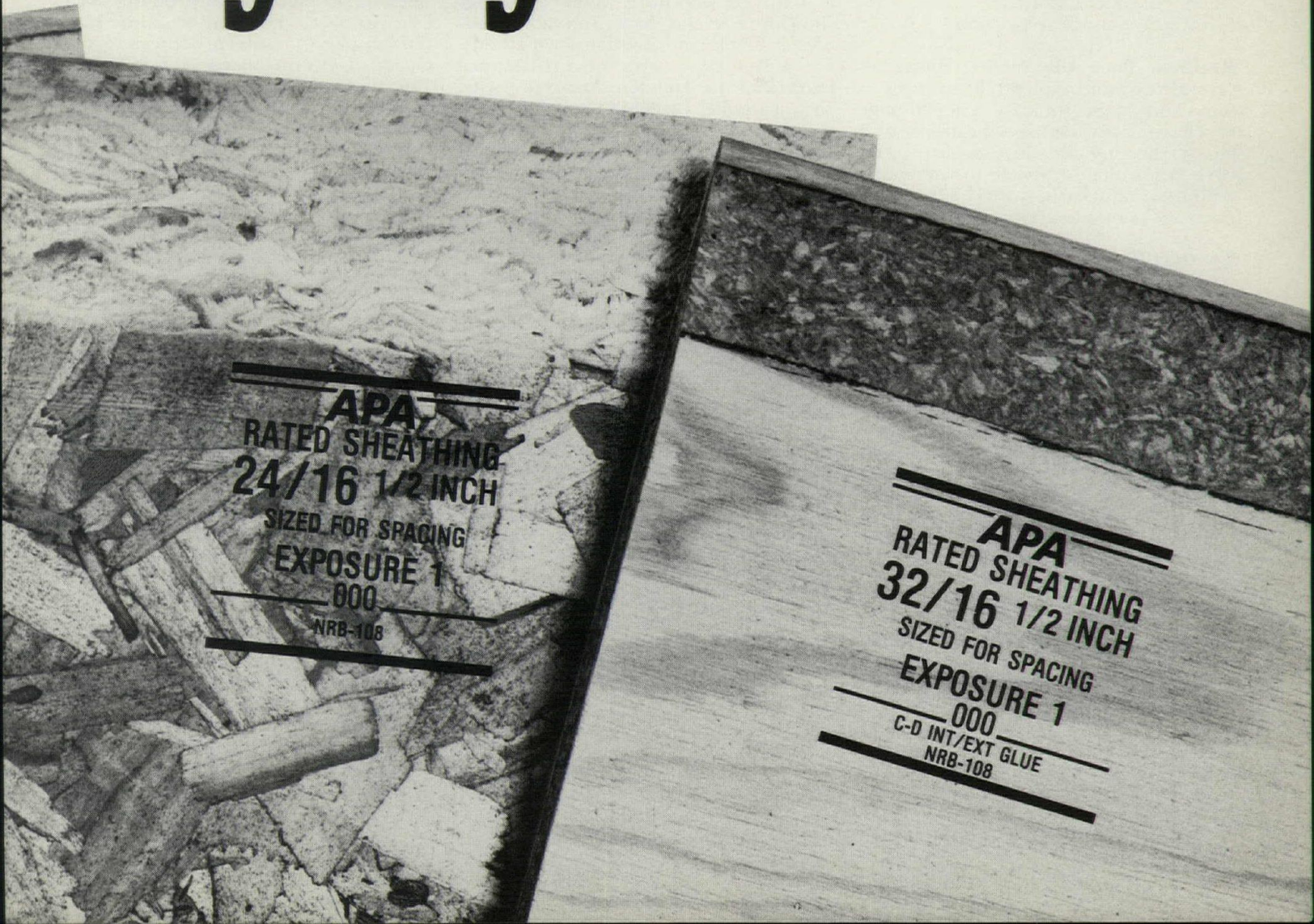


Literature continued from page 104

Site furnishings catalog shows wooden tables and benches reinforced with steel and wooden and fiberglass planters/benches, planters, and trash receptacles. There are several coordinated groups, such as Cleft®, with vertical lines, Strata®, with horizontal lines, and the fiberglass group available in 12 colors to mix or match. Landscape Forms, Inc.
Circle 201 on reader service card

'Trilogy Illuminated Ceiling Systems.' A 28-page brochure illustrates and provides product information about several unusual lighted ceilings. Systems include shielding elements, primary suspension, and lighting. A color chart, product profiles, interior plan drawings, and lamp spacing data are also provided. Neo-Ray Lighting.
Circle 202 on reader service card

Resilient floor tile catalog illustrates several vinyl and asphalt tile patterns in 9-in. and 12-in. squares. The 20-page brochure provides specifications and charts showing tile, feature strip, and cove base colors available in solids and patterns. Azrock Floor Products.
Circle 203 on reader service card

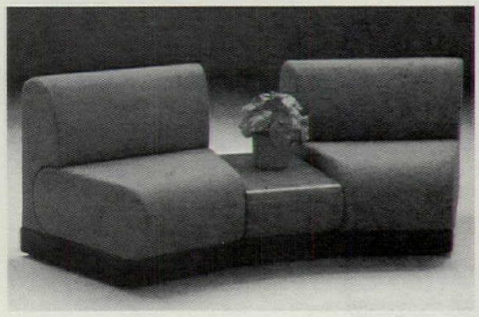
Contract Textile Wallcovering catalog contains samples of a collection of 75 patterns in wools, linens, silks, flannels, suedes, and other wallcoverings. For a free copy, write on professional letterhead to Tektura, 4342 W. 12 St., Houston, Tx 77055.

Open-plan office systems and furniture components are presented in five four-color brochures. Three brochures discuss the panels, one covers the modular furniture components, such as shelves, bins, and drawers, and the fifth explains the company's fast delivery program. Panel Concepts, Inc.
Circle 204 on reader service card

Screen and system fabric that is inherently and permanently fireproof, according to the manufacturer, is made from Eastman Kodak's 100 percent Verel® modacrylic fiber. It comes in 20 standard colors and 12 heather mist colors. Brochures show color swatches and provide specification data. Homestead Fabrics Inc.
Circle 205 on reader service card

Marble flooring in 6″ x 6″ x ¼″ tiles is available in 14 Italian and French marbles with matching trim. An eight-page brochure shows the tiles in color and illustrates their use in typical areas on walls as well as floors. Marble Technics.
Circle 206 on reader service card

'Eliminating Electrostatic Shock in Carpet' is an eight-page brochure that discusses the use of Bekinox® stainless steel fiber or Bekitex® spun nylon/Bekinox fiber in carpets for static control. In some instances, the manufacturer says, a conductive backing is not needed. The steel fiber is incorporated into the yarn during the spinning process and is said to be usable in all spinning processes and with all fibers. Included in the brochure is a suggested performance specification. Bekaert Steel Wire Corp.
Circle 207 on reader service card



Multiple Choice modular seating by Hans Krieks is illustrated in full color in a six-page brochure. Line drawings show the five seat, back, and table modules available and installation methods. For a free copy, write on professional letterhead to Helikon Furniture Co., Inc., Taftville, Ct 06380.

Kiso-Granite paving stones, produced by Nitto Kenzai Kogyo Co., Ltd., from granulated granite that has been fused at very high temperature, looks like natural granite yet is said to be even more durable. The product is described and its various forms are illustrated in color, as are several different paving installations, in a 12-page brochure. Yamaguchi Corp.
Circle 208 on reader service card

Genon® Vinyl Wallcovering designer's guide discusses the design process and the advantages of using Genon. It shows in color the patterns and finishes available. Special products include Gen-Film® for partition systems, Hercules for covering rough surfaces, and Undercover® wall lining. The 16-page brochure includes physical characteristics and provides general specifications. The General Tire & Rubber Co., GTR Wallcoverings Co.
Circle 209 on reader service card

Business furniture. New, 100-page, four-color catalog includes desks, credenzas, tables, filing cabinets, seating, bookcases, and data processing equipment stands and files. In addition to product descriptions and illustrations, there are color selector charts for fabrics, paints, and laminates. Cole Business Furniture, Div. of Litton.
Circle 210 on reader service card

Portable shelters for security and revenue control are described and shown in an eight-page brochure. There are both steel- and wood-framed styles, which come completely wired and with self-leveling feet, requiring only wiring connections to make them usable. There is also a knocked-down model for export. B.I.G. Enterprises.
Circle 211 on reader service card

Building materials

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

Xerox Centre, Chicago, Il (p. 58). *Architects: C.F. Murphy Associates, Chicago.* Curtain wall: Cupples Division, H.H. Robertson; aluminum coating, DeSoto fluoropolymer; glass, LOF 1-108. Doors: stainless steel and glass, Crane Fulview; hollow metal or wood, ACME Steel Door; telescoping truck dock, Inryco. Lobby terrazzo: John Carretti Co. Four-ply coal-tar pitch roofing: Koppers. Elastomeric waterproofing: Carlisle Rubber. Foundation and plaza fluid-applied waterproofing: Ned-Guard. Gypsum board: U.S. Gypsum. Interior enamel: Pittsburgh. Hinges: Stanley. Locksets: Sargent. Overhead closers: Sargent, Rixson. Fire command console: Honeywell. Elevators: Westinghouse. Electric distribution, lobby: Arcom Industries. Plumbing fixtures: Eljer. Flush valves: Sloan. Toilet stalls: Global, Architectural Metal Industries. Electric baseboard heating: Chromalox. Chiller: York. Cooling tower: Baltimore Air Coil. Sprinklers: Reliable Automatic Sprinkler Co., Control Sprinkler Co.

E.F. Hutton Building, Los Angeles, Ca (p. 64). *Architects: Reibsamen, Nickels & Rex, Los Angeles.* Concrete spread footings: Flintkote Co. Retaining walls: Bethlehem Steel. Steel structure: Riverside Steel Const. Insulated exterior wall panels: Northrop Architectural Systems, California Metal Enameling Co. Acoustical tile: Armstrong. Elevators: Haughton Elevator Co.

Alcan Corporate Headquarters, Montreal, Quebec (p. 68). *A.J. Diamond Associates, Toronto, Ontario.* Glass partitions: Canadian Pittsburgh Industries. Carpet: Perfection Rug. Drapery: St. Hubert Silks and Woolens. Upholstery: wool, Kobe Fabrics; leather, Spinneybeck Enterprises and Fine Art International. Work stations: Reff Products. Desks: Interiors International. Files: Steelcase
[*Building materials cont. on p. 111*]

Tools of the trade.

It can be what you want it to be, do what you want it to do.

Masonry is a thousand colors, textures, shapes and sizes. It creates patterns of light and shadow that move with the sun; it creates a visual mood for the structure. It provides a texture of contrast, or unity—whatever you intend.

Yet with all of the aesthetic freedom masonry gives architects and designers, it remains fundamentally a very practical and economical tool of the trade.

Masonry buildings go up faster so they can be occupied sooner. They have lower maintenance costs, never need painting, virtually no repairing. Masonry walls, because of their mass or density, reduce heating and cooling costs, thus saving energy. And masonry fulfills many functions—structure, enclosure, fire walls, sound barriers, finish walls.

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Tools of the trade. Consider them for your next building.

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Building materials cont. from p. 108

Canada. Seating: reception area, Fine Art International; executive offices, Knoll International. Chairs: Paul Arno; Sunar; Steelcase Canada; Knoll International; Aarkash. Desk accessories: Business Accessories. Desk lamps: Accessories Plus. Reception desk, conference tables, sign, and hardware design: A.J. Diamond Associates. Chillers and fan-coil units: McQuay-Perfex. Sign: King Plastics. Hardware: A. Faustin Co.; Montreal and Ferrum Metal Co.

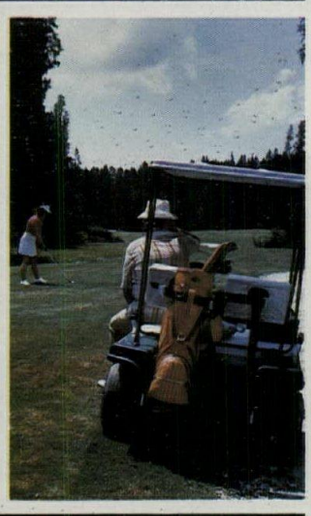
Offices, New York (p. 72). *Architect: Paul Segal Associates, New York.* Paint: Benjamin Moore. Particle board: Amberg Architectural Woodworking. Wool wall covering: Design-Tex, Willow-Tex. Gypsum board: U.S. Gypsum. Carpet: Stratton Industries. Lighting: Edison Price, Lightolier. Furniture: JG Furniture, GF Business Equipment, Knoll, Brickel, AI. Signs: Architectural Signing.

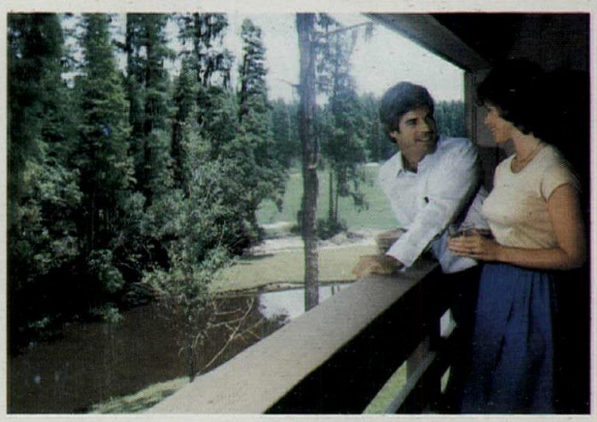
Garden Grove Community Church (Crystal Cathedral), Garden Grove, Ca (p. 76). *Architects: Johnson/Burgee, New York, Albert C. Martin Associates, consulting.* Steel structure: Pittsburgh/Des Moines Steel Co. Curtain wall: Cupples Products. Entrance doors: Golden State Glass. Interior doors: Hol-o-met. Terrazzo floors: Crossfield Products. Door closers: Sargent. Kitchen equipment: Dwyer Products. Security devices: Pyrotronics. Fire alarm: Simplex Time Recorder Co. Lockers: Republic Steel. Elevators: Otis Elevator Co. Handrails: Ornamental Specialities. Lighting: Gardco Mfg., Edison Price. Sanitary: American-Standard, Bobrick. Hot water boiler: Parker Boiler Co. Chiller: Trane Co. Carpets: Customweave. Seating: Marshall Co. Clergy chairs: New Holland Church Furn. Co. Pew-back speakers: Altec. Fountains: Kim Lighting.

Sun/Tronic House (G.M. Hartley, Trustee) by Copper Development Association, Fairfield County, Ct (p. 86). *Architects: Berkus Group, Santa Barbara, Ca.* Poured concrete foundations. Wood frame structure, with steel beams and pipe columns and plywood shear walls. Redwood T&G siding, decking, and interior paneling: California Redwood Association. Gypsum board and plaster interior walls. Custom insulated bronze windows: Copper Development Association. Greenhouse: Lord & Burnham. Insulating glass skylights: Libbey-Owens-Ford. Steel doors, garage doors and opener, and custom copper-clad entry doors: The Stanley Works. All-glass vestibule doors: Blumcraft. Lacquered brass shower doors: Keystone Shower Door Co. Slate floors: Vermont Structural Slate Co. Exterior paving: Stone on asphalt. Standing-seam 12-oz. copper roof: Copper Development Association. Fiberglas batt insulation (3½", 6", 9"), 1" foil-faced foam board, 1" Fiberglas sheathing: Owens-Corning Fiberglas. Lead sheet acoustical barriers between interior zones: Lead Industries Association. Clear finish on redwood: Woodlife. Hinges and lock sets: Solid brass. Closers (on double glass doors, only): Rixson. Copper exhaust hood (kitchen): Vent-a-Hood. Kitchen appliances, including microwave and compactor: General Electric. Computer control system: Apple Computer. Software and wiring for computer system: W.W. Gaertner Research. Brass handrails: Allied Bronze Corp. Lighting fixtures (with some exceptions): Lightolier. Bathroom fixtures, kitchen and laundry sinks: American-Standard (Ellisse line). Brass bathroom accessories: Paul Associates. Liquid solar collectors: Libbey-Owens-Ford. Forced-air distribution system and air-to-air heat pumps: General Electric. Copper direct-gain collectors: Copper Development Association. Photovoltaic system: Solarex Corporation. Emergency and security power batteries: C & D Batteries. Energy systems: Edison Electric Institute. Carpets: Karastan Rug Mills. Kitchen cabinetry: St. Charles. Other cabinetry: Harvey Root Millwork. Furniture (various manufacturers) from W. & J. Sloane. Upholstery fabrics (with Herculon): Hercules/Sherrill Interior blinds: Bronx Window Shade Co. Motorized insulating fabric shades (on skylights): Sun Quilt Corp. Motorized insulating security shutters: Roll-a-way.

Annual Index January-December 1980

Articles are listed chronologically by subject matter, followed by an alphabetical list of architects.





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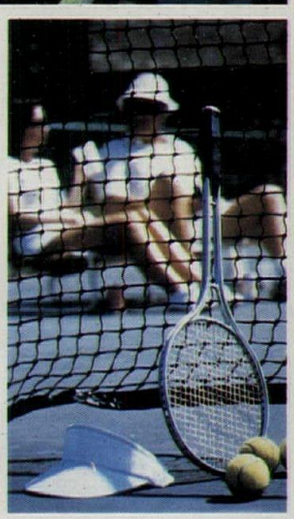

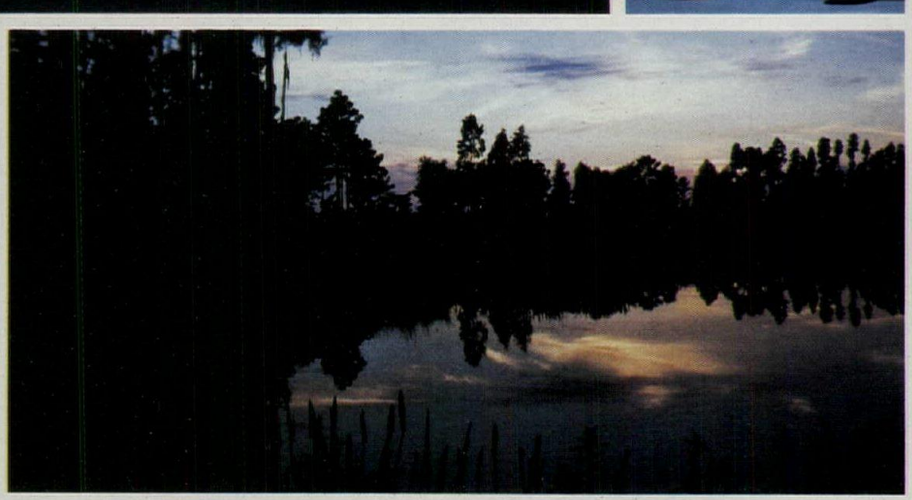

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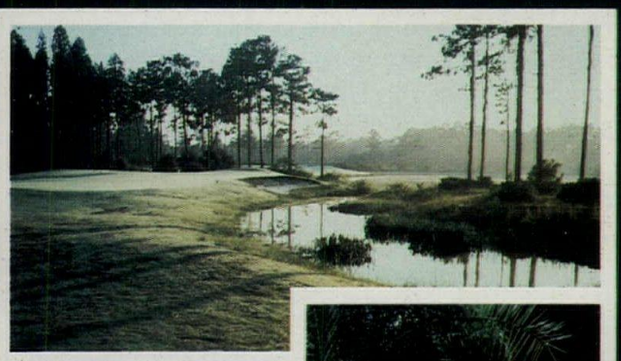

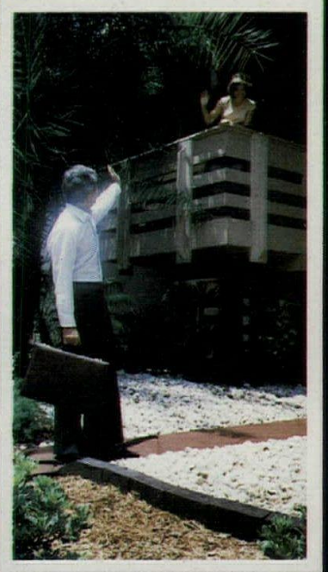

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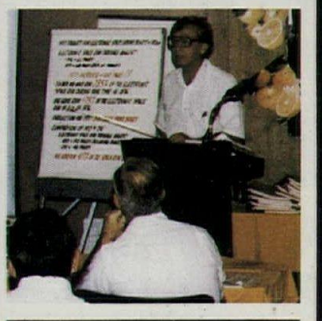

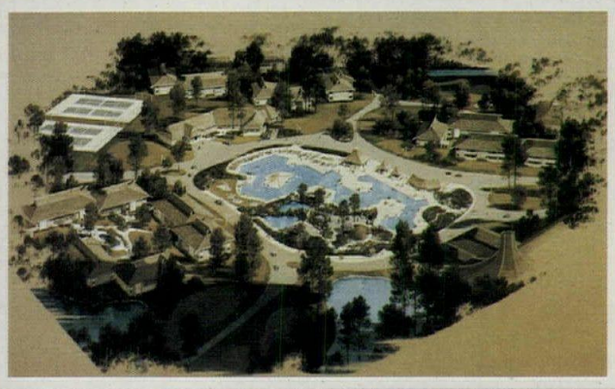

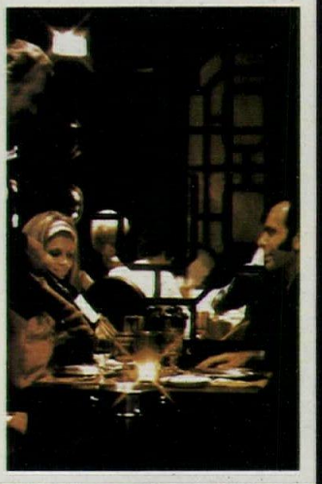

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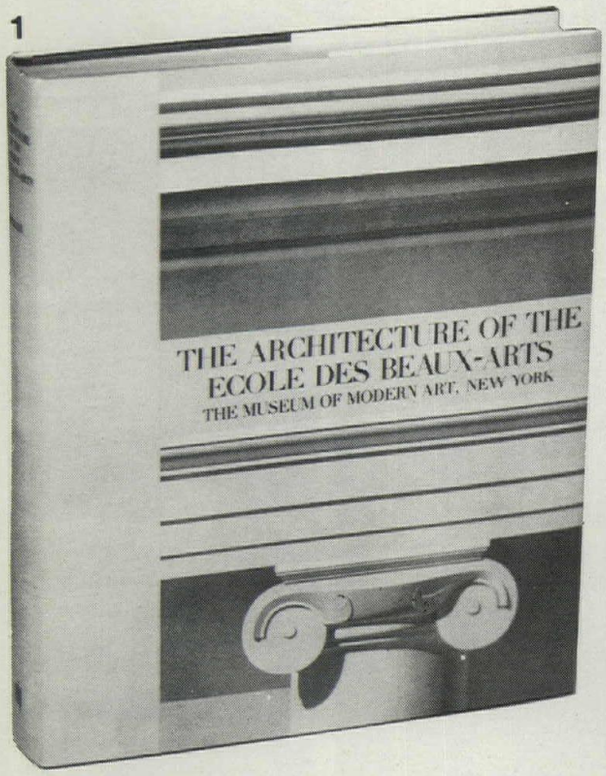

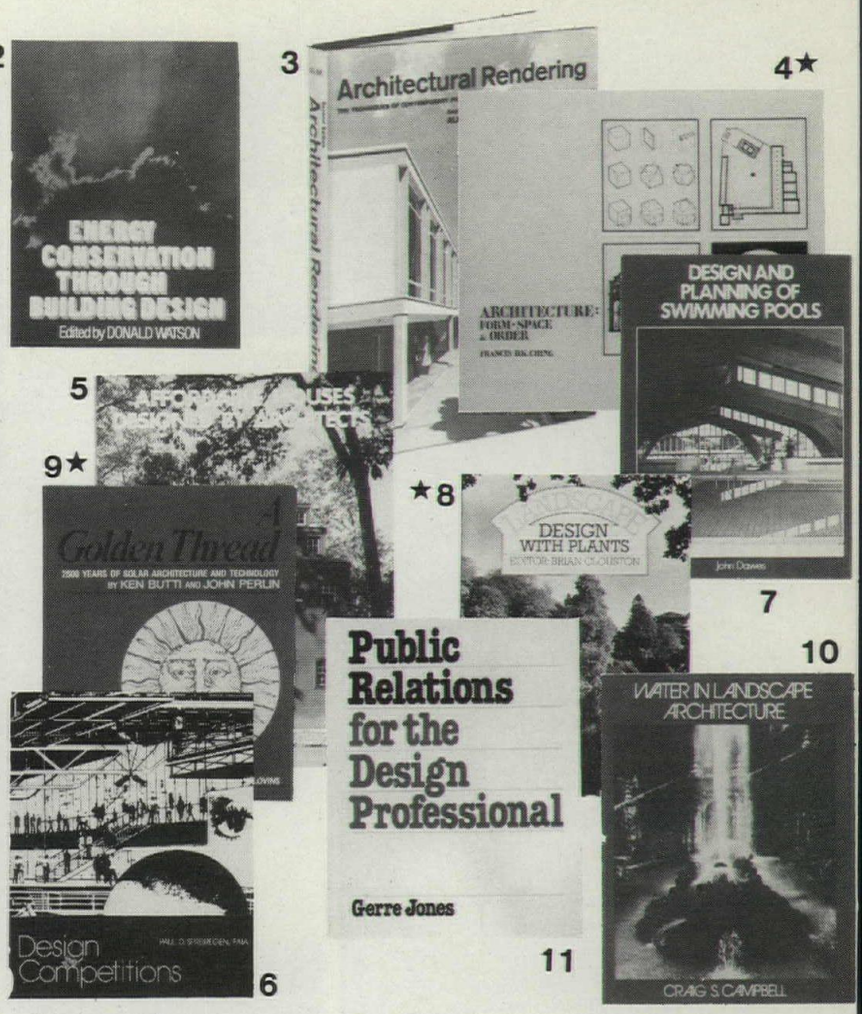

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Edited by Arthur Drexler with essays by Richard Chafee, David Van Zanten, Neil Levine and Arthur Drexler
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By Albert O. Halse, 326 pp., illus., 2nd edition, 1972 . . . $39.95

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6 Design Competitions

By Paul D. Spreiregen,
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The first comprehensive guide to design competitions based on American practices, it examines in detail all important aspects of this timely subject, including how competitions work and the ground rules that govern most competitions.
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9 A Golden Thread 2500 Years of Solar Architecture and Technology

By Ken Butti & John Perlin,
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This carefully researched narrative not only presents a history of solar energy use, but also demonstrates that successful solar energy applications of the past pave the way toward a society that depends on the sun for a large part of its heat, light and motive power.
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10 Water in Landscape Architecture

By Craig S. Campbell
128 pp., illus. . . . $15.95

This profusely illustrated book is the first published work that deals in substantial detail with the technical as well as the aesthetic principles of fountain design. Covers basic hydraulic principles, practical limitations, environment and available equipment.
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11 Public Relations for the Design Professional

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12 Architecture in Context Fitting New Buildings with Old

By Brent C. Brolin,
150 pp., illus. . . . $16.95

A design aid for architects and laypeople alike, this valuable guide analyzes the different ways in which architects have approached the problem of relating new buildings to old, advocating a modern design that respects the context by capturing its visual flavor.
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NEW★

13 Leisure Homes

By A. W. Lees with E. V. Hyen,
320 pp., illus. . . . $18.95

The homes collected in this informative guide represent a broad spectrum of imaginative architectural design. Floor plans and interior views of 56 stunning leisure homes are shown in striking color, plus step-by-step instructions and complete plans for building the *Popular Science* Lockbox House.
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14 Architectural Illustration The Value Delineation Process

by Paul Stevenson Oles,
288 pp., illus. . . . $34.50

In this copiously illustrated, clearly organized explanation of his value delineation system, the author presents a detailed description of the process which has resulted in these award-winning delineations that show realistically how a designed structure will appear when built.
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15 Furniture Designed by Architects

By Marian Page,
224 pp., illus. . . . $25.00

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16 Trees for Architecture and the Landscape Condensed Edition

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208 pp., illus. . . . $11.95

This attractive book will aid communication between landscape architect, architect and layman with a comprehensive collection of photographic portraits of trees whose structure, habit and other characteristics make them especially useful in relation to buildings and outdoor spaces.
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