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March 1980



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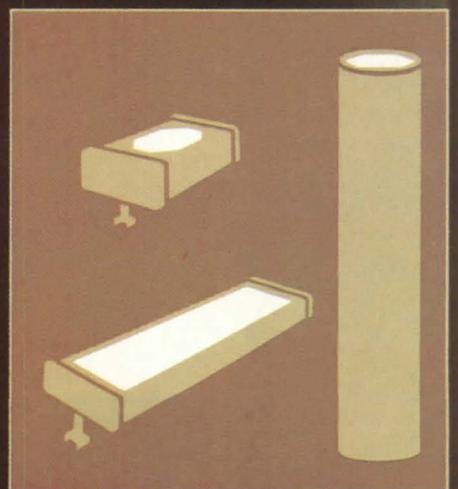
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Architectural design

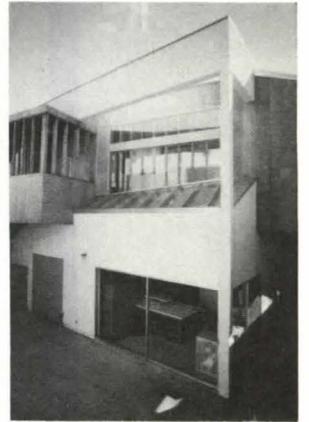
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A reinstatement of the profile, this is the first of three architectural firms to be covered this year. The Los Angeles-based firm, noted for Frank Gehry's avant-garde designs, also produces large-scale, straightforward work.
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Frank O. Gehry & Associates designed an expansion of existing facilities for Gemini G.E.L., a graphics firm.
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For his own family, Frank Gehry has sculpted a shell of industrial materials into abstract forms around a renovated 1920s house.
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Urban living quarters, called Casbahs, appeared in Modern architecture in the 1940s. Since the 1950s they have inspired a new type of building in the Netherlands.
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Designed by architects Emilio Ambasz and Giancarlo Piretti, the interior of the three-story Banque Bruxelles Lambert in Milan, Italy, has the richness, if not the grandeur, of the ornate older residence that houses it.

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Cover:
View of Frank Gehry's house (see p. 81). Photo: Tim Street-Porter.



THONET MUNDUS J.&J.KOHN

Between 1899 and 1905, Austrian architects and designers developed the style now identified as Vienna Moderne. Reacting against the excessive ornamentation of Art Nouveau, Otto Wagner (1841-1918), Josef Hoffmann (1870-1956), and many others created buildings, objects and furniture which emphasized "great simplicity and an energetic exhibition of construction and materials."* In 1903, Hoffmann and Koloman Moser, both of whom had studied under Wagner, founded the Wiener Werkstaette (Vienna Workshops). Inspired by the example of the English Arts and Crafts Movement, the Wiener Werkstaette brought together outstanding craftsmen and the most advanced designers of the time. Also, for the first time, designers other than the Thonetes were creating bentwood styles.

Until 1869, the manufacture of bentwood furniture was controlled exclusively by Gebrüder Thonet. But upon the expiration of the firm's patents, numerous other manufacturers began copying the techniques and styles invented by Thonet. Notable among them was the firm of J. & J. Kohn. A period of fierce competition ensued. In 1906 Leopold Pilzer, who began his career as an office boy for Kohn, merged sixteen of the smaller bentwood producers into a new firm, Mundus. In 1917, Mundus acquired control of Pilzer's first employers, J. & J. Kohn. During the difficult period of economic and political reorganization which followed World War I, Gebrüder Thonet joined Kohn-Mundus (1922-23). Under Pilzer's leadership, the bentwood industry, critically damaged by the war, began to revive.

*Otto Wagner



A 1904 stool by Otto Wagner; one of the many outstanding pieces of furniture commissioned for the Vienna Postal Savings Bank which Wagner completed in 1909.



Designed by Hoffmann in 1905, this chair with an adjustable back was produced by J. & J. Kohn.



One hundred fifty years of Thonet: 1830/1980



An illustration from a Thonet catalogue, circa 1930. The company remained primarily interested in commercial, public seating areas such as the hotel lounge envisioned here.

The Fledermaus Chair, shown at left, was designed by Josef Hoffmann for the cabaret of the same name which opened in 1905. The cabaret's interior was a brilliant, fully-realized example of Vienna Moderne, and quickly became a gathering place for the Viennese avant-garde.

Thonet



The Hoffmann Chair, 1929-30, (shown at right). Although some historians dispute the attribution to Hoffmann, the chair's commercial and aesthetic success is unquestionable. Considered by many the last major bent-wood design, this chair, with small variations, has been in production since 1930.



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Modernism fights back

March 1980

Recent events indicate stiffening opposition to those revisionist attitudes and designs that seek to supplant Modernism.

The Establishment of Modern Architecture—that network of practitioners, professors, and critics that perpetuates the true belief—is finally reacting as if to a genuine threat. This has been brought home vividly to me by two recent events: the jury deliberations for the Les Halles competition (p. 31) and the outraged reactions to P/A's January Awards issue (p. 10).

Up through the middle 1970s, the secure majority of Mainstream Modernists could dismiss as mere aberrations any examples of what has come to be called Post-Modernism. (Let those who keep telling us that this term is inadequate come forward with a better one.) As for the writers who announced the Death of Modernism, they could prove nothing more dire than a social disease, which seemed hardly to slow the victim down. Nor did they come up with any viable successor. (Though I maintain that Post-Modernism *exists*, it may never have the strength or coherence to become dominant.)

By the late 1970s, however, arguments for revision of our design attitudes—if not for the physical achievements of Post-Modernism—were being taken seriously by larger numbers of critics, students, teachers, and practitioners of architecture. Dogmatic adherence to Modernism (a label that had to be recycled) gave way to a live-and-let-live attitude, conveniently referred to as pluralism. This coexistence situation appeals to practitioners who see some merit in assimilating Post-Modernist influences into their work—selectively, in stages—and to critics and editors who feel an obligation to weigh all options fairly. This pluralist situation could eventually lead, through a convergence of positions, to a new consolidation of design principles. Meanwhile, this design pluralism remains as unstable as political *détente*.

The results of this year's P/A Awards competition upset the delicate balance; the choices were not pluralistic (as the previous year's had, quite consciously, been). These jurors chose winners in the architectural design category, and to a lesser extent in the urban design area, that implied a rather exclusive preference for the formal complexities and symbolism of Post-Modernism. It is not uncommon for the P/A Awards to elicit angry responses; the intensity of that reaction this year seems to have less to do with what was recognized—which is comparable to numerous winners in recent years—but with what was *excluded*.

The content of the reader reactions indicates the kinds of dangers seen in a capitulation Post-Modernism. One common charge is that of social irresponsibility; Modernism began as an expression of social conscience, and even though the connection has long since become obscured, formal indulgence is still seen by some as a betrayal of the people. When the Post-Modernism is embodied in a

series of vacation houses and kitchen additions, the social indictment seems sealed. (It's easy to overlook key Modern landmarks that served similar purposes.) Even the works that have programs of more social relevance—such as the hospital addition or the YWCA among this year's winners—are seen as exhibiting a preoccupation with form, though there is totally reasonable planning behind their symbolic exteriors. Finally, there are charges of elitism, the conspiracy of a mutually supportive few to promote themselves through a closed network. The best defense against a phoney, self-appointed elite is skepticism, and that seems to be flourishing; but we should not recklessly dismiss the possibility that some of the figures so identified are making contributions that really deserve respect.

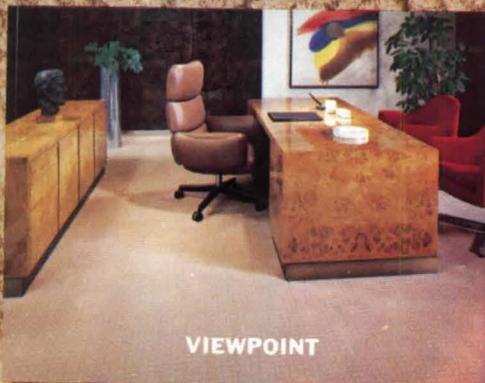
The reactions of various jurors for the Les Halles competition show related patterns. The surprising prevalence of historically allusive schemes seemed to harden the positions of the Modernist architects there. They also revealed national patterns: the Americans and the French seemed on the whole receptive to evocations of 19th-Century Classicism, perhaps because they call to mind optimistic, culturally active periods for those nations (witness the sumptuous American Renaissance exhibition now making the rounds of U.S. museums). The Italians seemed to see Post-Modernism only as aesthetic and social retrogression.

What, in fact, is threatened by any Post-Modernist gains, however tentative? Are the obdurate Modernists concerned primarily with threats to their own stature and the stability of their professional lives, or do they foresee a genuine impairment of the architect's service to society? That depends, of course, on the extent to which they perceive Modernism as serving society well now or—more significantly, perhaps—the extent to which they see the formal concerns of the Post-Modernists as the wrong cure for the deficiencies of Modernism.

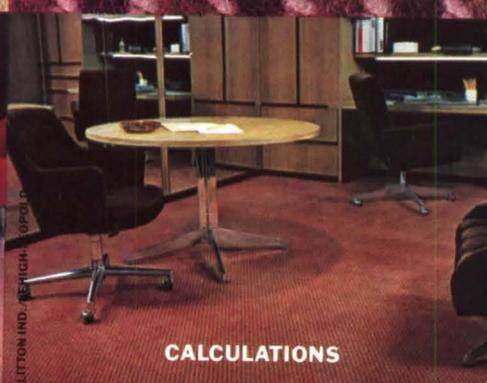
I, for one, believe that Modernism needs a substantial overhaul. It can learn from Post-Modernism, though other sources of reform should by no means be ignored. (I can never quite give up on behavioral research, though we have little to show for it.) I can only hope for the pluralist situation to prevail, for now, so that there can be productive cross-fertilization.

John Morris Diefen

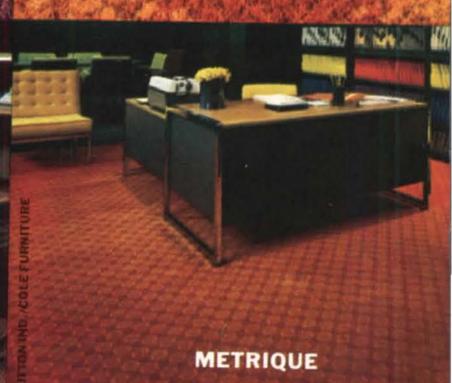
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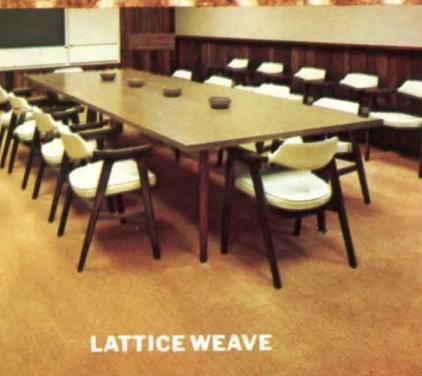
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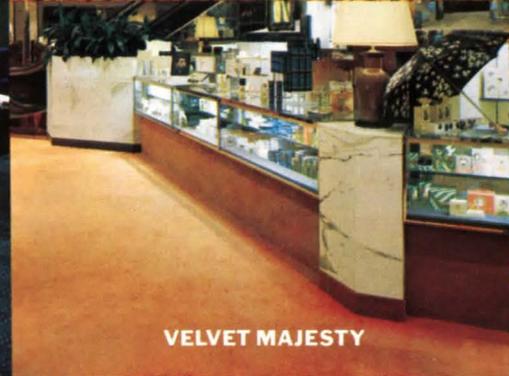
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P/A's new face

My congratulations for taking one step backward into the 80's. Your serif type face in the January issue is a joy to see again. I've gone through my share of Helvetica press-type since graduating from design school, but for printed text I have always felt the sans-serif type is a strain to read. The serif termination aids immeasurably in visualizing the word comprised of the letters and allows one to read with greater ease and speed. It's refreshing to see you have the courage to return to a traditional design form that evolved for good reason.

John K. Holton, AIA
 Director, Energy Conservation Div.
 Office of Buildings Management
 General Services Administration
 Washington, DC

WOW! What a refreshing new graphic image for P/A. The new format with its flexible grid works great in accommodating the many layout situations. Additionally, the new serif typestyle provides a sparkle of visual relief from all the architectural Helveticas in print and on signs today. A good solid traditional choice.

I realize what a monumental task it is to redesign a periodical as I've recently gone through a similar effort in updating the graphic image of *Texas Architect* magazine—our state magazine published seven times annually by the Texas Society of Architects.

Your new look is most successful, the right gutsy mix of format and controversial project coverage. Congratulations!

Dennis G. Felix, AIA, Associate
 Head Signage/Graphic Design Group
 Caudill Rowlett Scott
 Houston, Tx

Improvidence?

The following fairy tale might interest you.

The stoops of Providence: An urbane narrative

Albert (with his spear!) is the only individual left functionally, expressively, and symbolically "comfortable" with the proposed connections to the RISD campus (P/A First Award, Jan. 1980). To develop "a series of steps [that] will tie together the now dislocated structures [of the RISD campus]" is an extremely brilliant idea. The execution leaves that idea unfulfilled.

The proposed solution inhibits desired connections. Access from Market



THE STOOPS OF PROVIDENCE

Square to historic Benefit Street is achieved only through the interior of Memorial Hall. An extension, designated object "M," to existing dormitories provides an edge for the Garden Steps and recognizes that the "itinerary of logical circulation" exists *along*, rather than across, Benefit Street. There is a failure to link RISD's administrative and gallery space at Woods Gerry mansion to the remaining campus. (Messrs. Machado and Silveti feel that "the last buildings of the RISD campus" are further down the hill.)

Such urban shortcomings afford no positive *benefit* to the *street* or the school. In fact, accolades from a jury will not bring the art of architecture to the RISD campus, but will instead create buildings and spaces to be "drawn from, learned from," and *deformed* against.

A citation maybe; First Award NO!
 Domenic Carbone, Jr.
 RISD architecture '77
 Cambridge, Ma

P/A Awards: The readers judge . . .

The 1980 P/A Awards issue was a real triumph for every one of us who is searching for an architecture of more significant meaning. It was a consistent set of awards given by a jury that obviously had a point of view, and it is that consistency which makes the issue have such impact.

Architectural projects which attempt to deal with the symbolic, the iconic, and to converse with their context and their users in the language of architectural

form, are not now just the freaks and jokes of the architectural press, but are a compelling and solid stream of work. And even the research projects have courage to reconsider some old architectural values, by probing deeply into user perceptions. Imagine having the courage to award research which said that just maybe double-loaded corridors were best after all (the ELEM project) and that residents of HUD-assisted housing rather liked living near people similar to themselves, and considered building appearance to be critical to the satisfaction of their housing needs. Such research work really confirms the prophetic-artist-architect's criticism of Modernist sociological pretensions.

The whole P/A Awards issue, in fact, rings compellingly true, from cover to cover.

William J. Conklin, FAIA
 Conklin & Rossant
 New York, NY

. . . and judge . . .

I think it is a sad commentary on the state of the profession when the entire thrust of an awards program (P/A, Jan. 1980) in one of its most prominent journals is devoted to the kind of work exhibited in your recent issue. The projects premiated under the category of Architectural Design were, in my opinion, evaluated from the standpoint of a single esoteric set of aesthetic criteria, rather than on their intrinsic merit as pieces of architecture.

Having reviewed the comments of the
 [Views continued on page 14]



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jury members, it's not surprising to me that awards were not given to larger and more complex building projects, since it is generally impossible to engage in this kind of self-serving, aesthetic esoterica on larger public, institutional, or commercial projects. Your jurors are right! The opportunity to pursue the kind of architecture which they apparently prize so highly is available only to those who dabble in the personal statements associated with custom-built houses out in the country. Even at that, I would seriously question the livability of some of these stylistic *tours de force*.

As I read through the jury comments in this issue, there is little reference to plan organization, relationship to site, or attention to the design of spaces for

human occupancy; but there is tremendous attention to formalistic and stylistic jargon. When I look at the actual plan arrangement of some of these buildings, I find that they are relatively formal, static collections of rooms. It is almost as if the interior spaces of the building are subservient to the stylistic, formal language which is the principal aim of the designer. Nowhere is this attitude more prevalent than in the mental masturbation of Michael Graves, whose mausoleum-like houses, so beloved by Mr. Stern, not only strike me as ugly, but also as not terribly pleasant places to live.

I do not consider myself a champion of the Modern Movement, though I would suggest that there are a number of things architects have learned from the Modernist tradition. For example, we have learned that small punched

openings in walls are not the only way to let light into a room or to provide a view out of it. We have learned that glass can, in fact, be used to create an interrelationship of interior and exterior spaces; and we have learned that great richness of form and space can be created by exploiting the technology of construction in response to the building's contextual relationships. Unfortunately, it seems that many of these positive aspects of the Modern Movement have been thrown out by those who, in reaction to it, have chosen to adopt an architecture of decoration.

Even the first design award is couched in exaggeration. Certainly this collection of stairs and pedestrian spaces is a nice solution to tie together what is apparently a fragmented urban campus, but to say that "this is about the most significant urban design architectural scheme in any American City I have ever seen"? Come on!

I guess I wouldn't be as offended if there were only one or two awards that fell into this mannerist/faddist vernacular of decorative architecture; but to see the entire orientation of the jury comments slanted towards such solutions is, I believe, truly unfortunate and insulting to the serious practice of architecture, many examples of which you probably received in conjunction with this awards program. I can only tell you that I would be embarrassed to have our clients, or potential clients, view this awards issue as an indication of where architecture is today.

Thomas M. Anglewicz, RA
Detroit, Mi

... and judge

The arrival today of your January issue was most timely. With a cold and rainy night outside, the section on the P/A awards helped immeasurably in kindling the fire in my fireplace.

Sammy Sams
Raleigh, NC

Your 1980 P/A Awards for Architecture are provocative, fanciful, and successful solutions to the various problems approached. Though occasionally troublesome in their complexity, these projects have a richness that is a welcomed contrast to the basic blandness of most American Architecture.

In spite of these accomplishments, a foreboding trend is emerging that is analogous to the judgment of the Chicago Tribune Tower Competition jury in 1922. Both juries chose to ignore rational solutions in favor of a fashionable stylistic idiom. Rogers, Stern, Gehry, and Jahn have arrived at a consensus which eliminates the many directions of thought prevalent in recent years to state in unmistakable terms that the future of architectural design is "Gravely Obfuscated Embellishment."

Gravely because it is a narrow genre of design principally initiated by Michael Graves, although obliquely assisted by Meier, Venturi, and, most recently, Tigerman.

Obfuscated because the image state-
[Views continued on page 16]

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ments are never made simply, but rather within the context of complicated and ambiguous geometric forms.

And lastly, *Embellishment* because the designs are often encumbered with barnacular elements that do little to facilitate the solution of the problem.

This surge of thought along a narrow channel of architecture opened by Graves, et al, has breached, with its own momentum, the bounds within which it can stand on the strength of its intellectual precepts. It continues its untenable expansion with the support of complex rationalizations provided by the vanguard of architectural sophistication exemplified by the members of your awards jury.

Is there not a pervasive purpose to

the relentless flow of civilization that demands some degree of rationality in the architectural forms of our environment? Have any of our profession's current leaders addressed this question with clarity? Or are they too busy scrambling for the title of "most fashionable because unintelligible" in the tiny and esoteric world of Gravely Obfuscated Embellishment?

*Richard Varda
Dawn Varda
Architectural design
Minneapolis, Mn*

Credit extended

The name of project architect Jack Boncher of Mackey/Anderson Notter Finegold, St. Louis, was inadvertently omitted in the credits for the restoration of Mechanics Hall, in Worcester, Ma (P/A, Nov. 1979, p. 84).

Winners' circle enlarged

We won two P/A Awards also, in 1973 (Jan., p. 104) and 1974 (Jan., pp. 56-57).

*Susan Southworth
Michael & Susan Southworth
City Design & Architecture
Boston, Ma*

Plugging in the facts

For the sake of historical accuracy, I should like to point out to you regarding, "The Plug's revenge on the museum," P/A, December, 1979, p. 25, that the basic premise is quite incorrect. Your author erroneously assumes that Robert Venturi had something to do with the siting of Oldenburg's *Plug*. "By moving the plug so that it was diagonally opposite the pop Ionic column that supports a lopped-off corner of the addition, Venturi linked his structure visually and thematically to its content. . ."

The simple fact is, Oldenburg's *Plug* was moved off the construction site to make way for the new wing. It was brought back after the building was entirely completed. Only then, and solely at Mr. Oldenburg's decision, was a new location picked. Thus the basic thrust of the "News report" misleads your reader by misrepresenting the roles of both Mr. Venturi and Mr. Oldenburg.

*Richard E. Spear
Director and Professor of Art
Allen Memorial Art Museum
Oberlin College
Oberlin, Oh*

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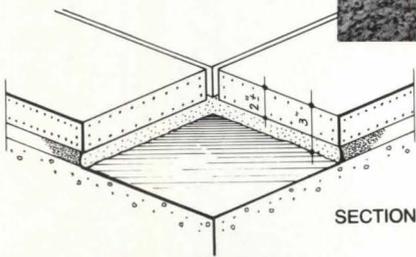
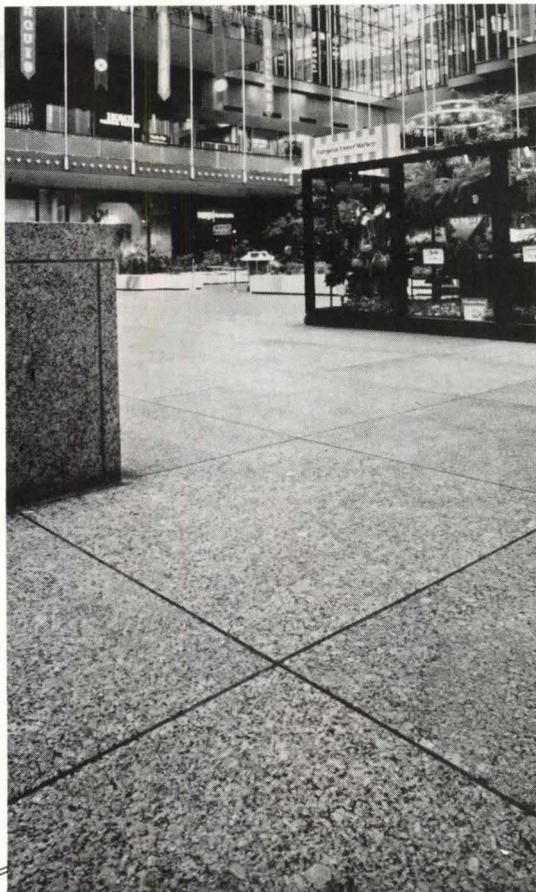
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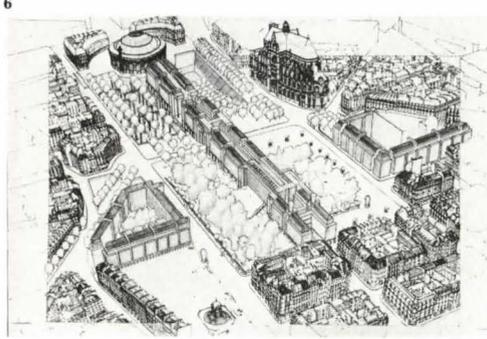
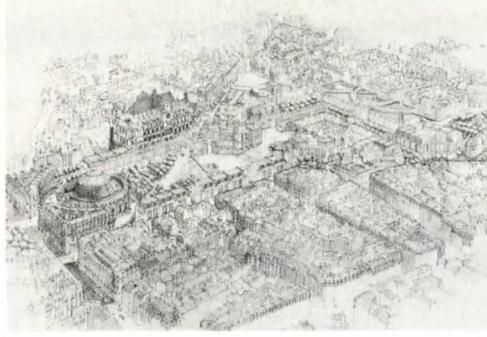
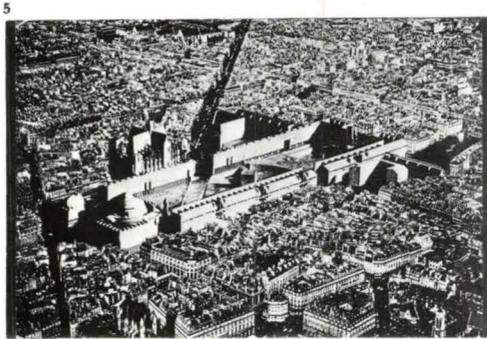
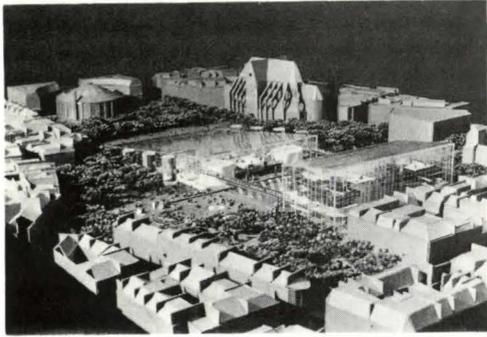
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7

The prize-winners: **1** Steven Peterson, Barbara Littenberg, and David Cohn, New York, who altered the existing subterranean shopping "Forum"; **2** Franco Purini, Marco Mattei, and Renato Nicolini, Italy, who proposed a pyramidal monument to the French Revolution; **3** Greg Walton of Atlanta, for an urban scene of Belle Epoque character; **4** Michel Bourdeau, Piero Baroni, Piero Carlucci, Mainzio de Vita, Mairo Galantino, and Fernando Guerini, Italy, a Franco-Italian team whose complex Modern forms are poorly represented in drawings available for publication; **5** Richard Ness, Shi Ming Tai, Ngu Aloysiu Bomgwa, James Dahlbery, and T. Dray, Minneapolis, for a glass-sheathed Information Center bisected by the Forum.

Special mentions: **6** Frank Joris, France, for an evocation of historic urbanism with central cascade as amphitheater backdrop; **7** Raimund Abraham, Bone and Levine, New York, for a grand walled square, penetrated by major avenues; **8** Yves Lion, France, for housing along a gallery spine, spanning the Forum and sunken gardens; Jean-Baptiste Loyrette and Bertrand Piquet, France, for urban spaces well articulated by Modern structures.

Citations: Luciano Celli Tognon et al, Italy; Ann Jannick Gissing and Daniel Remy, France; Vittorio Mazzuconi, Italy; Gaetano and Francesca Pesce, Italy; Jun and Hiromichi Matsui, Japan; Shira Rosan, U.S.A.

The jury: Philip Johnson and Diana Agrest (U.S.), Kazuo Shinohara (Japan), Carlo Aymonino (Italy), foreign architects; Jean Nouvel, P. Soria, Henri Ciriani, P. Colombier, French architects; Tomás Maldonado (Italy), Marc Emery (France), Haig Beck (England), John Dixon (U.S.), editors; François Barré, Roland Barthes, and Henri Lefebvre (France), Bruno Zevi (Italy), arts and culture figures; representatives of Les Amis de la Terre, l'Union des Champeaux, Centre d'Information et d'Animation des Halles, and La Plateforme des Comités Parisiens d'Habitants.

8

Surprising, however, was the fluidity of voting patterns; the unlikely alliances would form on behalf of one project, then dissolve at the next instant.

A smaller, more homogeneous jury, however, would have been hard pressed to single out one entry; most of these jurors could identify no one solution they alone would chose among these submissions.

It seems apparent now that the program may have been too complex—in its manifold connections to the city fabric, in its numerous and somewhat elastic functional demands—for an open international competition. And the only rewards promised were prize money (about \$12,500 in first-prize money) and recognition. When the identities were unveiled after judging, some prominent names appeared—Charles Moore, Leon Krier, and Aldo Rossi, for instance—but in such cases one could question the extent to which the entries represented personal vs. team effort or real proposals for this site vs. polemic positions. Few of the winners, at any rate, were well known to the jurors.

A few issues dominated much of the jury's discussion. One subject of heated disagreement was whether solutions should be "open" or "closed"—that is, whether the whole cleared site, with its irregular and more or less accidental boundaries, should be treated as a single space, with structures freestanding in it, or whether the tract should be reorganized into a set of major and minor squares, delineated by networks of new linear structures. The "open" schemes were supported most strongly by community groups and by Bruno Zevi, and they denounced the closed schemes as privileged enclaves, divorced from the surrounding fabric. Most of the archi-

texts, on the other hand, endorsed the "closed" schemes as appropriate extensions of the historical urban pattern of Paris; they pointed out that the ones they endorsed could, in fact, be entered along the axes of existing streets, and they compared the "open" plans to the mayor's own amorphous proposal.

Critics of the "closed" schemes also tended to see in their repetitive arcades and façades—and in their occasional grand formal gestures—a historicism that was dismissed as "mimicry" or "retro" design (see Editorial, this issue). Jurors who favored historical allusion acknowledged that some of the façades—even, in the winning schemes—are tedious or naïve, but one member turned the tables, branding a Modernist scheme as 1950s "retro" (more grossly misinterpreted, ironically, than most of the 1890s versions).

The issue of symbolism generated a more complex alignment of forces. The community people, the arts and culture figures, and some of the French architects argued for strong specific symbols—a pyramid, for instance, or a long housing structure symbolizing the return of habitation to this site. A center for erotic activities, decked out in witty Caligula-esque trappings, was even accorded a citation. The U.S. members, along with other architects and editors, maintained that a well-articulated sequence of squares and plazas would be by far the most appropriate symbol, representing the urbanism and urbanity of Paris.

One project, the prize-winning scheme for an information center, posed its own set of hotly debated issues, dividing the jury along other lines. The only one among the finalists that departed radically from the given program (which was permissible), this scheme was seen by many jurors—the community representatives and some of the foreigners—as a promising modern-day equivalent of the market functions that had occupied this site since antiquity. Some of the French architects and culture figures, however, saw in the proposal a bastion for centralized thought-control, imposed through rigged electronic systems. The scheme was attacked just as vehemently, but by other jurors, for the alleged backwardness and banality of its glass-encased, minimal enclosures and for its "left-over" public spaces. My few words in defense of the entry's architecture were met with disbelief; Maldonado predicted the scheme would be "laughed at in New York." In the end, it garnered enough votes for a prize, but the jury report stipulates that it is recognized for its program, not its architecture.

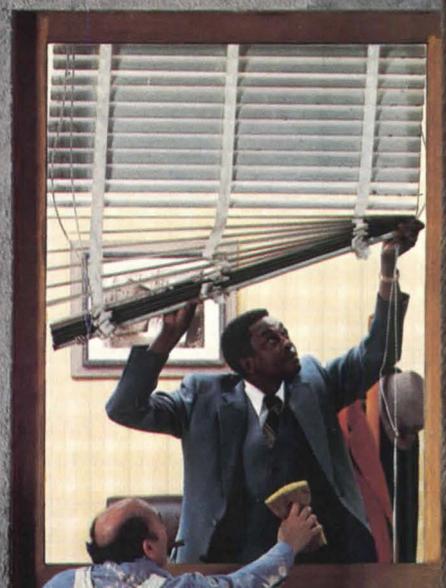
Another subject of controversy, never resolved, was jury procedure. Haig Beck called repeatedly—as the jury busily reduced the numbers—for regrouping the remaining entries by type. Rational as this may seem in theory, few jurors agreed that it would expedite our efforts; some asserted that we were not there to analyze tendencies, but to choose winners. A more rational procedure [News report continued on page 34]

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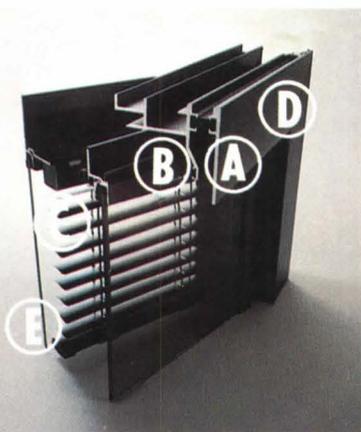
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ture of some kind, however, would have been welcomed, at least by the English-speaking jurors. The seemingly aimless careening from debate to a round of voting, followed by debate on the meaning of the vote, caused anxiety. It is unlikely, however, that more rigorous or predictable methods would have appreciably affected the outcome. In the end, we had to rely on weighted voting to represent the positions of all jurors. The "prize" selections are those that would probably have mustered slim majorities in simple yes-no votes—but those would not have been sufficient to satisfy most jurors. The "special mentions" represent a second plateau of weighted votes, the "citations" those kept in to represent the viewpoints of specific factions (whose names are listed in the official releases).

What effect will all this have on the city's plans for the Les Halles site? None, as long as the present mayor holds sway; he denied any validity to the jury and refused to review its selections.

While I would have reservations about executing any of the premiated schemes as presented, I am confident that all of the "prize" and "special mention" projects are far superior to what the mayor is now executing. (Faint praise, perhaps.) If Paris could only hold a second-stage competition among the top nine teams, a scheme would undoubtedly emerge that could rank with the city's urbanistic splendors. That's unlikely to happen, but at least we tried—hundreds of us tried. [JMD]

Eileen Gray: Designer

Until recently, few people, architects and designers or others, had ever heard much about Eileen Gray. Her works are currently (through April 1), however, the subject of a small but important exhibition at New York's Museum of Modern Art. The show, directed by J. Stewart Johnson, MOMA's Curator of Design, is a slightly different version of an exhibition seen last year at the Victoria and Albert Museum in London. Today, Gray's multipurpose and built-in furniture of metal, plywood, cork, plastic, and other industrial materials is seen as a forerunner of some of the most current design trends.

Eileen Gray was born in 1879 of an aristocratic Scots-Irish family. In 1898, she went to London's Slade School, at the height of the Arts and Crafts movement, to study art seriously, which was not something a young lady of her class was supposed to do. But in London she became interested in oriental lacquer techniques and eventually mastered that demanding craft, after which she moved to Paris in 1902. There, she first exhibited some pieces in 1913 and was soon commissioned to design furni-



Living room, Roquebrune, 1929 (above);
black lacquer and leather chair (below).



ture and interiors for the famous couturiers Jacques Doucet and Suzanne Talbot. Her work was published by Vogue and Harpers Bazaar.

In 1922, Gray opened a shop in Paris called Jean Desert, and it was from this time that her previously highly decorative and somewhat theatrical work, which appealed to people of fashionable bent, began to change to a more severe style that often used industrial materials. This attracted the attention of J.J.P. Oud, Walter Gropius, Le Corbusier, and Mallet-Stevens, among others, some of whom encouraged her to begin work in architecture. From 1926 to 1929, she and Jean Badovici, an architect and editor of the influential and avant-garde *L'architecture vivante*, designed the villa "E-1027" and its furnishings at Roquebrune on the Riviera, off the waters of which Le Corbusier, a frequent house guest, met his demise in 1965.

What is most extraordinary about Gray's work is that in almost every area she seems to prefigure many things that are to come only much later. Her small chest with pivoting drawers, of 1923, bears a marked resemblance to Joe Colombo's popular "Baby" stand of 1968. The geometric, linear designs of some of the lacquer screens suggest she knew what Al Held would do 50 years later. Her use of chain-link type fencing, both outside and for screens inside, immediately brings a Frank Gehry or Joe D'Urso to mind.

As the museum's catalog (by J. Stewart Johnson, \$12.50) says, Gray was "an original." The exhibition, which includes many pieces of furniture, her notebooks, photo blow-ups, models, and drawings of the architectural works, will unfortunately not travel after it closes at MOMA, when the handsome installa-

tion will be dismantled. All is not lost, however. Stendig is coming out with reproductions of six of her furniture pieces, one of which, the adjustable smoking table (P/A, Nov. 1978, p. 131), is already available. Other pieces, such as the spectacular Transat chair and some of the rugs, will be available from Andrée Putman's Ecart in Paris. [DM]

PADC preservation update, downbeats

The preservation aspect of the revitalization of Pennsylvania Ave. in the nation's capital seems, despite some setbacks, to be moving ahead. The Pennsylvania Avenue Development Corporation (PADC) signed a lease last fall with the Quadrangle Development Corporation and the Marriott Corporation that will mean the continued operation of the National Theatre in its present location. Quadrangle/Marriott will be building a \$115-million office, hotel, and retail complex in association with the Rouse Company around the theater (P/A, Dec. 1978, p. 22). Architects for the new complex are Frank Schlesinger and Mitchell/Giurgola; the theater will be renovated under the direction of Jerome Lindsay Associates for 1983.

Across 14th St., the long-vacant Willard Hotel awaits its developers. PADC selected Stuart Golding and the Fairmont Hotel to renovate the building and add a new section designed by Hardy Holzman Pfeiffer Associates (P/A, Feb. 1979, p. 22). Negotiations on the lease were progressing with PADC until a dark cloud appeared.

Washington developer Oliver T. Carr, who lost out in the PADC competition on the Willard, sued, challenging the right of PADC to select someone else. Carr claims that, as an owner of the property next to the Willard, where the addition will be built, he should have been given first rights to develop it. More than one person familiar with the situation has used the term "sour grapes" to describe Carr's action.

The problem, as PADC sees it, is one of delay. W. Anderson Barnes, executive director of PADC, says, "A developer can be expected to wait only so long." Delays not only raise the costs, he points out, but also contribute to the further deterioration of the hotel.

Barnes considers the Willard to be "the flagship project" of PADC and thinks its completion will have an "important spillover effect" on the Avenue and area. "The Willard," he told P/A, "is too important for lengthy litigation. The only losers are the taxpaying public and historic preservation."

[News report continued on page 38]



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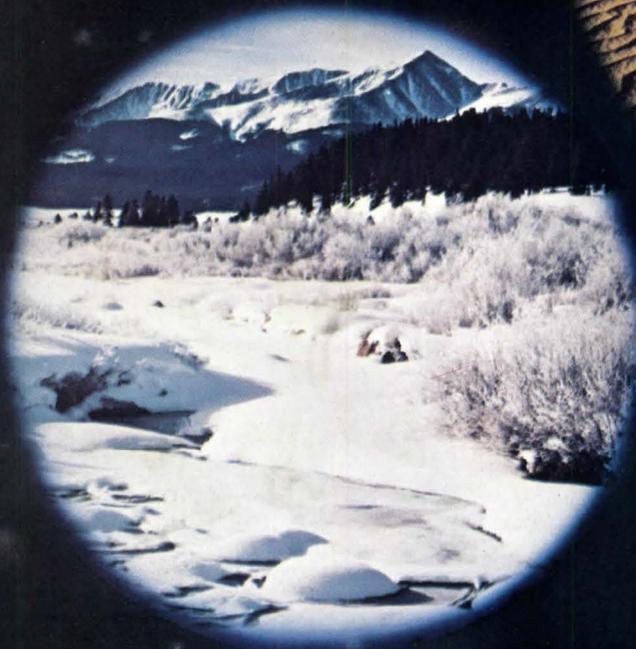
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Shiu Wing Steel Works, 1978
- **JAPAN**
Oshima Shipyards, Nagasaki-Ken, 1973
- **KUWAIT**
Shuaiba South Power and Water Production Center, 1968
- **SAUDI ARABIA**
National Commercial Bank, Jeddah, 1978
- **SWEDEN**
The Town of Hertsön, Lulea, 1970
- **UNITED ARAB EMIRATES**
Sheraton Hotel, Dubai, 1977
- **UNION OF SOVIET SOCIALIST REPUBLICS**
Natural Gas Pumping Stations, 1977
- **UNITED KINGDOM**
Anglesea Loading Jetty, Anglesea, Wales, 1969
- **UNITED STATES**
 - ALASKA**
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 - CALIFORNIA**
Mount Sutro Tower, San Francisco, 1973
 - FLORIDA**
National Airlines Hangar No. 2, Miami, 1973

LOUISIANA
Boise Southern Paper Mill, DeRidder, 1969

MICHIGAN
Renaissance Center, Detroit, 1976

MISSOURI
Crosby Kemper Memorial Arena, Kansas City, 1975

NEW JERSEY
United Airlines Reservation Center, Rockleigh, 1975

NEW YORK
Ginna Nuclear Power Plant, Ontario, 1967

OKLAHOMA
Washita Generating Station, Washita, 1966

PENNSYLVANIA
The Gallery, Philadelphia, 1977

RHODE ISLAND
Kaiser Aluminum & Chemical Corporation, Portsmouth, 1967

TEXAS
Texas Stadium, Irving, 1972

WISCONSIN
Aid Association for Lutherans, Appleton, 1977

- **WEST GERMANY**
Friedrich Krupp Steel Mill, Bochum, 1971

- **ZAIRE**
General Motors Plant, Kinshasa, 1973

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In recent weeks, things seem to be looking better. Developer Goulding reports that the Carr problem has been resolved, and the architects say they have started working drawings. "Everything," Goulding says, "just takes much longer than expected."

Elsewhere on the Avenue, the federal archives have moved out of Lansburgh's, an old department store that inspectors found unsafe for federal records, and that means PADC will have to find an alternate user for the structure. The archives had been expected to assist in the development of an arts center in the building.

PADC has signed a lease with developers of Gallery Row, a proposed collection of 14 art galleries and shops in a row of Victorian commercial structures at 7th and D Sts. Although bad soil conditions caused some delays, that problem has been solved, according to George Hartman Cox Architects (the firm has 1 million sq ft of space under design along the avenue).

There are other problems, however. A Victorian brick façade on Pennsylvania Avenue was dismantled last summer and boxed for future use by PADC, which would like to install it as part of the Gallery Row project. But Hartman reports that officials of the Heritage Conservation and Recreation Service, U.S. Department of the Interior, are questioning whether or not such action would qualify the owners for tax relief under the preservation provisions of the Tax Reform Act of 1976.

Clearly irritated at the long, bureaucratic delay, Hartman asks, "What's preservation and what's Mickey Mouse? Moving the façade is better than demolition."

Finally, the U.S. General Services Administration has signed a \$13-million construction contract for the renovation of the Old Post Office at 12th St. and Pennsylvania Ave. (P/A, Nov. 1978, p. 36). Work is expected to take two years, and when completed, the building will house the National Endowment for the Arts, the National Endowment for the Humanities, other federal offices, culture-related functions, and a number of commercial shops and restaurants.

The nine-story skylight is now being rebuilt and letting sunlight inside the nine-story central court for the first time since 1931. [Carleton Knight, III]

Murphy named chairman of PADC by Carter

Ending a two-month delay in action by the Pennsylvania Avenue Development Corporation, President Carter has named Thomas F. Murphy, former president of the International Bricklayers Union, as acting chairman. He replaces Joseph B. Danzansky, the Washington, DC, business leader who died November 8.

The White House was under pressure



Jorge Silvetti and Rodolfo Machado 1) with P/A's David Morton. Thom Mayne 2) of Morphosis, and James Hoverman, John Morris Dixon of P/A. 3) Coy Howard with John Casbarian, Taft Architects. 4) Suzanne Stephens, P/A, and Edward Dusek, Boston Redevelopment Authority. 5) William Johnson, Army Chief Engineers' Office, Uriel Cohen, and Gary T. Moore, with P/A's Richard Rush.

P/A at the Plaza Design Awards luncheon

Each year the staff at *Progressive Architecture* views the Design Awards luncheon with some amount of trepidation. Will there be a blizzard closing all airports (as happened two years ago)? Will a strike bring New York to a standstill? Will Administrative Editor Barbara McCarthy, who organizes the affair, get ill, leaving the rest of us to muddle through?

Paranoia put to rest, there we were at the Plaza Hotel in New York on Friday, January 18, at noon, happily taking part in the festivities—a Baroque Room reception, with the luncheon and presentations following. This year everything ran really smoothly. Slides all fell into place during the presentation, and no recipients of the awards got lost or stumbled finding the dais.

Publisher James J. Hoverman and Editor John M. Dixon acted as masters of the ceremonies, while Senior Editors David Morton, Suzanne Stephens, and Richard Rush handed out the awards to the winners of the three different categories of architecture, urban design and planning, and research. The turnout was magnificent: 340 attended the luncheon, including the 19 winners in architecture (some repeaters for the 22 awards and citations meted out), four recipients of urban design and planning awards and citations, and three recipients for research. Jurors Frank Gehry, Helmut Jahn, Charles Rogers, and Robert Stern were on hand; the remaining jurors, Blanche van Ginkel, John Kriken, Wolfgang Preiser, and Francis Ventre were unable to attend.

This event terminated festivities that had actually begun the evening before when *Progressive Architecture* held its fifth annual Advertising Awards presentation. This time, 31 advertisers were the recipients of awards for their ads, chosen from the 483 placed in P/A in 1979 (for details, see Jan. 1980, p. 68). Also on hand for the occasion were Ad-Award jurors William T. Lohmann, James Novak, Gertrude Lempp Kerbis, and Jack Hartray, architects all. Charles Biederman of General Electric and James Hoverman, P/A's publisher, presided over the presentation, which followed dinner in the Sky Club atop New York's PanAm Building. [SS]

[News report continued on page 43]

to find a new chairman because PADC rules make it difficult to operate without such an individual. The search has been stymied by at least two factors: the White House, according to local news reports, is insisting that the new chairman be a supporter of President Carter, and local Democratic party officials cannot agree on a candidate to recommend to the White House. [Carleton Knight, III]

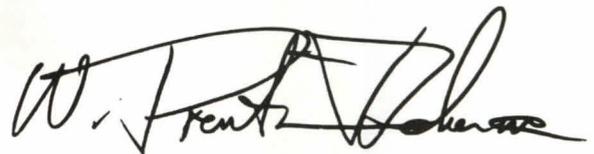
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JG/Westminster Auditorium Seating/AT&T Long Lines



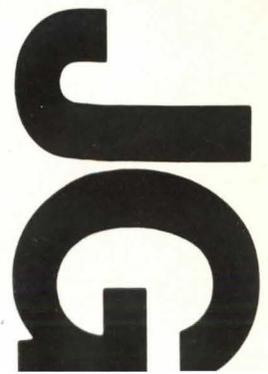
Westminster seating in this continental layout features individual arm rests for user comfort and center pedestal riser mounts for easy maintenance.

Complimentary layout service available on request.

Installation: AT&T
Long Lines
Architect: John Carl
Warnecke, FAIA
Architects
Product Design:
Dickinson/Smith

JG Furniture
A Division of
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Quakertown
Pennsylvania 18951
215 536 7343

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AIA chapter awards for 'Inside Architecture'

Sponsored by the Interior Architecture Committee of the Northern California Chapter, AIA, the first "Inside Architecture—a Decade of Excellence" program recognized 15 interiors completed in the 1970s as outstanding examples in the Bay Area. The first such program to be sponsored by a local AIA chapter, the program is intended to promote professional as well as public interest in recent interior design. The jury consisted of architect Pietro Belluschi, of Portland, Or; interior designer Cini Boeri of Milan, Italy; and editor Olga Gueft of *Interiors* magazine, New York. Award winners were: Del Campo Associates, for the *Vidal Sassoon Salon*, San Francisco (Gonzalo Romero, Project Director); Richard Fernau/Dumbparts, for *Franks for the Memory*, San Francisco (P/A, Sept. 1979, p. 172) (Richard Fernau, Scott Glendinning, Laura Hartman); Environmental Planning & Research, Inc., for the *California Redwood Association* San Francisco (P/A, Sept. 1979, p. 160) (Darryl T. Roberson, principal in charge, Joseph Chance, project architect, Suzanne J. Straith, designer, Allison Lasley, designer) and for the *EPR Offices*, San Francisco (Darryl T. Roberson, principal in charge/designer, Charles R. Bowman, principal in charge/designer, Joseph Chance, architect); Gensler & Associates, for *Brobeck, Phleger & Harrison*, San Francisco (Don Kennedy, Orlando Diaz-Azcuy, Derek Claudius, Eva Ching, John Lijewski, Jim Kautz, Nancy McKay, Rex Vanard) and for the *United Airlines Ticket Office*, San Francisco (Don Kennedy, Steve Thompson); Don Knorr FAIA & Associates, for *Feather Factory*, San Francisco (Don Knorr, FAIA); Marquis Associates, for *St. Francis Yacht Club*, San Francisco (Phyllis Martin-Vegue, ASID, principal in charge, interior design, Elizabeth M. Taylor, IBD, project interior designer, J. Peter Winkelstein and Robert B. Marquis, principals in charge, architecture); Tallie Maule and Reid & Tarics Associates, for the *West Portal Station—Muni/Metro*, San Francisco (Tallie Maule, William Cullen, Howard Grant); Donald E. Olsen & Associates, for a *House Remodeling*, Berkeley (Donald E. Olsen, FAIA); Robinson Mills & Williams, for the *Offices of Robinson Mills & Williams*, San Francisco (Matthew R. Mills, AIA, partner in charge, Andrew K. Belschner, design partner, Beverly Thome, designer, Jamie Milligan, designer, Robert Meyhaus, designer); Donald Sandy, Jr., AIA, James A. Babcock, for the *Northern California Chapter, AIA Headquarters*, San Francisco (Donald Sandy, Jr., AIA, James A. Babcock) and for *Sandy & Babcock Office*, San Francisco (Donald Sandy, Jr., AIA, James A. Babcock); Sohn/Nakahira, for *Oyama Houseboat*, Sausalito (Bruce Nakahira, project designer); Whisler-Patri, for *Qantas Airways Ticket Office*,

Los Angeles (Raphael Garza).

Interestingly enough, three firms each received two awards among the 15 winning projects selected out of the 120 entries.

SOM establishes foundation for arts

The architectural firm of Skidmore, Owings & Merrill has established the SOM Foundation for the advancement of the arts through such activities as the preservation of archives, support for publications, study endowments, and individual grants. The Foundation, whose creation was announced on Dec. 13, 1979, is administered by a Board of Directors consisting of twelve partners from the various SOM offices and chaired by Bruce Graham. Individuals

and groups within the firm may contribute funds to be earmarked for particular purposes or used as the Board sees fit. Award contributions to date total \$128,500 and initial awardees include: MIT, for a fund in honor of John O. Merrill, Sr.; Cornell University (in collaboration with the National Archives), for the preservation of Nathaniel Owings' papers on urban development, especially the Pennsylvania Avenue project; the University of Pennsylvania, for the preservation of its Louis Kahn Collection; and New York's MOMA.

Acting out of a combination of benevolent interest in the arts and tax considerations, several large architectural firms have set up foundations in the past, the best known being, probably, Chicago's Graham Foundation, [News report continued on page 46]

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Memphis Publishing's new 5-story office plus basement building houses writers, editors, printers, and engravers for the firm's two newspapers. Gross useable space: 131,000 sq ft; unit cost: \$38.17. The building was completed in 1977.

Five-story steel office building designed for space and energy efficiency

A flexible floor plan and an energy-efficient structure were two of the most important requirements desired by *Memphis Publishing Company* for their new office building. Those goals were achieved with an ASTM A572 Grade 50 high-strength steel frame and a blended cellular steel floor deck system.

According to the architects, "The building had to conform to today's energy conservation standards, and provide a floor plan that would allow relocation of staff or technologies—without changing the outward appearance

of the inner structure of the building."

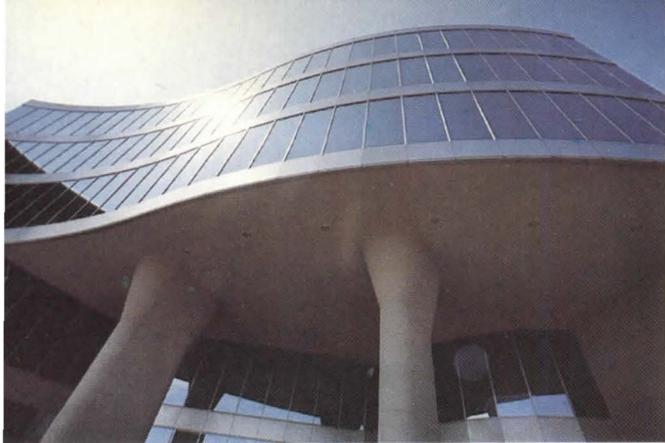
Serpentine-shaped curtain wall

The front of the building features a curvilinear glass window wall and a precast skin. The window wall, three stories high, is oriented to obtain the desired solar gain and optimum viewing angle of the surrounding area.

The curving glass surfaces were accomplished by staggering the steel frame in a segmented pattern, then shaping the concrete deck to the exact radii required.

Steel vs. concrete frame

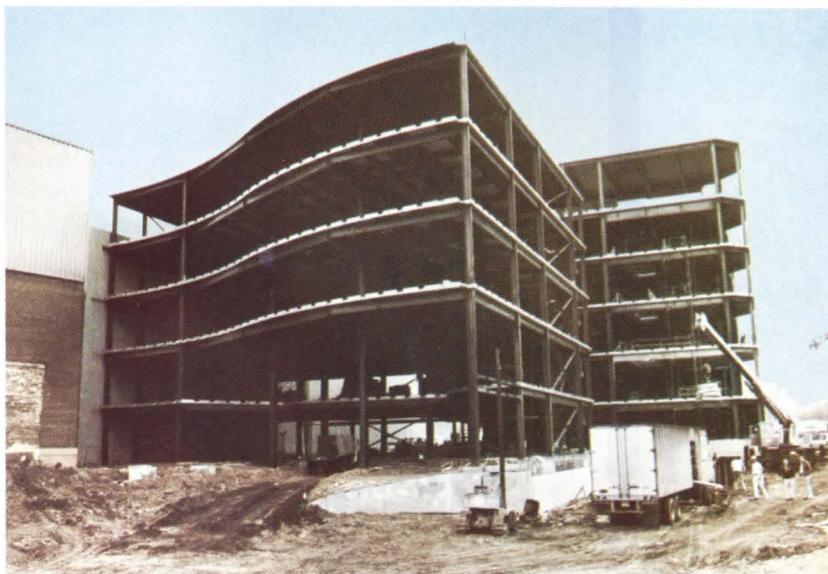
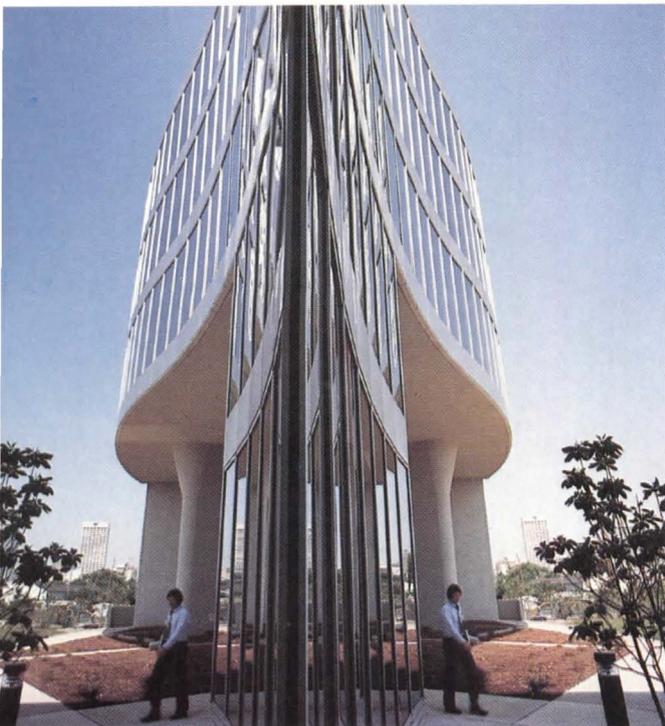
A reinforced concrete waffle slab frame was considered initially, but discarded. The designers found that a concrete frame could not provide the desired power and communications flexibility as economically as a blended steel cellular floor deck system. What's more, the engineers said that future structural alterations, such as spot reinforcing for floor loads, additional stairways, transfer chutes between floors, and heavy equipment loads could be more easily accommodated by steel framing.



Credits:

Owner: Memphis Publishing Company
Architect: Walk Jones & Francis Mah, Inc.
Structural Engineer: Gardner and Howe
Fabricator/Erector: Pidgeon Thomas Iron Co.
Construction Manager: Morse/Diesel, Inc.
 All firms are located in Memphis, Tenn.

The project was built by the "fast-track" construction method. Steel was ordered in advance of completion of the finished working drawings, which helped speed construction. Bethlehem supplied 600 tons of structural shapes for the project. All primary framing members are ASTM A572 high-strength steel.



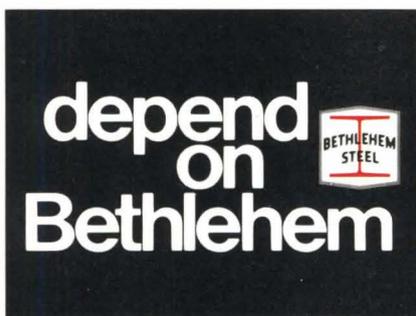
Dead load and seismic considerations

The dead load of the structure had to be minimized because of the unstable soil bearing conditions at the site. Selection of a high-strength steel frame permitted the use of a foundation consisting of drilled piers with belled bottoms. This eliminated the need for a deeper, more costly foundation.

The structural frame dead load was further reduced by designing the part of the exterior wall that is covered with precast concrete wall panels to be self-supporting. The precast concrete wall panels are attached to the steel frame for lateral support only. Typical bays measure 32 ft by 28 ft.

Lateral loads are resisted by a combination of rigid framing, X-bracing, and K-bracing. Shear walls or X-braced bays, used alone, would have been impractical because of the anticipated floor

uses and the exterior glass curtain walls. Unit weight of the steel frame is 10.5 psf.



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 - San Francisco (415) 465-6290
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founded by the firm of C.F. Murphy. The establishment of the Foundation is thus an index of SOM's size and financial standing.

Interiors awards initiated

Thirteen interior designers were recognized on January 9 in a new awards program started this year by *Interiors* magazine. The awards honor excellence in the field of contract interior design; criteria are "Humanism, Efficiency, Aesthetics and Practicality." Judges this first year were: Kent Bloomer, Professor of Architecture at Yale; Ward Bennett, interior and furniture designer;

Denise Scott Brown, principal in the Philadelphia architectural firm of Venturi, Rauch & Scott Brown; and William Turnbull, principal in the San Francisco architectural firm of MLTW/Turnbull Associates.

Winning designers and their interiors were: Stanley Felderman, New York, for his executive offices for the Colgate Burbank Building of Columbia Motion Pictures, Los Angeles, Ca; Andrew Belschner and Beverly Thome for the general offices for Robinson Mills & Williams, Architects and Planners, San Francisco, Ca; Richard J. Coronato of Hellmuth, Obata & Kassabaum, New York, for his office systems for Lennox Corporate Headquarters, Lawrenceville, NJ; Juerg M. Steinegger, Hans R. Kaeser, and Lawrence Charity of Interiors Concepts, New York for Slotnik's Daughter Restaurant in the

Citicorp Building, New York; Judith Stockman & Associates, New York, for Luchow's Restaurant, New York; John Morford of Jeanne Harnett & Associates, Chicago, for his Stendig showroom at the Chicago Merchandise Mart; Eugene Aubry of S.I. Morris Associates, Houston, for the Alfred C. Glassell, Jr. School of Art, Houston; Robin Jacobsen, New York, with consulting architect R. Scott Bromley, New York, for Girard's Disco, Baltimore; Howard Snoweiss, Juan Lezcano, and Robbyn Shirley of Design Matrix, Coral Gables, Fl, for Westinghouse Tampa Division, Fl; J.L. Harter Associates, Allentown, Pa, for the energy-efficient Operations Center for Rodale Press, Emmaus, Pa; Haak, Kaufman, Reese & Beeors, of Lancaster, Pa, for the adaptive reuse of the Lebanon Railroad Farmers Trust Bank, Lebanon, Pa; Michael Kalil and Giuseppe Zamboni of New York for the low-cost design of the Open Atelier of Design, New York.

John Saladino, New York, products and interior designer, was selected Designer of the Year, the top honor in the awards program.

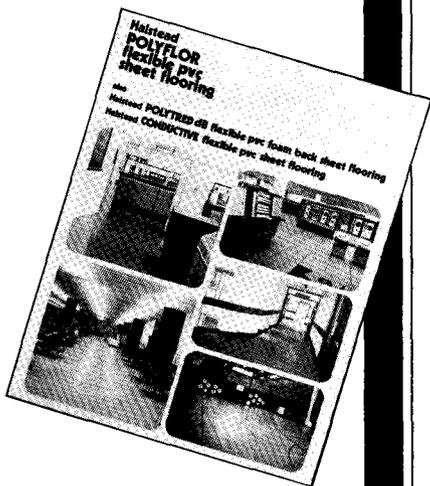
Building reclaims gravel pit

An unused gravel pit is the site of the proposed Multnomah County Operations and Maintenance Building in Oregon. The structure will be primarily underground to minimize visual impact of the building and to reduce energy consumption 50 percent below that of a similar building above ground. The architects are Zimmer Gunsul Frasca of Portland. A grant from the Department of Energy will finance the installation of a solar system on the roof to provide 100 percent of the cooling and hot water energy requirements and an estimated half of the heating needs in the winter.

Orgatechnik Fair Cologne, 1980

A trade fair which promises to be one of the world's largest for office products and furniture will be opening October 21 in Cologne, Germany. Called Orgatechnik, the Third International Office Trade Fair, the show will be underway through October 26. In conjunction with the Cologne International Trade Fair & Exposition Corporation, the German-American Chamber of Commerce of New York is organizing economical ways for U.S. manufacturers to travel to and exhibit at the event.

Although Orgatechnik is a forum for the broadest spectrum of office products, strong emphasis on office interiors products and furnishings is expected to continue to increase. United States companies wishing to broaden their marketing efforts are offered the opportunity to benefit from low-cost packages for both display space (with the U.S. group exhibit) and travel ex- [News report continued on page 50]



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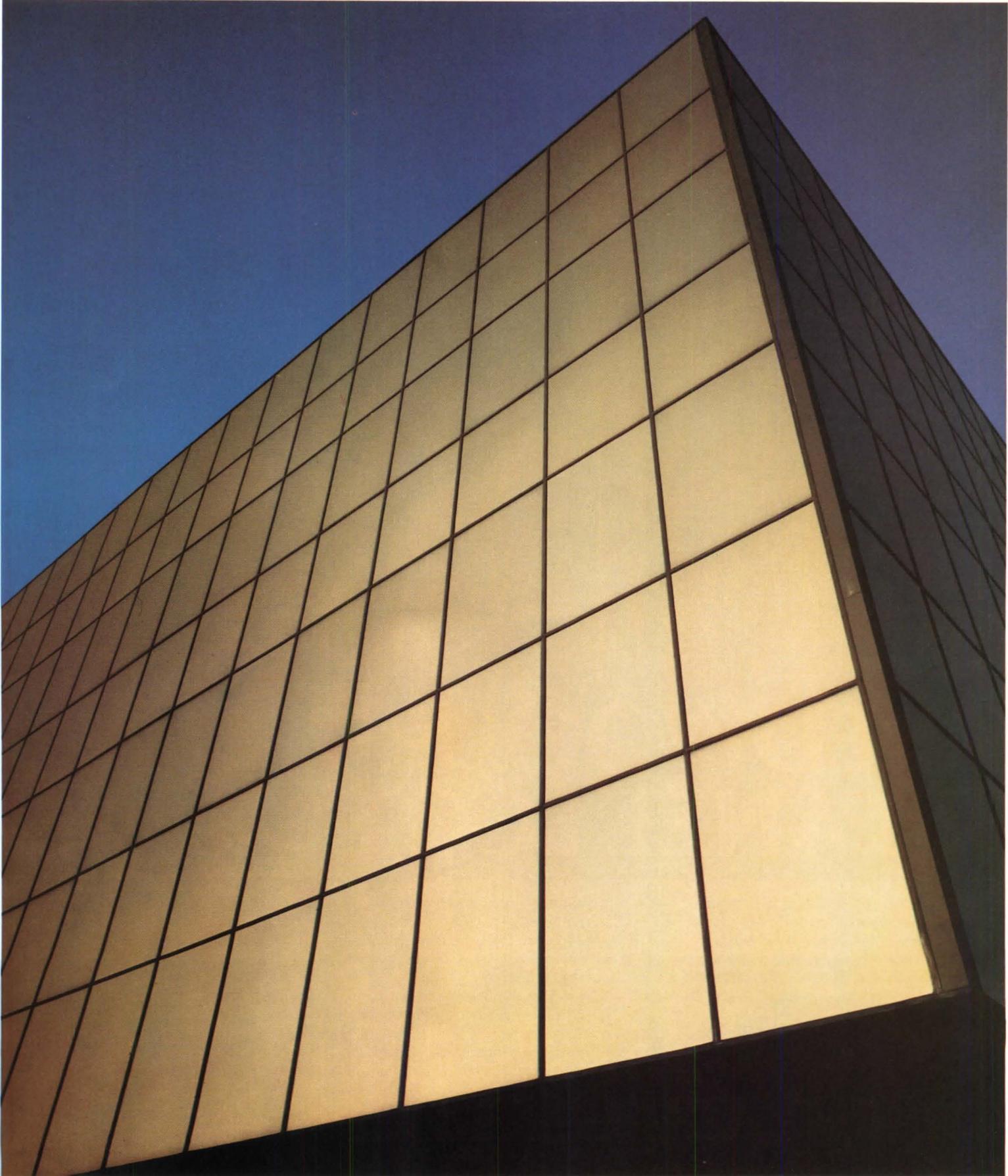
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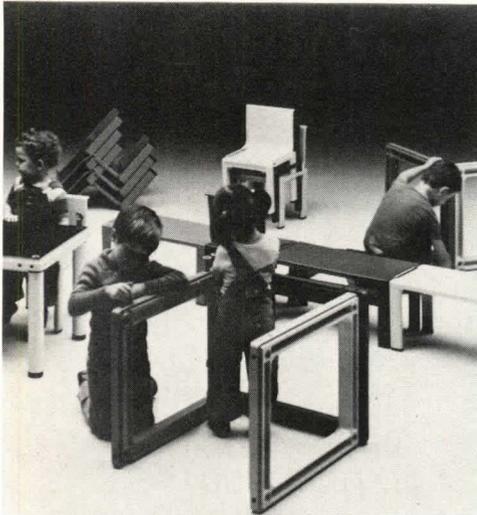
penses. For more detailed information, contact Hans Teets, Trade Fairs Manager, German-American Chamber of Commerce, 666 Fifth Avenue, New York 10019.

Roscoe Awards for product design

The ninth annual Roscoe Product Design Awards, sponsored by the Resources Council, Inc., a national association of interior furnishings manufacturers, honored 22 products for their "excellence of adaptation or reproduction, creativity, innovative design, use of materials and color, and craftsmanship." The winners were: a smoking table, designed by Eileen Gray and manufactured by Stendig, Inc.; multi-functional stools designed by Anna Castelli Ferrieri, manufactured by Kartell, and distributed by Beylerian Ltd.; the "Ritz Armchair" designed by Ben Baldwin and manufactured by Jack Lenor Larsen, Inc.; the "9000 Resin Table Series," designed by Jules N. Heumann and manufactured by Metropolitan Furniture Corp.; the "School System Chair" designed by Centrokappa, manufactured by Kartell, and distributed by Beylerian Ltd.; the folding armchair designed by Masayuki Matsukase and Centrokappa, manufactured by Kartell, and distributed by Beylerian Ltd.; a diagonal sheer case-



Multi-functional stool, bent PVC back.



Preschool and nursery furniture.

ment designed by Craig & Saul Goldman and Terri Roese and manufactured by Craig Fabrics; "Boardwalk" fabric designed by Nicole Gelpi and manufactured by California Dropcloth; "Stretchluxe" fabric designed by Vincent Cafieso and manufactured by Stow/Davis Textiles; "Iris" fabric designed by Inger McCabe Elliott and manufactured by China Seas, Inc.; "Wedding" fabric designed by Patty Madden and manufactured by HGH Design Group Ltd.; "Dennis' Paint" fabric designed by Dennis de Crenzano and Saul and Craig Goldman and manufactured by Craig Fabrics; "Pastiche Dhurrie" rug designed by Shirley Mellinger and manufactured by Patterson, Flynn & Martin; "Bedford" carpet designed by Stark Design Studio and manufactured by Stark Carpet Corp.; "Zealand Box" carpet designed by Alan Meiselman and manufactured by Saxony Carpet; "Linea" aluminum baffles designed by Lew & Pathaud, Inc., and Integrated Ceilings, Inc. and manufactured by Integrated Ceilings, Inc.; "Allegro" wallpaper designed by Robeynth and manufactured by Carta Divina; "Jumbo Jute Wallcovering" designed by Norton Blumenthal and manufactured by Norton Blumenthal, Inc.; fluorescent/incandescent floorlamp designed by Paul Mayen and manufactured by Habitat, Inc.; the "Sculptura" wall clock designed by William Sklaroff Design and manufactured by Howard Miller Clock Co.; "Delineations Bed Linens" designed by Martex Studio and manufac-

[News report continued on page 52]

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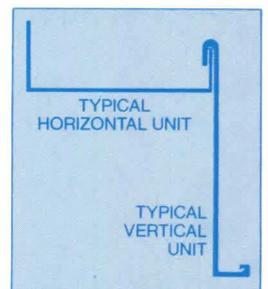
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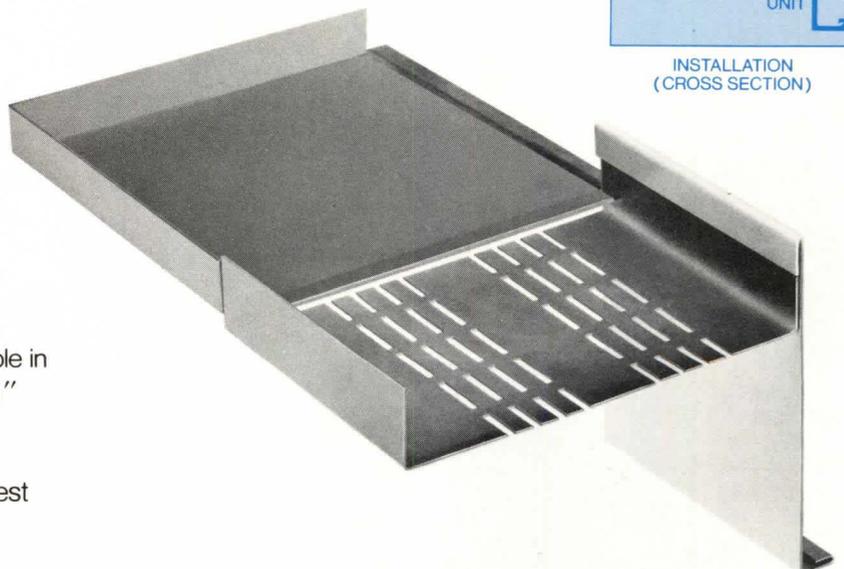
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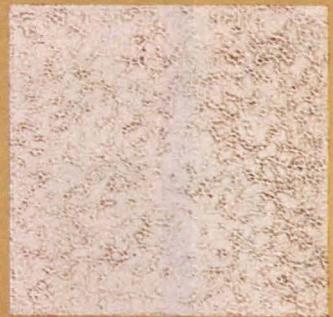
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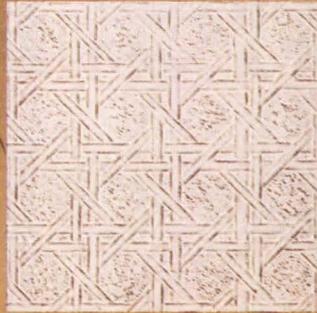


INSTALLATION (CROSS SECTION)

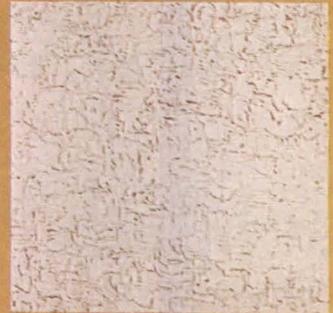




Alfresco



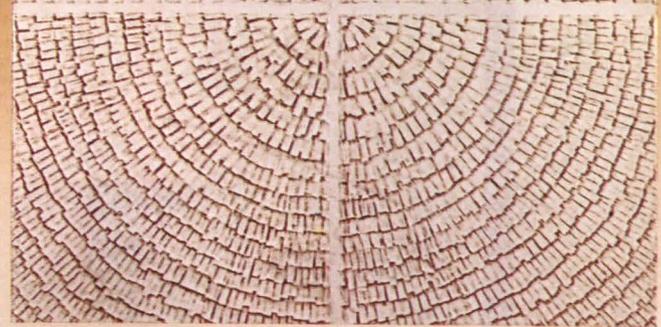
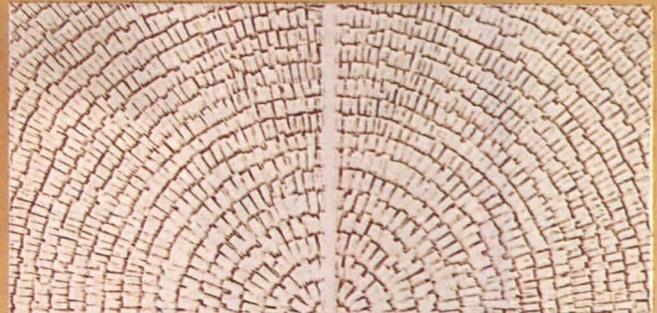
Cane



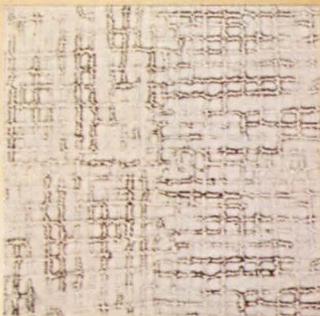
Sandbar



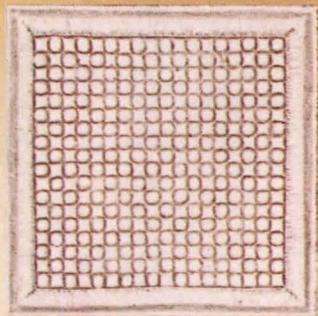
Heritage



Radiance — All patterns shown in "Warm White."



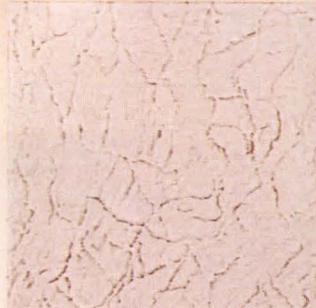
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News report continued from page 50

tured by Westpoint Pepperell.

The seventh House Beautiful Pace Setter Design Award, given to a Resources Council member firm for design excellence, was awarded to Manuel Canovas, Inc., at the Roscoe ceremony, held on November 1, 1979 in New York.

Solar index

In 70 cities across the U.S., another number has been added to the weather report. The Solar Index is the percentage of the average domestic hot water need that could have been supplied on that day in that location by a solar hot water system. The calculations assume an average family of four, using 80 gallons of hot water per day, and a system using 60 to 90 sq ft of flat-plate solar collectors. Such hot water heating systems, since they are effective in more parts of the country than most other solar systems, offer the best base for a national statistic. Data collected by the National Weather Service in each participating area are computerized and then disseminated by the National Solar Heating and Cooling Information Center.

The DOE-funded Index was conceived as a media service that would increase public awareness of the actual feasibility of solar energy systems. Well, in most places it probably has. But no, you won't see the Index in the *New York Times*. The year-old project is still not operative in Metropolitan New York, because the "sunshine switch" on Belvedere Tower in Central Park has been vandalized. The photovoltaic cell, which measures the amount of sunshine being received in the city, has been out of commission for some time, and nobody seems to be doing much about it.

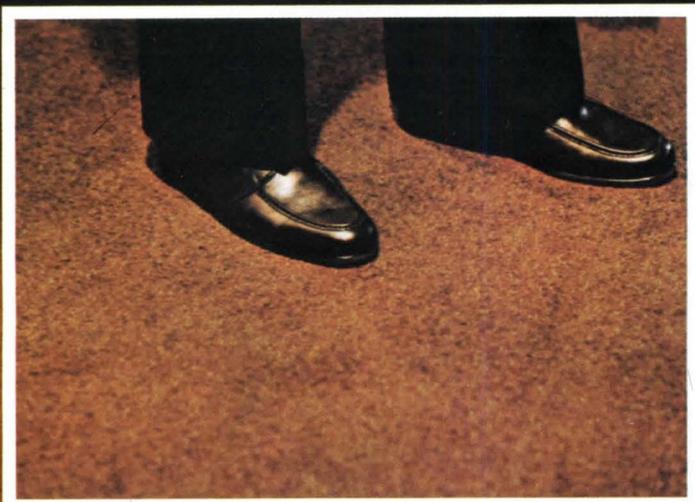
Cape Cod shingle solar

The first Coast Guard station to use solar energy systems in its design, the Provincetown U.S. Coast Guard Station on Cape Cod, designed by Symmes, Maini & McKee of Cambridge, Ma, harmonizes with Cape Cod vernacular architecture. Dedicated August 6, the facility, the first federal building in the state to use a solar energy system, was hailed by the community, which has steadily opposed the idea of a Coast Guard station in the vicinity for the past ten years, on the grounds that an institutional structure would destroy the town's architectural character.

The main building, a 9000-sq-ft administration and barracks structure, is broken into seven linked clapboard and shingle blocks that step down in traditional Cape Cod style. Flanked by a restored warehouse and protected by a seawall and a 1400-ft pier, the small-scale elements are arranged close to the street and parallel to it, in a grid pattern [News report continued on page 56]

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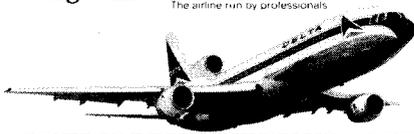
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News report continued from page 52

typical of Provincetown. The high-pitched roofs echo the local style but also provide the correct angle to mount the solar panels that provide up to 60 percent of the building's heat and hot water. Passive features such as skylights, double-glazed windows, and insulation are included. In a more experimental effort, solar collectors are also mounted on the warehouse, now used as a mechanical shop and for storage.

The total project cost \$2 million, of which \$1 million went to the pier, designed with Childs Engineering of Medfield, Ma.

Pipsan Saarinen Swanson 1905–1979

Pipsan Saarinen Swanson, Hon. AIA, ASID, died suddenly Oct. 23, 1979, at her home in Bloomfield Hills, Mi. The daughter of Eliel and Loja Saarinen, Mrs. Swanson was noted for her interior design work, especially her pioneering use of color in educational and institutional buildings. Her 1929 interiors for the Kingswood School for Girls, a complex designed by her father, won her particular acclaim. In 1926, she married J. Robert F. Swanson, an architect who was a close associate of Eliel Saarinen at Cranbrook and who later collaborated with Saarinen on several projects. Awarded an honorary AIA membership in 1970, she was at the time of her death a partner in the Bloomfield Hills firm of Countryside Design.

Charles Hilgenhurst, FAIA 1929–1980

An architect known for his achievements in government service, Charles G. Hilgenhurst died suddenly in late January. A graduate of Cornell and Princeton, Hilgenhurst is best remembered for his role as planning and urban design administrator for the Boston Redevelopment Authority from 1962 to 1971. Former BRA Director Edward J. Logue and other colleagues recall the remarkable understanding and personal charm he brought to complex negotiations with officials and private developers and praise him for the exceptional design quality of Boston's Government Center, waterfront, and other areas. The firm of Charles G. Hilgenhurst & Associates, established in Boston in 1971, has recently participated in planning for Boston's Southwest Corridor, among other projects.

Paul R. Williams, FAIA 1894–1980

Reportedly the first black architect named to fellowship in the AIA, Paul R. Williams died early this year in Los Angeles, his life-long home. Educated at the University of Southern California, Williams later received honorary doc-

torates from Howard, Tuskegee, and Lincoln University. In over 50 years of practice, Williams designed a variety of structures, ranging from small houses to movie stars' mansions, resort hotels, office buildings, and department stores. He was associated in the design of the Los Angeles County Courthouse and the city's International Airport. In 1952, he designed the memorial at Pearl Harbor for those who perished there in 1941. His firm, Paul R. Williams and Associates, remained active after his retirement in 1973.

Calendar

Exhibitions

Through March 16. "Arts on the Line: Art for Public Transit Spaces." MIT Hayden Gallery, Cambridge, Ma.

Through March 21. "Lella and Massimo Vignelli." Parsons School of Design, New York.

Through March 30. "Maria Nordman/Texas." Jointly sponsored by the Dallas Museum of Fine Arts, the Fort Worth Art Museum, and the Laguna Gloria Art Museum in Austin. The Fort Worth installation will close March 9; that in Austin will be on view at various locations in the city.

Through April 5. "The Oceanliner: Speed, Style, Symbol." Cooper-Hewitt Museum, New York.

Through April 20. "The American Renaissance 1876–1917." National Collection of Fine Arts, Washington, DC. Previously at the Brooklyn Museum, New York, this show will travel to The Fine Art Museum of San Francisco, May 31–Aug. 10, and to the Denver Art Museum, Denver, Co, Sept. 24–Nov. 30.

Through June 1. "The Horses of San Marco," Metropolitan Museum of Art, New York.

Conventions

Mar. 17–18. Strategies for Stopping Shopping Centers. New York. Conference sponsored by the Downtown Research and Development Center. Contact: DRDC, 270 Madison Ave., Suite 1505, New York 10016 (212) 889-5666.

Mar. 26–29. 68th Annual Meeting of the Association of Collegiate Schools of Architecture. San Antonio, Tx. Contact: ACSA, 1735 New York Ave., Washington, DC 20006 (202) 785-2324.

April 17–20. Earth Sheltered Design Innovations. Oklahoma City. Sponsored by Oklahoma State University. Contact: J.F. Bolar, Architectural Extension, Room 115 Architecture Bldg. Oklahoma State U., Stillwater, Ok 74074 (405) 624-6266.

April 21–23. Symposium on the American Movie Palace. Milwaukee, Wi. Sponsored by the Univ. of Wisconsin-Milwaukee. Contact: Prof. J. Valerio, School of Architecture and Urban Planning. The Univ. of Wisconsin-Milwaukee, Milwaukee, Wi 53201 (414) 963-4014.

April 23–27. Annual Meeting, Society of Architectural Historians. Madison, Wi. Contact: SAH, 1700 Walnut St., Philadelphia, Pa 19103 (215) 735-0224.

ANNOUNCING THE OWENS-CORNING ENERGY AWARD WINNERS FOR 1979.



FOUR WINNERS. Seven honorable mentions. In all, eleven designs as efficient with their environment as they are with energy.

Designs representing the labors of an elite corps of architects and engineers. Individuals who realize that the need to create exciting, energy-efficient buildings is not just a noble gesture but a necessity.

On the following pages are the four winning designs. Their creators. And the environment with which each structure will coexist.

THE AWARD JUDGES: C. William Brubaker, executive vice-president of Perkins & Will, Architects, Chicago/ G. Day Ding, head of the Department of Architecture at the University of Illinois/ David L. Grumman, president of Enercon, Ltd., Energy Consultants, Evanston, Illinois/ George E. Hartman, a partner in Hartman-Cox Architects, Washington, D.C./ Roderick R. Kirkwood, a partner in John Graham and Company, Architects, Seattle/ Mortimer M. Marshall, Jr., director for Construction Standards and Design, Office of the Secretary of Defense, Washington, D.C.

PROJECT: Solar Energy Research Institute, Golden, Colorado.

This research center is a perfect example of practicing what one preaches.

A steplike complex of two-, three- and four-story buildings interspersed with greenhouses and solar courts. All nestled in a natural "sun bowl" on the south slope of a Colorado mesa. Protected from the winds, yet open to the full force of the sun.

Over 80 percent of the building's power is passively and actively supplied by energy systems using renewable resources.

In total, this "tribute" to solar power will consume less than a quarter of the energy required by comparable buildings.

MR. DING: This structure not only houses energy research facilities, but also demonstrates state-of-the-art technology in solar and other renewable energy sources.



Paul Kennon, Caudill Rowlett Scott, Archt., Houston, Tex.; John Anderson, John D. Anderson & Assoc., Archt., Denver, Col.; Vic Langhart, Rogers Nagel Langhart, Archt., Denver, Col.; Fred Dubin, Dubin-Bloome Associates, Eng., New York, N.Y.



**PROJECT: Department of Energy/Argonne National Laboratories
Program Support Facility, Argonne, Illinois.**

It's four-fifths office building. And one-fifth water retention pond.

Circular and compact. A design that's perfectly tuned to the nondirectional nature of the building site. And one that offers minimum exterior wall space; maximum office space.

Skylights are interspersed across the undulating roof providing up to 65 percent of the interior lighting.

On the southside overlooking the pond are three canted, vertical rows of solar collectors.

The mechanical system utilizes solar for heating and cooling, internal heat recovery and a low-velocity air distribution system.

MR. GRUMMAN: *This building has a projected energy consumption of slightly over 27,000 Btu's per square foot per year. And that's quite an accomplishment in a northern climate.*



PROJECT: Summertree Housing Development, Sacramento, Cal.

Think of this development as 144 individual energy-conserving dwellings. All existing on eight acres of suburban Sacramento soil.

The quintessential housing project. Combining some of the best architectural features of the single-family house with energy efficiency.

Each unit is equipped with both active and passive energy components. Including solar collectors with individual computer controls.

Landscaping and site planning contribute heavily to the development's energy performance as well as to its livability.

Each unit has a southern orientation. Double-glazed windows. And clerestory windows for natural lighting and ventilation.

MR. MARSHALL: *The project is architecturally compatible with the environment. It's refreshing to see a residential developer who is concerned with the integration of energy conservation and architecture.*

PROJECT: California Farm Bureau, Sacramento, Cal.

When completed, this two-story structure will be recessed into the earth. With the appropriate sides utilizing screen planting; the west side being bermed out.

The heating, ventilating and air-conditioning systems are designed to save 74 percent of the heating and cooling energy as compared to a conventional plan. The energy savings will be achieved through the evaporative cooling at night of chilled water which is stored and utilized for cooling. Also by computer room heat recovery, and a solar-assisted domestic hot water heater.

MR. HARTMAN: *Here is a very careful pairing of a simple energy-conserving design with sophisticated controls of conventional mechanical equipment.*

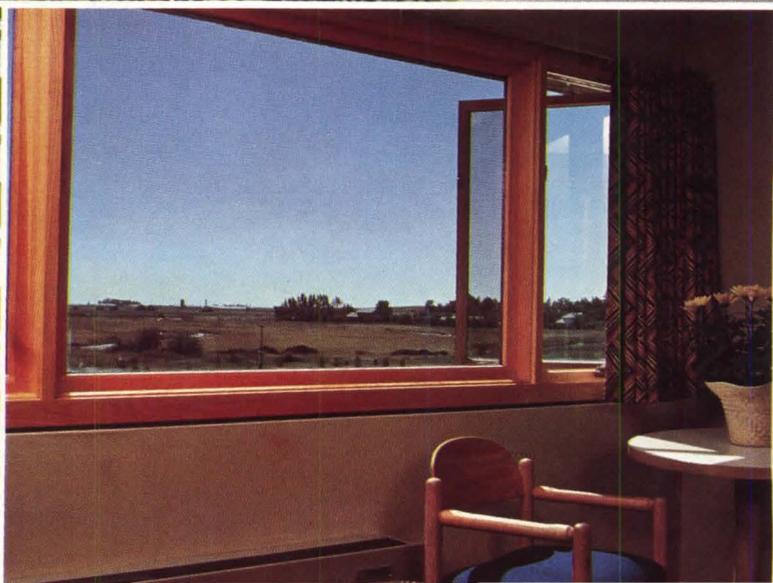


Bill Hutcheson, John Pflueger, Pflueger Architects, San Francisco, Cal.; Arthur Zigas, Shlomo Rosenfeld, Syska & Hennessy Inc., Eng., San Francisco, Cal.

HONORABLE MENTIONS—Commercial: Central Pre-Mix Concrete Co., Spokane, Wash.; Walker McGough Foltz Lyerla, P.S./Commercial: Sunstructure Office Building, Albuquerque, N.Mex.; The Burns/Peters Group./Institutional: Millford Reservation Environmental Center, Pike County, Pa.; Kelbaugh & Lee Architects./Commercial: North Spokane Branch, Seattle First National Bank, Spokane, Wash.; Walker McGough Foltz Lyerla, P.S./Institutional: Gloria Floyd Elementary School, Miami, Fla.; Saez/Pacetti Architects/Planners./Special: Solar House, Lake Tahoe, Cal.; MWM, Mackinlay/Winnacker/McNeil AIA & Assoc./Commercial: San Francisco Downtown Airlines Terminal, San Francisco, Cal.; Jacques de Brer, AIA, John Ellis, RIBA. ©1980 O.-C.F. Corp.

FOR A FREE BOOKLET with highlights of this year's winners, write E. P. Meeks, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.





Friends and alumni were determined to enhance Iowa State Center with a gracious motor hotel that's a model of energy efficiency.

Only a Pella package could make this facility so comfortable in its surroundings.

Because of its proximity to the new South Campus of Iowa State University, friends and alumni who were developing the Gateway Center Motor Hotel insisted that the design be compatible with the architectural style of the nearby complex. They also placed major emphasis on energy conservation and comfortable guest accommodations.

The architect, himself an Iowa State alum, knew that Pella windows would meet all the developers' exacting requirements. He had specified Pella many times before for residential as well as commercial projects and had been impressed by Pella's overall superior quality and service.

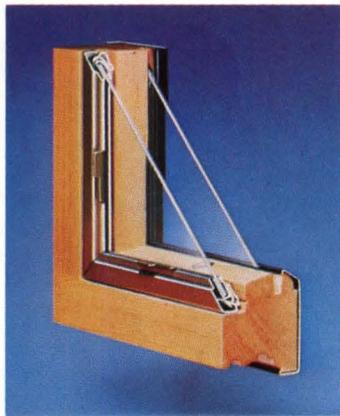
For the Gateway Center, he chose Pella Clad Casements

with the Double Glass Insulation System and Solarcool® Bronze Glass. The bronze-finish cladding eliminates costly exterior maintenance and complements the prestressed concrete construction. Inside, the beauty of natural wood enhances the cozy charm of the guest rooms. In each room, a window can be opened for ventilation to reduce the need for mechanical air circulation. What's more, the Solarcool Bronze Glass cuts energy transmission, further reducing reliance on air conditioning.

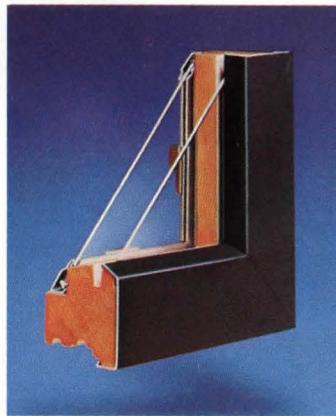
All in all, only a Pella package offers such a wide margin of comfort for designing crisp low-maintenance exteriors and warm inviting interiors with exemplary energy efficiency.



Pella's outside glass is easy to clean from inside. A unique case-ment hinging system moves the sash toward the center of the frame to provide plenty of elbow-room.



Precision wood construction makes Pella windows truly energy-tight. The optional Double Glass Insulation System has a 13/16" air-space between panes for maximum performance.



Pella's tough exterior aluminum cladding is cleaned and etched, then coated with a baked-on acrylic polymer in standard dark brown or white. It won't chip, crack or peel. No painting needed.



Pella's Clad system includes rectangular or trapezoidal frames which will accept a variety of glazing options, louvers or matching clad panels for extensive design flexibility.

For more detailed information, use this coupon to send for your free copy of our 32-page, full color catalog on Pella Clad Windows & Sliding Glass Doors. Call Sweet's BUYLINE number or see us in Sweet's General Building File. Or look in the Yellow Pages under "windows", for the phone number of your Pella Distributor.

Gateway Center Motor Hotel
Ames, Iowa

Architects:
Wilkins, Bussard and Dikis, Ltd.
Des Moines, Iowa

Project Architect:
James Wilkins

General Contractor:
A. H. Neumann Brothers, Inc.
Des Moines, Iowa

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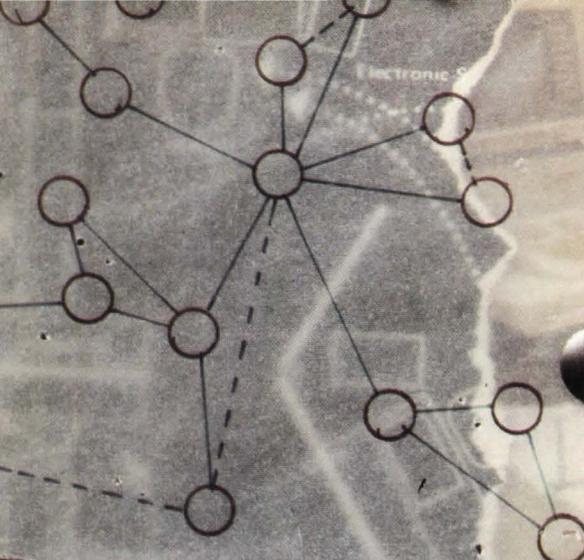
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Also available throughout Canada. This coupon answered within 24 hours.



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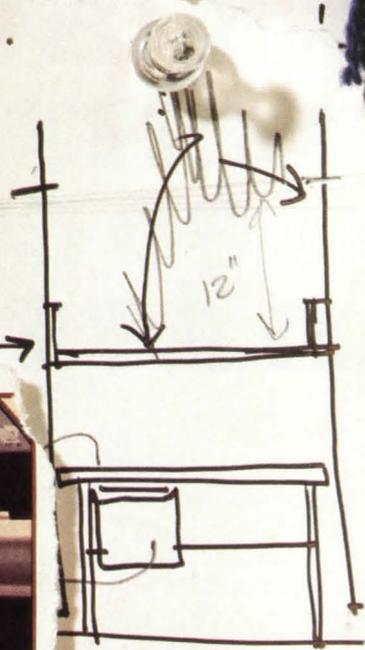
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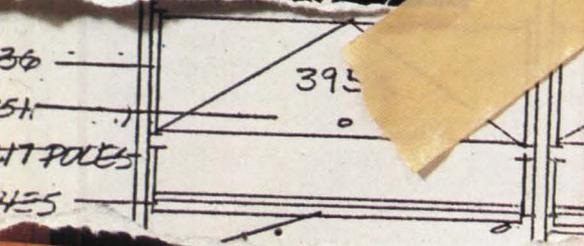
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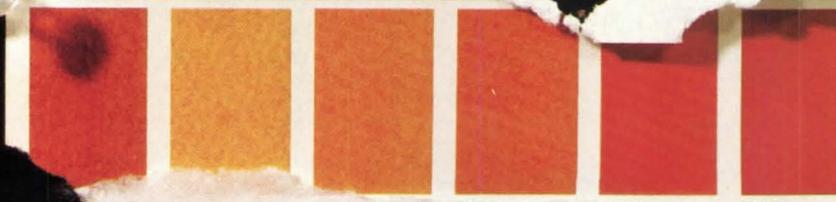
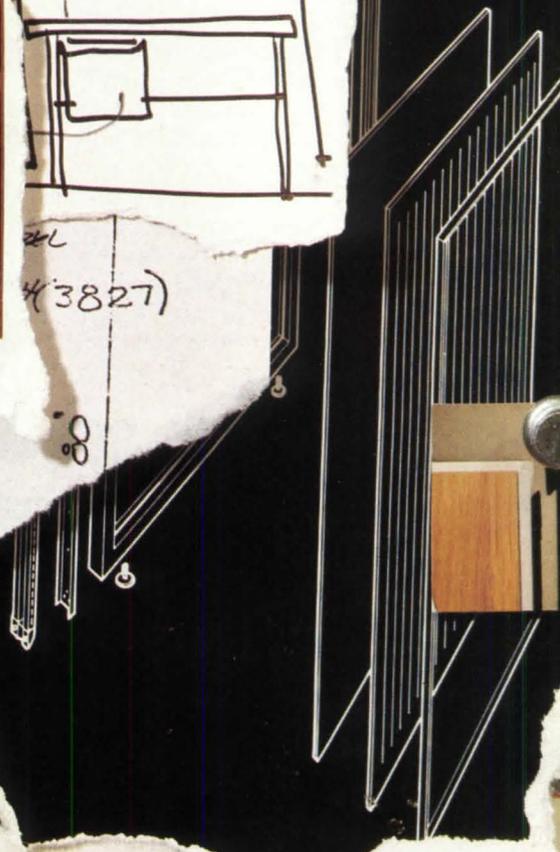
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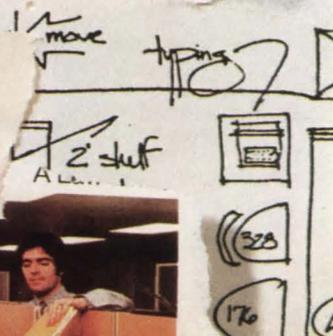
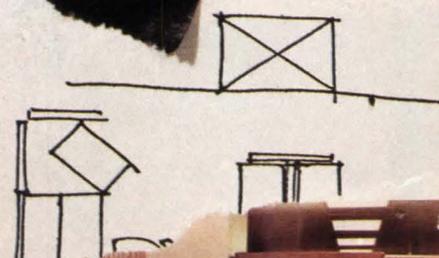
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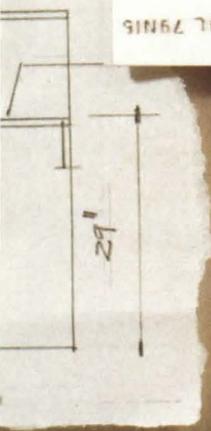


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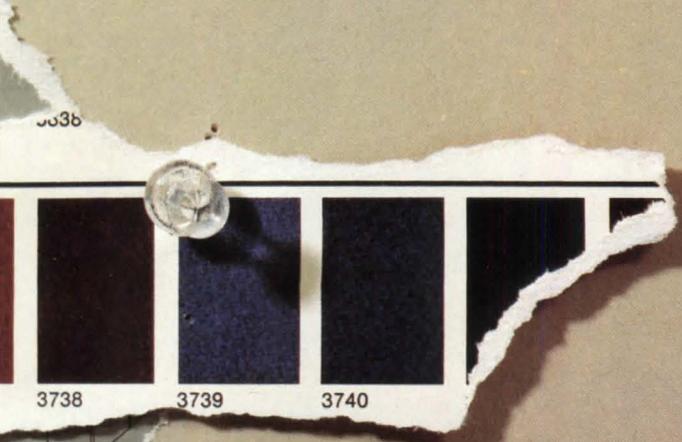
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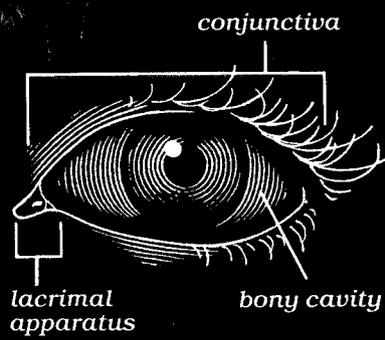
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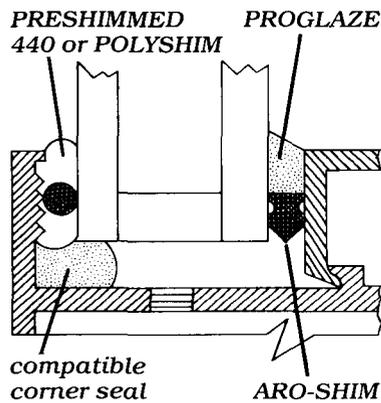
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Frank O. Gehry & Associates

Firm profile: Introduction



Richard Gross

The Los Angeles-based architectural firm has received much publicity in the last few years owing to the avant-garde formal experiments of its design head. The firm also executes large-scale work that is straightforward in nature. And now it has plans to expand eastward.

The primacy of artistic goals versus social goals in architecture is frequently the subject of heated debate; Frank Gehry's work has been controversial for that reason. Gehry considers himself an artist—he sees his buildings as sculpture, objects in the landscape responding to their settings in an expressionistic and even intuitive way. His rhetoric is not functionalist or oriented toward higher social objectives; he wants to “turn people on to architecture.” Sometimes he succeeds, producing a sparkling and original work; other times



he at least builds crisp, well-crafted buildings, which serve their clients' needs, while investigating limited yet important constructional and compositional problems (P/A, July 1979, p. 62).

His ideas are, without a doubt, in the vanguard of architectural thought because he explores both the *medium* of modern architecture and its programmatic and symbolic con-

Ron Davis House, Malibu, 1972–1974 (top); a trapezoidal form reflecting the formal aesthetic of its artist-owner. Hay barn for O'Neill ranch, San Juan Capistrano, 1971 (bottom), built as part of master plan.

Frank O. Gehry & Associates

tent. He is preoccupied with the placement of architectural volumes in relation to each other and to the immediate environment. He is concerned with the manipulation of "ordinary" materials, and with extending our understanding of architectural space. His work remains very modern in its minimal simplicity, and yet it respects few of the dogmas of the Modern Movement.

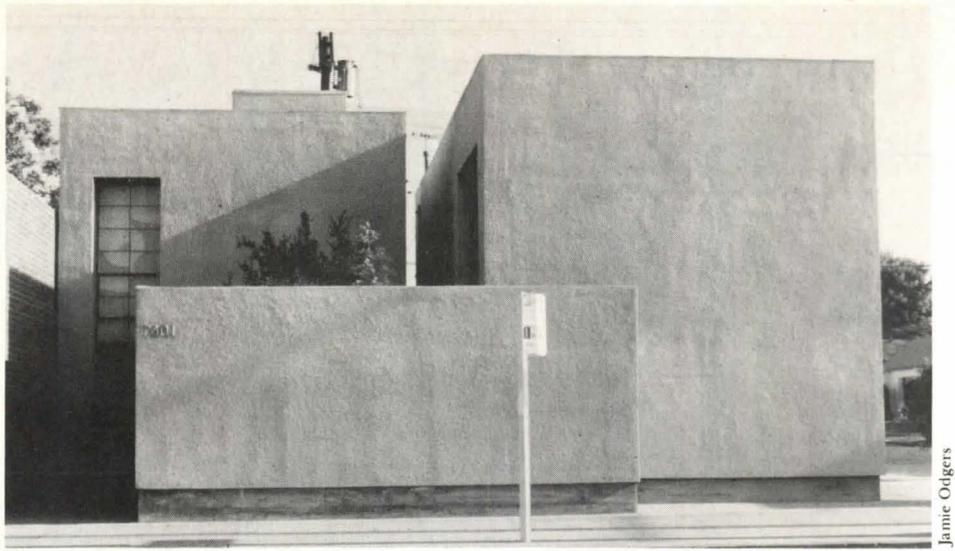
Frank Gehry began his practice in 1962. He was soon joined by a classmate from USC, Greg Walsh, who is still with the firm. A large part of their work consists of commercial and institutional buildings, all of which bear the same signature. Gehry is most interested in the conceptual phases of the projects; Walsh enjoys the nuts and bolts of seeing things through. Walsh's meticulous attention to detail has been absolutely essential to the architecture the firm has produced.

Last January Frank Gehry & Associates merged with Krueger Associates of Boston, forming Gehry & Krueger, Inc. Paul Krueger was formerly a partner with Jose Luis Sert and worked with Le Corbusier on the Carpenter Center at Harvard. This arrangement should provide the firm with additional depth for large projects, although Gehry will maintain his own office for small-scale projects.

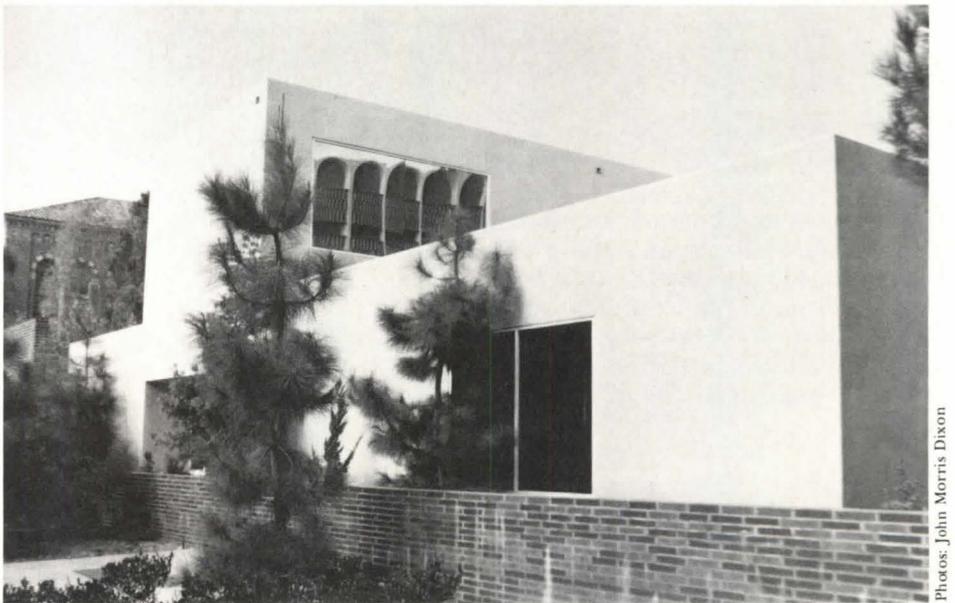
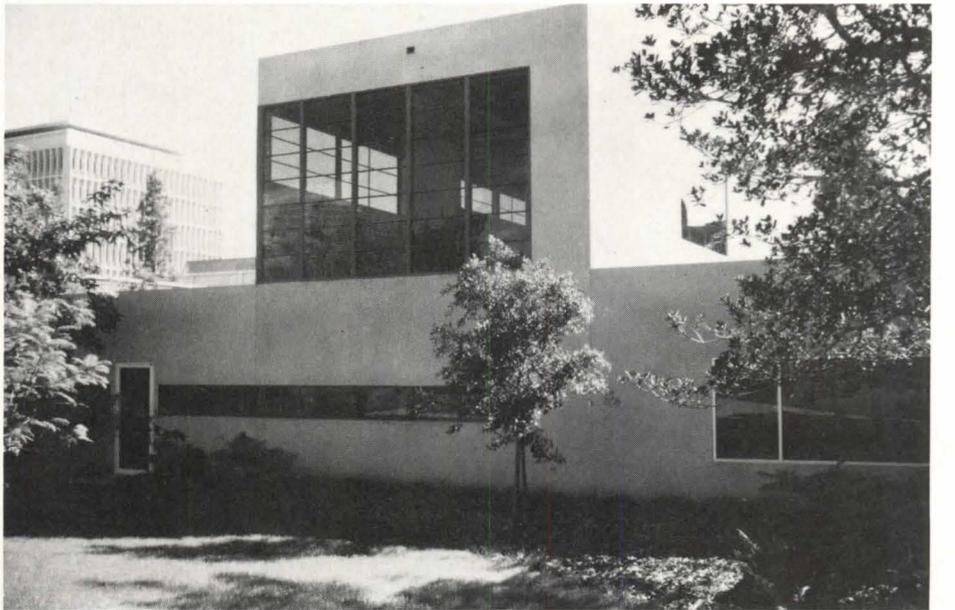
The environment of Gehry's office resembles an artist's workshop more than a typical architectural studio. Located on the top floor of a large industrial building, it is a lively but unexpected place to find architects working. Paintings and sculpture by Gehry's friends create a dynamic landscape, a reflection of the kind of architecture produced there.

The use of materials is one of Gehry's main interests, and he has developed his palette as carefully as a painter. The materials he uses seem distasteful to many architects because they are cheap, off-the-shelf, mass-produced, and ordinary—"sticks and stucco," aluminum-framed windows, corrugated iron. They are not used in a slick way, they aren't shiny, and, although borrowed from industry, they are not used to produce a machinelike High Tech image. However, Gehry's team is in complete control of its construction media and handles this unlikely palette in a subtle and elegant way.

The firm spends a lot of time reexamining performance and application of common materials. For example, in 1970 it thoroughly explored the structural and formal properties of corrugated cardboard, producing a line of laminated cardboard furniture called "Easy Edges." When Gehry became interested in chain-link fencing, two students working in his office spent an entire summer examining its performance and fabrication. The firm feels that since it is often necessary to cut costs with inexpensive materials, it makes sense to understand their potentials. This kind of research also encourages a good



Jamie Odgers

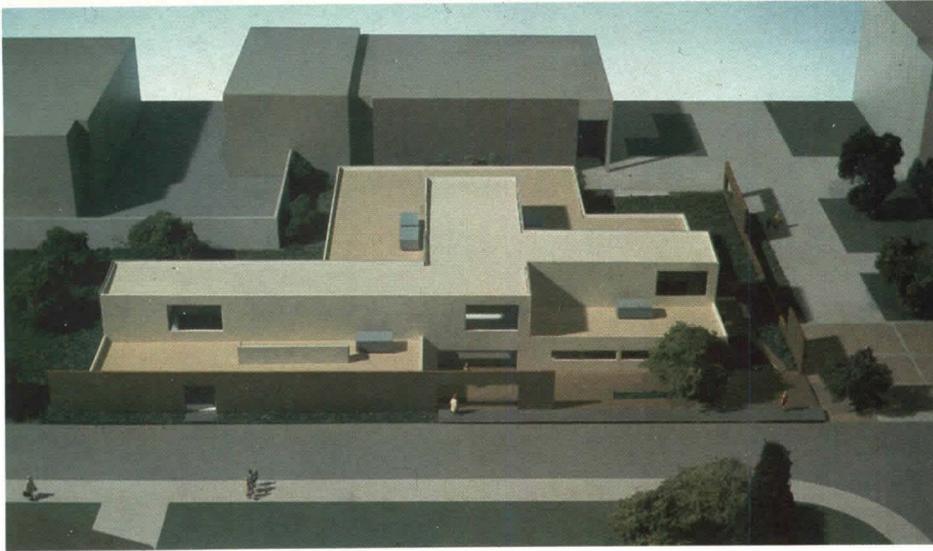


Photos: John Morris Dixon

working relationship with contractors and leads to simply done, well-executed results.

Gehry's successful use of the "builder's vernacular" is unique because, in the hands of most contractors and many architects, stucco and metal-framed windows combine to produce paper-thin, flimsy-looking buildings. Gehry avoids this problem and gives his

Danziger studio/house, Hollywood, 1968 (top); an inward-turning solution to busy street, stucco on wood frame. UCLA Placement Office, Los Angeles, 1976 (middle and bottom), built of wood frame and stucco.



UCLA Placement Office, 1976 model (top), showing courtyard complex interiors (middle and bottom). With limited budget (\$661,900), architects exposed construction inside.

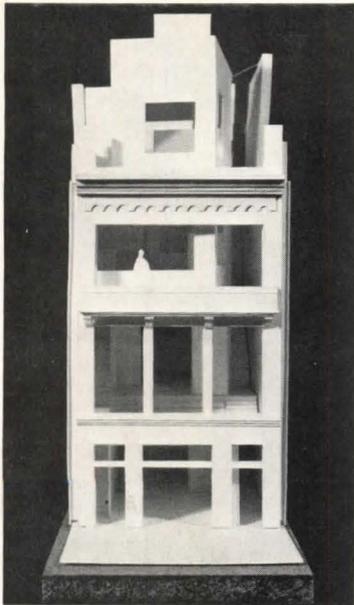
buildings substance by using a number of compositional devices. For example, with Gemini G.E.L., p. 76, he used forced perspective—sloping part of the cornice line of the original façade to create the impression of bending a flat surface around a corner of the street. Another device that gives many of his buildings substance is the strong juxtaposition of one heavy volume against another to cast deep shadows. The massing of the UCLA Student Placement Center (left; facing page, middle and bottom) and the Danziger studio (facing page, top) demonstrates this device. He doesn't try to disguise his stucco buildings to look like concrete; instead Gehry *reveals* the true thickness of their walls, allowing us to see the structure by leaving ceilings exposed or encasing studs between two layers of glass. This kind of architectural striptease could be interpreted as an ironic comment on the Modernist dictum of structural integrity.

The idea of splitting a building apart to create "objects in a landscape" was initially developed in the (unbuilt) Jung Institute project and continues to be a theme in projects like the San Fernando arts park (p. 74), the De Menil residence (p. 72), and the Indiana Avenue townhouse and another house in Venice (p. 73).

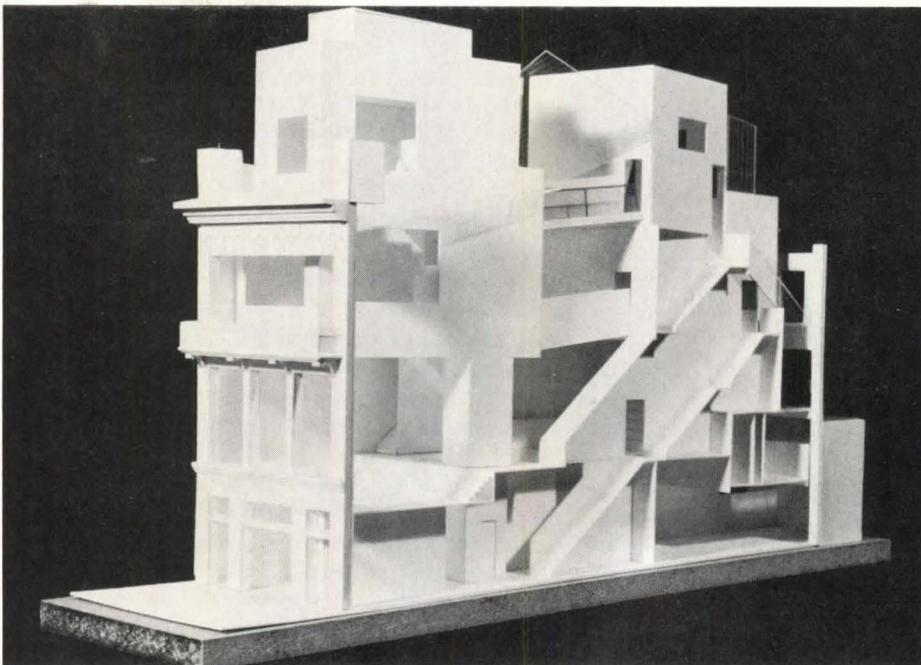
One side effect of working mainly with models is that Gehry's buildings are more interesting spatially than they are in plan. This effect doesn't seem to matter much because he uses three-dimensional cues to lead people through the buildings, with obvious success. Working with models also raises the issue of changing scale—looking *down at* a model is different from living *inside* a building. The scale model places emphasis on the relationship between volumes rather than their internal workings. As a result, it is often the "in-between" spaces in Gehry's most recent buildings which are most exciting. This is apparent, for example, with Gemini G.E.L.'s glassed-in staircase and the pinched court between the addition and the older building. The courtyard between the addition and the new vault, too, is far more dynamic than any of the interior spaces, which are fairly anonymous. The same phenomenon pertains to his own house where the ambiguous inside/outside space of the new kitchen/dining area is by far the most significant space in the house. In that case, the surrealistic juxtaposition of materials carries confusion to high art.

Another aspect of Gehry's work that makes it unique is its strong response to the immediate context. This doesn't mean that it is "vernacular" in the old-fashioned sense of literal interpretation of style. It *is* regional, however, and its modernity and abstract qualities directly respond to the forces that shape it. Southern California is full of images of building and rebuilding. From the tacky-tacky construction of its inner city commercial avenues to the massive housing tracts in Orange County, there are always new building and demolition going on. The area is also laced with industrial sites and military installations fenced off with chain link. Earthquakes, fires, and floods hardly instill a pervading feeling of permanence. Then there is the car.

Frank O. Gehry & Associates



Two buildings designed by Gehry on heavily trafficked Melrose Avenue not surprisingly pick up their formal cues from the street. Their volumes are expressed in a bold, minimal way so that their architecture is understood at automobile driving speed. These schemes, although situated on the same street, are very different from one another. The Danziger studio and residence (p. 70, top), which is on a corner where two streets cross at right angles, forms an introverted and static composition of gray boxes, mysteriously blank, a still life befitting Barragán. Gemini G.E.L., on the other hand, signals a change in the street's direction, and splits apart where Kings Road bumps into Melrose Avenue. The result is a more dynamic composition. In any case, both buildings are so



Photos: Clay Tudor

Original model, de Menil residence, New York, 1978-1980; current design not shown. Carriage house remodeling for person actively involved in arts. To include swimming pool, and multiuse space for guests. Second floor will have several levels, rising from street side to highest level at rear. On top of second floor will sit two "objects"—a two-level apartment for owner and a two-level apartment for daughter, both constructed of reinforced concrete separated by skylit vertical space.

Construction shot of house project in Venice, Ca.



John Morris Dixon

low-keyed as to be fairly anonymous; their monochromatic color schemes render them almost invisible: they reinforce the street on a subliminal level.

In a curious way, the same kind of invisibility applies to Gehry's own controversial house (p. 81). Another corner site building, it follows implied building lines along both street edges. Its "building site" appearance is so common in that part of Santa Monica that it is easy to drive past the house without noticing it. This is an intentional irony—the deification of the old suburban house by encasing it in a framework of corrugated iron and chain-link fencing.

At the UCLA Student Placement Center (pp. 70, 71), Gehry's sensitivity to surroundings is more sophisticated. The building is located along a main part of the campus pedestrian spine. Here he erected brick screens along two sides which face older brick buildings and placed the monochromatic gray stucco building behind the screens. The result is a sedate, formal, and economically planned building.

On the inside of the Student Placement Center, inexpensive materials and simple details were combined to reinforce the axis of L-shaped building, a 20-ft high internal public space. High clerestory windows, exposed trusses, and air-conditioning ducts give the space a casual, airy feeling. This high, open, informal spine contrasts with the more sedate offices and interview rooms adjacent to it. These are neutral spaces with high ribbon windows along one edge, providing views out, but visual privacy within. It is in a quiet, ordinary building like this that Gehry shows how the serious application of inexpensive materials and detailing can enhance what is basically a fairly orthodox idea. Exposed structure acts as decoration when it is juxtaposed against more polished volumes. Strip windows increase the sense of space when they frame nothing but a view of the sky.

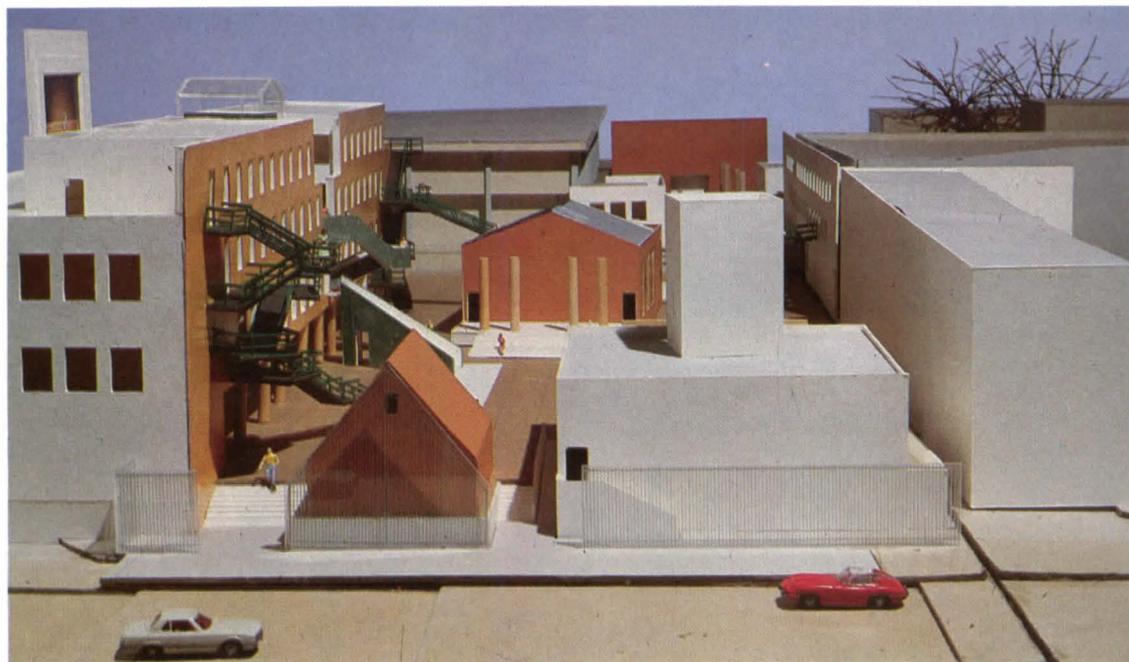
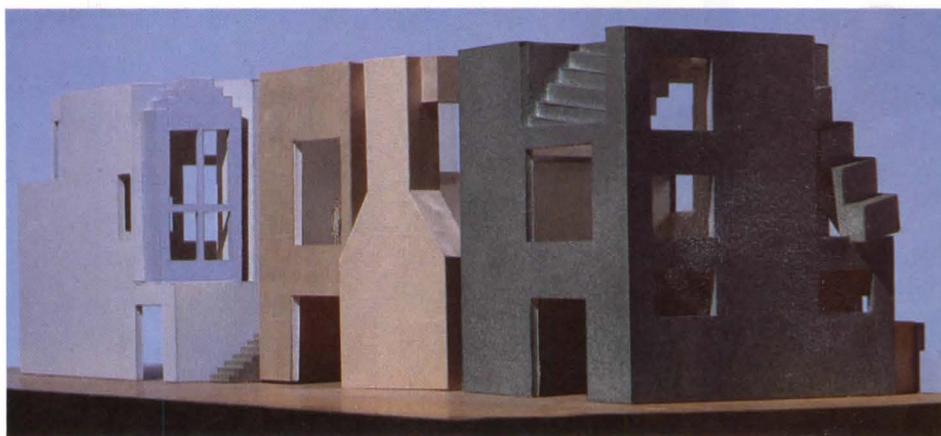
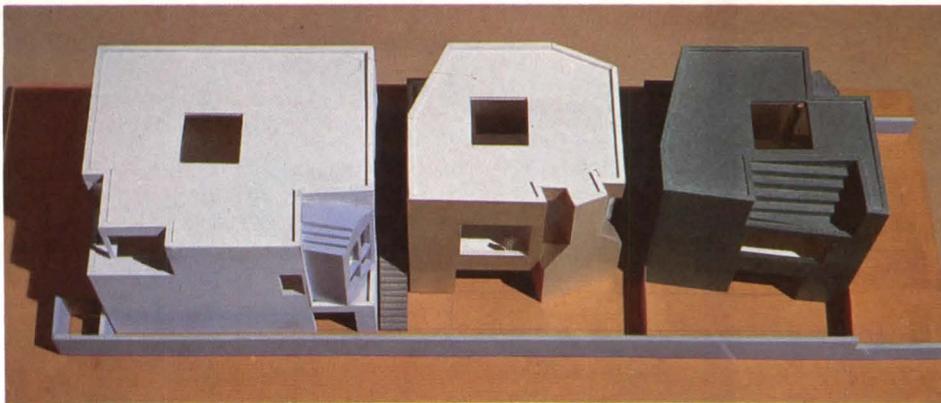
Two projects currently in progress will further test Gehry's skill as an architect, sculptor . . . and salesman. Both schemes, the Loyola Law School addition (facing page, center and bottom) and Santa Monica Place (p. 75), are on sensitive urban sites, and both are being carried out for fairly conservative clients.

At the Loyola Law School, which will shortly begin construction, Gehry was asked to add 50,000 sq ft of new offices and classrooms and to renovate a further 50,000 sq ft of existing buildings. The school is located in a "gray" area near Downtown Los Angeles and consists of a few undistinguished, visually isolated buildings that face onto secondary streets. The new buildings will tie the campus together, turning it in the opposite direction and creating a new pedestrian space opening onto a major street. The proposal looks promising in model form, and it is a new development in Gehry's work. By playing on a traditional theme, courts of law, he is inventing an urban open space where none previously existed. Again he will use forced perspective and other sculptural devices in the arrangement of buildings to focus attention inward. He is devising an architecture that is

understood as classical and institutional while remaining thoroughly Modern in technique. Here he is literally drawing the street into a group of buildings in a manner appropriate to its setting—an area where commercial and institutional courtyard buildings have a well-established history.

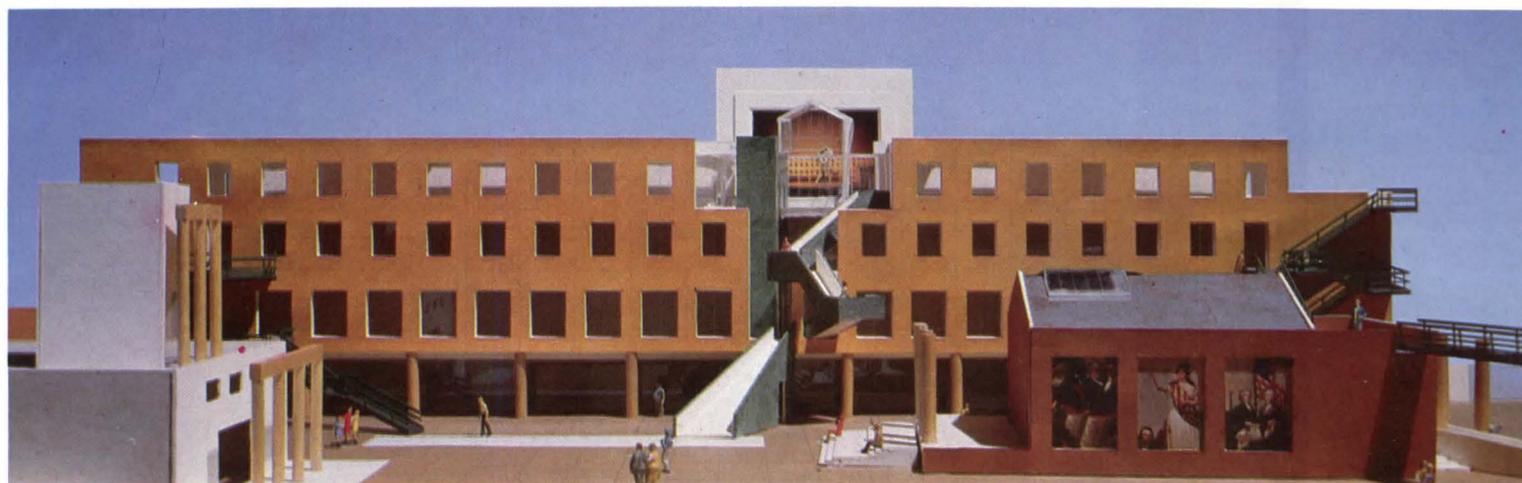
Santa Monica Place, the firm's largest current scheme, is a shopping center on a sensitive transitional site. An old, lower middle class community is giving way to a younger, more affluent one in this area. A pedestrianized shopping mall occupies one side of the site, and a Sears department store is on the other. The Pacific Ocean and Santa Monica Pier are two blocks away and the freeway close by. Many people object to the fact that a shopping center is being built here, heralding the possibility of further development: Santa Monica Place itself is the first phase of a shopping development that will extend a block further to Ocean Avenue.

As with all such schemes, the architects have been actively involved in hammering out design criteria with the developers and city planning authorities. These criteria include the placement of two large department stores on the major corners, the designation of number and type of public gathering spaces, the location of entrances, etc. Fortu-



Indiana Avenue project, Venice, 1980 (above); three artists' studios are covered with different materials: green asphalt shingle siding, unpainted exterior plywood, and pale blue stucco. Elements of exteriors for the 1500-sq-ft two-story units are overscaled to become pieces of abstract sculpture.

Loyola Law School addition and renovation, Loyola University, Los Angeles, 1980 (left and below). 50,000 sq ft is being added and 55,000 sq ft renovated in existing complex that will house a total of 1000 students. Scheme comprises large of-fice building, three classrooms, moot court building, plus existing building, all detached.



Frank O. Gehry & Associates

nately, the developer is the Rouse Corporation, an enlightened client with whom Gehry has worked before (P/A, Feb. 1976, p. 58); and the city is insisting on sensible measures to reinforce the pedestrian fabric of the area.

The scheme consists of two major department stores with recessed courtyard entrances on four sides, three large interior "squares," and two parking lots. Gehry designed the parking structures and the two stepped-back pedestrian spines, one connecting Sears to the existing pedestrian mall, the other bisecting it, forming a "square" in the middle of the complex. The central court is turned at an angle, visually linking the two spines and creating a point of rotation. The axis that joins Sears and the old mall is intended to be a continuation and visual culmination of Third Street and a "gourmet fair" in the shape of a large glass house with its structure exposed should simulate the feeling of a street market. The entrance court on this side is the most open and generous.

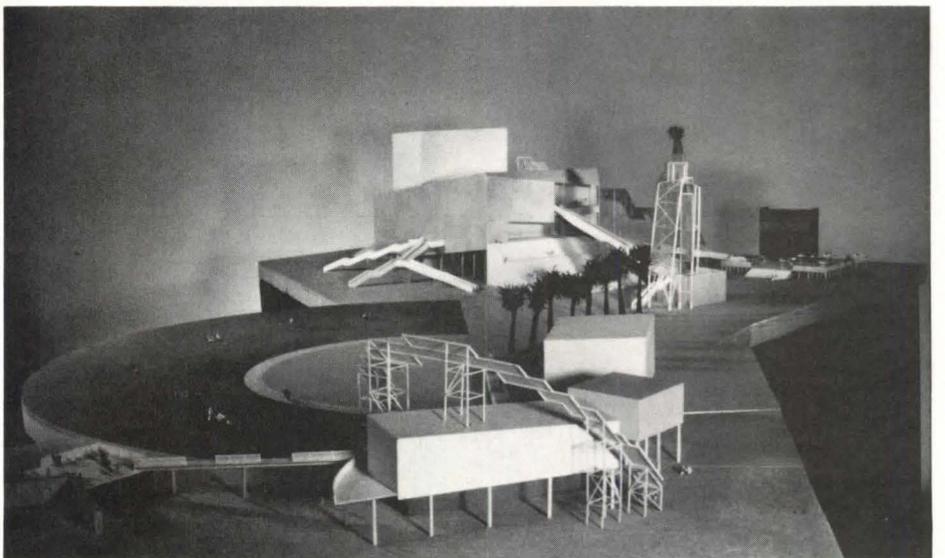
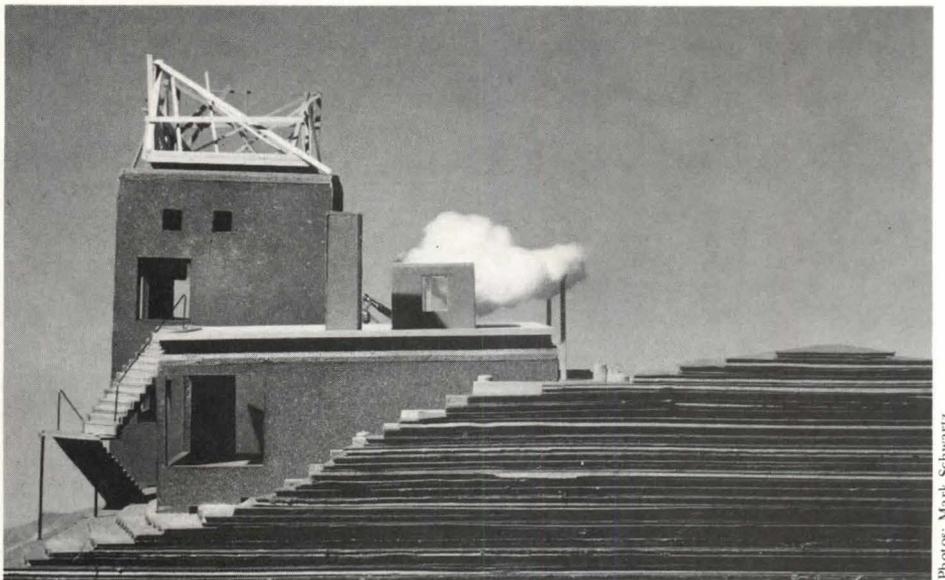
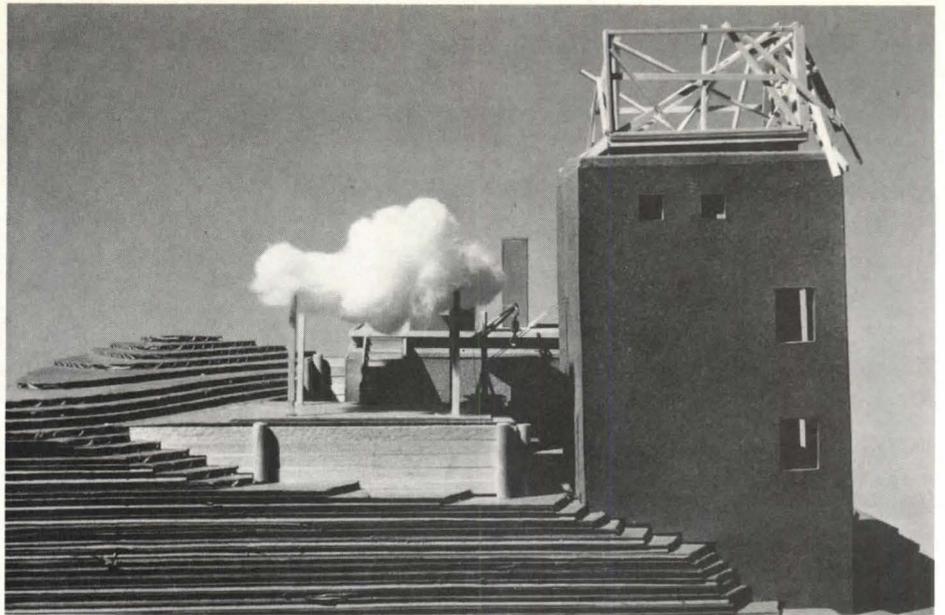
This development is considerably higher and denser than the surrounding urban fabric. Gehry is attempting to produce a feeling of transparency with chain link and exposed structure on the parking garage elevation and with the skylit pedestrian spines. If he succeeds in breaking up the mass of the development into objects in an urban landscape, he may succeed in producing the first Los Angeles shopping mall that does not turn its back on the city. However, with the whole complex still under construction, this is impossible to predict.

At Santa Monica Place and the Loyola Law School, Gehry is trying to apply some of his recent ideas to buildings in dense urban locations. Again, forced perspective, the dispersion of architectural volumes, and transparency are exploited to draw pedestrians into these schemes as well as to create a strong impression from passing cars. These projects encourage personal involvement with the architecture, their strong central plans acting as an occasion for chance encounter, their informal appearance encouraging interaction.

In order to accept Frank Gehry's architecture, it is necessary to be sympathetic to the philosophy that "turning people on to architecture," making them aware of it through devices which jolt the senses, is an important goal in itself. Gehry believes that architecture is meant to delight and that the unexpected or ordinary can be beautiful.

Often Gehry's ordinary means of achieving delight appears to be ironic, and it is perhaps this aspect of his work that makes it difficult to accept. Some people will never see exposed studs, chain-link fencing, or corrugated iron as architectural materials, and will never see beyond the materials to the manner in which they are being employed.

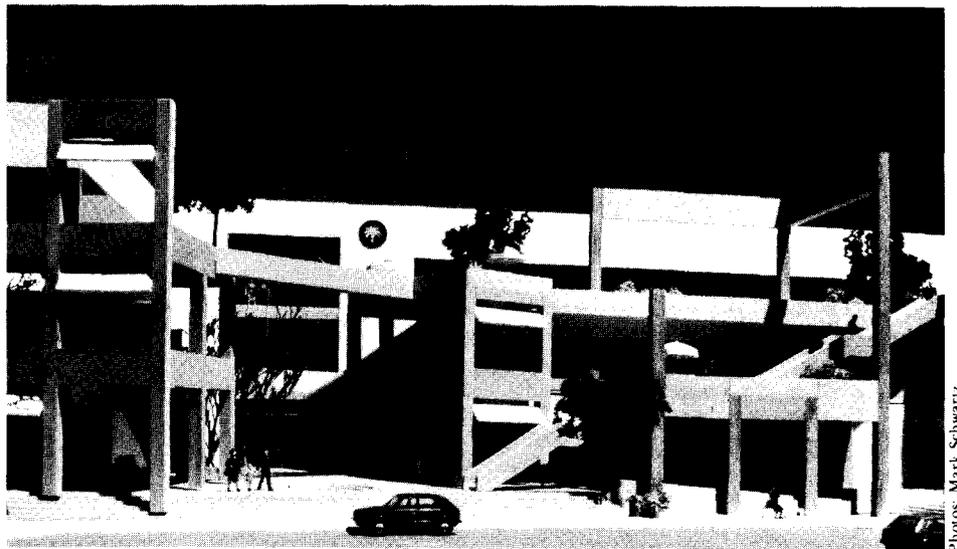
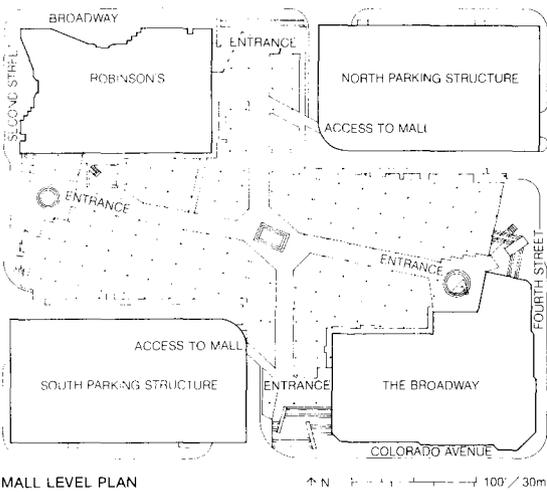
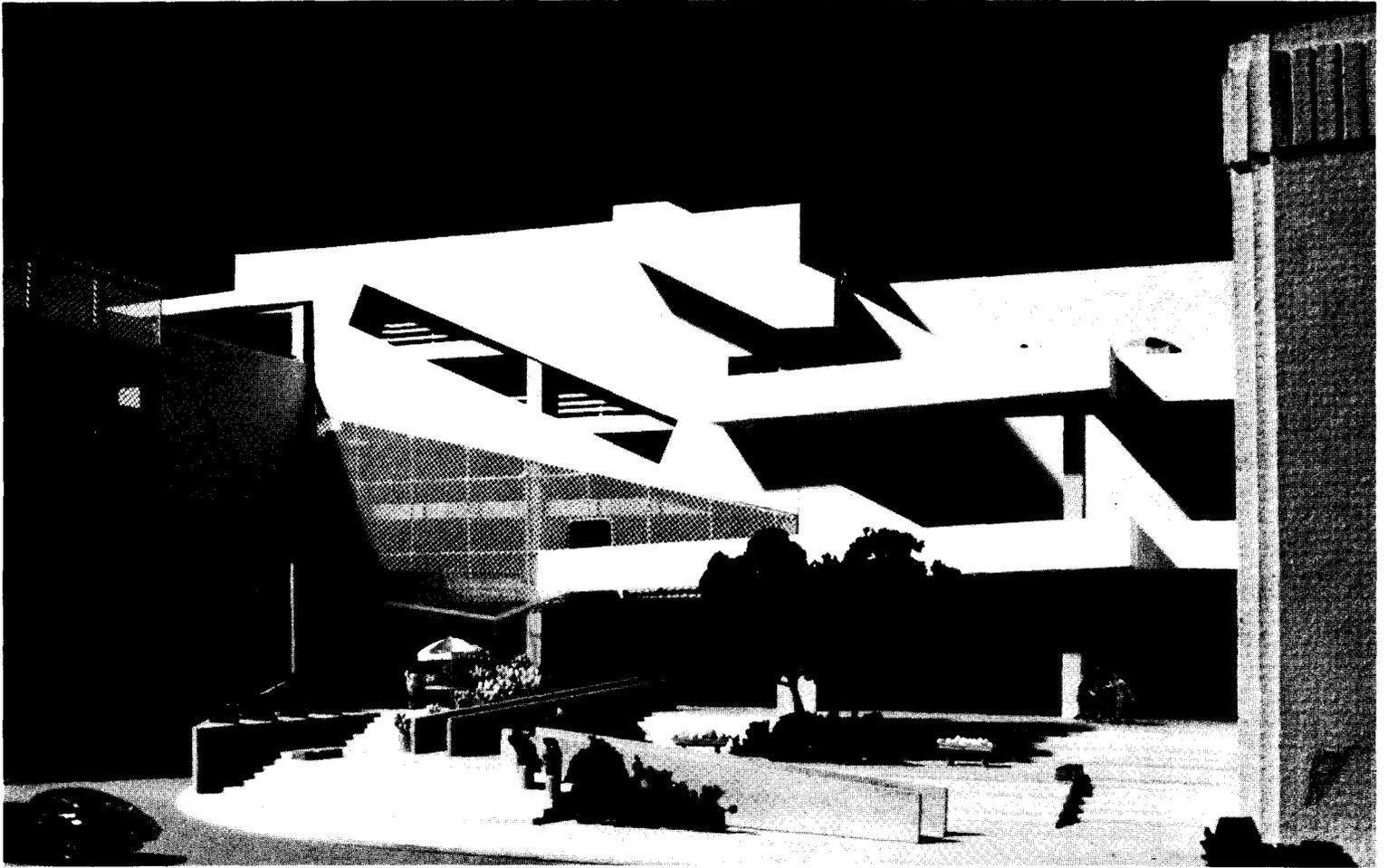
It is true that Frank Gehry is playing with



Model of Benson House, Los Angeles, 1980 (top and middle). House formed of two separate components, for sleeping and living, expressed as distinct buildings on the site. The lower one contains living/kitchen; the tower is a self-contained bedroom.

The Arts Park project, 1978, San Fernando Valley, planned to be built in stages, will include an armature of a sequence of bridges and decks linking open-air sheds, studios, classrooms, 2500-seat theater. Lawrence Halprin executed site design, landscaping.

Photos: Mark Schwartz



architecture, that he enjoys doing it and makes no apologies about the fun he is having. At the same time, he is completely serious about the artistic evolution of his work and is in control of the end results.

Frank Gehry's work is an expression of a well thought out personal philosophy applied to the art of architecture; and being so personal, it could not and probably should not be emulated by others. It is a regional architecture, appropriate to its time and place. By recognizing its importance as such, we are marking a turning point in our attitudes towards the goals of architecture.

[Barbara Goldstein]



Santa Monica Place in Santa Monica is a multilevel urban shopping center comprising new three-level Broadway and Robinson department stores (not designed by Gehry). Gehry & Associates are building two garages for 2000 cars and three-level skylit galleria with malls linking to center court.

Office of Frank Gehry & Associates is in loftlike space of warehouse; sculpture by Larry Bell.

Art on Melrose

Gemini G.E.L., Los Angeles

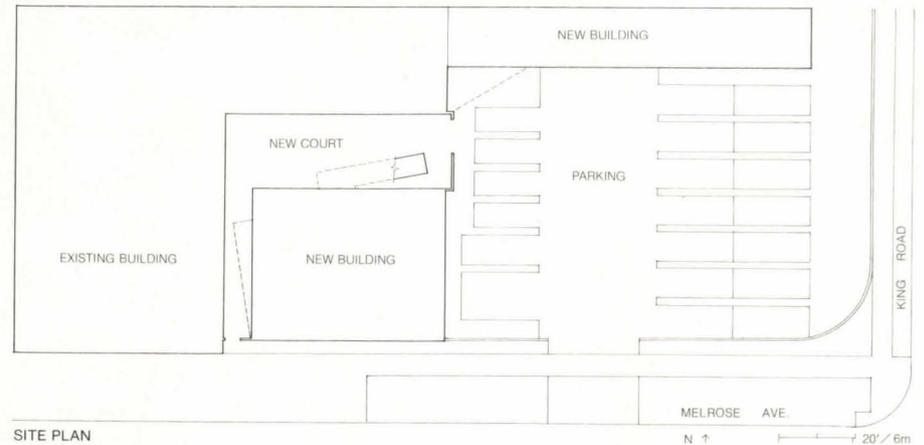
Without any obvious fanfare, an existing facility for producing quality prints gets second looks for additions and connections.

Given Frank Gehry's view of himself as an artist, it is fitting that a number of his commissions have direct connections to the world of art. Gemini G.E.L., one of the nation's most prominent names in the field of fine arts graphics, was the client for this expansion of existing Los Angeles facilities. The combination of site—a flat corner lot in a commercial area along Melrose Avenue—and a straightforward program resulted in a quiet front façade treatment. A few clues to the discerning might hint that architecture, not just building, was going on here.

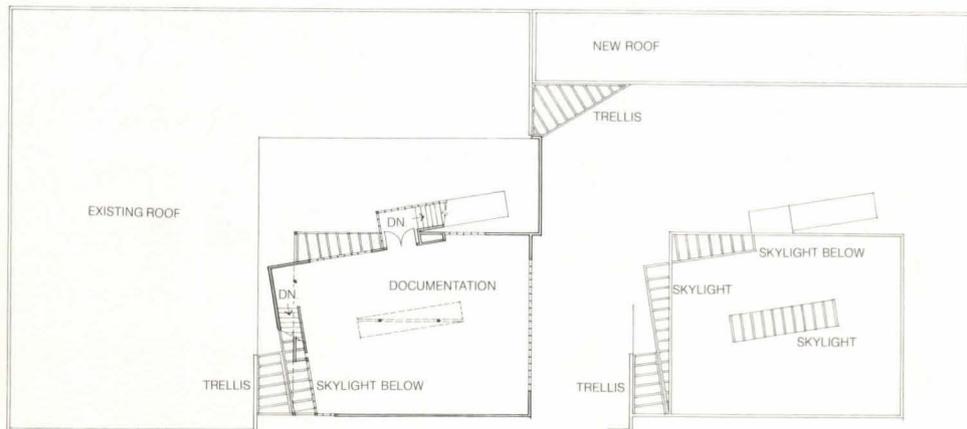
As mentioned in the introduction to this profile, forced perspective is one of Gehry's favored elements. The western approach to the site includes a bend in Kings Road approaching the straight eastern path of Melrose. The upper cornice line on the existing Gemini G.E.L. building has been pitched down, away from the west edge; on an otherwise flat plane, the result is a visual bending. Then, between that existing mass and the new two-story addition east of it, another junction that announces an event. It is a link between the existing building in gray and the new in white; that much is clear from the street. It turns out to include a stair up to the second-floor exhibition and documentation space, and a path through the open court behind the new building.

But the stair doesn't obey orthogonal rules; it starts out inside the new building, but on a heading toward the old. A skylighted portion of it pulls free, cutting across the open passage, its exposed wood joists carrying through the orthogonal new "wall" plane into the interior space beyond. Juxtapositions of raw plywood, exposed joists and studs, inside and outside, give the sense of casual chaos and, as in much small-scale Gehry work, of not being finished. However, the details and handling of materials confirm that the design is under control.

Stopping short of either the existing wall or the implied back plane of the new one, the maverick stair turns in to the two-story building—a right angle, still askew. As it cuts across on its way to forming an outer back stair, the upper wall forms the upper edge of an irregular skylight in the studio below. The second stair in turn breaks loose, angling into the court below, covered for a certain distance until the covering surface is "torn" away, and studs and joists continue.

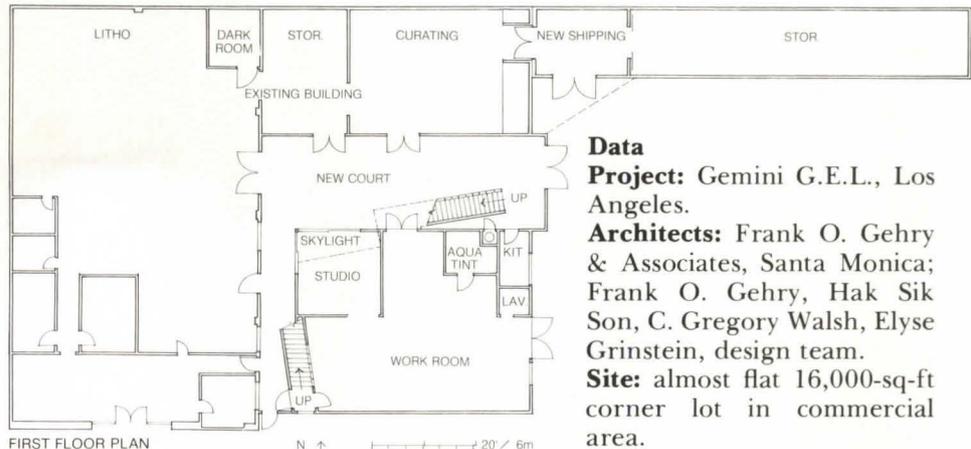


SITE PLAN



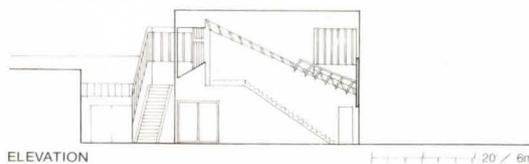
SECOND FLOOR PLAN

ROOF PLAN



FIRST FLOOR PLAN

N ↑ 20' / 6m



ELEVATION

20' / 6m

Aside from the simple addition of about 1000 sq ft of storage vault space, the interiors of the new two-story building are the major elements within the shell. Again, exposed studs, joists, and plywood are combined with painted gypsum board to shape casual, functional, pleasant work areas. With the unmistakable mark of Frank Gehry and his associates. [Jim Murphy]

Data

Project: Gemini G.E.L., Los Angeles.

Architects: Frank O. Gehry & Associates, Santa Monica; Frank O. Gehry, Hak Sik Son, C. Gregory Walsh, Elyse Grinstein, design team.

Site: almost flat 16,000-sq-ft corner lot in commercial area.

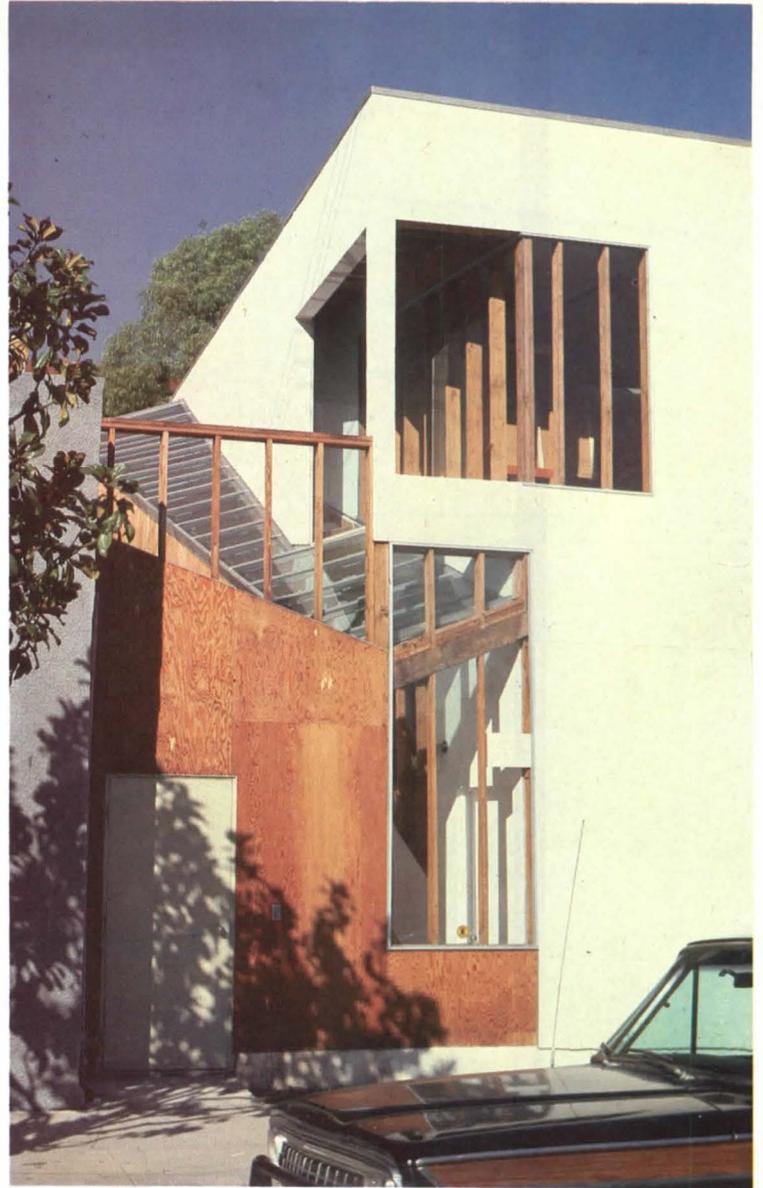
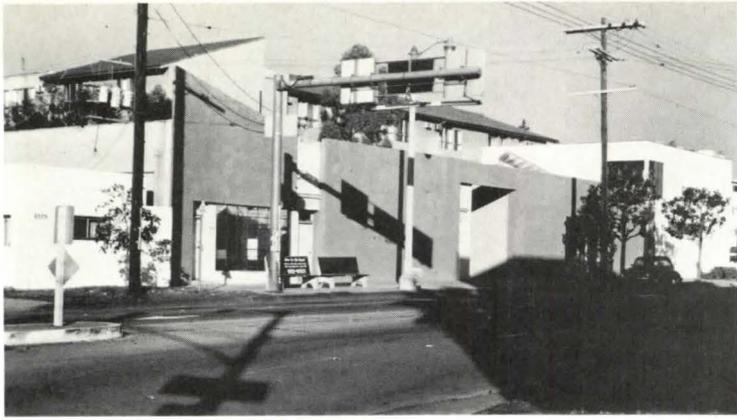
Program: add about 5000 sq ft to include studio/workroom space, storage, exhibition and documentation spaces.

Structural system: concrete foundation, wood frame and concrete block walls, wood and reinforced concrete slab roof.

Mechanical system: gas-fired furnace, rooftop heating/cooling unit.

Major materials: exterior, stucco and plywood; interior, gypsum board (painted) walls, exposed wood frame.

Consultants: structural,



Johnson & Nielsen Associates; mechanical, Donald F. Dickerson Associates; electrical, Athans Enterprises, Inc.

General contractor: The JSF Co.

Costs: \$233,387; \$51/sq ft, including sitework, interior finishes and furnishings.

Photography: Tim Street-Porter except top left, center right, Dan Zimbaldi.

From the street (top left), a quiet façade splits between existing and new (top right). Angled stair (center right) leads to second-floor gallery (right). In the courtyard, a second skewed stair begins as a framed platform left of skylight (above).



Spaces in between

Cabrillo Marine Museum, Wilmington, Ca

In designing this museum, Gehry and team pulled different programmatic elements apart, then wrapped them in chain link.

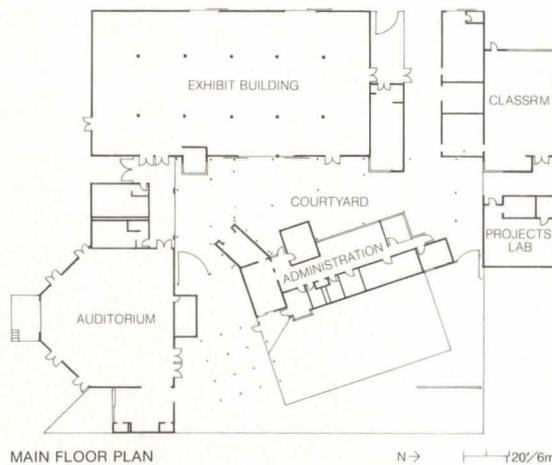
One important issue Frank Gehry has been tackling over the last few years is highly appropriate to Southern California. Gehry is interested in exploring the relationship between outside and inside space, incorporating outdoor spaces into his buildings, and in creating a transition between the two. Recently he has been “exploding” his buildings, breaking them into several discrete volumes and tying these together with chain-link structures, arcades, or other purely visual devices. By working with the spaces *in between* buildings he is, in a sense, constructing a model of urban space inside his buildings.

At the Cabrillo Marine Museum in Wilmington, not far from Los Angeles, Frank Gehry & Associates were presented with a program calling for 20,000 sq ft of diverse elements, including an auditorium, offices, classroom/laboratory space, and exhibition areas.

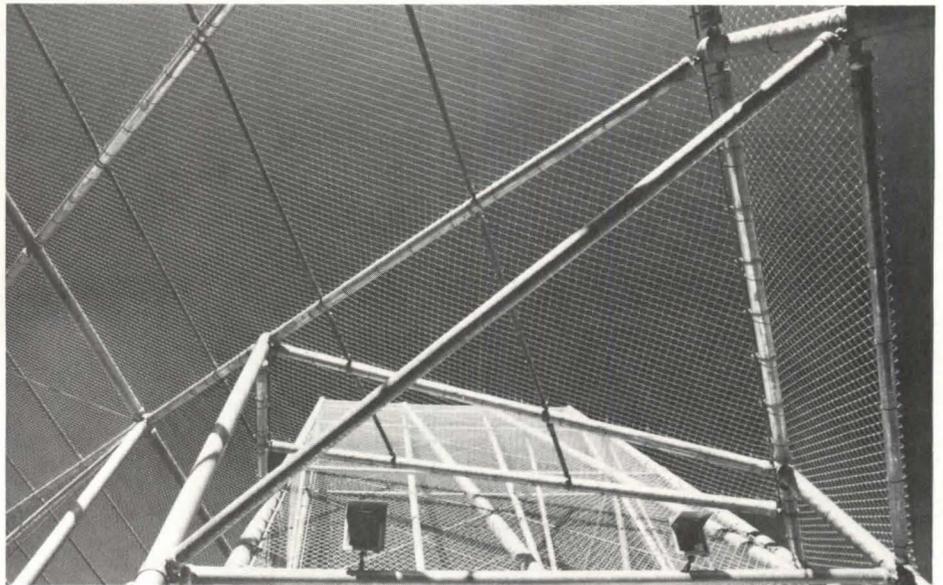
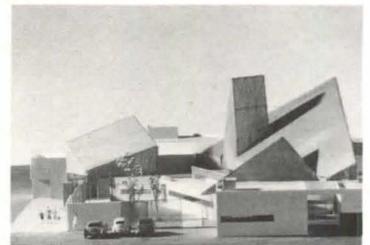
The architects convinced the museum that, rather than have all functions placed under one roof, they should be split into separate buildings, using circulation space in between for open-air exhibitions. This scheme would create a separation between public and private elements of the building, while allowing visitors to move around viewing workshops and laboratories in action. The separation of functions would give the museum a processional sequence appropriate to its educational functions. The variety of indoor and outdoor spaces would also allow Frank Gehry another opportunity to arrange “objects in the landscape.”

The Marine Museum, begun as a small collection of marine specimens in 1934, is an educational and research facility run by the City of Los Angeles Department of Parks and Recreation. Currently housed in a renovated Spanish-style bathhouse, it serves the public with exhibitions, audio-visual programs, and tours. The museum is largely geared toward tours of school children, led by a dedicated army of museum volunteers; their interest in the place was one indication of its need to increase both the research and exhibition potential with the new space.

Working together, the clients and architects devised a scheme that would allow the public to participate in the exhibitions and observe the workings of an aquarium and re-

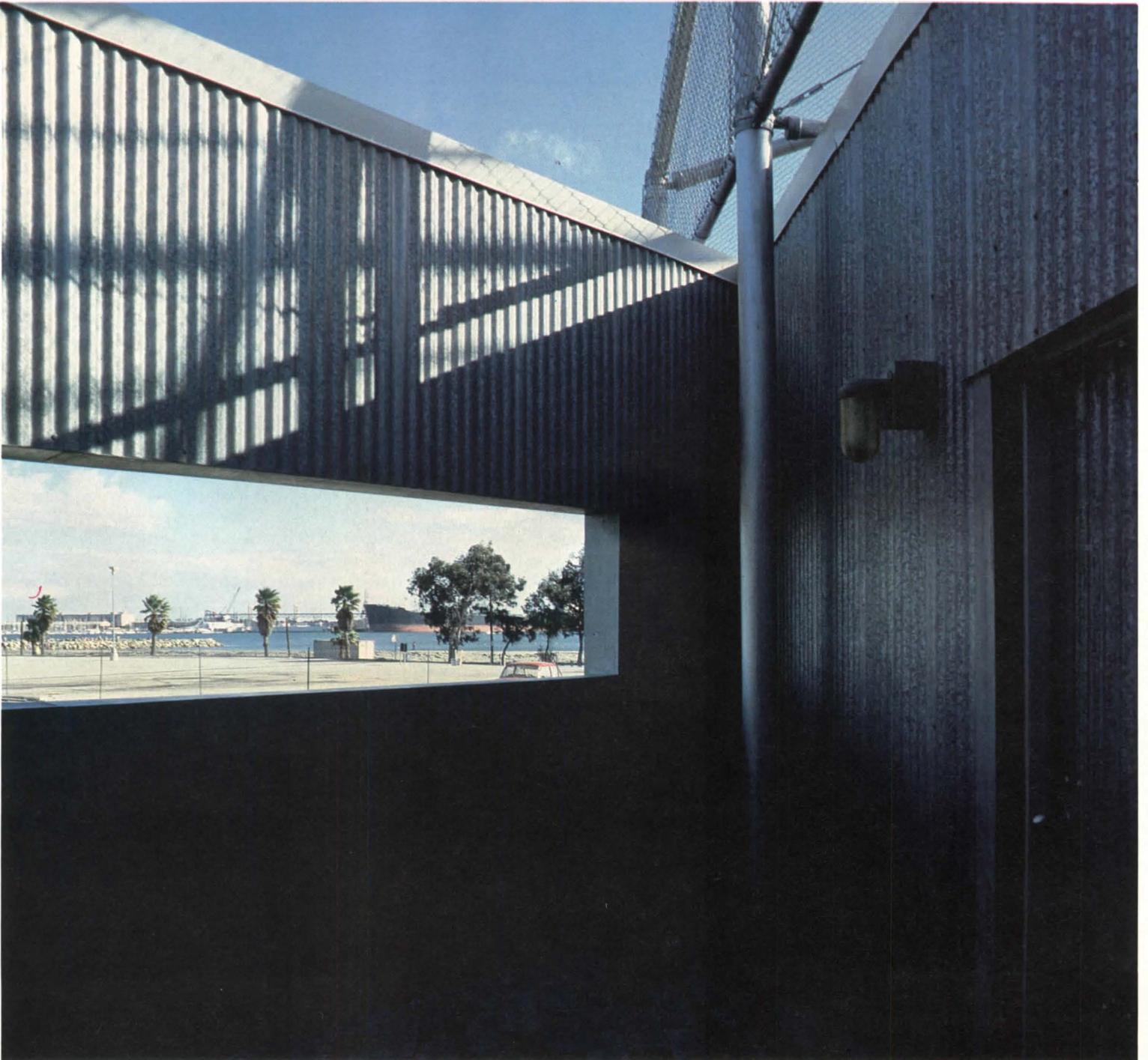


Different materials for separate programs are shown in the administration building (photo, bottom), which is wrapped in mirror glass, and in the chain-link type of pergola for outdoor spaces (middle).





Front entrance (right); center court between exhibit hall and administration (above), private patio (bottom) adjoining office.



Cabrillo Marine Museum

search laboratory. The buildings are grouped around an irregular-shaped courtyard, where visitors can view most of the museum's facilities. The courtyard space will be used for outdoor display, with some of the exhibition material being hung from the chain-link superstructure.

The museum is nestled into a cut in the hill which leads up from San Pedro Harbor, a busy commercial port. Approached from the hill, the chain-link structure is the only visible sign of the building, and it resembles the cranes and nautical equipment dotted around the harbor. From the parking lot, the cluster of shedlike buildings and chain-link superstructures evoke images of dockyards. Although the museum describes itself as resembling a "fishing village" in atmosphere, it is more like a dry dock. Settled hard against the edge of the hill, its series of industrial-looking volumes appear to belong.

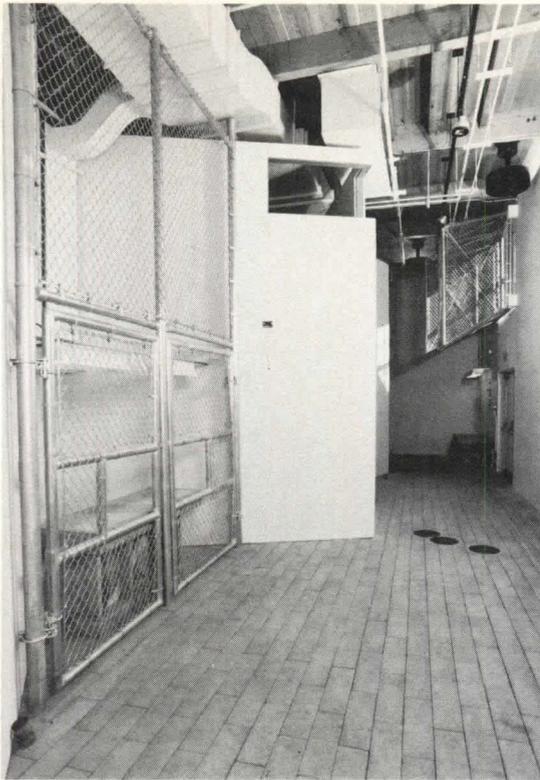
Architectonic cues

Gehry has arranged the volumes of the building so that visitors follow a planned sequence of events, reinforced by strong, three-dimensional visual cues. At the entrance to the building, a pinched and directional court is faced on two sides with corrugated iron, contrasting with the white stucco façade of the administration wing. The gray color of the metal skin and the angles at which the buildings are set deepen the perspective at the entrance, drawing visitors into the central outdoor exhibition space. A cutout canopy marks the entrance to the auditorium building, and an arcade along the edge of this building leads to the exhibition area. All of these devices are actually traditional ones for bringing people into a building, but are handled here in a fresh manner.

Gehry articulates the functions of different buildings by the choice of materials as is obvious on the exterior of the exhibition hall. The white stucco wall of this building is broken in two places by protruding corrugated iron and glass boxes to accommodate the ticket booth and an aquarist's lab. These protrusions give the building more visual variety and intimate scale than it would have had with everything under one roof.

The exhibition area is a landscape in itself, and it includes two different display routes: a short central route leads through a circuitous dark green tunnel containing top-lit aquariums of various sizes. Because of the color and winding nature of this tunnel, one will have the sensation of swimming under water. Around the periphery of the exhibition area is the longer route.

Not only are the different functions in the building given identity by the choice of materials, but the sequence of indoor and outdoor spaces in the museum is beautifully modulated by the special elements. A trellis of pipes bridging the classroom and exhibit building, and the classroom and project lab, creates the *impression* of an archway. These pipes, which seem at first to be a purely for-



mal device for dropping the scale of the passageways, actually carry the seawater used in these spaces.

Reinforcing the image

The central courtyard is villagelike in quality and in scale. The buildings protrude into the space at different angles, clad in different ways, as if on the street of a fishing village. Here Gehry also used materials to direct the visitor's footsteps. At the more private end of the central courtyard, a director's office is stepped back and clad in mirror glass. This device breaks up the density of this corner and pushes people back toward the main entrance to allow the offices some privacy.

Aside from any practical use of chain link for exhibition purposes, the evocative qualities of that material seem extremely appropriate in this situation and context. The museum is primarily used by children, and everything about it feels like a playground, from the exhibitions to the overall structure. Gehry originally wanted to pave the ground with asphalt (overruled), which would have enhanced the image of schoolyard.

The overall structure is equally evocative of the harbor and the miles of industry, oil wells, and power generators that surround the industrial landscape of San Pedro.

In a sense, Cabrillo Marine Museum is one of the most appropriate buildings Gehry has designed. It is a museum where the primary intention is to get people interested in their own environment. By involving visitors in the building itself, presenting it as a playground and a place to explore, Gehry is achieving both his own goals and the goals of the client. [Barbara Goldstein]

Around the periphery of the exhibition area there are larger demonstration tanks locked behind chain-link gates (photo, left) which can be opened by the tour guides.

Data

Project: Cabrillo Marine Museum, Wilmington, Ca.

Architects: Frank O. Gehry & Associates.

Design team: Frank O. Gehry, C. Gregory Walsh, John Claggett, Rene Ilustre, Frederick Usher.

Client: City of Los Angeles Department of Recreation and Parks; Joel Breitbart, Allen Habicht, city officials; Suzanne Lawrenz-Miller and John Olguin, codirectors.

Site: flat asphalt lot used for beach parking near public beach on curving coastline.

Program: total sq ft: 34,000; exhibit area 7800 sq ft; auditorium and multipurpose rooms, 4400 sq ft; administration, 2700 sq ft; classrooms and aquarists' labs, 4200 sq ft; court spaces 14,000 sq ft; maintenance, 900 sq ft.

Structural system: steel columns and beams, plus wood columns and laminated wood beams.

Major materials: stucco, galvanized steel panels, steel mesh, frames and posts, concrete pavers, asphalt (exterior); painted gypsum board, wood beams, plywood and tongue-and-groove sheathing, concrete pavers, concrete slab, carpet, V.A.T. (See Building materials, p. 140.)

Mechanical system: closed seawater system for aquariums using below-grade seawater storage tanks; a/c forced air system; individual gas-fired units on roof serve separate portions of building complex.

Consultants: Kurily & Szymanski, structural; Donald F. Dickerson Associates, mechanical; Athans Enterprises, electrical.

General contractor: Tutor-Saliba.

Costs: \$2,510,000 including exhibit.

Photography: Gordon Sommers, model shots, p. 78; Dan Zimbaldi, remaining.

Out of the rage for order

Frank Gehry house

In the house Frank Gehry renovated for himself and his family he experiments with comments on architecture and art.

The outrageous appearance of this house (see cover) will probably prompt two questions from many readers: 1) Why would an architect do this to a house? 2) Why would a magazine publish it?

Because the house's exterior and interior violate so many conventions pertaining to domestic architecture, it will strike many—and understandably so—as being self-consciously avant-garde. The employment of materials such as chain-link fencing, plywood, and aluminum siding summons painful remembrances of the built environment the profession has *not* been able to control—such as the commercial strip and light industrial buildings. The manipulation of this debris into sculptural abstracted forms akin to conceptual art of the last several decades signals aspirations to a “higher” cultural plateau of activity. The collision of this carefully ramshackle construction with the

weathered shell of a 1920s salmon-pink shingle-sided house introduces a recognition that architectural forces are still involved in the interaction.

The daringness of the act makes sense because of the engagement it sets up between observer and the observed: in the search for order in the disorientation, one is struck with the poetic qualities inherent in the parts and pieces that make up the new and old environment. The engagement reveals no intensively constructed theory about the generation of form. The design remains a “one-off” exercise, one that helps us see specific features differently, but not a totality.

Architect's intentions

Gehry's work often reveals a split between the “straight” stuff he executes for developers and institutional clients and his exploratory design, exemplified by this project, for private clients. With this house renovated for himself, his wife Berta, and two children, Gehry “purposefully overdid” the design. He wanted to get a lot out of his system, he concedes, as well as experiment with certain formal ideas. Gehry's interest in art goes back some way (see preceding pages and P/A, Sept. 1978, p. 74). When he talks about

The interior of the two-story house with a gambrel roof has been gutted in a manner of speaking. The main floor has been made an open living room with one wall of white gypsum board, another of wood studs, another of plywood, and interior windows overlooking the kitchen addition. Spaces are subdivided into intimately scaled areas. Wall at rear faces backyard.



Frank Gehry house

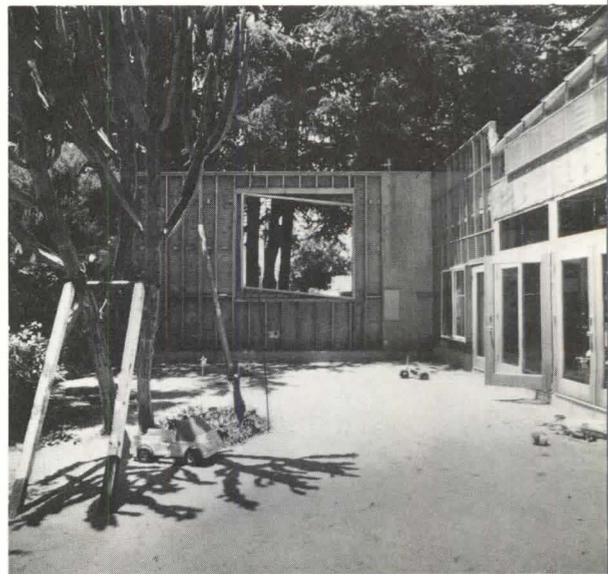
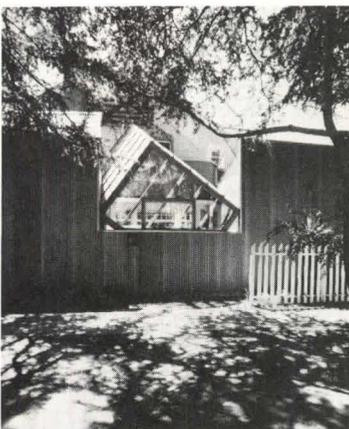
searching for a vocabulary of forms, artists like Rauschenberg and Jasper Johns enter into the conversation. In describing a mood or light quality, the paintings of Magritte, van Ruisdael, and Vuillard are frequently cited.

The corner site in Santa Monica is small—50' x 100'. Gehry took the 2100-sq-ft house and expanded it by 800 sq ft plus 680 sq ft of deck, wrapping the older house with the new, tougher-than-nails jagged carapace of aluminum siding, glass, chain-link fence, and plywood.

By building the house out to the allowable setback lines, Gehry claims to be "contextual," although many would argue that contextualism involves more than conforming to building lot patterns. Then by extending the northwest wall beyond the actual volume of the house, he created a private backyard. The screen wall, deliberately designed to look like a stage flat and very deliberately propped up by wood poles, calls attention to the "back lot" character of the yard. The openings in the wall distort and shift perspective while dramatizing the views glimpsed as one looks from out or in. Even the placement of the trees, in conjunction with the askew angles, makes the ensemble recall a film set that might have been concocted for a German Expressionist western. *Dr. Caligari Rides Again*.

The interior of the house has been handled with a slightly different sense of drama. After gazing upon the exterior, one is ready for the German war-torn apartments in Rainer Fassbinder's film, "Marriage of Maria Braun": holes gouged out of peeling plaster walls, doors hanging by one hinge, the roof caving in, and so on. Gehry does not go quite that far. But definite allusions to these effects are introduced. In a *de-construction* type of gesture, Gehry has stripped the original old house down to the basic elements from which it is formed—studs, joists, beams, and rafters. Other dramatic effects rivet the attention: rotated cubelike skylights, oddly angled windows, and planes manipulated in cockeyed perspective. All elements allow light to shoot in, refracted and/or direct by day, reflected from other parts of the house by night. Some architectural fragments are left intact but stripped of their normal surround—for example, old windows remain embedded in stud walls to advance in a figure-ground relationship; others are embedded in new walls in unexpected locations.

When Gehry discovered that diagonal bracing in the old house repeated the pattern of the bracing of the skylights, he decided to go ahead and take the exposed frame theme even farther. His cacophony of visual effects makes use of repetition, reverberation, and resonance. The internal consistency established between various parts and pieces is continually followed through: A chain-link infill section in the roof gable corresponds to a stud infill wall and a plaster infill wall, all in sequence in the gable configuration. Other recurrences abound.



The front entrance (top); rear of house with new exterior wall (middle); side of house (above, left); rear court (above, right).



Client satisfaction

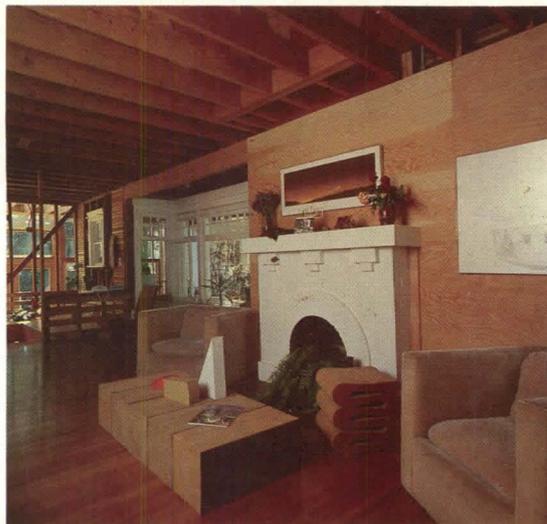
Frank and Berta Gehry report the house to be quite livable. The architect Gehry suggests that they spent too much money on the renovation, and he contemplates selling it every day or so. Berta Gehry originally found the rather ordinary, slightly shabby house, but was attracted immediately to it because of its scale and character. Since the architect Gehry wanted a challenge, Berta the client willingly allowed the old house to be stripped, then swathed in tin clothes. She was even willing to have a driveway—one that did not exist—serve as the kitchen and dining room floor. Gehry wondered if he were going too far with the ambiguities established between inside and outside here, especially with his decision



Kitchen (top) is flanked by breakfast room (left), dining (right).

Frank Gehry house

Existing fireplace was left embedded in new plywood background of living room and surrounded by Gehry-designed furniture. Upstairs in master bedroom, fireplace is again left in place, attic removed, and construction exposed.



to pave the floor in never spic-and-span asphalt. But it can be easily cleaned with a hose. The new addition level, three feet below the main floor of the old house, promotes a strong contrast between the old and new shells. The outside north wall of the old house now becomes the inside wall of the kitchen-dining addition—another startling transposition.

When asked if there were anything he would design differently now, Gehry replies, "There is simply too much going on." Perhaps he is thinking of the upstairs passageway on which chain link has been laid over the wood beams for a truly unusual peripatetic experience. In terms of function, however, he claims the house works well on every level except one: the acoustical. Acoustically the house is one large room, he complains—a problem with a young baby. One room in the old house was left intact for the maid. Gehry has noticed that the maids (there have been several) tend to lock themselves in that room when not pressed into service.

Outside observations

With angles, planes, and shapes skewed and going awry, with collapsed and colliding elements creating dissonance and discontinuity, the result is surprising. Parts and pieces begin to take on clarity outside and definitely project a sense of order inside. Gehry stripped the interior of the old house down to the basic components, but carefully filled in sections here and there with slats and gypsum board so that a sense of careful balance permeates both old and new sections. Admittedly the artiness of it all is insistent. However, the general expectation would be that the interior would truly resemble a construction site. The almost-but-not-quite twist comes as an agreeable shock.

The old house retains its identity as "architecture" inside, in contradistinction to the outer physiognomy. The living room and bedrooms in the old house form distinct places that are even "cozy." The most dramatic space is the kitchen-dining area, where natural illumination, old architectural elements, and new forms converge in a functional and symbolic interaction.

The new areas inside adhere to architectural rules and vocabularies: the added wing of the kitchen and dining rooms is as ordered and defined a space as any traditional hall. The spaces in the rest of the house are delineated as discrete entities, again like traditional rooms. The artistically affiliated elements that dominate the exterior are perceived from within only as fragments, usually in apertures.

The most interesting exploration involves the stripping of the old house. This "rebuilding" process yields the richness of communication latent in the prosaic building blocks of architectural form. The simplicity of this speech is embellished through the introduction of other, more architecturally evolved elements. Thus the old windows and doorways become quite compelling, especially so when windows offer views to rooms beyond

with a surreally voyeuristic aura. All elements become objects on display, in a sophisticated museumlike installation.

From the exterior, however, the planar and cubical accretions of aluminum siding, chain link, and wood framing communicate something else. They maintain an abiding allegiance to modern art because of the deployment of planes and angles in abstracted relationships. The handling of the design elements wrapping the exterior bears few traces of "traditional" architecture. That is expected. The Gehry addition also rejects *modernist* architecture and its principles of clarity of structure function and economy of materials, embodied in the gridded plan and column-and-beam frame. In fact, the addition points up just how "traditional" modern architecture was when compared with modern art. Like modern art, the addition does toss out the right angle—at least on the outside.

Nevertheless, the architecturally based tension posed by the emergence of the pink house from the jagged shell leaves us expecting more. One would assume that the new shell should offset the older structure: that we would see and appreciate more about each idiom by the contrast. No reciprocal relationship becomes established; one part does not transform the other.

These statements have to be directed to the outside, particularly the north and east corner façades. The rear elevation facing the court invokes the imagery of California Case Study houses of the 1950s, with its modernist use of tidily rectilinear wood planking and large glazed areas. The fourth exterior wall, not easily visible, hasn't been given "the treatment" to the same degree.

The combination of a system of elements that belong distinctly to art and one that belongs to architecture creates the basic split—and consequent malaise. As a mixed-media work, the melding of forms creates neither a work of art nor a work of architecture, and thus becomes contrived. But there is more than mixing modes that suggests why something is weird. By appropriating modern art's abstracted relationships and nonobjective qualities for a habitable dwelling, Gehry violates the basic premise of modern art, that it be about art and its own process. He is making modern art *functional* and he is making it social. It adds to the surprise when the "functioning" interior is experienced, but the outside wrapping appears applied for effect.

Modernist architecture may have appropriated the forms of modern art, but the architects of the 1920s onward insisted on transforming the vocabulary of de Stijl, Constructivism, and Suprematism to fit a social program—albeit not always successfully. Their goals of creating a better society through "good" modern design and technology provided the basis for the formal exploration of the architecture. The architectural principles derived from the integration—principles like open plan, expressed structure, and so on, gave it coherence, conceptually and physically.

Without acknowledging the difference be-

tween uses put to the vocabularies of art and architecture, we are left with an amalgam of art parts and architecture parts. It creates an interesting experiment but only begins to gel inside.

As P/A has previously noted (Aug. 1976, p. 37), house designs are interesting architectural problems 1) when they provide laboratories for experimenting with ideas, 2) when they form postulations of architectural theory, and 3) when they can be read as a complete microcosm of an architect's work at a particular period in his development. Laboratory, emblem, or microcosm, each aspect is important to the creation of architecture. Only the first has been really attained in this house. Yet as an experiment it was worth while: As Gehry put it, there is a lot going on. [Suzanne Stephens]

Data

Project: Frank O. Gehry House, Santa Monica, Ca.

Architect: Frank O. Gehry & Associates, Santa Monica, Ca.
Design team: Frank Gehry and Paul Lubowicki.

Site: a corner lot 50' x 100' in a settled suburban section of Los Angeles.

Program: expand a 2100-sq-ft house with an 800-sq-ft addition, plus 680-sq-ft deck.

Structural system: wood frame construction; concrete foundations.

Major materials: wood, plywood, aluminum siding, glass, asphalt, gypsum board.

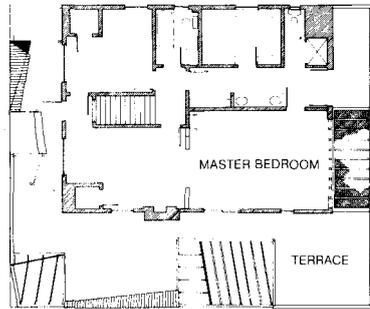
Mechanical system: gas-fired heater located in second-floor loft.

Consultants: Johnson & Nielsen, structural.

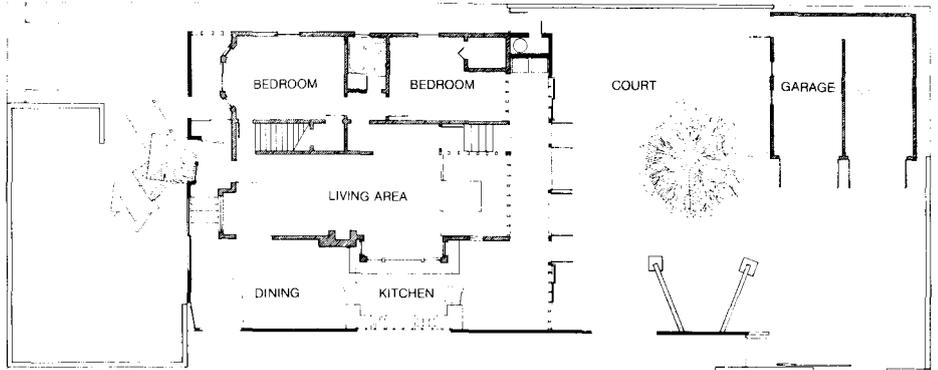
General contractor: J.S.F. Construction, Co.

Costs: \$70,000 new construction, site work, landscaping, interior finishes.

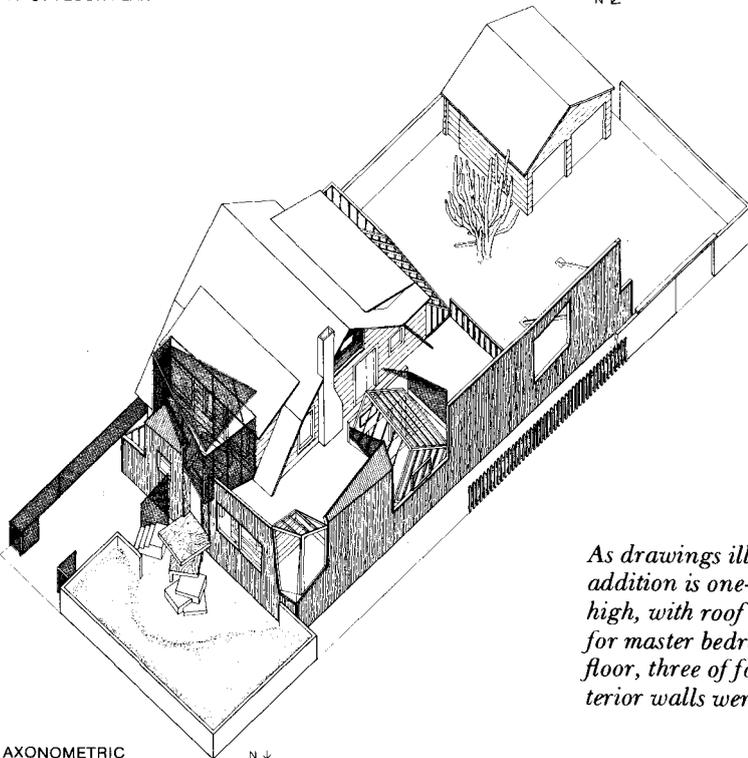
Photography: Tim Street-Porter.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



AXONOMETRIC

As drawings illustrate, the new addition is one-and-a-half stories high, with roof made into deck for master bedroom. On main floor, three of four original exterior walls were left.

The Dutch Casbahs

New architecture in Holland

Jennifer Taylor

The "Casbah" theme first appeared in Modern architecture in the 1940s, and since the 1950s it has provided the inspiration for a new type of building in the Netherlands.

The Casbah theme makes its mark on the pages of the Modern movement of architecture in Le Corbusier's 1942 Master Plan for Algiers (1). Its maze of streets is simply shown on plan as a hatched grid with clearly defined edges, but its essential character is captured in the few ink lines of the accompanying small sketches. Its density, intimate scale, and the diversity within a basic uniformity are noted and recorded. The Casbah as a spontaneous urban living quarter, charged with interesting smells, sights, and happenings, has provided a metaphorical reference point for progressive planning concepts in the Netherlands since the 1950s. At the crucial formulative period surrounding the CIAM Otterlo meeting in 1959, the Dutch journal *Forum* provided the critical mouthpiece for its editors, who included J.B. Bakema, Aldo van Eyck, and Herman Hertzberger. In 1959 it published an article entitled "Towards an Organized Casbah,"¹ which included a student housing project by Piet Blom, a pupil of van Eyck's. In 1961 van Eyck's "The Aesthetics of Number, Multiplicity and the Casbah Idea,"² appeared. The same theme recurs consistently in related guises in van Eyck's later writings. Terms such as "significant ambiguity" and "labyrinthian clarity" extend the evoked image of a multifaceted social and physical urban structure. Today, Piet Blom's Casbah at Hengelo (p. 88) is, as the architect expresses it, "occupied" but not "completed."

Structuralism

The expediency demanded by the pressing problems of this century too often has given rise to the production of a universal environment that suppresses the individual in the collective. This is particularly evident in the area of housing—the one situation where the expression of idiosyncracies, preferences, and needs must be readily accommodated. Recognition of the problem is widespread, and architectural responses range over a broad spectrum. In the Netherlands, some recent architecture demonstrates a marked concern with *this dilemma* and proposes ways in which the environment can be structured to create an integral order and at the same

time encourage initiative.

The architects pursuing this direction have been grouped under the heading of "Structuralists"—a term that could be misleading if construed in a limited architectural context. But as applied to their work, structuralism refers to "the form of the real structure of cohabitation in all its subtleties."³ It is perhaps the recurrent use of the term "Casbah," however, that provides the best key to the fundamental, almost primitive ideology that underlies Dutch Structuralist work.

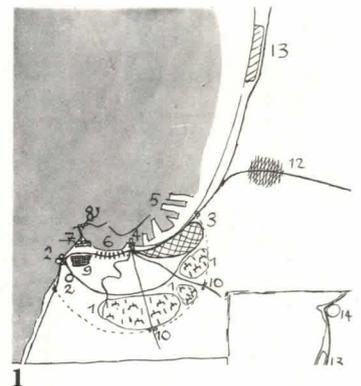
Dutch Structuralism implies a social and spatial revolution. It represents an attitude and suggests a means. In both respects it seeks an organization that will increase freedom. It is concerned with providing the minimal ordering of the environment to suggest an adaptation for living. While it proposes a signification of place and occasion in small elements, it opposes specific indication of use.

The Structuralists' line of thought is the outcome of many factors. It arises from the political and architectural tradition of the country, the world-wide reassessment of the functional emphasis in Modern architecture, and the particular problems of alienation within the welfare state of Holland.

The Dutch heritage

The contribution of this small country to the Modern movement has been remarkably significant. Architecture to "serve" the new community has been a constant theme, from the pioneering work of H.P. Berlage (2) at the end of the 19th Century to the current work. Despite the varied architectural expressions, it underlies the purity of de Stijl, the exuberance of the Dutch Expressionists, and the moral doctrines and restrained architecture of the postwar years. "Participation" is not a new concept. It is of interest to note Le Corbusier's comment following his visit to the Brinkman and van der Vlugt 1928 van Nelle Factory⁴ in Rotterdam (3). "Personal participation in every stage of the human endeavour. . . . The Managers, the highest and lowest grades, the workers, male and female, all eat together in the great room which has transparent walls opening onto endless views of meadows. . . . Participation. I can truly say that my visit to that factory was one of the most beautiful days of my life."⁵

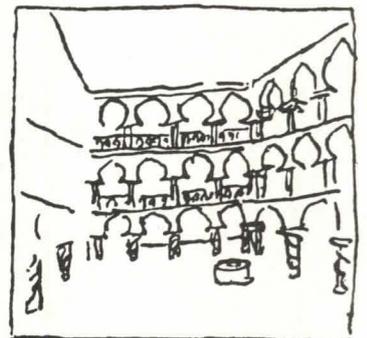
The Dutch have never suffered from megalomania, and there are few buildings in the country that would qualify as "monuments." Small scale in mass and detail, a high



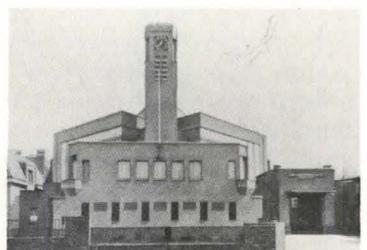
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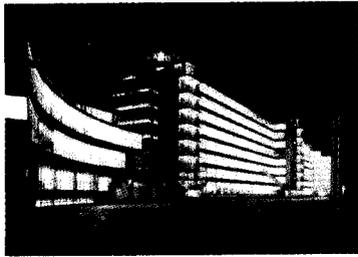


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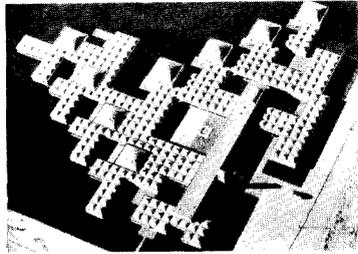


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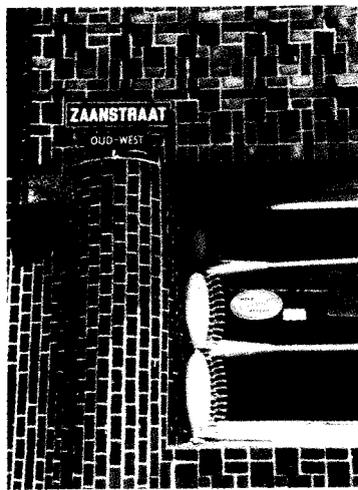
Author: Jennifer Taylor is Senior Lecturer in the School of Architecture, University of Sydney, Australia.



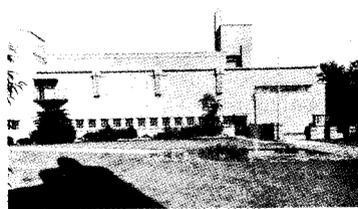
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1 LeCorbusier, master plan for Algiers, 1942. 1a, 1b accompanying sketches.

2 H.P. Berlage, Christian Science Church, The Hague, 1928.

3 J.A. Brinkman and L.C. van der Vlugt, Van Nelle Factory, Rotterdam, 1928.

4 Aldo van Eyck, Children's Home, model, Amsterdam, 1962.

5 M. de Klerk, Eigen Haard Housing, detail, Amsterdam, 1913-1919.

6 W.M. Dudok, School, Hilversum, 1921.

level of craft, and compact, enclosing, building disposition have characterized the work through the centuries. These persist today.

Redefinition of the urban problem

In view of these circumstances, it is not surprising that the CIAM finally splintered and was eventually dissolved after the 1959 meeting in Holland. At the Otterlo Conference, the old search for finite resolution was eroded by the argument that buildings and cities were dynamic, constantly evolving phenomena. The imposition of an idealized order on the untidiness wrought by change was seen as a superficial and even an artificial solution denoting a misunderstanding of the nature of the problem. The breakup of 1959 was not unheralded. At the congresses of Aix-en-Provence (1953) and Dubrovnik (1956), restlessness and impatience with the static notions of closed complete forms, particularly those determined by specific functional use, were evident. The accelerated rate of change in values, requirements, and available hardware was undeniable, and the ability of current solutions to accommodate the evolving needs without destroying themselves in the process was called into question.

A new flexible order was sought. The answers varied widely but the Smithsons' definition of "the cluster" expressed the generally held concepts: "The Cluster is a close-knit, complicated, often moving aggregation, but an aggregation with a distinct structure."⁶ Proposals for the new structuring of the environment emerged in two related yet distinct pattern groupings, one lineal, the other centralizing. The controlling contacts of the lineal system are the channels for circulation and services. A centralizing system is predominantly structured by space and mass around a conceptual vertical axis. The three-dimensional geometry of such an order opens up the possibilities of innumerable varieties with adaptations and subtractions within volumes. Louis Kahn's architecture shows many examples of this logic, while Herman Hertzberger's *Centraal Beheer Offices* (Apeldoorn, 1972, p. 93) provide a great spatial symphony on the theme. Dutch Structuralist architecture, generally, is consistent in its adherence to the strongly three-dimensional centralizing mode of organization.

The Otterlo meeting provided the major milestone for the change in architectural urban theory. While the extensive projects of such groups as Archigram and the Metabolists can be seen as stemming from this meeting, there was another aspect of the discussions that focused on the intimate experience of architecture. The need for an understanding of the basic nature of "place" and "occasion" was stressed, notably by Louis Kahn and van Eyck. Bakema presented his project for Kennemerland, and van Eyck discussed the early planning stages for his *Children's Home* (4) for Amsterdam (P/A, Sept. 1962, pp. 154-161). But Holland's most significant contribution came from the ability of van Eyck always to bring discussions back to the timeless needs fundamental to all men.

A problem of freedom

Following World War II, Holland's housing problem (which existed well before that time) escalated. By 1959, 700,000 postwar homes had been built, still leaving an official shortage at that time of about 125,000.⁷ The government mass-housing scheme, however, produced exactly what was intended—Mass Housing. The failings of this system are argued most forcefully in Nicholas Habraken's book *Supports—An Alternative to Mass Housing*: "Mass Housing demands in advance what a dwelling is before the occupier is in any way concerned"; "Man no longer houses himself: he is housed."⁸ Dutch administration is not unaware of this problem. To find new answers it sponsors experimental building projects that are not subject to its uniform regulations. These are for specially selected projects in designated areas—what Blom has called "reservations for wild architects." The tightly bound organization of building in Holland makes the recent achievements of designers such as Herman Hertzberger and Theo Bosh (with van Eyck since 1971) even more applaudable than they would otherwise be. The seemingly radical nature of some of the work, especially that of Blom, suggests a great urgency, a fear that each opportunity must be grasped to the full as another may not readily present itself.

The tools

Keen and sympathetic observation of human behavior provides the clues to an understanding of design for "place" and "occasion." "The architect . . . must look well and listen well, for the tools that matter to him are not his ruler and set of compasses, but above all his eyes and ears."⁹ In search of the commonality (his "timelessness") of man, van Eyck led the way towards primitive and past innocent societies "to rediscover the archaic principles of human nature."¹⁰ The vision of a simple relationship between man and his setting adds a nostalgic (but not escapist) note. The recounting of remembered observations occurs as a constant theme. Hertzberger writes as a poet of children playing in the gutter, and Blom recalls the rich and varied relationships that evolved around the commonly shared bathhouse of his youth in the Jordaan district of Amsterdam. The physical evidence of the concerns of their own past culture was close at hand: the sheltering enclosure of the old cities, the small scale of the brick paving of the streets, the protecting tiles of roofs, and the creation of intimate pockets of space. Lessons for the craft of handling building materials show clearly, particularly in the work of Jan Verhoeven (pp. 90-91), whose interest in detail has led to unconventional studies, such as the meticulous examination of the alignment and joinery of the timbers of Viking ships. The brick tradition kept alive in the exuberant details of van der May and de Klerk (5) and the simple massing of Dudok (6) demonstrates the possibilities of a recognizable human measure even in large structures. Similarly, the structural glass block of the 1920s appears again in recent work. A keen awareness of and respect for the herit-

New architecture in Holland

age of the modern buildings of Holland give a sense of continuity to the work. While there is no evident historicism, the debt to such designers as Oud, Brinkman, Rietveld, Duiker, and Dudok is fully acknowledged.

Geometry is the principal tool for instigation of the organization of design. It provides the framework for procedure and ultimately emerges in the structure of the building. The final form reflects this controlling device, sometimes in an evident but more commonly in a masked manner. One characteristic of this work is that while a model, plan, or aerial view shows a clear, repetitive pattern, in the experience of the buildings the order is often sensed rather than seen. The evident discipline must be viewed in the light of van Eyck's comment, "Order has no function, this side of evil, other than to make what is essentially chaotic work."¹¹

In response to the need for high densities within a cohesive organization, Nicholas Habraken proposed a system of support structures. "We must make constructions which are not in themselves dwellings or even buildings, but are capable of lifting buildings above the ground; constructions which contain individual dwellings as a bookcase contains books, which can be renewed and replaced separately."¹² While Habraken intentionally avoided a specific form for the support structure, Le Corbusier was less reluctant, as such a dynamic, open-ended system appears in his 1930 Project 'A' for Algiers (7). Habraken carries his proposal further by exploring the possibilities of mass production in the service of the individual houses. Individual choice is present, but it is restricted to selection of a niche in the provided structure and selection of a dwelling from the modular parts available from the manufacturer. A responsible yet restrictive proposal.

To what degree is individual freedom to be curtailed in the interest of the community? Accepting that overall control (or should we say guidance) is necessary, the next debatable point is as to how much physical structure should be provided. One extreme is to provide the minimum necessary structuring of the environment to allow the occupiers of the land to erect their own enclosures at will. "If someone built his small house and it calmly caves in on him—who cares? That's no national calamity; the man is simply stupid because he built carelessly."¹³ Self-built community developments are certainly not impossible, but while such liberty may be ideally desirable, even Blom cannot believe that the



8 resulting physical environment would be equally ideal.

The reality of the situation is that in his housing schemes for Hengelo and Helmond, Blom had to design all parts of the buildings down to their last detail. At the Casbah, Hengelo (8), the apartment units are elevated on a concrete platform to create what he calls "a roof over the communal spaces below." The platforms with their vast spanning lintels demark the ground level space in a way reminiscent of M. Brinkman's 1919 Spangen housing in Rotterdam (9). But unlike Spangen, with its strong surrounding wall of apartment blocks, the Casbah consists of small-scale, clearly defined units suggestive of the vernacular cottage. It appears as if a series of large hoists had elevated a ground-based housing group up into the air. In their elevated positions, Blom's apartments have the air of small-scale intimacy that Oud achieved in his housing schemes of the 1920s (10).

The density of the Casbah is high—100 houses to the hectare—and the elevation of the units has allowed for shops and parking to be accommodated below. Considerable open space remains to be filled in according to what the residents desire—"more parking, a pub, a brothel, what they will."¹⁴ The Hengelo scheme provides the units with small gardens, open shared gardens within the complex, and even a farm and pond without. Here Blom has attempted to revive the spirit of old housing sectors, "where the vicar lives over his church and the fireman over his great red monster."¹⁵ Forced economic restraints are met by the standardization and repetition of types.

The density of Helmond (11) is 143 houses to the hectare, and this is achieved without superimposing units on each other. Unlike the Casbah, which forms an island in a general housing area, the Helmond development is integral with the central activities of the town. Blom refers to these units as "tree houses" and to the scheme as "a wood." His phrase "Let's grow a town" best expresses his intent with this organically planned project.



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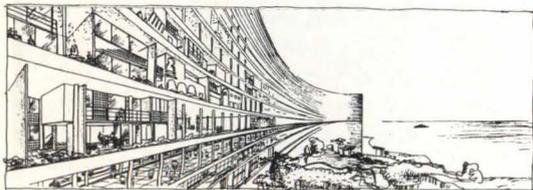
7 LeCorbusier, *Project A, Algiers, 1930.*

8 Piet Blom, *The Casbah, Hengelo. 8a interior courtyard. 8b view across "the farm."*

9 M. Brinkman, *Spangen Housing, interior courtyard, Rotterdam, 1919.*

10 J.J.P. Oud, *Het Witte Dorp Housing, Rotterdam, 1923.*

11 Piet Blom, *Housing, aerial perspective, Helmond. 11a prototype dwellings. 11b corner of living room.*



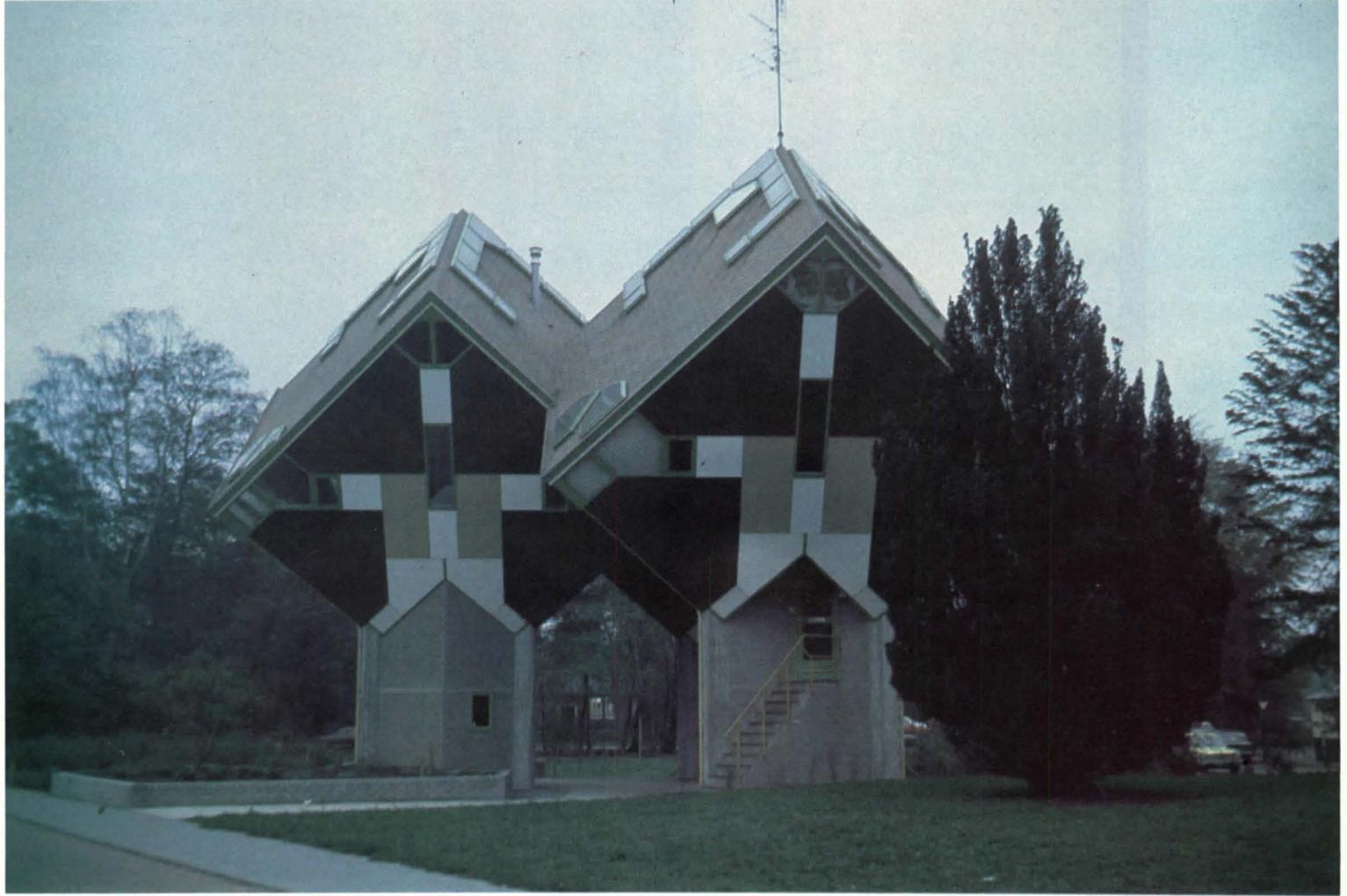
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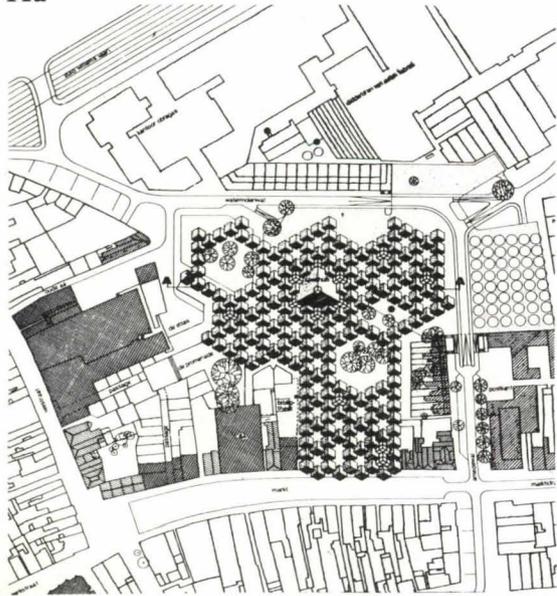
8a



8b



11a



11



11b

New architecture in Holland

The housing design consists of three horizontal layers. The lower level is for community use. There are no conventional streets. Under the dwelling level is an open pedestrian zone providing public access to the playhouse, to the nearby market, and the adjacent community hall (a renovated factory). Blom describes the envisaged space as like a vast cathedral with people living in the vaults. The upper zone of the Helmond housing opens to the sky. This is achieved by the top level of each unit having a transparent roof with adjustable openings and blinds. The central zone is for the general activities of home life; from this one can go down for increased contact with others or go up for increased seclusion in contact only with the sky.

While the freedom for man to determine his own habitat has not been achieved in the demanding forms of the Helmond housing, Blom has instigated a revolutionary concept for high density living. It presents a unique statement of his intensely romantic and personal vision of a structure to provide a rich and viable setting for community life.

Variation on a conventional theme

Jan Verhoeven's many housing schemes (12) demonstrate the potential of imaginative use of subtle variations on basic schemes. Verhoeven belongs to the age-old craft tradition. Material details in timber, brick, and concrete block are meticulously designed and crafted, and the derivation of form from traditional buildings imparts a recognizable, comfortable quality. The interior spatial interplay is far from traditional and rather akin to the work of Aalto. But it is Verhoeven's ability to weave closed and open spaces into a protected, yet integrated, continuum of intensive land use that sets his work apart. His designs, from the internal arrangement of individual structures to the overall pattern of multiunit developments, are guided by a subtle use of the rationality of geometry.

Radial space is a characteristic of Verhoeven's work. From a central climax the spaces fan out in regular variations. This gives rise to dynamic rather than passive space. The hexagonal school at Rozendaal (1973) provides a clear example of the spatial variation possible within the order of radial geometry. As can be seen in his various housing groups of Hoevelaken, the circular pat-



12a



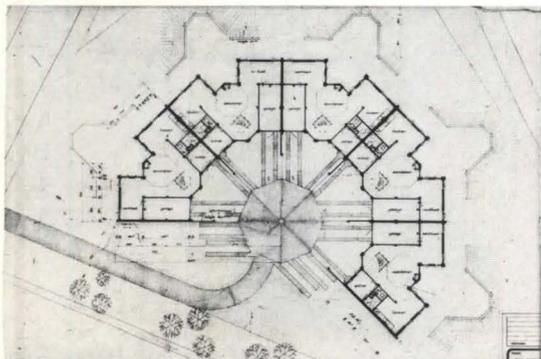
12c



12d



12e



12



12b



13



14

tern is extended into town planning, giving cohesion, yet relieving monotony.

Regeneration

The old towns of Holland provide lesson books in harmonious exercises of integration of old and new. Throughout the centuries, new façades as well as new buildings have been welded into the urban fabric without disruption of the consonance of the streetscape. A consciousness of the potentially disruptive nature (both social and physical) of contemporary design strongly conditions much recent work. The city as a total, vital entity was a recurrent theme in the *Forum* publications. The child in the city appears as a referral point to indicate the fundamental level of concern. "A city which overlooks the child's presence is a poor place. Its movement will be incomplete and oppressive. The child cannot rediscover the city unless the city rediscovers the child."¹⁶ In accord with this statement, over 650 play spaces on neglected urban pockets of land have been constructed following van Eyck's designs (13). Hertzberger pursues this theme even further: "Playgrounds are crutches—the city should be one big playground."¹⁷

Sympathetic building infill by van Eyck with Theo Bosch is demonstrated in the Zwolle housing (14) and the rejuvenation of Amsterdam's Jordaan district. In both cases it is evident the starting point for design lay in the nature of the existing townscape. The housing at Zwolle is integrated into the old, dense development of the inner city center. The housing rows, which wrap around a longitudinal pedestrian street, follow the curve of the old city walls and echo the height and forms of the existing pedimented roof profiles. The humane, intimate scale of the old is recaptured in this sympathetic essay of modern housing.

12 Jan Verhoeven, *Five Houses*, plan, Hoevelaken, 1977. 12a, 12b interior courtyard. 12c living room. 12d stair detail. 12e view from rear.

13 Aldo van Eyck, *playground on leftover site*, Amsterdam, 1954.

14, 14a Aldo van Eyck and Theo Bosch, *Inner City housing*, Zwolle.



14a

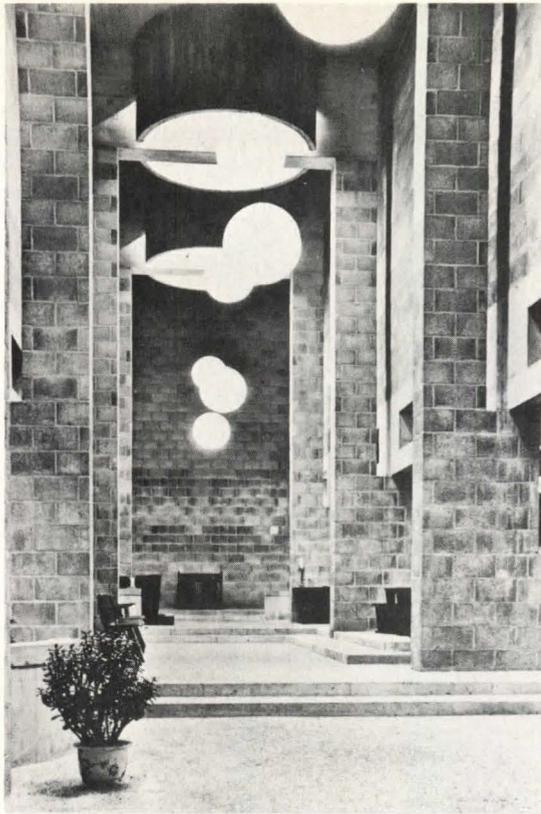
New architecture in Holland

Dutch Structuralist work is cellular in nature. Yet despite the repetitive use of what are often identical spatial units, the architecture is poetic rather than prosaic. From its very beginnings in van Eyck's Children's Home, the configuration of space has been subtly molded by the walls, the overhead plane, and the effects of these on the quality of light. Within the clearly differentiated infrastructure, space is compressed, released, contained, or liberated in multiple variations.

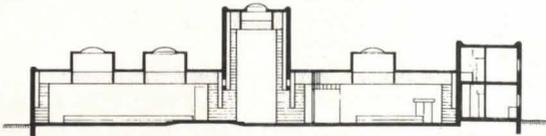
One of the simplest yet most eloquent expressions of this spatial poetry is to be found in van Eyck's Catholic Church in the Hague (15) (1968-70). Here, within solidly enclosing perimeter walls, the basic space blocks are regularly aligned to create a severe geometrical composition. The units are defined by the individual overhead translucent domes. The "nave-transept," clearly marked in height and breadth, subtly divides chapels and service areas from the body of the church. Its soaring longitudinal nature is counterbalanced by the sunken cryptlike sacred area. The three-dimensional subdivisions and articulation of the parts within the simple rectangular space of the building create a rare spatial harmony.

Hertzberger's *Centraal Beheer* Offices (16) (1972), built for an insurance company at Apeldoorn, has blocks of space piled up in much the same way a child would pile up building blocks. In places floors project as shelves to support the space blocks; in others they simply rest on each other. The resulting interior is both awesome and intimate. The great voids in the building emphasize the security and containment (however minimal) of the occupied office spaces. The structure of the building suggests division without actually providing it, and intimacy has been achieved through the varied personal use of the provided elemental forms. In what is ostensibly an office landscape design, there is no feeling of a vast expanse divided, but rather of walking from room to room. There is no chaos, as the strong forms of Hertzberger's building always remain in control.

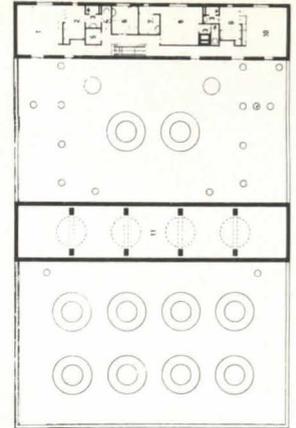
De Drie Hoven (17) (1974) in Amsterdam, also by Hertzberger, is a massive concrete-framed building for the invalid aged. Beyond its stark exterior, accommodation is provided for 550 residents. On entry, the somewhat foreboding presence is negated by the imaginative use of basic architectural elements and a masterly control of scale. Whereas at *Centraal Beheer* the space units as well as the structural members are repeated, at *De Drie Hoven*, the organization of space is free and independent of the structural frame. Walls and columns create pockets of areas richly varied in their offerings. The lighting is surprisingly low, particularly in the nursing-care section. Here, without the enclosure of their own walls, the patients' individual areas of occupancy are clearly defined by light. The occupants have so conditioned their own surrounds (even in a hospital ward) that one has the impression of walking past a row of houses with the front doors removed.



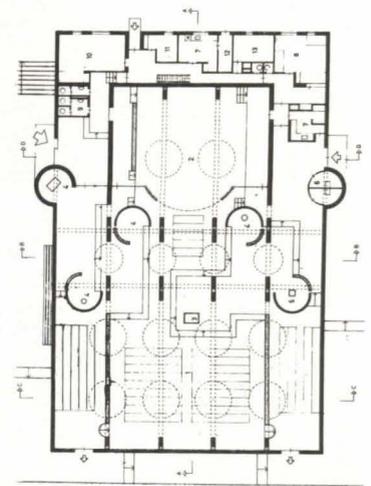
15



15c SECTION A



15b SECOND FLOOR



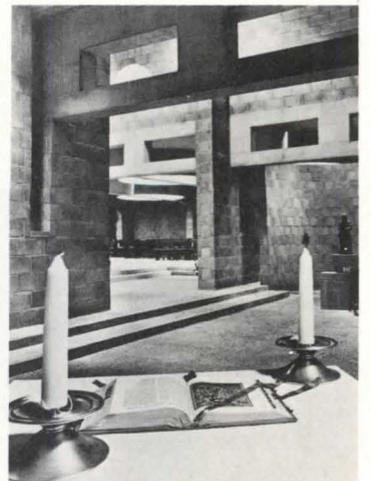
15a FIRST FLOOR



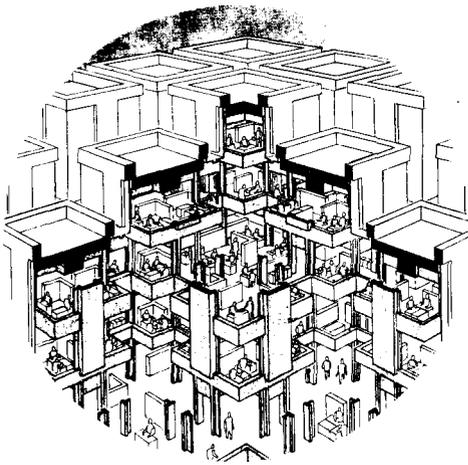
15d



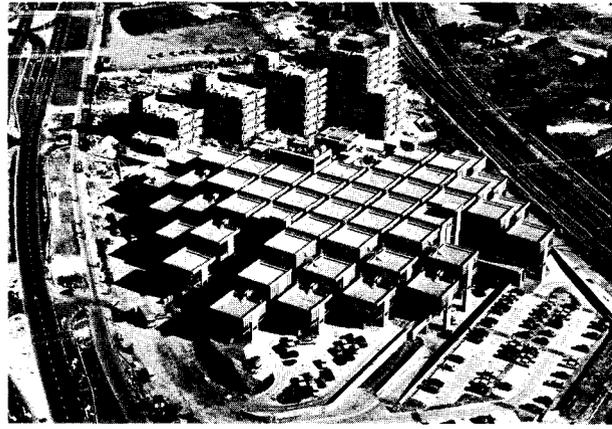
15e



15f



16



16a

15 Aldo van Eyck, *Catholic Church, The Hague, 1970*. 15a First Floor Plan. 15b Second Floor Plan. 15c Section A. 15d, 15f interiors. 15e exterior.

16 Herman Hertzberger, *Centraal Beheer Offices, interior isometric, Appeldoorn, 1972*. 16a aerial view. 16b interior.

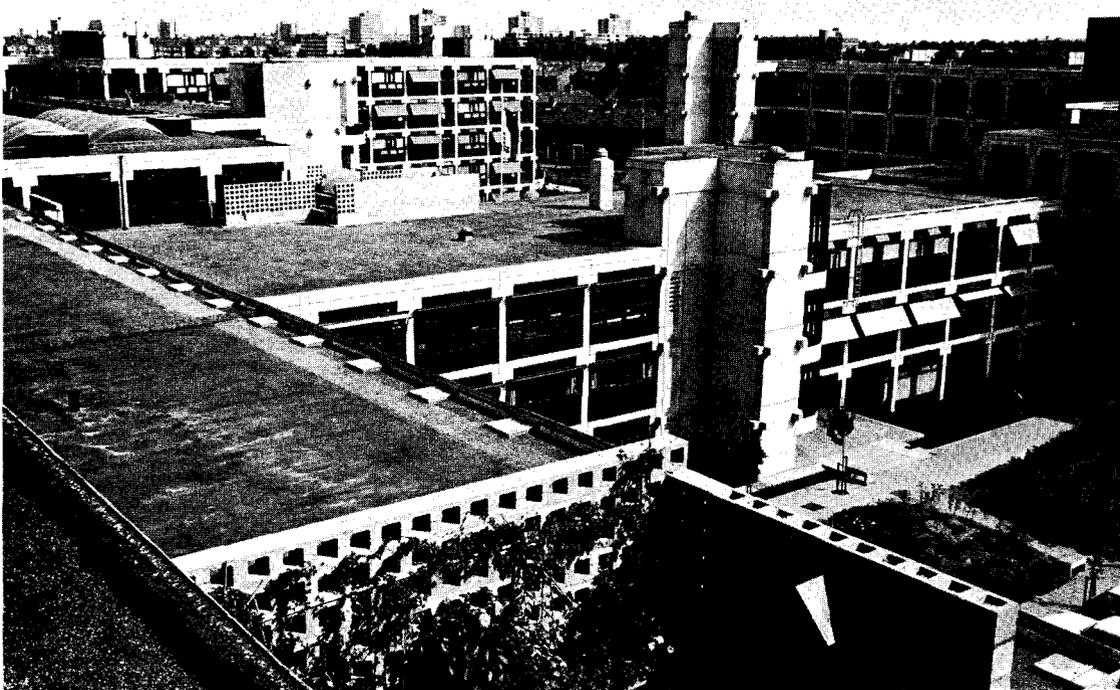
17 Herman Hertzberger, *De Drie Hoven, Amsterdam, 1974*. 17a, 17b interiors.



16b



17a



17



17b

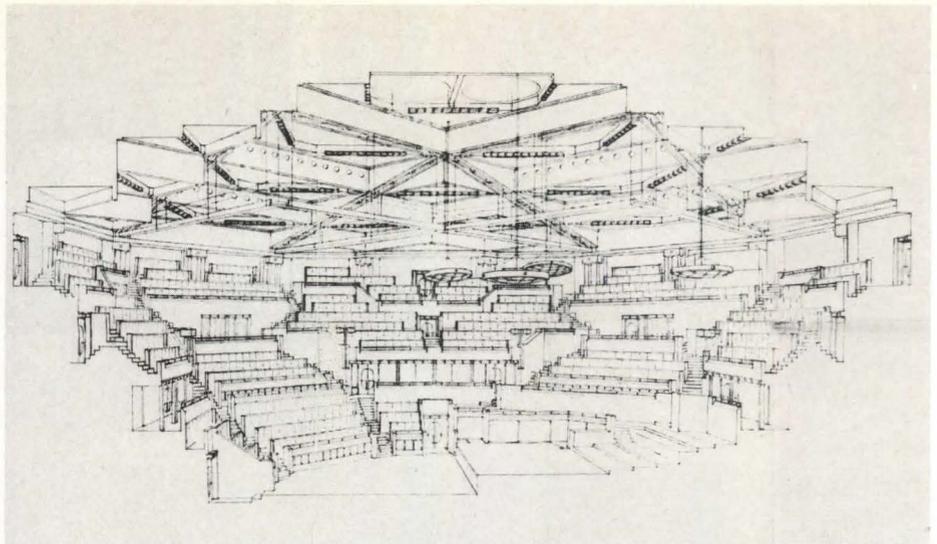
New architecture in Holland

The quality of Hertzberger's "womblike" spaces persists in his recent design for a concert hall for Utrecht (1979) (18). The problem here was how to enhance the shared experience of large numbers of people (including those in the orchestra) and at the same time maintain small group identity in the various sections. An initial scheme was based on the division of the hollow of the hall—even by columns: "The column is symbolic of the limits of freedom."¹⁸ The later development shows the creation of the large auditorium by the addition of many small, defined pockets. With this building, Hertzberger draws on the versatility of poured-in-place concrete—a reversion to the constructional process of his Amsterdam student housing (1959–66). The concert hall, defined by a cluster of small spaces, was conceived as a vehicle for freedom: "There is no choice in a situation that is completely open. Where there are no obstacles there can be no choice."¹⁹

T'Karegat (19) (1971–72) in Eindhoven by Frank van Klingeren is a Structuralist solution in the rhetoric of universal space. Here a series of pyramid-capped units was erected. The structural form and spatial division imply no specific use. These tentlike forms now house two schools, a library, a restaurant, a supermarket, and other community functions. The supporting posts suggest the possibilities of partitioning, which have been taken up in some areas. In others, they operate as mental spatial dividers that are not physically inhibiting. This is a fun fair version of the open, yet defined, spatial unit theme of van Eyck's Children's Home. The control of the interplay of complex spatial relationships is among the major triumphs of Dutch Structuralist architecture.

Form

Hertzberger's most innovative contribution lies in his use of "form as a catalyst for liberation."²⁰ His theory relies on two principal suppositions. First, that through inherited, sensed, and observed responses the designer can develop a sensitivity to, and become aware of, the shared attributes and needs of "man." Drawing upon this "collective memory," he can then predict and therefore design for the accommodation of such basic concerns. And second, that there exists "the fundamentally unchangeable and underlying reservoir of arch-forms."²¹ He postulates that recognition of these polyvalent forms and their use in architecture will stimulate the user to personal interpretation, and therefore use, in the way that best suits his needs. "Unlimited freedom may hold a great potential, but there is no spark to start the motor. Everyone needs an incentive, a helping hand, to motivate and stimulate him to fitting his environment to himself and making it his own. And so we have to confront him with something which will instigate interpretation."²²



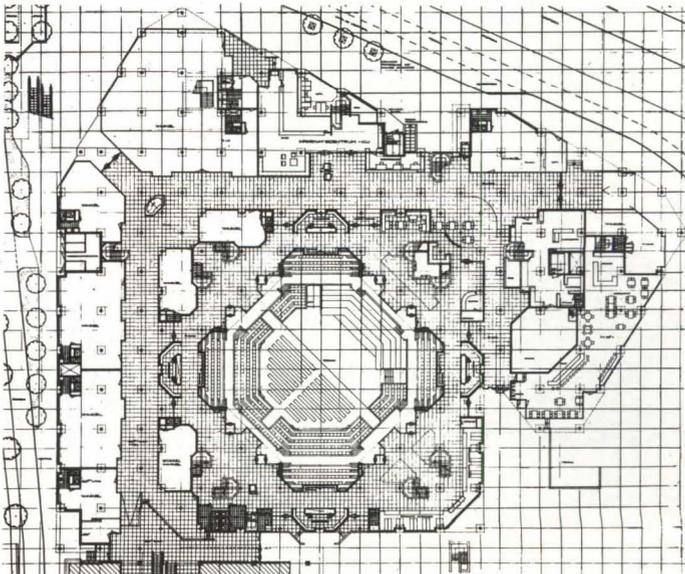
18



18a



18b



18c



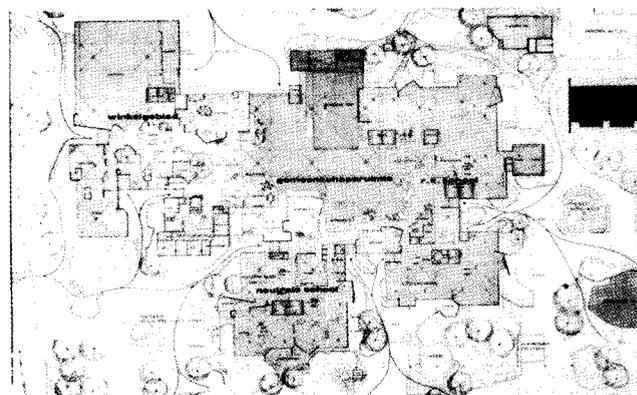
18 Herman Hertzberger, *Music Center, interior perspective, Utrecht, 1979. 18a exterior rendering. 18b exterior detail. 18c plan.*

19 F. van Klinger, *T'Karregat, interior, Eindhoven, 1972. 19a elevation. 19b plan. 19c interior.*

19



19a



19b



19c

New architecture in Holland

Hertzberger's overall forms of buildings, independent of size, are strong, not aggressive, but with a bulky, subdued blockiness reminiscent of Dudok's work. Within, they are suggestive of a labyrinthian cave, dull in color (usually exposed gray concrete block), restricted in natural light (sometimes almost gloom), and fractured by columns, spur walls, shelves, and sills. While the personalization of space is characteristic of the use of all of Hertzberger's buildings, the intentional use of catalytic elements is most clearly seen in the Montessori school (1966) and the "Daigoon" houses (1971) in Delft.

The Montessori School (20) is a low-key somber building transformed by its users. Here the neutral gray concrete block has been imaginatively used to create platforms, cavities, nooks, and crannies of inviting use. It abounds with forms (some rearrangeable such as the "pit" in the kindergarten) that demand attention and investigation. Its much publicized sand pit, with open water channels and hollow block dividing walls, is like a microcosm of a ruined city, and equally intriguing.

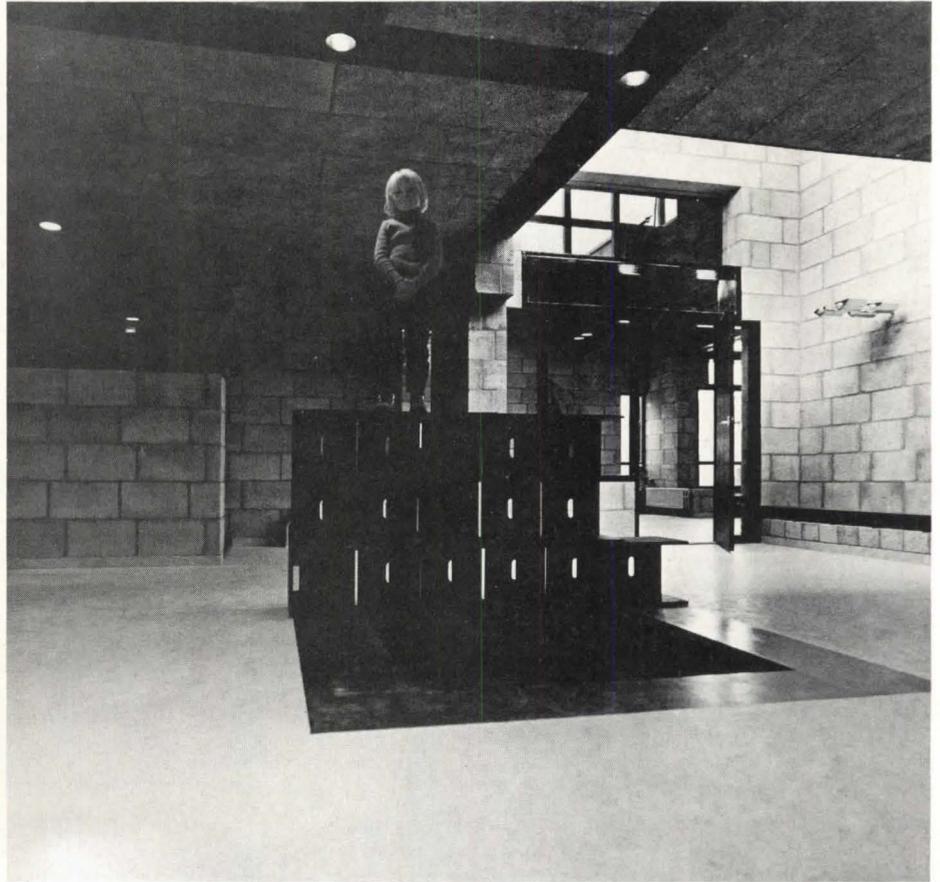
The experimental "Daigoon" houses (21) are more ambitious but demonstrate the same interest. The Delft houses encourage exterior as well as interior adaptation. Gray concrete block again is utilized as the background to personal whims and tastes. Unspecific, "suggestive" beginnings for use have led to changes by the occupants that give individual character to the houses. The inviting bar structures on the roof terraces and the single row of concrete blocks between gardens have been successful in their suggestion of use as "dividers." While some of Hertzberger's contentions may be highly debatable, in practice the success of his intentions supports their validity.

The Structuralists' aim

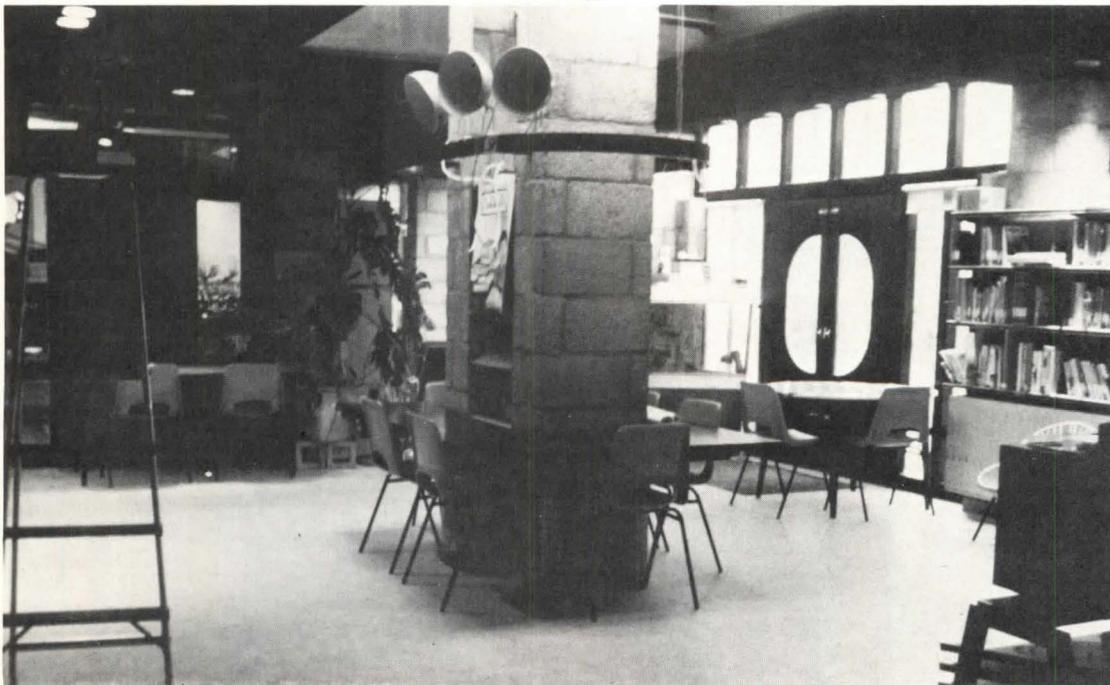
The major aim of Dutch Structuralist work appears to be to make people aware of their own potential for the creation of their own habitat. Answers as to how this can be achieved range from proposing the absence of form to the providing of strong catalytic form. The built solutions, despite size and often unconventional appearance, all are modest solutions retaining a comprehensible scale. Perhaps most significant are the evident attempts to, in van Eyck's words, make a "place" out of "space," and to accommodate the occasions of the intimate experience of architecture. □



20b



20



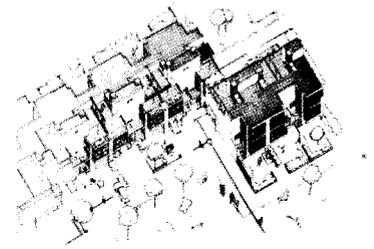
20a

20 Herman Hertzberger, Montessori School, interior, Delft, 1966. 20a interior. 20b sandpit.

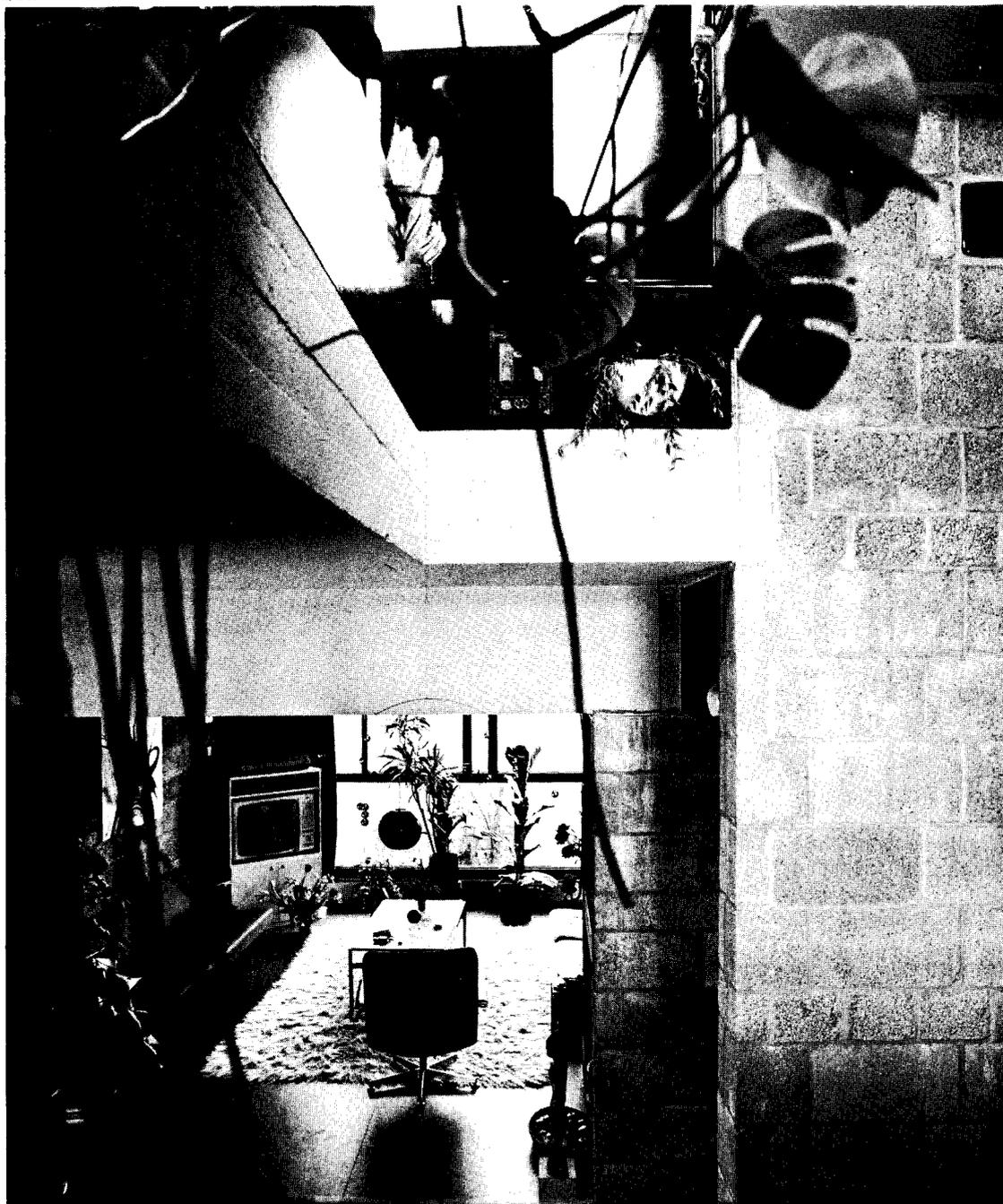
21 Herman Hertzberger, Daigoon Housing, interior, Delft, 1971. 21a exterior. 21b axonometric.



21a



21b



21

Footnotes

1. *Forum*, No. 7, 1959; 2. *Forum*, No. 4, 1961; 3. *Forum*, No. 1, 1960; 4. By J.A. Brinkman and L.C. van der Vlugt with the Constructivist, Mart Stam; 5. Le Corbusier, *The Radiant City*, New York, 1967, pp. 177-9 (First published in French, 1933); 6. A. & P. Smithson, "Cluster City, A New Shape for the Community," *Architectural Review*, November, 1957, p. 334; 7. Bouwcentrum, *Building in the Netherlands 1945-1959*, Bouwcentrum, Rotterdam, 1959; 8. N.J. Habraken, *Supports: An Alternative to Mass Housing*, The Architectural Press, London, 1972, p. 9 (Amsterdam, 1961); 9. Herman Hertzberger, "Architecture for People," *Architecture and Urbanism*, 77:03, p. 142; 10. Aldo van Eyck, CIAM Congress, Otterlo, 1959; 11. van Eyck, "Team 10 and 20," *L'Architecture Aujour'hui*, Jan./Feb. 1975, p. 18; 12. Habraken, *Supports*, p. 59; 13. "The Strange Views of Piet Blom," translated from *Bauwelt*, Vol. 65, No. 37, pp. 1217-1230, 7 October, 1974 (Abstracts from an interview given by Piet Blom to the Dutch journalist, Johan Phaff, in 1970. It appeared in *Delta*, Summer, 1973.); 14. *Ibid*; 15. *Ibid*; 16. van Eyck, *Team Ten Primer*, p. 53; 17. Hertzberger, Interview, 1976; 18. *Ibid*; 19. *Ibid*; 20. *Ibid*; 21. Hertzberger, *Forum*, No. 3, 1973; 22. *Ibid*.

Photo credits: 8a, 8b, 9, 10, 11a, 11b, 14, 14a, 15e, 16b, 19, 19c, 20a, 21a, Jennifer Taylor. 16, Aerophoto. 17a Willem Diepraam. 17b Wim J. van Heuvel. 20 Chris Tjisse. 21 Kurtz.

Black ribbons and lace

Banque Bruxelles Lambert, Milan, Italy

Entrance and reception.



Architects Ambasz and Piretti erected this three-story bank interior within part of an ornate fin-de-siècle grand residence, matching not its style but its opulence.

The situation occurs more and more frequently. There is a sumptuously ornamental structure from another age, either a gem in itself or exceptionally well located. It is bought or rented, sometimes even "saved" in the process, whereupon someone has to do something about making it useful. In the enthusiasm over a moral deed well done, aesthetic questions can be left dangling or, as often as not, polarized into a keep-the-faith-versus-wanton-pragmatism mock battle.

The Milan branch of Banque Bruxelles Lambert is one of the few projects to take on the proposition that not only can contemporary design ideas be introduced into buildings of earlier styles but that such an introduction must be made formally. Some relationship must exist between the two.

The older building in this case is a late 19th-Century grand residence across from the Castello Sforzesco in Milan. "It was decorated in styles ranging from High Renaissance on the ground floor," describes partner-in-charge Emilio Ambasz, "to a rococo hall of mirrors on the top level." Velvet covered the walls; a statue of a man climbing a tree with a lion hard upon him stood in the entrance. Italy's extensive historic design review restrictions froze the exterior as well as parts of the interior.

"My decision," says Ambasz, "was to leave the ornamental complex 'as found' but rigorously toned down. It is intended to be a background foil, a visual basso continuo, against which the installation is contrasted."

With the velvet and statue, for example, gone, the stage took on a more assured countenance, full of nostalgic fancy-dress pieces nobly arranged. From the installation, and with a very limited budget, Ambasz strove to elicit a presence that was both contrapuntal in style to its "landscape" and equal if not greater in impact. Each added object, though starkly simple in line, is made in some way more than itself.

The tools are color and light. For instance, the walls. "If you ask people what is the color of the bank," says Ambasz, "they say the walls are painted white but the air is lilac." With a gifted craftsman, a technique of wall painting was improvised to give the wall depth and the air a luxurious texture and solidity. Three coats of paint have been applied. The first is heliotrope, a color picked, among other reasons, for its flattery to skin. For the second coat, an air brush sprayed little vaporized clouds of white paint on the wall, in many layers to get it even. The nozzles of the air brush were refined for the third coat, which consisted of microscopic speckles of gray and brown. Combined with quartz lighting, the technique, says the architect, picks up the

heliotrope when it bounces off the wall but all the eye can see when it looks at the wall directly is a creamy shade of white.

Similar double effects were wrought from the painting of the moldings. For example, the deep crevices and planes facing the ceiling in some rooms were painted green while the remainder was painted creamy beige. Ambasz describes the result as a beige molding with a radiant aura around it. The carpet is composed of yarn bundles dyed light beige on top and lilac at the roots. The lamps have black shades but stems of bluish-black.

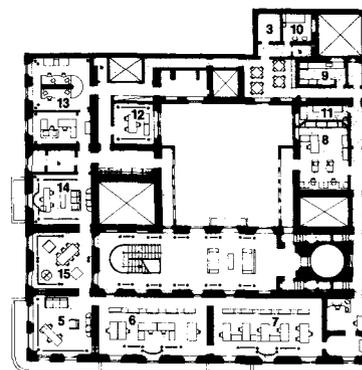
Each color undertone adds a vibration to the atmosphere. "The main thing I wanted to do," says Ambasz, "is have a sense of immense serenity when you walk into the bank, a sense of having arrived." As for the technique: "Nothing should be exactly what you think it is," he says. "Magic shows no stitches."

The furniture itself consists of pure volumes in black, white and, occasionally as an accent, red. To register against the elaborate background, the surfaces of the objects have been rendered luminous. The white objects—Deco-like tables in the exhibit and conference rooms—are of Carrara marble, which has a translucence of its own. The black desks and cabinetry have been lacquered to a high polish—as has the occasional red cabinet—to give them that same presence beyond their own form, not only in their glow but in their reflections.

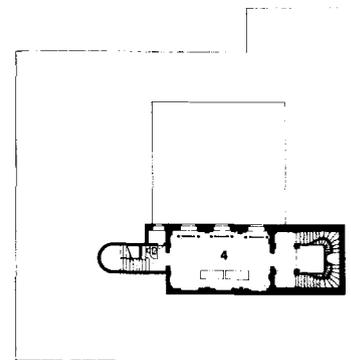
The found columns have been lacquered that same bright black and together with the vertical lamps give a rhythm to the procession which is such a part of this interior. The bank's ability at the time to obtain only part of the residence necessitated an arrangement with most of the banking offices on the top floor. Though it is a merchant bank reliant on corporate more than individual patrons, there was still the paramount question of a clear and compelling path. As relevant to this as the columns and lamps is the grand staircase. Its new handrail, a ribbon that whips around in playful reference to Belgium's Art Nouveau prominence, marks a dramatic path with both direction and relief, the latter in the form of a landing with a scenic backward view.

In black leather, the handrail is also the key to the second element of formal linkage between old and new. As the first was heightening the impact of each, the second is drawing a literal dividing line between. That line is an implied black cordon around the new areas that appears and reappears in various guises. Its entrance is the handrail.

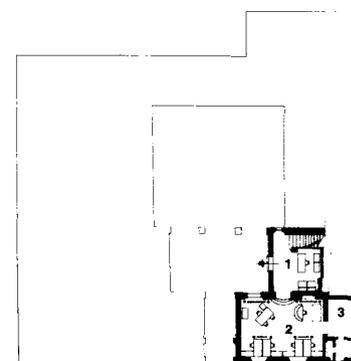
The offices are lassoed by a ribbon of black enameled steel bars along the floor—about 1/4 in. high with a slightly curved top to avoid tripping—and slender black vertical lamps growing out of black hemispheres, giving the edges a kind of Morse code dot-dash-dot pattern. Each room is treated slightly differently within this conceptual framework. In one, the bars encircle the room meeting lamps at the corners. In a second, the bars occur only in one-half of the room while the points of the lamp bases imply their existence on the other. In the largest working spaces, the bars bow in



SECOND FLOOR



FIRST FLOOR



GROUND FLOOR

Legend

- | | |
|--------------------|--------------------|
| 1 Reception | 10 Infirmary |
| 2 Transfer | 11 Employees' room |
| 3 Safe | 12 Controller |
| 4 Exhibit | 13 Exchange |
| 5 Director | 14 Deputy Director |
| 6 Credit | 15 Conference |
| 7 Accounting | |
| 8 General services | |
| 9 Kitchen | |



Data

Project: Banque Bruxelles Lambert, Milan, Italy.

Architects: Emilio Ambasz and Giancarlo Piretti, New York and Bologna. G. Cicorella, collaborator.

Program: renovation of 15,000 sq ft within a 19th-Century grand residence for the Milan branch of a Belgian merchant bank.

Major materials: see Building materials, p. 140.

Client: Banque Bruxelles Lambert, Brussels, Belgium.

Cost: withheld at request of client.

Photography: Santi Caleca.

recognition of adjacent bay windows.

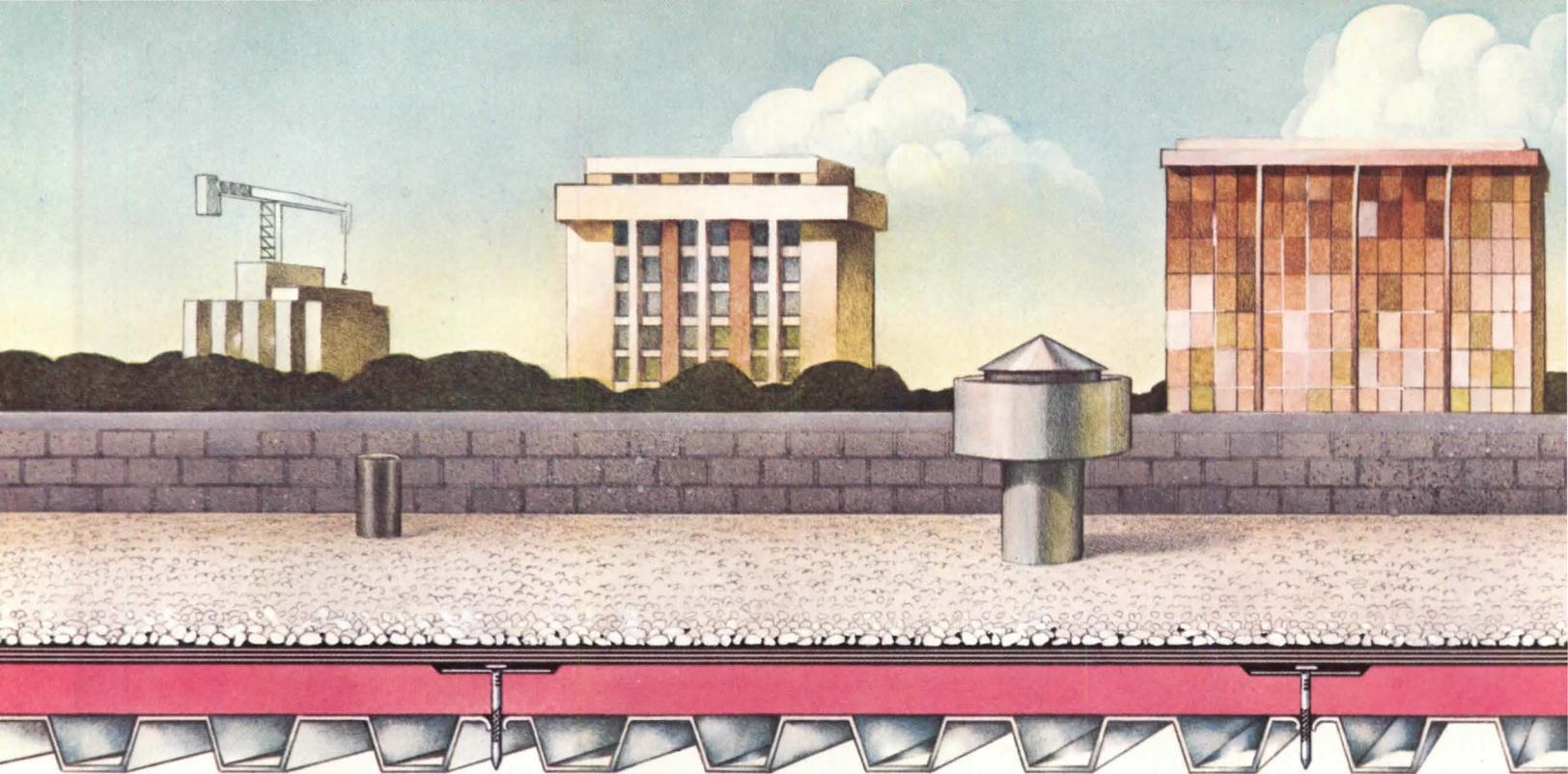
"It is possible to perceive each room as enclosed within, or enveloped by, a 'prism' of edges," explains Ambasz. "All this notwithstanding the fact that in no case do such 'prisms' exhibit all the twelve edges [of a cube] which Geometry demands. Heaven forbid the obvious should be used when the suggested suffices."

It is undeniably an interesting idea. And while a matched contest—paired off and set on each other at the tone of the black ribbon—may be only one way to mix old and

new, it does, for once, address the problem. If there is a hesitation, it is that the steel floor bars may well seem the artifice that they are, a possible stitch in some otherwise very convincing magic. Yet the need for some formal demarcation—whether so literal or not—in this contrapuntal arrangement seems a valid insight. It is a new game—the mixing of minimal aesthetics with effusive ones. And it is reassuring when architects realize that to compel the sensual, emotional, and intellectual responses elicited by the great, and even good, architecture of the past requires a point of view and an organized design strategy. [Nory Miller]

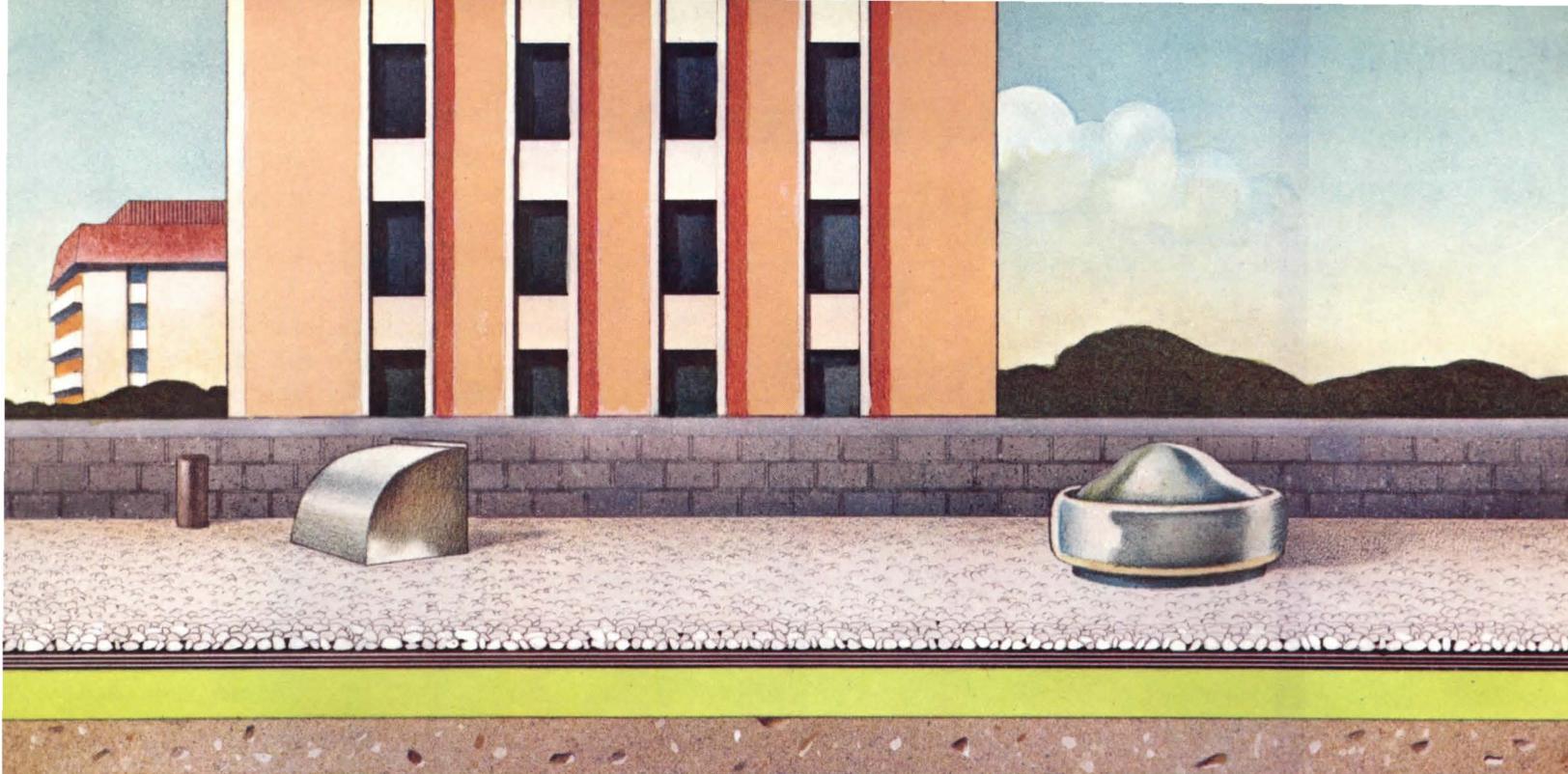


From reception, customers ascend the grand staircase (facing page, right), past the mezzanine exhibit room (facing page, left), to the rococo "hall of mirrors" (top), and from there to the surrounding banking offices. Left: director's office. Above: conference room.



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Tucson, Arizona
Architect
Richard Reif
Tucson, Arizona

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Architect:
Bowerman Bros. Inc.
Providence, Rhode Island



Jim West Realtors
Houston, Texas
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Teal Construction Co.
Houston, Texas



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Indianapolis, Indiana
Architect:
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Architect:
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Architect:
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Architect:
Chris Colby
Rochester, Minnesota



Office Building
Spokane, Washington
Architect:
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Spokane, Washington



Century Harbor Racquetball Club
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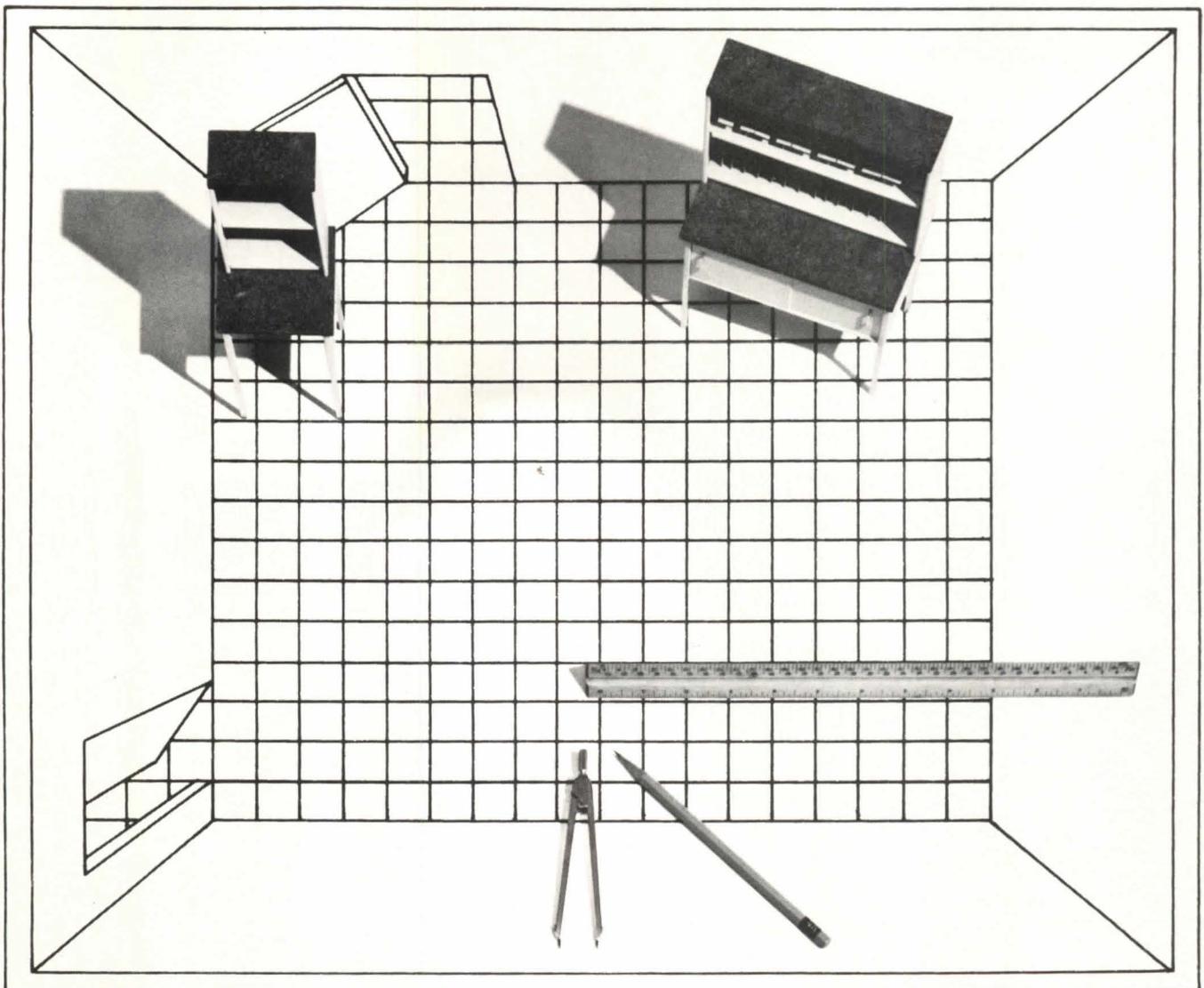
Kwik-File has used its organizational and design expertise to solve mailroom problems for several of the country's leading corporations. Now that expertise is available as a planning resource for architects and contract designers.

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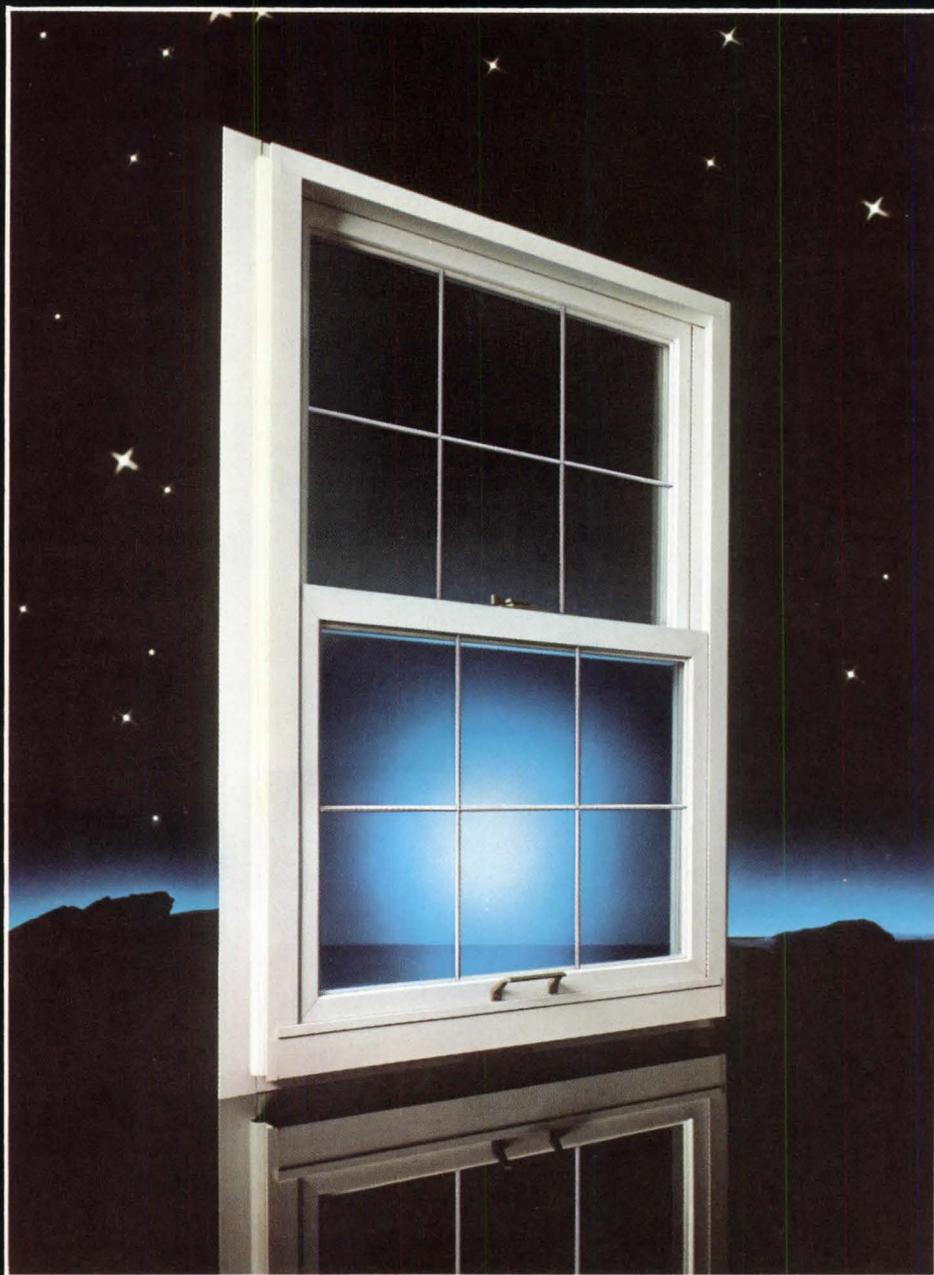


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Formulating master outline specifications

Walter Rosenfeld

A well-constructed outline can be the first step to clear and orderly specifications for a well-constructed building. Here are some outline guidelines.

Since an outline specification is often required to accompany design development phase drawings for presentation to an owner, a funding agency, or a contractor estimating the probable cost of the work, having a master outline specification ready for adaptation to the project at hand is clearly a great convenience. While some funding agencies have "outline specifications" available to be filled in for a particular job and may even require their use, in most cases these are inadequate to describe the intended results for architectural work, and the architect must provide his own.

If the outline specification follows the trade-oriented CSI 16-division organization of material, it will not only make pricing easier, but will also enable the document to serve later on as a basis for the project manual to be written along similar lines during the working drawings phase. Using a master outline to produce the job outline has two further advantages: it requires necessary materials decisions to be made more systematically at this time, and, more important, if properly set up, the master can be used as a check list of items to be decided or to be included in the work. This latter function is quite consistent with a basic principle of writing any kind of master section: to include the most frequently required items and options, and to edit chiefly by deleting unwanted material. The best "masters" therefore will aim to minimize time-consuming research and the writing of new material.

To set up a master outline specification, a brief section format should be established, along with a flexible numbering system which allows easy insertion and removal of items as well as providing for the contributions of consultants to be inserted or added on. Either the alpha-numeric "AIA system" or the all-digit "CSI system" will work, but thought should be given to making the document adaptable to word-processing or other electronic storage and retrieval, either now or in the future.

The search for source material for the master outline specification should start with the office master specification, if there is one. Ideally, the best master outline is a distillation of the firm's standard master specifications. Lacking an office master, the next best sources are project manuals for major projects with large numbers of materials and applications, taken apart and sorted by section. Use of such in-house material gives continuity and predictability to future outlines and permits the incorporation of materials

and construction policies developed by the firm during its previous history. If the firm is using a commercially available master specification such as "Spectext" or "Masterspec," it should be reviewed as well. So far, producers of master specifications have not themselves provided master outline specifications along these lines for use by their subscribers.

Begin by preparing short, stock mini-sections for each trade and material, paring the complete reference sections down to essential information. Use short, declarative and imperative sentences to identify the materials to be used and the important characteristics of their installation. While such mini-sections should fully establish all the basic materials of a building, they ought to concentrate particularly on items which affect cost and those which are important to the architectural character of a building. However, specifying details of construction should generally be avoided. Also, in most cases, the "General" portion (Part I) of a typical complete section can be omitted entirely.

The master outline will include more sections than any real building would ever require. For example, both conventional and inverted built-up roofs, steel, aluminum, and wood windows, and a variety of exterior wall systems may all be described if the firm's buildings are likely to use them. Where sections or items are mutually exclusive, they can be identically numbered to alert a future editor to choices which must be made.

Materials and methods can be specified by reference to ASTM or ANSI numbers, by description of the product, by performance requirements, or by manufacturer's name and model number. Some items will indicate the scope of work; others will just list essential requirements for each trade. To simplify things, groups of related items can be gathered into one mini-section such as "Building Specialties" and given as little as one line each, even though later on each may have its own section in the final project manual.

Examining each reference section and condensing the significant information into a collection of such mini-sections is the major task in setting up master outline specifications. Once completed, however, the document should well repay the effort in convenience, consistency, and speed. □

Author: Walter Rosenfeld
CSI is head of the Specifications Department at The Architects Collaborative in Cambridge, Massachusetts.

Third generation

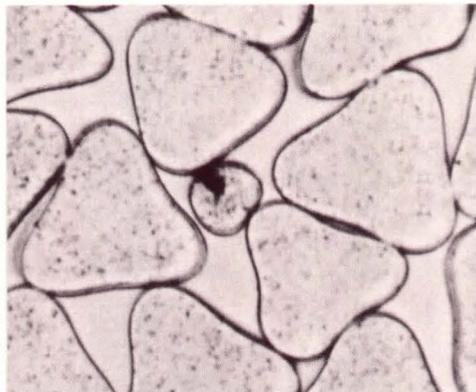
Interior technics: Carpeting

More than 280 million square yards of commercial carpet were sold in the United States last year and what they had in common with carpet of a generation ago is almost nothing.

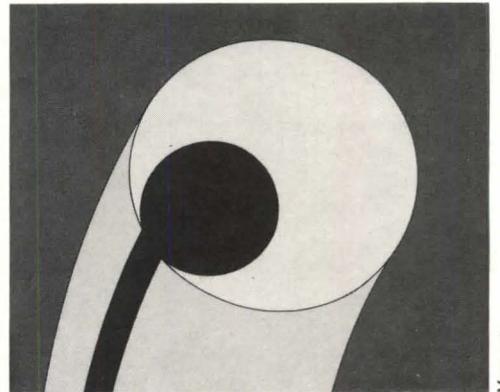
There was a time when carpeting in schools, hospitals, secretarial pools, or airports would have seemed luxurious. Now it is commonplace. Technological improvements over the past two decades have made carpet so competitive with other flooring materials, both in cost and durability, that it has become a \$5 billion industry (wholesale and retail) in the United States alone. What was once considered finishing is now a building material. And attempts to make it tougher, more versatile, and easier to maintain have, if anything, sped up in recent years.

Several factors have contributed most dramatically to wider use of carpet in this country. First, of course, is the development and continuing improvement of inexpensive, durable synthetics. Second, the U.S., beginning in the 1950s, began shifting over to tufted, as opposed to woven, manufacture. Now 97 percent of the market, tufting is so much faster a process that it can produce considerable dollar savings while continuing technical improvement has narrowed the quality gap. Last, the improvements in fiber and manufacture made possible the steady increase in direct glue-down installations, a method that allowed, for the first time, use of carpet in huge expanses where there was nothing between distant edges to use for anchoring. Today, 65 percent of commercial carpet is direct glue-down.

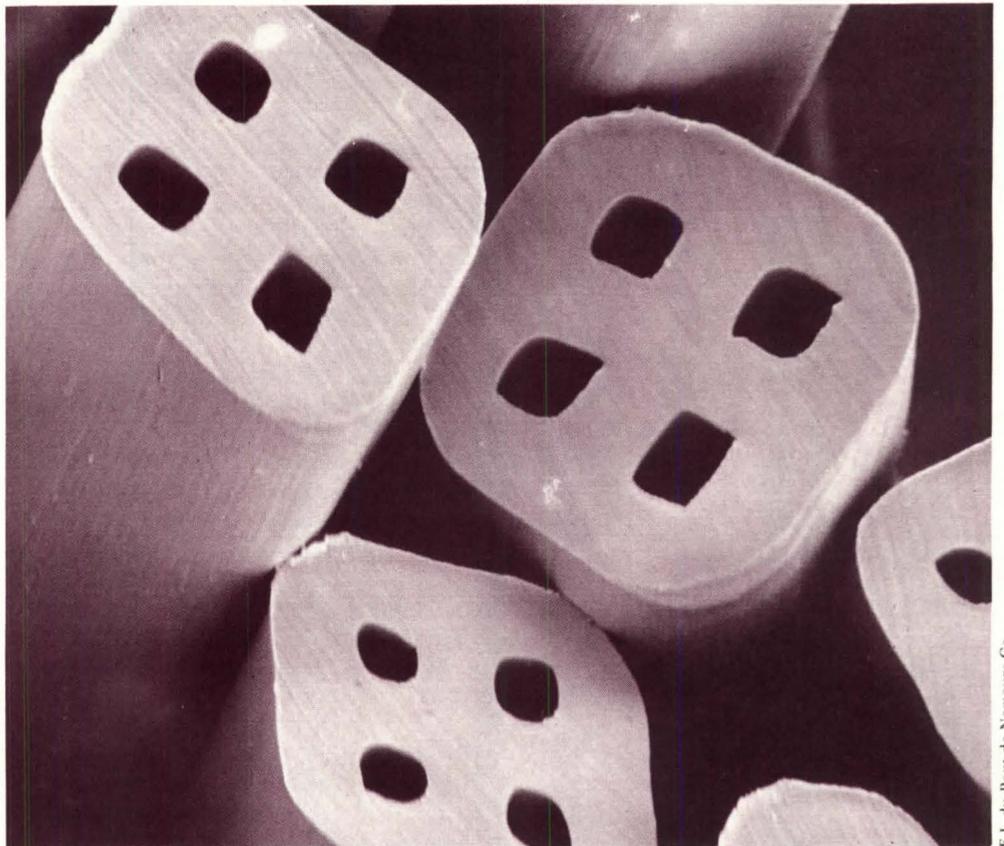
The most recent developments in fiber haven't been new fibers or even new blends, but improvements in the most popular fiber, nylon. As Richard Eldridge, president of the Carpet & Rug Institute, puts it: "In America nylon is it. Everything else is an also-ran." In 1979, nylon captured more than 80 percent of the market. Developed during World War II, nylon is the toughest of the fibers and the one researchers have con-



PHOTOMICROGRAPH



CROSS SECTION



PHOTOMICROGRAPH

centrated on most recently. Acrylic, preferred for its wool-like feel, has been steadily decreasing, now down to five percent of the yardage sold per year. Polyester, holding at 10 percent, is used mostly in homes. And polypropylene, made from natural gas and used for everything from outdoor grass to imitation Orientals, is rising slowly, still only at four or five percent of the market. What is expected to increase its share is the

Among the third-generation nylons are Monsanto's trilobal Ultron (top left) with its carbon-lined filament (top right) and Du Pont's Antron III (above) with its square cross section and carbon core filament.

Monsanto

E.I. du Pont de Nemours Co.

continuing price increases, and sometimes scarcity, of oil. Textiles (including nylon) use less than three percent of our oil consumption but compete with unleaded gas for one of the main ingredients. (Among other consequences, this has led at least one fiber producer into joint efforts with oil companies on both drilling and refining ventures.)

Wool, once the only material carpets were made of and still holding 50 percent of the market in Europe, fills less than one percent of the orders here. Because of the tremendous increase in its cost, that one percent is the upper end of the spectrum, accounting for three to four percent of the dollar share. Ironically, the decline of wool, and its thereby enhanced status, has opened a wedge to the European companies who often have a greater selection than American counterparts. The past few years have seen British, Dutch, German, Swiss, etc. firms moving into the small—but apparently sufficient—vacuum.

Carpet manufacturers have put their hand to blends, of course, making the best use of each fiber's characteristics. Nylon/acrylic and even wool/nylon blends are commonly available.

The new nylons

Called third generation, the current crop of nylon fibers represents a step forward in the attempt to develop carpet that, soiled or not, looks clean. Nylon, clear by nature, shows every speck. The first modification introduced was the addition of pigment in the manufacturing process, hence delustered nylon. Next chemists remolded the fiber from round cross sections to trilobal. Delustering is still standard but the crevices in the cloverleaves turned out to be real dust traps. Now nylon comes in either a modified trilobal cross section with virtually flat sides like a snub-nosed triangle or in Du Pont's unique construction, a square with four cylindrical holes piercing through it. Both achieve their soil-hiding properties by breaking up the flow of light, scattering it, and masking everything (in this case dirt) beneath.

Fluorochemicals

On the other hand, there is the approach of creating carpets that actually stay clean. Here the most promising developments have been the fluorocarbons which can be applied to the finished carpet (or any fiber, including the new nylons). They replace silicone products which provided no repellency to oil and little to water and had the

added disadvantage of harshening the "hand" or feel of carpet to which it was applied.

The development of fluorochemicals dates from an accident in the mid-1950s in a 3M laboratory researching an elastomer for aircraft use. A bit of the chemical spilled on an assistant's tennis sneaker not only resisted attempts at removal, it didn't even become wet. That led to applications in textiles, first for natural materials, and later for synthetics. In the early 1970s, products for carpet were introduced.

The problem with topical treatments, invariably, is the potential for wearing and washing out. This is especially true with the commercial cleaning breakthrough of the past five years, hot water extraction. A method that puts hot water with detergent under pressure into the carpet and then immediately vacuums it out, hot water extraction can remove anti-stain treatments in just two to four cleanings. It is a breakthrough because it thoroughly removes the dirt (and it is dirt rubbing between yarn tufts that can really fuzz out a carpet), and because it leaves in the carpet only a fraction of the dirt-magnet detergent residue left by the rotary shampoo method.

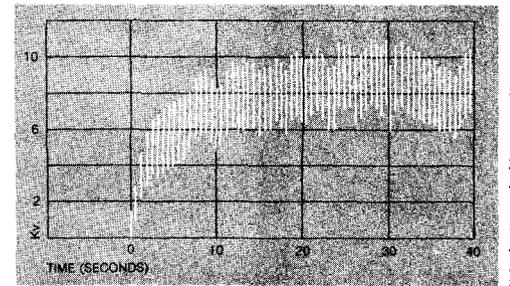
For these reasons, topical treatments have been far more widely used in residential than contract applications. But the companies have begun active campaigns for the contract market, combining factory application with after-cleaning retreatment products. A recent entry into this field tries an end run around the problem by combining its partly fluorochemical protector with a dry powder absorber for cleaning.

Shocks, computers, and static

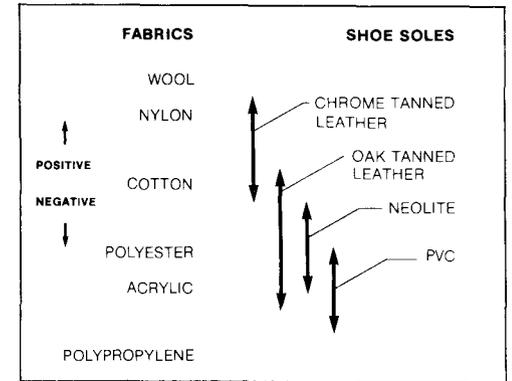
There has always been a problem with static. People shuffle along carpet, touch a thermostat or something and wham, an electric shock. The threshold for human sensitivity is 3500 volts.

Two kinds of controls have been used to eliminate the shocks—chemical sprays and conductive materials. Anti-static sprays, like other topical treatments, are very effective while they remain in the carpet. Cleaning and traffic remove them. And while traffic adds soil which is anti-static in itself, the sprays have been used largely in residences.

Conductive materials are permanent and come in several types, working something like lightning rods. The idea is to dissipate electricity by keeping it moving without allowing it to build up high enough to provide a dangerous shock. What is needed is determined by the yarn involved. Wool, acrylic, and polypropylene, for instance, are considered low static fibers. It is not that they are inherently anti-static. They are simply negatively charged, complementing



Voltage buildup during a walk on unprotected nylon carpet (above), the highest static fiber. Below: Relationship of the electrical properties of carpet fibers and common shoe-sole material.



TYPICAL TRIBOELECTRIC SERIES

the most commonly used shoe sole materials. If we all switched shoe soles, nylon might be low static.

Conductive material can be added by the carpet manufacturer or the fiber producer. It can be added as conductive filament or conductive backing, and often the two together. What the carpet manufacturers have been using is microscopic metal wires. At first, coated copper was used, but it too quickly mashed down in traffic to the bottom of the carpet and ceased working. Stainless steel has proved more effective as it is incorporated in the spinning process and wound evenly through the carpet. It can be used with any carpet material, including wool.

The newest technology is a third-generation conductive polymeric incorporated into the third-generation nylons by the fiber producers and supplied, fait accompli, to the carpet industry. Nylon is the most static-producing of the fibers because it is so positively charged. The new filament is a combination of nylon and carbon paste. One producer inserts the carbon down the core of the fiber, another coats the outside. A third runs a miniature core of carbon down one side of the filament with a sliver showing at the edge. A fourth buys carbon filament from one of the above and simply winds it around its own product.

These carbon/nylon filaments are then fed into the rest of the nylon fiber

Interior technics: Carpeting

at a predetermined ratio. The differences between the cross sections have to do with individual patent rights. But among the factors differentiating them is that the more carbon that shows on the outside the more effectively the filaments can be combined with special shoes, for instance in computer rooms, but also the more likely little dark streaks will show up in very creamy colors.

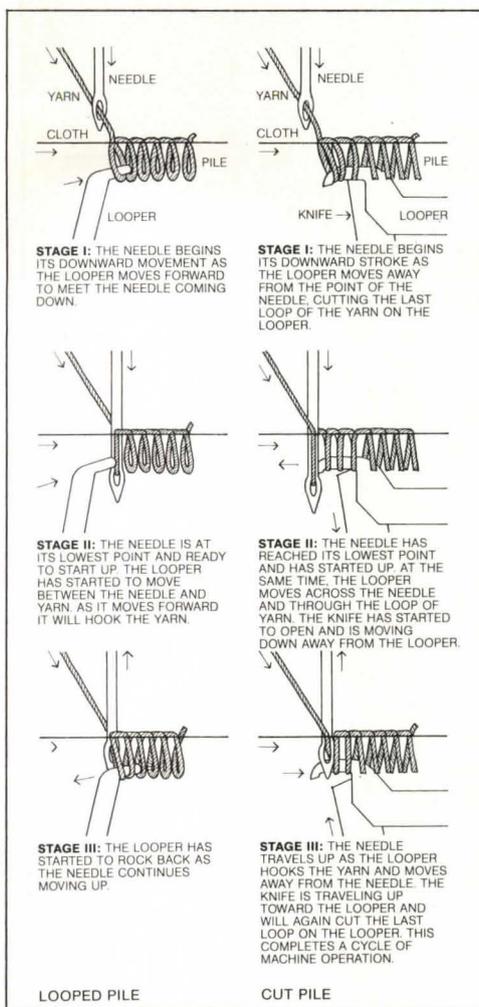
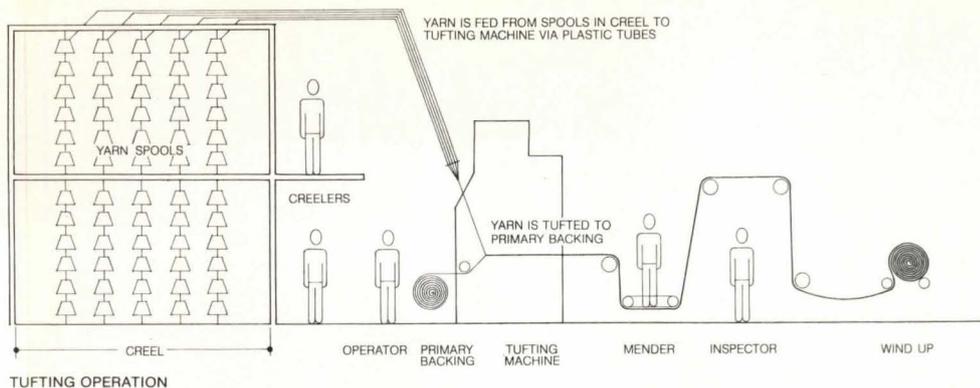
All the carbon filaments are more than capable of handling "human comfort" and are generally guaranteed not to exceed 3000 volts. The problem arises with all the new, highly sensitive electronic equipment. Little shocks we can't even feel cause computers to make mistakes, forget, and become erratic. For computer rooms that have been around for awhile, the most common approach is to use something other than carpet, require special personnel to wear special conductive shoes, use anti-static sprays, and/or try to keep humidity levels above 50 percent.

Two things are changing this. First, of course, carpet manufacturers want that market. Second, the spread of word processors, CRTs, etc., all over the office makes humidity control and topical approaches inappropriate. Consultant William Klein (now of United Technical Products) worked with IBM to develop recommendations. Simply put, instead of the 3500-volt cutoff for people, IBM says equipment requires that the number be kept below 2500 volts. (Measurements are generally taken at 20 percent humidity, 70 degrees Fahrenheit.)

Fulfilling this requirement raises problems more of manufacture than technology. The available techniques—both steel wire and carbon filament—are capable of holding static below that threshold, but not at the ratio at which it is normally included in fiber production. Increasing the "richness" of the mix has proved very effective. (An unsolved question is how to control static arising from furniture, especially metal casters.)

Putting the carpet together

There is a new process on the horizon, referred to—naturally—as the third generation of carpet manufacture, that many feel is the carpet construction of the future (woven and tufting being generations one and two). Consultant William Squier calls it "the railroad train that is coming." That process is fusion bonding and its history dates back long before tufting to an early patent in 1888. Most commonly, the process involves two sheets of jute backing coated

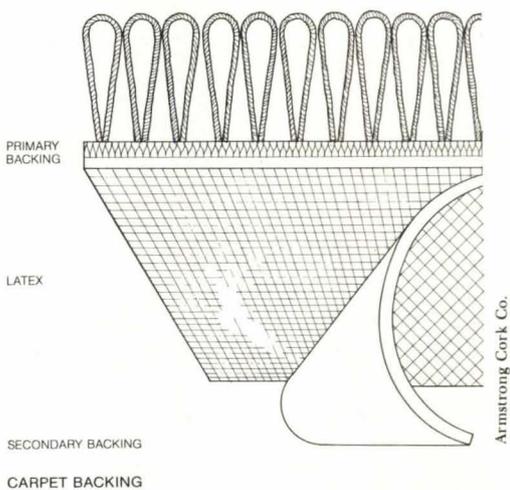


PRINCIPLES OF TUFTING

with an adhesive and brought to parallel vertical positions. Yarn is folded back and forth between them, embedded in the adhesive on both sides. The sandwich is passed through an oven and then slit, forming two pieces of cut pile carpet. To make loop pile, adhesive is left off one of the pieces of jute and the yarn is, of course, not cut.

The advantages of fusion bonding are several. Says David Owens, of RBI International Carpet Consultants, "Bonding can reduce face yarn for equal or better performance by 25 to 30 percent because none is wasted on the

More than 97 percent of America's carpets are tufted.



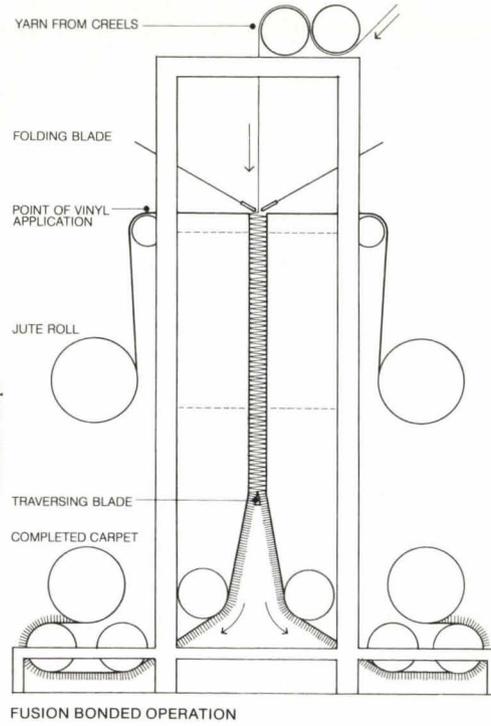
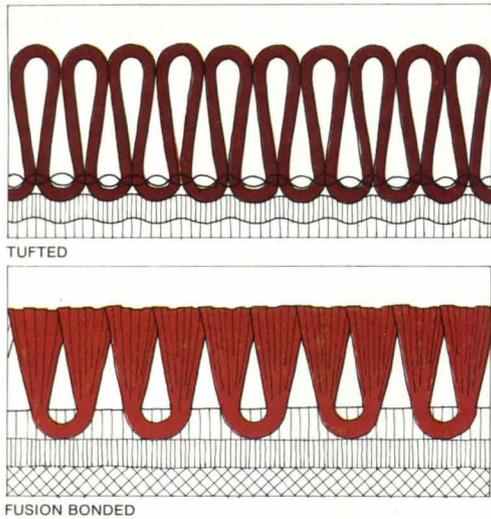
Armstrong Cork Co.

back of the carpet." The result is that a 28-oz fusion-bonded carpet is equivalent to a 42-oz tufted one. Because the construction is denser, the carpet has an even better resistance to abrasion and crushing, and soil tends to stay on top. The adhesive provides not only a tuft bond so strong that the yarn would thread before pulling out, but acts as an impenetrable barrier between liquid spills and backing. The unitary construction eliminates fraying and delamination.

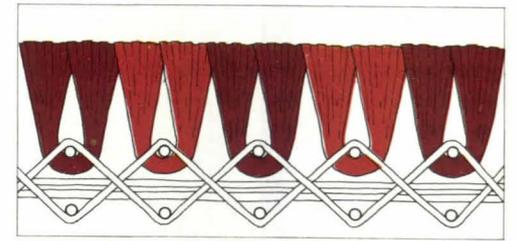
At the moment it is used by only four or five U.S. companies and holds about two percent of the contract market. Part of the problem is the adhesive—most commonly polyvinyl chloride (PVC). It is expensive. What the industry watchers expect is that current research on PVC, hot melt adhesives, and urethanes will yield results in the very near future. The manufacturing process is also slower than tufting, points out Peter Desai of Kemos, and eyes, he says, are on a Danish company that is working on a faster version.

Carpet tile

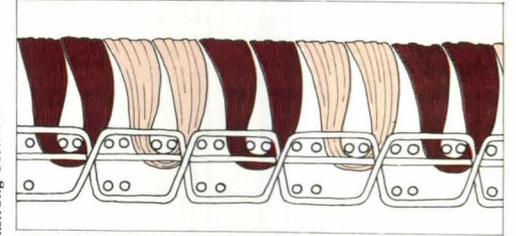
Thus far the most consistent use of fusion bonding is in an area of the market that is growing quickly on its own—carpet tile. The modular approach is attractive for a variety of reasons. For building types where spills or high traffic are a problem, tiles offer the possibil-



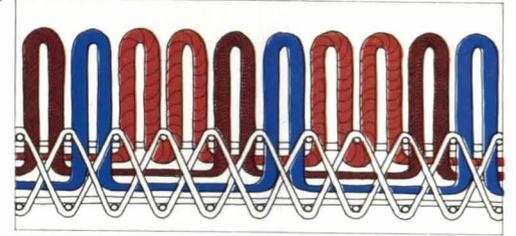
Cross-section illustrations of the various carpet construction methods (below and far left). The drawing at left shows the fusion bonding process, possibly the carpet construction of the future.



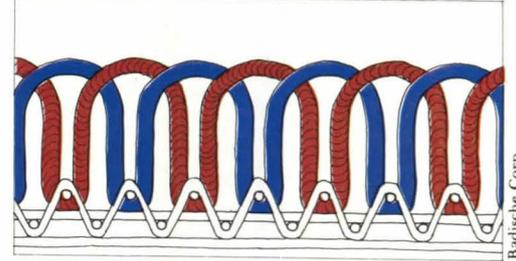
VELVET WOVEN



AXMINSTER WOVEN



WILTON WOVEN



KNITTED

ity of replacing only part of the carpet. Manufacturers even suggest rotating the tiles on a regular basis before that point, quoting statistics that in general 20 percent of the carpet gets 80 percent of the wear. For open offices, tile provides quick subfloor access, the ability to be moved along with partitions that otherwise would leave ridges, and qualification by IRS for investment tax credit. If and when flat cable becomes commonplace, tile is expected to become mandatory.

But while tile manufacturers insist that tile lifecycle costs are lower than broadloom, the higher first costs have led broadloom manufacturers to provide alternative methods for gaining access to infrastructure with broadloom. Basically, these are twofold: release adhesives and release adhesives in combination with magnetic tapes applied to the metal trench headers. Both allow broadloom to be cut, pulled back, and replaced. Sometimes reapplication of the release adhesive (if the carpet is pulled back over and over) is required.

One of the least routine aspects of carpet at the moment is backing. Jute, the vegetable fiber from India and Bangladesh that can serve as either primary or secondary backing or both, has been subject to mushrooming costs and erratic supply for the past two years. While none argue jute's advantages in terms of dimensional stability, insensitivity to temperature, porousness to adhesive, etc., the instability of that part of the world has caused many to look at other choices. One, already quite common as primary backing but under serious consideration (and some manufacture) as secondary, is woven polypropylene. While its immunity to wet rot, sometimes a problem in glue-down applications, is a recommendation, its cost and jute's installation advantages account for the industry's dominant wait-and-see attitude. Meanwhile, poly-

urethane unitary backing in some situations such as glue-down can be a worthy alternative. In addition, says David Owens, the latex used to attach fiber bundles to the backing has increased substantially in quality over the past few years.

The pattern revolution

"One thing that is changing is that suddenly everyone is interested in patterns, in offices too," says Norman de Haan, Chicago interior designer, and the manufacturers receiving the orders agree completely. While this has a lot to do with ideas about historic styles, enriching previously minimalist biases in design, etc., there are some technical developments that are operating hand in hand with the aesthetic ones. There is also the practical advantage that patterns are great soil hidiers.

One of the areas of technical improvement is the application of dye to the surface of the carpet. There are now several methods of "printing" which provide deeper penetration and sometimes more flexibility than flat-bed printing, including mold and jet injection. This last—officially, computer controlled, micro-jet, color injection dyeing—has been in operation for only a few years. It can be used for solid color or intricate patterns, and the computer control factor makes it highly flexible. Dye penetration is substantial and the absence of the rotary or flat bed screens means no pile distortion or crushing. The process involves photographing the design to be duplicated, placing the photograph in a high-resolution scanner, which digitizes the design and converts it to magnetic tape. It is this tape which controls which dye liquors are fed into which microjets when the carpet is run through the actual printing. The

machine, though affording internal cost savings as well, is a high initial capital investment and thus far limited to only a handful of the 400 American carpet companies.

Another development affecting color and pattern has been the ultratufter machine, especially in combination with the growth of piece dyeing. It used to be that all patterned carpet was woven. What the ultratufter makes possible is the combination of two types of nylon in small-scale geometric patterns. This is combined with the technology that treats nylon to accept dyes in a predetermined manner and one of the methods of piece dyeing, either beck or continuous piece dyeing. (Piece dyeing has grown to 25 percent of the styles offered in a market that used to be almost entirely yarn dyed.)

This allows a carpet manufacturer to tuft a variety of patterns with undyed yarns and store them as greige goods. When a customer comes in, he can

Interior technics: Carpeting

choose almost any two colors. The carpet can then be dipped in dyes to order, backed, and shipped in sometimes no more than two weeks. It allows the manufacturer to offer a wide variety of color without having to "back them up in inventory." As a result of piece dyeing, new carpet lines, patterned or solid, are more frequently offered in 30 to 40 colors instead of the ten or so that used to be common.

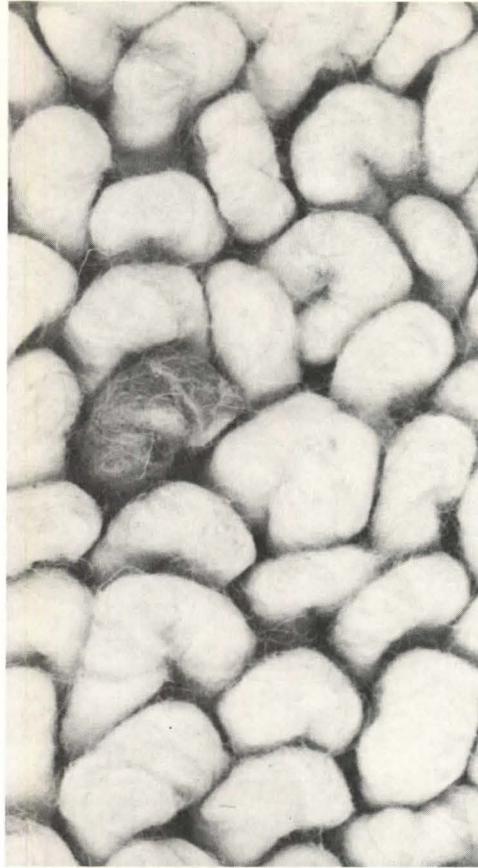
On the other hand, piece dyeing has its disadvantages. Beck dye lots are limited to about 1000 yards. And continuous dyeing has potential end-to-end, side-to-side shade variations. Some, such as Du Pont's William Beebe, see an increasing return to yarn dyeing (still 32 percent of styles offered) indicated in the near future.

As for other methods of dyeing: solution dyeing (where color pigments are added to the polymer prior to extruding) is still used most often for polypropylene, although there is a solution-dyed nylon now on the market. Solution dyeing provides the best light fastness and stain removal without color loss, a plus for nylon which is notoriously vulnerable (60 hours of light fastness is normal with other methods, 500 hours is possible with solution dyeing). Stock dyeing (staple fiber dyed prior to being spun into yarn) continues to be the preferred method for acrylic and wool, with large dye lots possible.

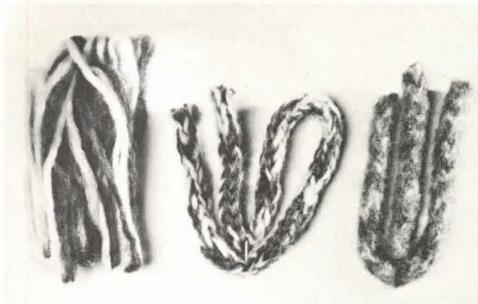
But while the market provides a continually enlarging array of choices, near every architect's and designer's heart is the inevitable question: What about custom work? It is here that the new printing, dyeing and ultratuft systems pay off in terms of flexibility. Traditionally, the minimum order for even custom color was 500 yards and custom pattern 1000, 2000 or never. Many firms still maintain those requirements, but joining them are several firms which make a point of offering custom color at as little as 100 yards, and at least one company offers custom pattern for as little as 200 yards (limited to two colors).

Stylistic trends

Besides the move to patterns and broader color lines, industry experts suggest several clear developments. "There is a trend to finer gauge carpets," says David Owens. This includes not only greater use of the $\frac{1}{8}$ " and $\frac{1}{10}$ " machines but development of $\frac{1}{16}$ " machines for unprecedentedly tight constructions. Cut pile is growing in popularity, with a greater emphasis on the velvet velour finishes. In 1979, 31



One of Concepts International's Berber wool carpets made of felted yarn (above). The Wool Bureau's experimental felting process would go directly from woolen roving to knitted tubes to felting (below).



percent of the styles offered were cut pile. In 1976, it was only 19 percent.

Berbers, named for the homespun tribal rugs of North Africa and developed in Europe a decade ago as machine-made products from untreated North African wools, continue popularity. They have even inspired a host of synthetic imitators with artificially introduced irregularities.

The popularity of the Berbers has given The Wool Bureau an idea. Always looking for ways to increase wool's share of the market, their carpet researcher Ralph Adams is developing a method to use wool's natural tendency to shrink when washed—felting—to produce a yarn with a knobby matte surface that can be adapted to American tufted manufacture. Felting is already becoming popular in Europe where the International Wool Secretariat (of which our Wool Bureau is a member) is working on a continuous felting machine.

Adams' innovation would be to subtract the spinning, plying, and twisting steps, proposing that manufacture might go straight from carding to knitting (a novel idea) to felting. His work has been sent to Secretariat headquarters in England for further research. The advantage, if the research suggests its viability, would be a special effect at no extra cost. Says Daniel Kressler of The Wool Bureau, "If you are going to have something that is this precious in the marketplace, you need to develop something nothing else can do."

Future influences

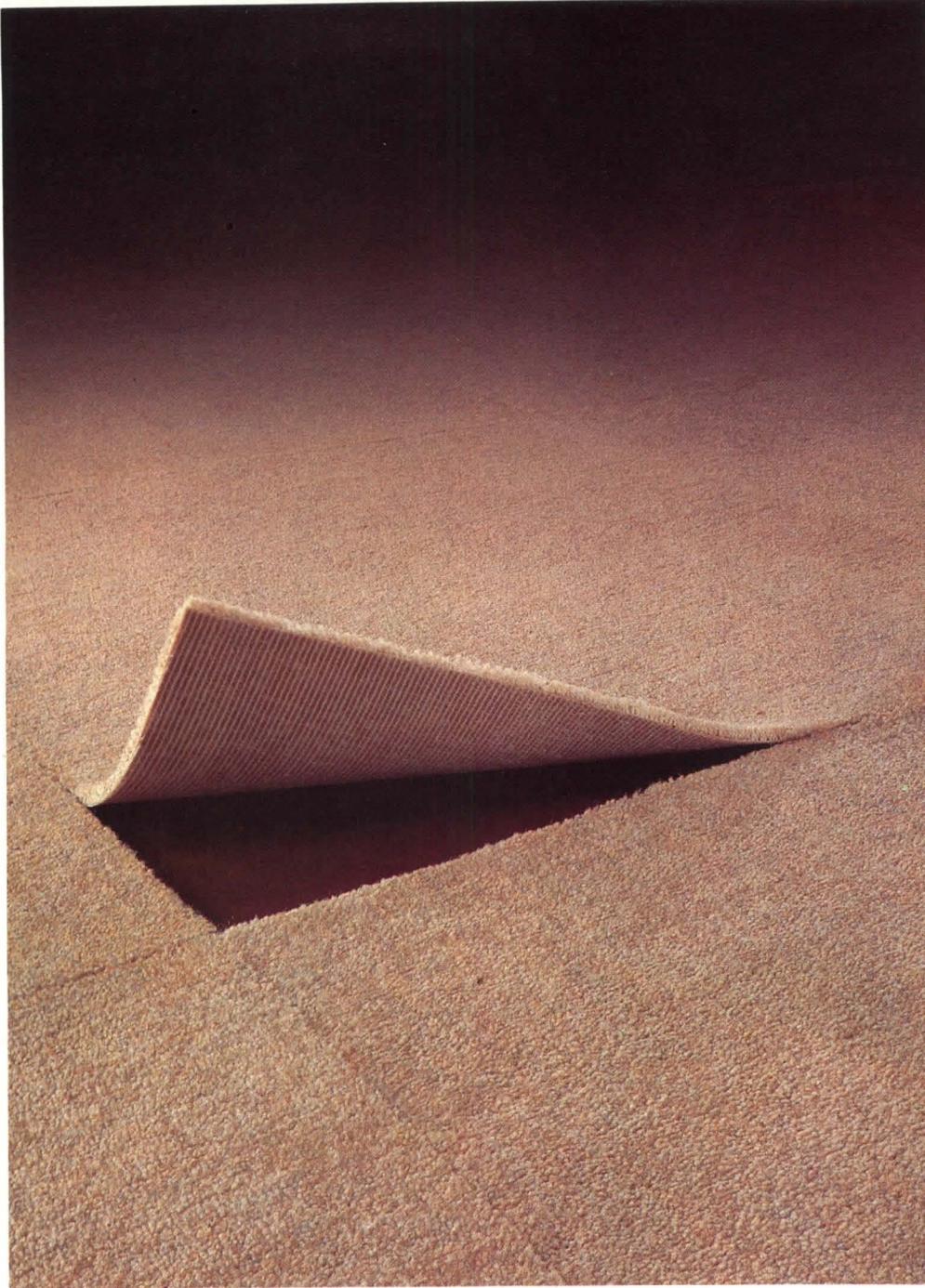
Among the developments likely to have an effect on carpet in the future is the restructuring of testing procedures and standards of acceptability in fire protection. The Steiner tunnel test has been rejected in favor of the radiant flooring panel test for carpet by the National Fire Protection Association and the American Society for Testing and Materials. Model codes have been or are in the process of being revised, and legislative bodies are expected to adopt the revision as a matter of course. Basically, the tests are considered more accurate and actually show carpet to advantage under simulated fire conditions.

What is more likely to change what the market produces is very much further down the road—that is, the interest in questions of smoke emission and toxicity. Hazard to life, as opposed to property, is a more recent concern in fire codes, which, except for the disaster response type regulations, have been largely determined by insurance company lobbying. However, the kinds of research that could even begin to set standards have yet to be done. The advance guard on this is the FAA, pushed by complaints about airplane disasters where passengers survived the crash but not the fire or, in most cases, smoke after landing.

Considerably less dramatic is the care labeling issue. The Federal Trade Commission, exceedingly pleased with the results of care labeling in clothes and, according to them, in receipt of numerous complaints about carpet, are in the process of extending those regulations. Carpet manufacturers would be required to label carpets as to recommended method and agent for cleaning. The label would be generic—petroleum- or water-based, etc.—not by brand name. Residential rugs would bear a permanent label. Roll carpet

Concepts International

The Wool Bureau Inc., Bill Helms Photo



Milliken

Carpet tiles are manufactured in two basic varieties: rigid-backed—fusion bonded, with a tertiary backing of polyvinyl silicone; and soft-backed—tufted with a flexible backing system of polypropylene (left). Above: Carpet printed with a computer-controlled, micro-jet, dye-injection machine.

in. and exposed edges must be attached. Says John Weber of the Architectural and Transportation Barriers Compliance Board, "These are the same rules as for nontripping carpet. All it really does is eliminate shag." Further research, suggest the barrier-free advocates, will mean much more specific and strict requirements in the future.

How exactly these issues—especially flammability and barrier-free—will affect contract carpeting is unclear, though overestimation of the eventual influence hardly seems possible. Other trends—especially stylistic—come and go. One thing is clear. With the market that carpeting has developed and the extensive research capacities of the major companies, the next generation is likely to produce at least as much change as this one. [Nory Miller]

Acknowledgments

We wish to thank the following architects, consultants, organizations, and manufacturers for their help in preparing this article: Armstrong Cork; Badische, Dianne Jemmott, Ivor Chapman; Bekaert Steel Wire Corp., Charles Ender; Donald W. Belles; Bigelow-Sanford, Joseph Degen; Carpet & Rug Institute, Richard Eldridge; Couristan; Norman de Haan; Dow Chemical; E.I. du Pont de Nemours & Co., William Beebe, Dr. Ronald Schmoyer; Eurotex; FTC, Earl Johnson; Jute Carpet Backing Council; Kemos, Peter Desai; Lees, Div. of Burlington; 3M, Chet Bierbrauer; Ron Mace; Milliken; Mira-X, Walter Geddie; Monsanto; Phoenix Carpets, Alvin Poskar; RBI International Carpet Consultants, David Owens; Norman Rosenblatt; William H. Squier; United Products Inc., William Klein; John Weber; The Wool Bureau.

would have a single label attached to the top as it was cut and sold to the consumer. Contract buyers could waive the requirement.

The regulation has been approved by the FTC's commissioners. The FTC staff is in the process of redoing some of the mechanics but expects the rule to be published this month, effective in six months.

Richard Eldridge, president of the Carpet & Rug Institute which, of course, represents manufacturers, responds that "if and when the FTC makes its rule, CRI will sue them. We have told them that, and we have told

Congress." He maintains that "there are only six fibers used, and the cleaning rules are pretty much the same for all of them." In addition, he says, "there are instructions already on the cleaning products."

Another major issue that will be coming up, like flammability, perhaps years from now is the effect on carpet standards of requirements for barrier-free construction. The problem now is that very little research has been done. Some carpets are easier for wheelchairs to move on; some have the effect of stuck brakes. Some track (send the chair on a trip of its own), some don't. All that is really known for sure so far is that the denser and shorter the pile, the better. The new ANSI standards will say that carpet should be securely attached, with a firm cushion or none; level loop, textured loop, level cut pile or level cut/uncut. Maximum pile height is set at 1/2

Lees

A LEXICON OF CARPET BACKINGS

The backings of a carpet — primary and secondary — are as important as its face. Anyone who works with carpet should know and choose the right backings for needed look, performance, and wear. Today's backings are mostly synthetic, made of woven polypropylene, because of their strength, stability, resistance to moisture — and because added features, even static resistance, can easily be built into them. Dozens of types are now available. Here's a guide to the most important.

P pri'ma·ry

The strong, lightweight woven fabric, the essential framework of the carpet, into which the face yarns are tufted. It is the core of the carpet.



Poly Bac The most widely-used primary backing in carpet today. Woven of ribbon polypropylene yarns, it is available in a range of constructions, weights and finishes engineered to suit the carpet specified, such as tight weaves for narrow-gauges or dense saxony plushes. Comes in black, beige, and gray.



Colored Poly Bac Poly Bac woven of pre-colored yarns in a range of colors. Same qualities as regular Poly Bac, and especially apt for pre-dyed face yarns and for shags of these yarns.



Poly Bac FLW Poly Bac into which nylon fiber has been needed to make a dyeable cap. Made in several types of construction and fibers other than nylon. Widely used for cut pile styles, usually in piece-dye and continuous-dye processes. Particularly suited to shags.



Pre-colored Poly Bac FLW Pre-colored Poly Bac into which polypropylene fiber in the same color has been needed. Used mainly with pre-dyed face yarns in similar colors to add body and minimize grinning in lesser weights.



Poly Bac A/S A special conductive yarn, almost undetectable to the eye, is added to Poly Bac for permanent static control. Used with a conductive face yarn, this backing can reduce static electricity by four-fifths on cut-pile nylon carpets. Especially effective in commercial installations and anywhere static electricity is an annoying problem. Poly Bac FLW is also available with static control.

S sec'ond·ar'y

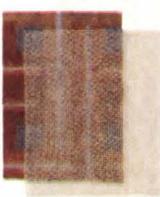
The visible, exterior backing of the carpet. Laminated to the primary after the tufting operation, it adds tuft bind and gives stability to the carpet, especially for installation.



ActionBac Only a few years old, this all-synthetic woven secondary backing has become the most important development in the field since the concept of synthetic backings was accepted throughout the carpet industry a generation ago. Strong, stable, with all the resistance against natural hazards (damp, insects, rot) of synthetics.



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This synthetic secondary backing is constructed in a leno weave, with every intersection locked in, which prevents ravel and fray at cut edges, a significant development for both manufacturing and installation.

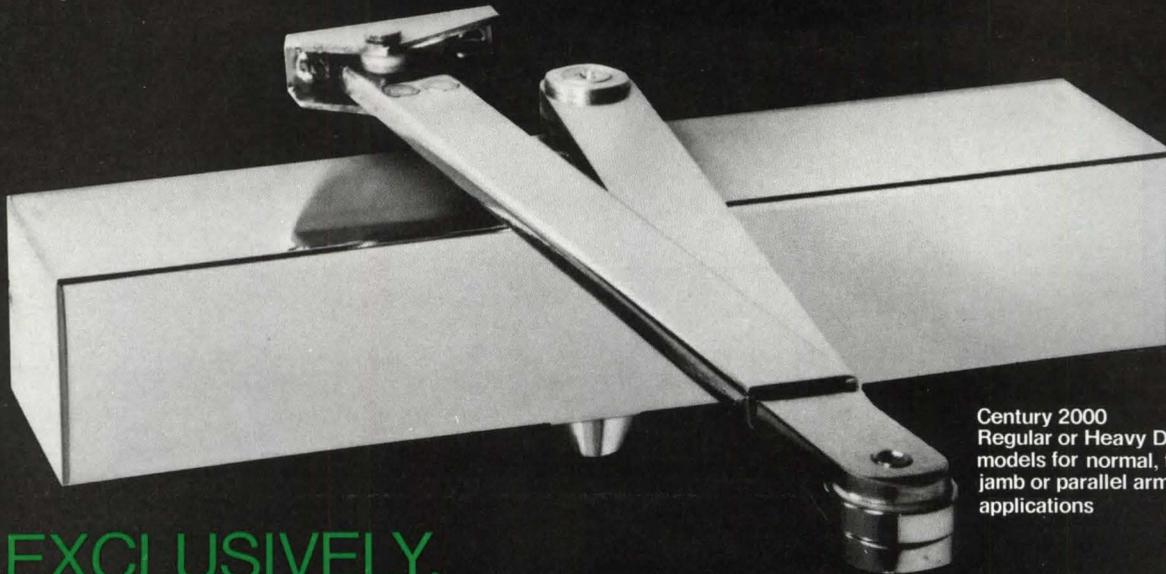
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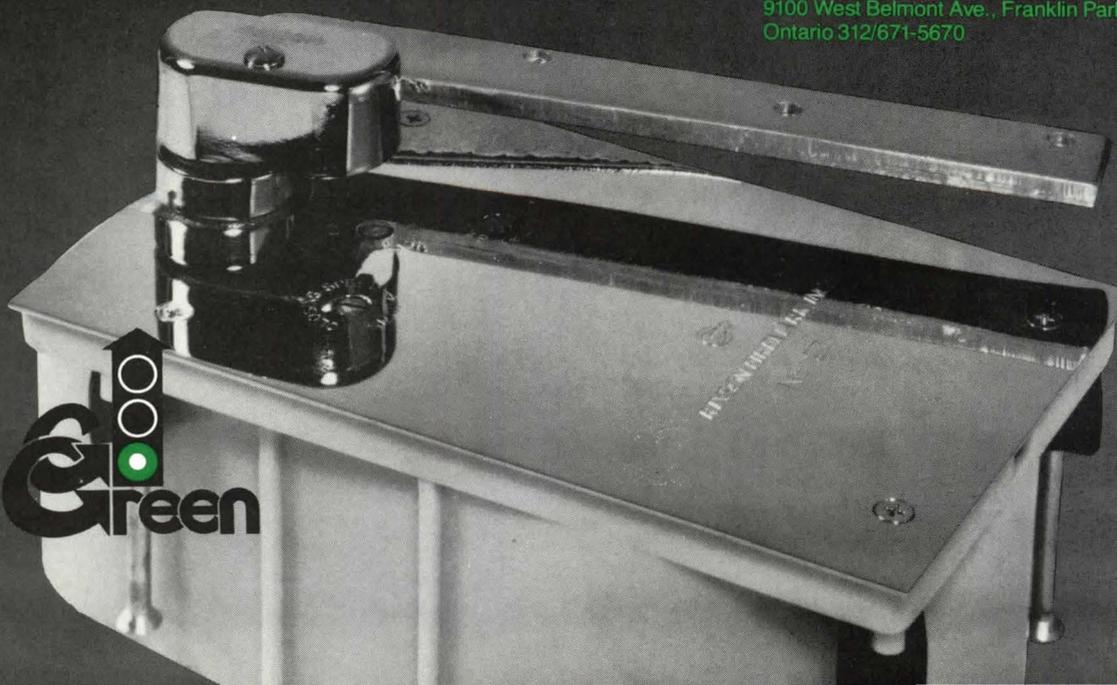
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Liability for injury to third persons

Norman Coplan

An architect's liability for injury caused by a visible or hidden defect extends in some jurisdictions several years beyond the acceptance of the building by the owner.

In many jurisdictions of the United States an architect may be subject to liability to third persons arising from injuries sustained at the building site, such liability being predicated upon errors or omissions in his building design. Such an injury may occur many years after the architect has completed his services and the owner has accepted the building project. Some states have addressed themselves to this perplexing problem by adopting a "statute of limitations" which bars an action against the architect after the passage of a certain number of years following the completion of the building project. In some jurisdictions (e.g., Indiana), the courts have ruled that an architect is not liable for injuries occurring after the work was completed and accepted by the owner. In other jurisdictions, such as New York, the applicable rule has been that an architect would not be liable to a third party after the owner accepted the project if the defect claimed to have resulted from an error or omission of the architect was "patent," but that the architect's liability would continue if the defect in question was "latent" (*Inman v. Binghamton Housing Authority*, 3 N.Y. 2d 137).

In a recent case, however, an appellate court in New York ruled that an architect is subject to liability for his negligent design regardless of whether the defect causing the injury was hidden or observable, and that such liability may be established no matter how many years have elapsed between the date of the completion of the architect's services and the date an injury was sustained by a third party (*Cubito v. Gindele & Johnson, et al.*).

The *Cubito* case was instituted by an apartment building tenant who fell in a laundry room and sustained injuries. The plaintiff alleged that the architect had negligently planned and designed the laundry room so that water had collected on the floor causing the tenant's injuries. The defendant moved to dismiss the action on the ground that the action had been brought more than three years after the completion of the building project and was, therefore, barred by the applicable statute of limitations for malpractice. Further, it was contended that the defect claimed was a patent or observable one and that, therefore, the architect's potential liability terminated when the building was completed and accepted by the owner under the prevailing rule established by the highest court of New York in *Inman v. Binghamton Housing Authority*. However, the motion to dismiss the case was denied, and upon appeal, the denial of the motion was affirmed.

The appellate court held that the statute of limitations, as applied to a claim based upon

the alleged negligence of an architect, did not begin to run until such third party had sustained injury, even if this occurred many years after the completion of the architect's services. This was an affirmation of the then prevailing rule in New York State. However, the Court went further and rejected another prevailing legal rule in New York that an architect was not subject to liability for a patent defect after the acceptance of the building project by the owner. In this connection, the Court pointed out that the law had changed and evolved in respect to the liability of a manufacturer to the ultimate consumer of its products, making the manufacturer liable for its negligence regardless of whether the defect in his product was patent or latent. The Court said:

"The rule in New York now is that 'a manufacturer is obligated to exercise that degree of care in his plan or design so as to avoid any unreasonable risk of harm to anyone who is likely to be exposed to the danger . . . ' Since Inman followed MacPherson v. Buick Motor Co.—a case treating an industrial manufacturer—in considering the extent of the liability of an architect, by parity of reasoning the liability of an architect must now be treated under the same tests currently applied toward an industrial manufacturer. That is to say, the test of patent or latent defect is not to be applied, and the question of liability depends rather on whether the architect exercised due care in preparing his plans."

It had been pointed out to the Court that the impact of such a ruling was to subject an architect to a potential liability for many years after he had completed his services. In this respect, the Court said:

"In weighing the force of the appellant's contention that liability may hang over its head for many years after its work has been finished, we must also put in the balance the fact, as Special Term observed, that an injured party may be barred from recovery because of the lapse of the statutory period even before his injury was sustained. There are detriments which will be experienced by either the injured party or the architect, depending on the character of the rule adopted. Weighing the relative detriments, we are not persuaded that we should depart from the general rule—a rule, which we note, is applied in other jurisdictions."

The Court concluded by asserting that if the ruling which it was enunciating caused undue hardship to the architectural profession, its remedy was with the legislature. The *Cubito* case is now on appeal to New York's highest court, and we will further report on this case when the appeal is determined. □



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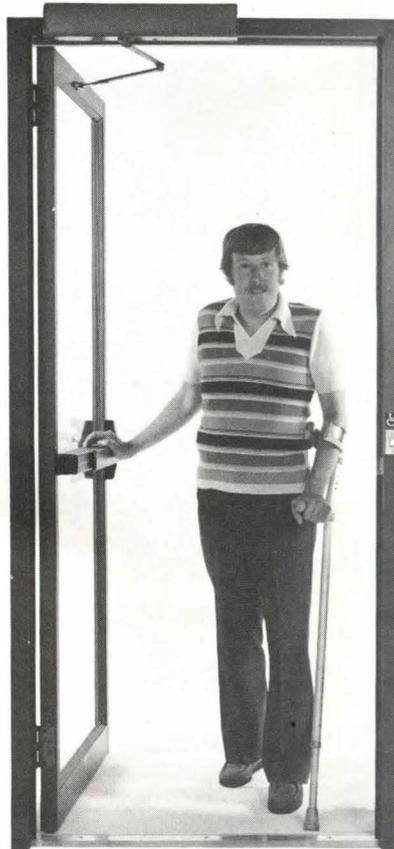
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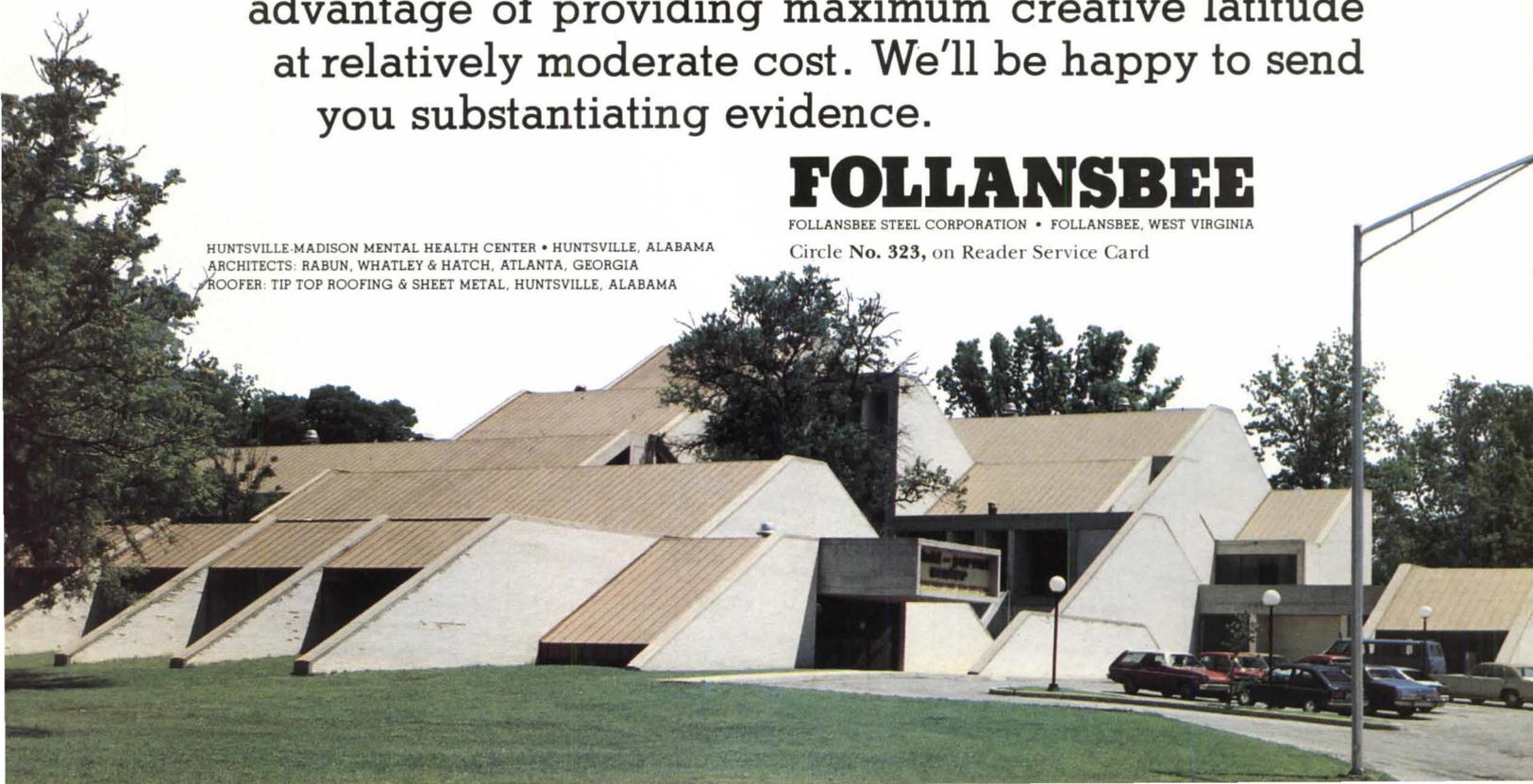
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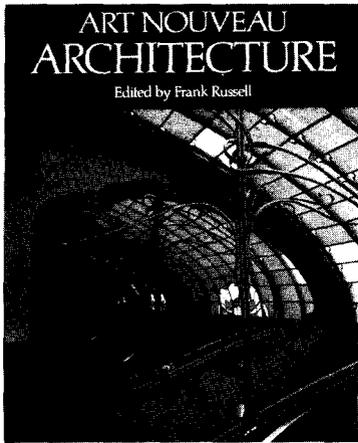
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Books



Art Nouveau Architecture edited by Frank Russell. New York, Rizzoli, 1980. Illus., 304 pp., \$65.00.

This large, profusely illustrated volume documents the extraordinary achievements of the architects of the turn of the century. In considering Art Nouveau architecture, the book broadens the term's meaning to include not only the French and Belgian types already clearly established, but also such movements as Vienna Secession, Italian Liberty Style, and even American Arts and Crafts (Greene and Greene), and early Frank Lloyd Wright. Organized by country, each chapter is written by a well-known authority and provides a visual survey of all the regional variations of the style, set against a discussion of the current ideological background.

Viennese Architecture 1860-1930 in Drawings, edited by Karl and Eva Mang. New York, Rizzoli, 1980. Illus., 128 pp., \$32.50.

This survey covers the period when Vienna flourished as a great architectural center and discusses the ideas and achievements of that golden era of the city's structural planning and building, which began in 1857 with the work of developing the Ringstrasse. Because that project remained open to all styles, Historicism took on a most pronounced form in Vienna, which was only overcome through the later work of such prominent figures as Otto Wagner, Joseph Maria Olbrich, and Josef Hoffmann. This book offers a beautiful selection of drawings of some of the most significant projects of the period, from the early Historicism to the proto-Modern.

Aldo Rossi: Projects and Drawings, 1962-1979, edited by Francesco Moschini. New York, Rizzoli, 1979. Paperback, 163 pp., \$14.95.

Aldo Rossi is one of the most original, influential, and controversial architects practicing today. His highly rationalistic work, which is based on neorealistic and populist concerns for expressing an awareness for Italy's past, is thoroughly documented in this attractive volume. The architect's life, projects, writings, and completed structures are discussed, and the works are profusely illustrated through plans, sketches, and photographs. The book lists all projects, both completed and proposed, writings, and main exhibitions.

[Books continued on page 126]

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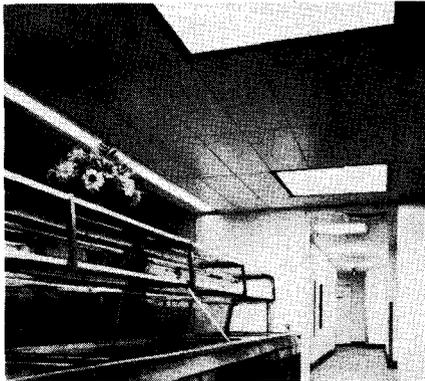
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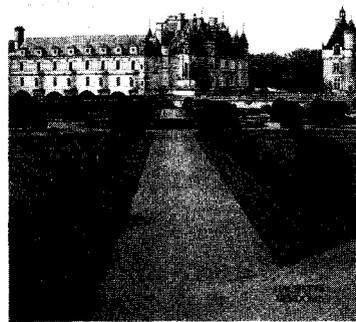
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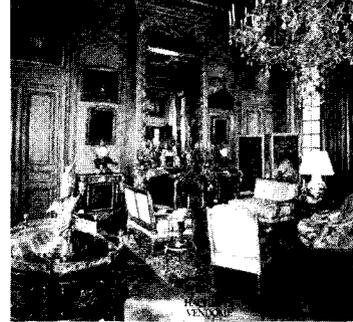
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Books continued from page 125

THE CHATEAUX OF FRANCE



THE GREAT HOUSES OF PARIS



The Chateaux of France by the editors of *Realities-Hachette* and *Daniel Wheeler*, New York, the Vendome Press, 1979. Illus., 212 pp., \$45.00.

Over the past several years, the editors of *Realities-Hachette* have produced an 11-volume survey of the chateaux of France. In this new large-format volume, 78 of the most important examples have been selected from the larger work, ranging in time from the medieval period through the 18th Century. Each chateau is characterized in an essay that comments on its architectural style and significance, and recapitulates the history of the building and the people who lived in it. A general introduction traces the development of the chateau, and describes the parts typical to it in each age. A final section deals with problems of conservation.

The Great Houses of Paris by *Claude Fregnac* and *Wayne Andrews*. New York, the Vendome Press, 1979. Illus., 280 pp., \$50.00.

The great houses of Paris were built over a period of 400 years, and they range in style from Gothic austerity to the lavish ornamentation and eclecticism of 19th-Century Second Empire. These *hôtels particuliers* were created by France's most accomplished architects, and the interiors were finished by the most gifted painters, sculptors, and cabinet makers of the time. This large and lavish book shows the most beautiful of the houses, and each entry is accompanied by a text that gives a history of the architecture and decoration as well as a social history of Paris throughout the ages.

Otto Wagner by *Heinz Gerelsegger* and *Max Peinter*, with an introduction by *Richard Neutra*. New York, Rizzoli, 1979. Illus., 284 pp., Paperback, \$25.00

This book, a paperback reissue of an earlier volume now out of print, presents the only available overall survey in English of Wagner's works. The heavily illustrated text traces Wagner's career through his cofounding of the Vienna Secession, and through his influence on younger architects, such as Josef Hoffmann. In addition to new photographs of all extant Wagner buildings, this book also includes an impressive body of designs and documents, a biography, a bibliography, and a street map of all of Wagner's buildings in Vienna.

America's Grand Resort Hotels by *Jeffrey Limerick*, *Nancy Ferguson*, and *Richard Oliver*. New York, Pantheon Books, 1979. Illus., 303 pp., \$20.00.

The grand resort hotels of the last two centuries constitute an architectural genre that both mirrors American culture and embodies many of its values. In looking at this particular type of architecture, this book becomes an illuminating social history of resort life in America. But at another level it also functions as a carefully researched architectural history of the type. The large volume is profusely illustrated, and a map giving the locations of hotels discussed is also provided.

[Books continued on page 128]

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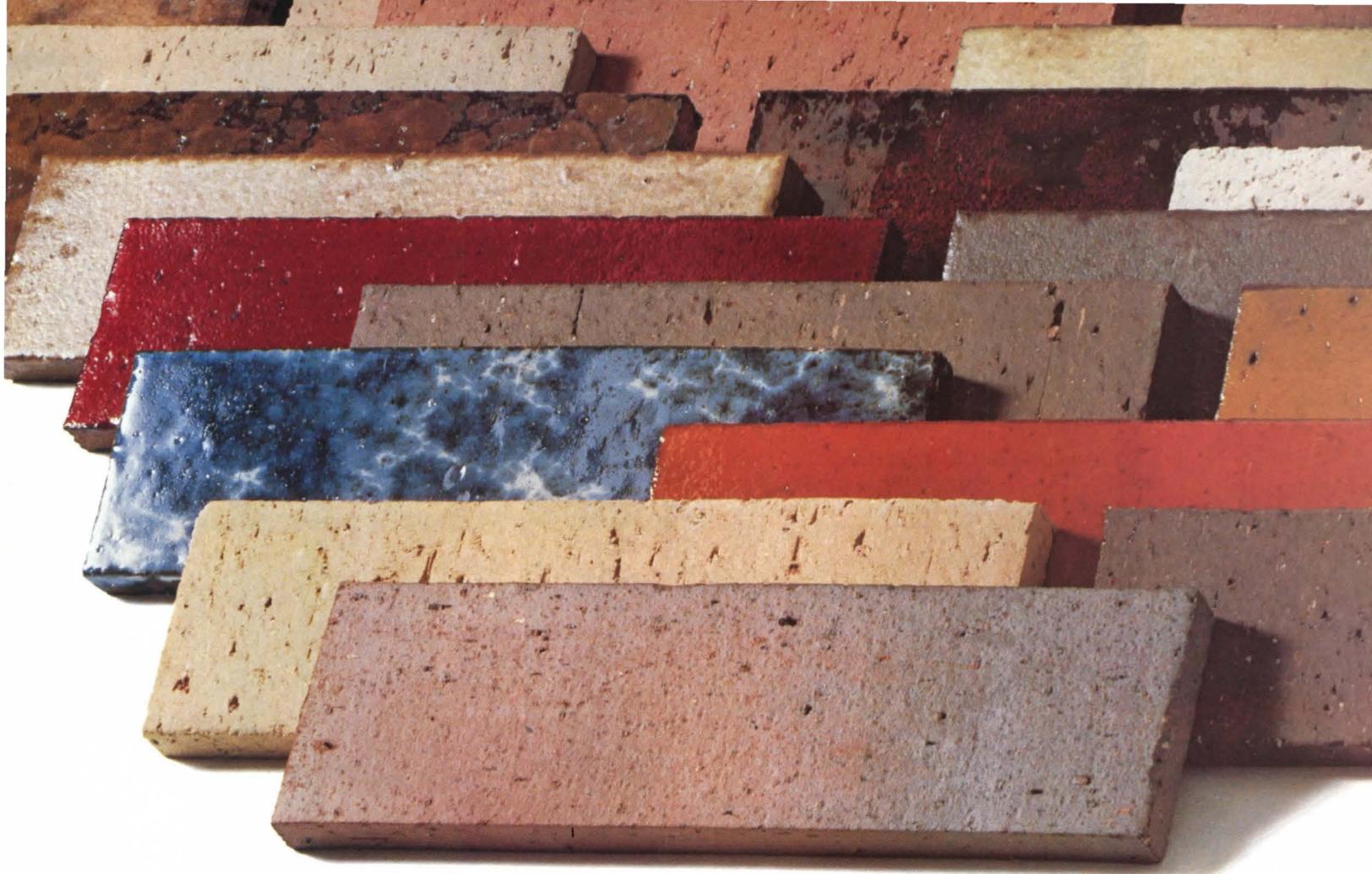
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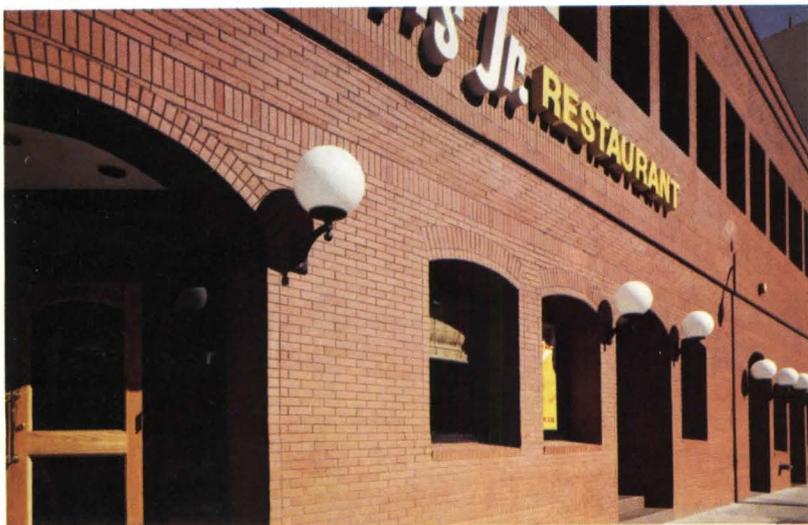
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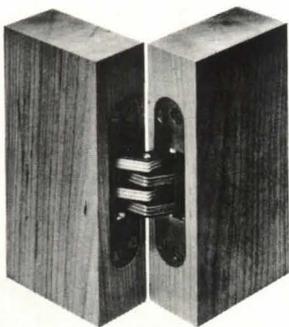


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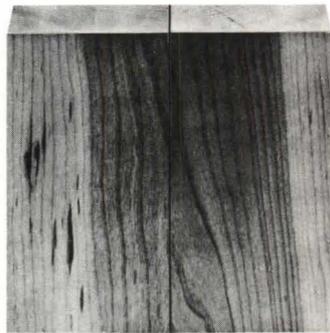


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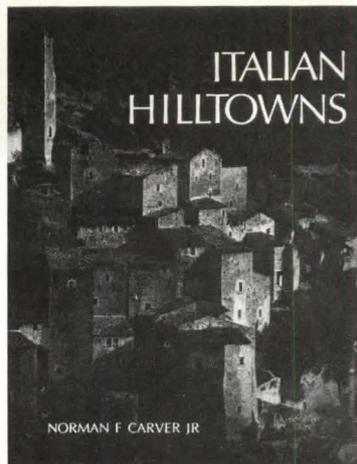
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Books continued from page 126

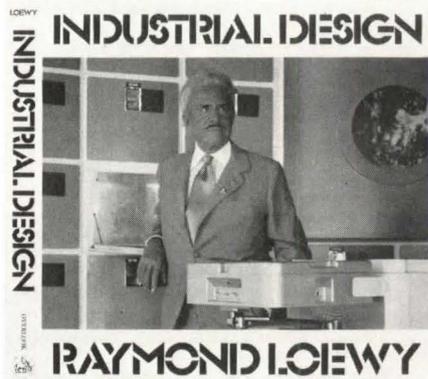


Italian Hilltowns by Norman F. Carver, Jr. Dobbs Ferry, NY, Morgan & Morgan, 1979. 192 pp., Cloth, \$22.95; Paperback, \$15.95.

This collection of extraordinary photographs of Italian hilltowns covers all regions of Italy, with particular emphasis on little-known places where one can sense an atmosphere hardly changed in hundreds of years. Today, however, because many of the towns are increasingly abandoned and ravaged by change, this book may represent one of the last documents of some of the most influential and beloved of human settlements.

Oriental Architecture in the West by Patrick Conner. New York, Thames and Hudson, 1980. Illus., 200 pp., \$30.00.

Of the many styles that have appealed to the imagination of Western architects and designers, few have been more inventive or extravagant in their expression than those of China and India. Images of the East have inspired a wide range of buildings, but found their most congenial setting in the landscape gardens of 18th-Century England. In this book, the author shows the pagodas and pavilions of the West as a hybrid type, and examines not only those buildings and gardens that can be seen today, but those that have long since disappeared, or which were too fanciful ever to have reached fruition.



Industrial Design by Raymond Loewy. New York, The Overlook Press, 1979. Illus., 250 pp., \$45.00.

From the 1932 Hupmobile to the 1945 Studebaker and the new logo for Exxon . . . these are just a few of some of the most important and innovative designs of the 20th Century, all from the hand of one of the most original and brilliant industrial designers of all time: Raymond Loewy. In this book, for the first time, his career is surveyed in a large visual presentation of his most famous international design achievements, together with his own account of his life in design. The large volume contains more than 700 photographs, with some that have never been published before from Loewy's personal collection.



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Products and literature

The following items are related to the interior technics article on carpet, pp. 110-115. They are grouped here for the reader's convenience.

Carpet products

Compu-Mat™ antistatic mat and runners provide localized protection of electronic systems and equipment from static electricity. Tested according to AATCC 134 methods, the mats and runners will not generate more than 2KV under the worst conditions. The carpet is 100 percent nylon containing carbon-infused monofilament. Mats are 3' x 5', 4' x 7', and 4' x 8'; runners are 3, 4, and 6 ft wide and up to 60 ft long. United Technical Products, Inc.
Circle 100 on reader service card

'Royal Suede' tufted broadloom made from Du Pont Antron® III nylon, with static control, is available 12 ft wide in 12 stock colors. It can also be ordered in custom colors. The solid color carpet is designed to complement the company's patterned Royalax Axminster group. Couristan, Inc.
Circle 101 on reader service card



Undyed wool-look contract carpet is made from Du Pont's continuous filament Antron® III nylon. The carpet's wilton construction adds durability, and it is static protected. Berber colors are eucalyptus, slate, mocha natural, maple bark, peat brown, and chestnut. Lees Carpets, Carpet Divisions, Burlington Industries.
Circle 102 on reader service card



Birchwood, with a berber look in a diamond pattern, is made from Du Pont bulky Antron® III nylon yarns with Teflon for soil resistance. In the radiant panel test, critical radiant flux surpasses HEW requirements for institutional health care facility corridors. Downs Carpet Co.
Circle 103 on reader service card

Berlana and Trefina carpets, for commercial or residential use, have been added to the Eligere™ line. Berlana is 100 percent wool and is available in white, cream, and two natural berber shades. Trefina is made from Du Pont's Antron® nylon, Teflon-coated for easy maintenance, and comes in a choice of 20 colors. Collins & Aikman.
Circle 104 on reader service card

Symbol and Gem-Tex contract carpets, one of nylon and the other of olefin, suitable for high-traffic areas, also have residential applications. Symbol is a velvet plush tufted with Anso® X Naturaluster nylon fiber that comes in 12-ft widths and is available in 15 colors. Gem-Tex is a multilevel loop tufted of Herculon IV polypropylene olefin fiber, also 12 ft wide, available in nine multicolors. Firth Carpet Co., Mohasco Corp.
Circle 105 on reader service card

Fusion-bonded carpets for heavy traffic areas allow yarns to be densely packed to resist wear and soil. Yarns offered are nylon, acrylic/nylon, and natural wool. In addition to 93 solids and heathers and 40 stocked patterns, the company will reproduce logos or other custom designs. Kemos, Inc.
Circle 106 on reader service card

Sugar Hill cut and loop carpet of 100 percent continuous filament nylon pile is treated for soil resistance and static

control. There are nine frosted colors in a pattern repeated at 36" x 20" intervals. The carpet is available in 12-ft width. Galaxy Carpet Mills.

Circle 107 on reader service card

Contract carpet of 100 percent Herculon olefin in three products is backed by jute, high density rubber, and Tex-a-Bac. All offer abrasion resistance, static control, easy soil release, and solution-dyed yarn for color fastness. Designs are Topnotch, a tweed; Graduate, a lighter weight companion to Topnotch; and Gamut, a patterned loop. Each is offered in a choice of bright colors. Jorges Carpet Mills.

Circle 108 on reader service card



Commercial broadloom carpeting recently introduced features deep colors such as burgundy, hunter, navy, and mahogany. Designs include Checkweave, a small check pattern made of Anso® X nylon in a cut and loop texture; Calculations, small geometrics in three tones, made of Antron® III nylon in a dense cut and loop surface; and Karapoint, white and gold dots on dark background, also of Antron® III nylon. Karastan Rug Mills, Division of Fieldcrest Mills, Inc.

Circle 109 on reader service card

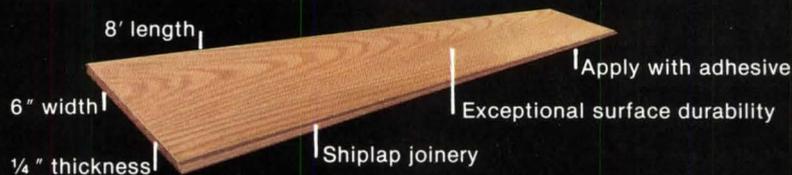
Nylon carpeting in three qualities, all treated for soil resistance and static control, includes relatively inexpensive Bright Spirit, a Berber bulky-yarn type in five colors; Proclaim, a mid-priced cut and loop texture with Saxony finish in 11 multicolors; and Sheer Elegance, superthick plush carpet in 25 solids. Downs Carpet Co., Inc.

Circle 110 on reader service card

[Products continued on page 135]



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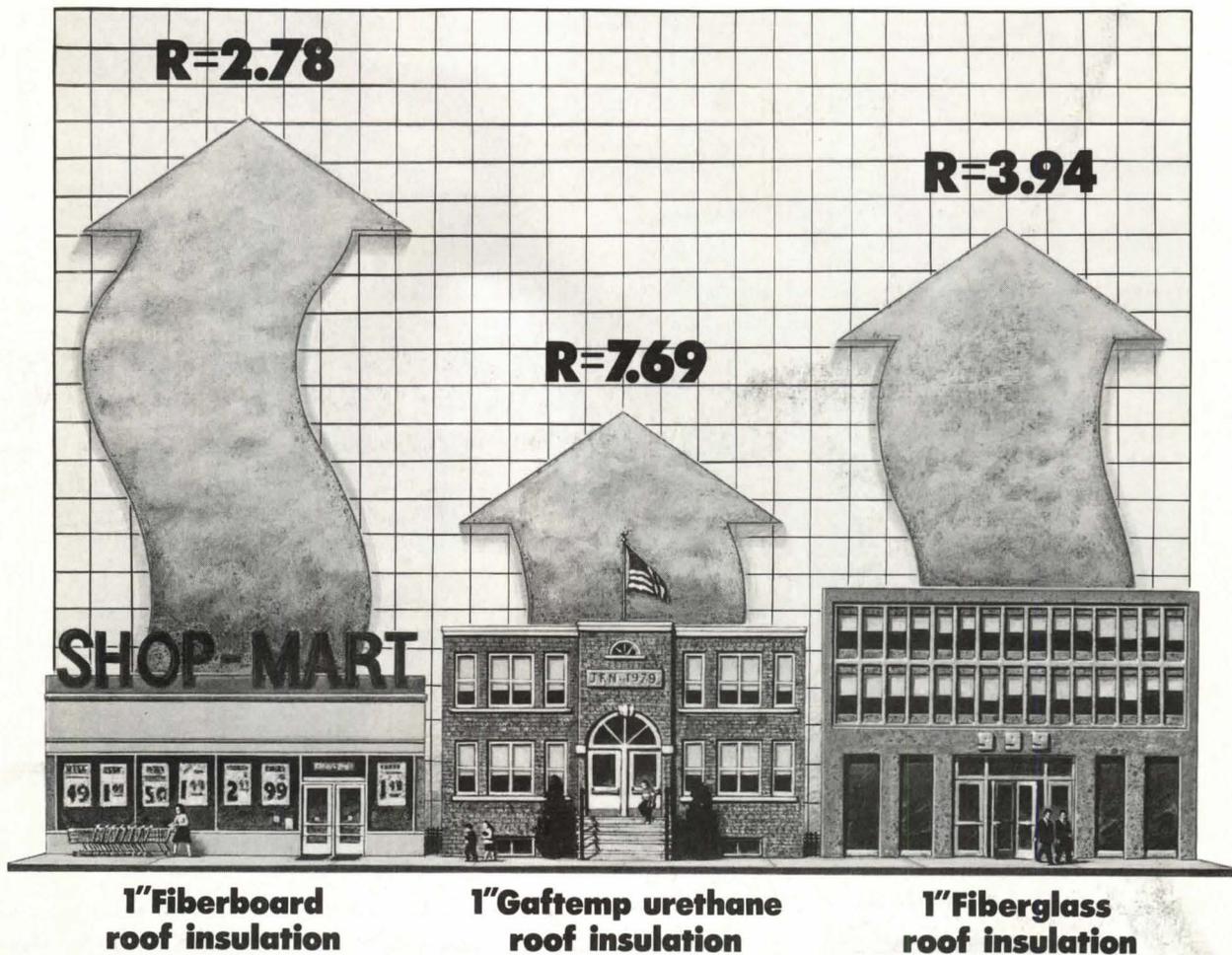


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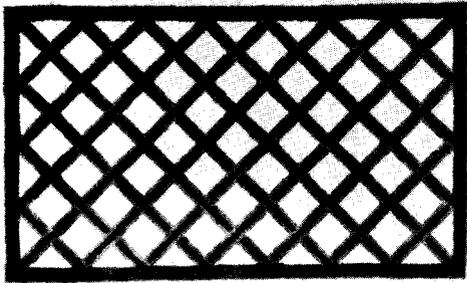
Products continued from page 130

Anniversary heavy-weight saxony carpet is made from Du Pont Antron® III nylon. It is treated with Teflon for soil resistance and has antistatic properties. Backing is woven polypropylene. The carpet comes in 24 deep colors and natural tones. Trend Carpet.
Circle 111 on reader service card

Compu-Carpet™ is antistatic to meet requirements of most computer rooms and other static-susceptible equipment. It protects better than hard-surface tiles, according to the manufacturer, and has the added advantages of comfort and sound absorbence. Three types are Designer Series and Commercial Series for heavy-duty use, and Executive Series for moderate commercial use. United Technical Products, Inc.
Circle 112 on reader service card

Additions to the Oasis berber-type carpet collection include Camel Walk, a diamond pattern; Desert Square, a raised square pattern, and Sand Drift, a wavy pattern. All are 100 percent wool in 12-ft width, and come in four colors: Sandalwood, Dark Blue, Stone White, and Desert Beige. Couristan.
Circle 113 on reader service card

Abaris carpet of 100 percent Antron® III yarn by Du Pont has a loop, ribbed texture. It offers excellent pile retention, resistance to wear, and antistatic control. The carpet is 12 ft wide and comes in 14 colors. Hollytex Carpet Mills.
Circle 114 on reader service card



Area rugs of 100 percent Anso® nylon include: Villager, a geometric patchwork design by Fritz Saal; French Quarter, a lattice pattern by the Ellenhanks; Counterpoint, solid color center with a geometric border, by Claudia Ronaldson; Botan, an Oriental poppy design by Glen Kaufman; and Spritzer, a round rug in a chevron pattern by Marie Creamer. Form III.
Circle 115 on reader service card

Rugs reminiscent of Early American styles include Ascona, Rubirosa, and Visby rag rugs of 100 percent cotton in sizes from 3' x 5' to 11' x 16' and custom sizes; and braided rugs of 100 percent wool, in tweeds, solids, and diagonals, shaped in squares, ovals, and rectangles of any size. The rugs are imported from Hungary and Portugal. Stark Carpet Corp.
Circle 116 on reader service card

New Orientals are custom made carpets, rugs, and tapestries in contemporary, period, or Chinese designs. The carpets are hand tufted of wool yarns especially dyed to match the colors of the artist's design. Latex compound is applied to the back for extra protection and longer life. Melbern Carpet Co.
Circle 117 on reader service card



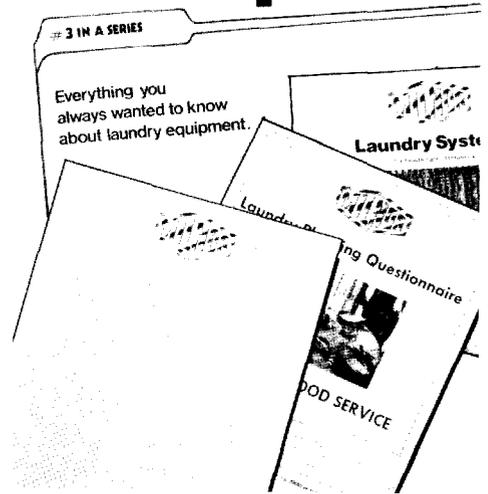
Carpet squares for the contract market offer durability and "switchability," to rotate for more even wear or to change designs. Backing provides dimensional stability and prevents buckling. There is a wide variety of surfaces and colors from which to choose. Heuga U.S.A.
Circle 118 on reader service card

Tey, a 100 percent wool rug with an Egyptian lotus leaf border design, is one of over a hundred designs available in wool or Anso® nylon. Custom designs, colors, and sizes can also be ordered. Form III.
Circle 119 on reader service card

Surfaces, a modular carpet of Du Pont's Antron® nylon, affords easy access to subfloor power and cable lines. Pressure-sensitive adhesive holds the tiles in place, yet permits them to be removed when necessary. Thermoplastic hot-melt lamination serves to bind the tufts and prevent edge ravel. Tiles are 24 in. square for faster installation. Lees Carpets, Carpet Div., Burlington Industries.
Circle 120 on reader service card

Adhesive #45G for installing carpets permits their removal without destroying the backing. It also permits carpet to be picked up and repositioned without applying new adhesive. The product will adhere to backings of rubber, urethane, latex, jute, foam, polypropylene, and vinyl. It can be applied over sealed concrete, wood, and asphalt surfaces without the use of a primer. It is easily applied, dries quickly even under damp or humid conditions, and has excellent resistance to humidity and water, according to the manufacturer. Synthetic Surfaces, Inc.
Circle 121 on reader service card
[Products continued on page 136]

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Products continued from page 135

Milstar® modular carpet systems offer design flexibility and access to under-floor utilities. The squares can be changed to accommodate new floor plans and are easy to replace in the event of damage. They can also be picked up and moved when an office is relocated. Installation is said to be more economical than installing broadloom, with an estimated saving in labor of as much as 30 percent. Milliken Contract Carpets.

Circle 122 on reader service card

Tex-Tiles are 18-in. square modular carpet tiles, primarily of nylon, of the type approved for use over flat cable. The tiles are available in eight qualities, each in ten to twelve colors. They are easily lifted to insert or relocate flat cable telephone or electric lines. Powerbond® 6-ft-wide vinyl-backed roll goods coordinate with the tiles. Surfaces are cut pile, level loop, textured loop, and cut pile frieze. Collins & Aikman.

Circle 123 on reader service card

Foundation is a dense, bonded urethane carpet cushion designed to be used under contract carpet in areas of heavy traffic. It is said to improve carpet wear, increase walking comfort, conserve heat energy, and absorb sound and vibration. There are three thicknesses: 0.26, 0.30, and 0.34 in. It is recommended for use in offices, restaurants, churches, retail stores, hotels, banks, and areas of similar heavy use. The Fairmont Corp.

Circle 124 on reader service card

Vantage mats and matting have nonslip backing for safer walking. The vinyl mat can be cleaned by vacuuming or hosing and is guaranteed against wear for five years. Colors are brown, green, cocoa, crimson, and clear. The product meets Federal fire requirements DOC-FF-1-70 and -2-70. Durable Mat Co.

Circle 125 on reader service card

Custody neoprene rubber carpet cushion, designed for medium- to high-traffic contract carpet installations, has a Class A flammability rating. It is mildew and vermin resistant, free of objectionable odor or allergens, says the company, and has additives that retard oxidation and aging. Dayco Corp.

Circle 126 on reader service card

Carpet literature

Zeflon 500® is solution-dyed nylon for contract carpet. Eight-page brochure discusses fiber properties, such as colorfastness and matching, stain resistance, durability, and static control. Badische Corp.

Circle 200 on reader service card

'Contract Carpet Maintenance Guide' discusses sources of soil and methods of reducing rate of soiling. It suggests considering the type of soil to which carpet

will be exposed when choosing colors. Daily maintenance, spot removing, and pile brushing to maintain appearance are covered. Included are instructions for removal of specific stains and a comparison of various cleaning methods. Bigelow-Sanford, Inc.

Circle 201 on reader service card

Mira-Contract 1 and Mira-Domain wall-to-wall carpet are both cut pile made from Du Pont Antron® III. Specifications of both are provided in a six-page brochure which also lists and illustrates colors available. Mira-X International Furnishings, Inc.

Circle 202 on reader service card

Ultron nylon fiber properties are provided in Tech-Talk Bulletin 76. The fiber is 10-denier 6,6 nylon with luster and antistatic control. Other information includes processing, dyeing, and finishing of fiber and a properties checklist. For a free copy of Tech-Talk 76, send a letterhead request to: Monsanto Textiles Company, Technical Publications Dept., P.O. Box 2204, Decatur, Al 35602.

The Engraver's Mark collection of commercial carpet is made from soil-hiding nylon that is chemically embossed. There are six patterns ranging from small-scale designs to bold geometrics in a selection of 25 colors, earthtones, and multicolors. The carpet is recommended for busy areas such as offices, banks, restaurants, stores, and hotels. Eight-page brochure shows available patterns in color and provides architectural specifications. Armstrong Cork Co.

Circle 203 on reader service card

The Tretford system comprises carpet modules, companion broadloom, and matching Acousticord wallcovering, which come in a wide choice of colors. Materials are static-free, sound-absorbent, and have a Class A fire rating. According to the manufacturer, they will not fray, ravel, dent, or tear. A six-page brochure provides specifications for each of the products in the system. Also shown are Berberwools in nubby textures, broadloom, and wall-coverings in earthtones. Eurotex.

Circle 204 on reader service card

Carpet underlayments of four types are covered in a six-page brochure, along with specifications for each. Felt waffle cushion offers long life in heavy traffic areas. Rippled sponge is recommended for use on or below grade over conventional or radiant-heated floors. Matrix urethane adds luxuriant feeling and increased wear to carpeting and meets ASTM E-84 flame retardancy requirements. Rebond is resilient, not affected

by moisture or heat, and can be used on or above grade. General Felt Industries.

Circle 205 on reader service card

Synthetic grass of olefin for indoor and outdoor applications, in several types and grades, is described and illustrated in color in a six-page brochure. Specifications and a list of properties are provided for each, along with suggested uses and warranty periods. General Felt Industries.

Circle 206 on reader service card

'Established Specs for Attached Latex Foam' for carpet specifiers covers the following topics: Why attached latex foam? What is the basic spec? Government Specifications for attached latex foam; and Specs for Hi-D foam. Advantages set forth include lower installation costs, softer feel underfoot, acoustical and thermal properties, and improved wear. The brochure points out that to achieve these properties, the proper attached latex foam must be specified. Attached Latex Foam Committee, The Carpet & Rug Institute.

Circle 207 on reader service card

'Selecting Carpet for Today's Office.' Sixteen-page brochure discusses the advantages in financial terms, based on life-cycle costs, of using Interface® modular carpet tiles, compared with using broadloom. Consideration is given to capital investment, operational costs, and disruption, dislocation, and removal costs. Carpets International-Georgia, Inc., Interface Flooring Systems.

Circle 208 on reader service card

'Performance Certification—A Testing Program for Contract Carpet' explains to carpet specifiers the company's program to optimize carpet performance. It reviews laboratory tests and explains the reasons, standards, and methods used for each test. Included are tests for density, deterioration, flammability, tuft bind, bundle penetration, pulling, wear, and static control. Badische Corp.

Circle 209 on reader service card

Stonemont and Stonemont Coordinates of Anso® Naturaluster nylon are illustrated in a full-color brochure. Stonemont velvet finish is available in 15 colors. The Coordinates are six patterns in 18 colorways, with base tones that correspond to the solids. All patterns and solids are illustrated in all their colors. Actual settings show some of the ways in which the two types can be combined for different effects. Magee Division of Shaw Industries, Inc.

Circle 210 on reader service card

Commercial carpet brochure provides specifications for several styles of nylon carpets rated for the type of traffic they can withstand. Information in the 16-page booklet includes pile height, stitches per inch, yarn ply and content, [Literature continued on page 139]

SuperBlend CR-4 it gives a carpet years of extra mileage.

For 9 years, this Delta Air Lines carpet of SuperBlend CR-4 from Badische Corporation was walked on by 25 million passengers in the Satellite Six facility at Los Angeles International Airport.

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The delicacy and beauty of these tensioned membrane structures is thoroughly practical. In this economical shelter for an outdoor music amphitheater, the natural beauty of the

site is preserved, with only minimal disturbance for footings for structural elements. The smaller white tensioned structure at the Aspen Design Conference in Colorado is even simpler, facilitating its erection and demounting each year.

All these structures, including the festive rest area sunshades, are fabricated of vinyl-coated polyester material held in tension on a steel framework. The result is a lightweight, rigid structure engineered to withstand heavy wind. Though a tensioned membrane structure is in a higher price class than a tent, it offers far greater strength and durability. Compared to alternative structures of wood, steel or masonry, it typically results in important cost savings.

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HELIOS TENSION PRODUCTS, INC.
Soft Shell Structures Division

Circle No. 336, on Reader Service Card

backing, static control, and flammability rating. Photos illustrate carpet colors and textures and show typical installations. Hollytex Carpet Mills.
Circle 211 on reader service card

'Carpet Product Selection Guide' is a three-section folder containing Tech-Talk bulletins describing acrylic, first generation nylon, and advanced generation nylon fibers. All bulletins provide information about denier, luster, and dyeability, and a detailed description of the important characteristics of the particular fiber. A bibliography of company publications on carpet fibers is included. The guide can be requested on professional letterhead from: Monsanto Textiles Co., Technical Publications Department, P.O. Box 2204, Decatur, AL 35602.

'Superblend CR-4' brochure tells about installations of carpets, made of Superblend CR-4 (70 percent acrylic, 30 percent nylon) yarns, that have been in use for five to nine years. Specifications for the carpets in these installations are included. Advantages of the yarn, the performance certification program, warranties, and wearability and cleanliness of carpets made from CR-4 yarns are also discussed. Create Center, Badische Corp.
Circle 212 on reader service card

Other products

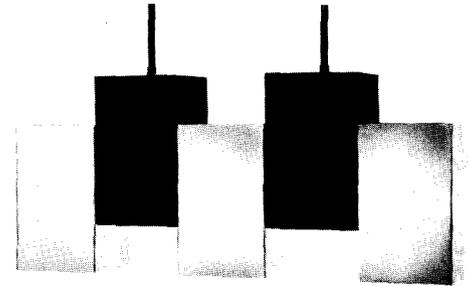
Serie Pegaso bath fixtures are vitreous china in a fluted design. Besides basin, toilet, and bidet, there are accessories: bath shelf, soap holders, towel bar brackets, tumbler holder, and tissue holder. Pegaso comes in all-white or cobalt blue, amethyst, ocher, and green, all with white interiors. Hastings Tile & Il Bagno Collection.
Circle 127 on reader service card

Weather Roof standing seam metal roof is available in Galvalume or with heat-reflecting white finish. It can withstand high winds and offers watertight integrity. A minimum slope of 1/4 in. per 12 in. of roof allows roofs to have a low profile. Marathon Metallic Building Co.
Circle 128 on reader service card

Clear vinyl strip curtains reduce air flow through doorways subject to heavy traffic flow, yet offer visibility for safety. For use in refrigerated storage areas, the overlapping strips part to allow traffic to pass through, then return to their original position. With no door swing to be considered, they make optimum use of space. Bally Case & Cooler, Inc.
Circle 129 on reader service card

Metric-sized roofing shingles, 18 percent larger than conventional shingles, reduce application time because only 66

are required per square instead of 78 per square using the conventional size. The fiberglass mat is covered with weatherproofing asphalt which has ceramic-coated granules embedded in it. The roofing shingles carry a UL Class A fire resistance rating. Reynolds Aluminum Building Products Co.
Circle 130 on reader service card



Food warmers, in both modern and traditional styling, use heat lamps to keep food warm. Finishes available are polished nickel, polished brass, colonial bronze, oxidized bronze, and antique copper. Seven models use single lamps; four use three lamps. They are designed for food service areas in restaurants, hotels, schools, hospitals, and institutions. The Feldman Co.
Circle 131 on reader service card

Shelf Light miniature spotlights snap into position on a power strip that is equipped with a 12-ft cord and on/off [Products continued on page 140]

"Weathering" for sale . . . CABOT'S BLEACHING OIL

Home by Techbuilt Inc., N. Dartmouth, Mass.;
Architect: Fred Della Paolera; Cabot's Bleaching
Oil on cedar siding and fence.

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One Union St., Dept. 328 Boston, Mass. 02108

- Send information on Cabot's Bleaching Oil
- Send Cabot's handbook on wood stains.

Products continued from page 139

switch. Strips are 18 in. for three lights, 29 in. for five lights, and 40 in. for seven lights, and can be joined for longer lengths. Lights are finished in polished aluminum, satin bronze, brass, and satin white. They can be used as accent lights, to brighten a dark corner, or to spotlight a collection. Halo Lighting Div., McGraw-Edison Co.

Circle 132 on reader service card

A perforated steel air-flow panel to be used with access flooring provides air supply or return opening for air distribution in computer rooms and general offices. There is an optional damper assembly to afford air volume control. The panel fits flush to the floor, eliminating tripping hazards. Panels are easily removed for access to underfloor services or to be relocated in order to change air-flow patterns. Westinghouse ASD.

Circle 133 on reader service card

Other literature

Ceramic tiles for flooring and facing are shown in color both as individual tiles and in installations. As described in a 12-page catalog, the tiles, both glazed and unglazed, can be used for exterior or interior applications. Specifications section serves as a guide to general specifications, products, and execution of

work. Detail drawings show the shapes available and their dimensions. Gail International Corp.

Circle 213 on reader service card

A residential alarm system brochure outlines the areas of security covered and the company-provided monitoring service. The custom-installed system provides burglary and fire protection and is monitored at a central station. In the event of an emergency, help is sent to the protected property. Honeywell Protection Services.

Circle 214 on reader service card

1980 Catalog of Safety Standards lists UL standards for safety for 424 items. Among new standards are those for wood stoves, hot tubs, and boat cables; others recently published include those for outlet boxes, incandescent lighting fixtures, smoke detectors, and fire protective signaling systems. Copies are available free from: Underwriters Laboratories, Publications Stock Dept., 33 Pflugsten Rd., Northbrook, IL 60062.

Construction management. Four-page brochure discusses architects' participation in the construction phase of buildings that they have designed, in a joint venture with a company experienced in construction management. It lists benefits to the architect and suggests minimum feasible project size for such an arrangement. CM, Constructors/Managers Inc.

Circle 215 on reader service card

Building materials

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

Cabrillo Marine Museum, San Pedro, Wilmington, Ca (p. 78). Architects: Frank O. Gehry & Associates, Santa Monica, Ca. Corrugated metal wall surfacing: Towest. Aluminum and glass curtain wall: Kawneer. Chain-link fencing: Alcorn Fence. Windows: Torrance Windows. Aluminum doors: Kawneer. Hollow metal doors: Security Metal Products. Sliding doors: Slidecraft. Interior steel folding doors and hollow metal doors: Holcomb & Hoke Mfg. Overhead steel rolling door: Pacific Rolling Door Co. Built-up roofing and corrugated metal: Flintkote. Water closets: American Standard. Baked enamel stalls: Mills Metal. Stainless steel bath accessories: Parker.

Banque Bruxelles Lambert, Milan, Italy (p. 96). Architects: Emilio Ambasz and Giancarlo Piretti, New York and Bologna. (Only U.S. distributors are listed.) Carpet: Louis De Poorter. Floor lamps and desk lamps: Atelier International. Flexible desk lamps: Castelli. Desks, office system, marble table: ICF and Abitare. Couches and low tables: Stendig. Ver-tebra office seating: Krueger.

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Architect B (\$15,675-\$20,500): Responsible for providing technical advice in the areas of solar applications and energy efficient building design. Will provide technical assistance for development of a Statewide solar program. Requires graduation from an accredited college or university with major studies in architecture or architectural engineering and four years of architectural experience or possession of a professional architect's license and one year of experience as a licensed architect. Graduate education in architecture may be substituted for experience on an equal time basis. Send resume to: Personnel Supervisor, Office of Emergency & Energy Services, 310 Turner Road, Richmond, Va 23225. For additional information concerning job responsibilities, etc., please call: John A. Johansen, (804) 745-3245.

Architect—Department Head: Candidates should have demonstrated thorough professional and administrative-managerial experience. The successful candidate will assume a partner's position in a major multi-discipline midwest A-E firm. Our city provides outstanding opportunities for cultural and athletic activities and an environment for family-oriented activities. All qualified individuals are encouraged to reply in confidence for prompt consideration. Send resume, including discussable compensation range, to Box 1361-326. An Equal Opportunity Employer.

Architectural Designers and Interior Designer: Health facilities and general facilities. Established, progressive, medium-sized Houston architectural firm with staff of 70 seeks a Health Facilities Architectural Designer, a General Facilities Architectural Designer and an Interior Designer with minimum of six years design experience on large scale projects. Individuals will have responsibility for generating, developing and implement-

ing design solutions for health and/or general facilities projects. Excellent starting salary; bonus consideration based on performance, possible opportunity for future ownership participation. Call or write: The Klein Partnership, Inc., 3000 Wesleyan, Houston, Tx 77027, (713) 623-6050.

Architectural Graduate: Small growing firm in Medford, Oregon; branch office in Pendleton, Oregon. Minimum 3 years architectural office experience. Ability to carry small to medium sized projects from design through construction. Broad scope of experience available including client contact. Afseth, Jacobs & Schmitz, Architects, 2950 East Barnett, Medford, Or 97501.

Architectural Specifications Writer: New York office of prestige A/E firm seeks specifier with five or more years progressively responsible experience in all phases of contract document preparation on large projects. Applicants should have understanding of contractual relationships and recognized office practice, knowledge of construction products, materials and systems, and research ability. Field experience desirable. Equal Opportunity Employer. Our employees know of this ad. Submit resume detailing education, experience and salary history in confidence to Box 1361-327, *Progressive Architecture*.

Assistant Professor: Position for a designer in area of shelter for human habitation. Candidates should have design and/or architectural background. Emphasis in engineering helpful. Ph.D. desirable; Master's degree and professional experience required. Position involves programs related to housing design, building technology and materials. Research and cooperative extension responsibilities. Position available May 1, 1980. Submit resume, research interests, statement of professional activities and/or teaching by April 15, 1980 to Dr. Christopher Williams, Design & Environmental Analysis, Box #A, Van Rensselaer Hall, N.Y.S. College of Human Ecology, Cornell University, Ithaca, NY 14853. An Equal Opportunity Employer.

Assistant Professor, Interior Design: Department of Textiles and Interior Design, 9-month position, tenure track. Beginning August 21, 1980. Salary negotiable. Doctorate preferred in arts related area, emphasis in history of interior design/furnishings. Professional experience; university teaching; demonstrated research competency. Responsibilities: assist in curricula development; teaching, advising interior design students; conduct research; manage interior design historic furniture collection. Send resume and names of three references to: Dr. Marilyn M. Dunsing, Director, School of Human Resources and Family Studies, 274 Bevier, University of Illinois 61801. Affirmative Action/Equal Opportunity Employer.

Chairman: The University of Toronto is seeking a Chairman for the Department of Architecture to take office July 1, 1980, or as soon as possible thereafter. The Department offers a five-year program leading to the B. Arch., and post-professional degree programs leading to the M. Arch. A revision of the structure of the School's programs is under study. Qualifications required are capacities for leadership in architectural education, and to relate effectively to the practicing profession. The existing School of Architecture will be-

come a department in a new faculty with the Department of Landscape Architecture on July 1, 1980. Nominations and applications should be addressed, by April 30, 1980, to: Professor B.L. van Ginkel, Director (Dean-designate), School of Architecture, University of Toronto, 230 College Street, Toronto, Ontario, Canada M5S 1A1.

Chairperson: Department of Design, The University of Kansas. Design Chairperson Search Committee, 446 Murphy Hall, The University of Kansas, Lawrence, Ks 66045.

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College of Architecture: University of Florida, is seeking two faculty members for Interior Design program, Fall 1980: Teaching responsibilities: all areas interior design. Qualifications: Master's degree, college level teaching experience in interior design, interior architecture or environmental design. If experience other than interiors, evidence of interior involvement requested. Professional experience necessary. Position level, Assistant Professor. Salary commensurate with qualifications. Resume, official transcripts, 3 letters of recommendation should be sent to Dr. Michael Young, College of Architecture, Interior Design, 331 GPB, University of Florida, Gainesville, Fl 32611. Deadline: May 15, 1980. Equal Opportunity/Affirmative Action Employer.

Faculty Positions: The College of Architecture of King Faisal University in Dammam, Saudi Arabia, has just created new faculty positions for the academic year 1980-1981. Positions available at all levels in the following areas: Architecture, Urban and Regional Planning, Landscape Architecture, Engineering Sciences, Building Technology, and Mathematics/Physics. Candidates should have Ph.D., M.A. or equivalent degree; practical and/or teaching experience preferred. Language of instruction is English. Positions start in September 1980. Salary is competitive. Benefits include free furnished accommodation, air tickets to and from Saudi Arabia once a year for husband, wife and 2 children, 60-day summer holiday. Please submit complete resume (including daytime telephone numbers) and a listing of three references to Dean Ahmed Farid Moustapha, College of Architecture, King Faisal Univer-

sity, c/o Saudi Arabian Educational Mission, 2221 West Loop South, Houston, Tx 77027.

Faculty in Architecture: To teach in all ranks at university in Jeddah, Saudi Arabia. Language of instruction is English. Minimum of one year contract renewable by mutual agreement. M. Arch. required. Positions are available starting September 1980. Faculty qualified in structures, environmental control systems, and construction technology especially needed. Interviews this spring. Total monthly salary: Professor, \$2,500-\$3,210; Associate Professor, \$2,236-\$2,854; Assistant Professor, \$1,820-\$2,375; Lecturer, \$1,382-\$1,824. *Other Benefits:* Free furnished accommodation; education subsidy; 60 days annual leave; air fare to and from Saudi Arabia once a year for husband, wife and up to two children; no Saudi income tax. Send curriculum vitae at earliest convenience to: Dean Maurice Kilbridge, Harvard Design School, Cambridge, Ma 02138.

Instructors: The Department of Architecture at California State Polytechnic University, Pomona, is seeking applications for the following faculty positions for 1980-81: 1. Instructor full-time in undergraduate structures and environmental controls. Minimum: Master's degree in architecture or engineering and two years professional experience. Research experience desirable. 2. Instructors full-time and part-time in undergraduate/graduate design classes. Minimum requirements: Master's degree or equivalent and two years professional experience. Teaching experience desirable. The University is an Equal Opportunity Employer. Send resume to Chairman, Department of Architecture, California State Polytechnic University, Pomona, Ca 91768. Deadline: March 15, 1980.

Position Vacancies: The V.P.I. College of Architecture and Urban Studies has full and part-time faculty positions open in the areas of Design, History, Structures and Technology. Rank and salary are negotiable depending on the qualifications, experience and circumstances of the candidates. Requirements include the terminal degree in their field and extensive experience in teaching, research and/or practice. Submit applications and a resume to Dean Julio M. San Jose, College of Architecture and Urban Studies, Virginia Polytechnic Institute and State University, Blacksburg, Va 24061. Virginia Polytechnic Institute and State University is an Equal Opportunity/Affirmative Action Employer.

Professors: Following posts of Professors in the pay-scale of Rs. 1500-60-1800-100-200-125/2-2500 plus allowances as admissible under the rules have fallen vacant in the School of Planning and Architecture. Appointment will be made in next three months. The School is an autonomous institute and has been declared to be a deemed university under Section 3 of the U.G.C. Act. Consultancy Practice as admissible under the rules of the School is allowed. Residential quarters may be made available in future. 1. Professor of Architecture; 2. Professor of Landscape Architecture; 3. Professor of Housing; 4. Professor of Planning. For details of prescribed qualifications and experience for the posts, the candidates may contact the Registrar, School of Planning and Architecture, 4, Block-B, Indraprastha Estate, New Delhi-110002. Tel. 263240. Cable. Schoolplan, New Delhi.

[continued on page 144]



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Social Scientist/Architecture: MIT Architecture Department seeks creative faculty, Assistant Professor, to teach advanced students and conduct research on human dimensions of built environments within the on-going Behavioral Science program. Candidates should be interested in relationship between humans and built settings, knowledgeable about environment and behavior, experienced in working with architects, understand appropriateness of social science methodologies, and wish to develop research. Background could be sociology, cultural geography, anthropology, psychology, psychiatry or other social science. Three year appointment. Resume and two articles by March 15, 1980 to Professor Gary Hack, Room 10-485, M.I.T., Cambridge, Ma 02139. MIT is an Affirmative Action/Equal Opportunity Employer.

Syracuse University School of Architecture has full time faculty positions open for the fall of 1980, in the Architectural Design sequence of the program. Tenure track; rank, salary and length of initial contract negotiable. Registration and secondary capability preferred. Send resumes and three references to Louis

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Architectural Graduate: Male, 28; desires responsible/challenging position with progressive architectural firm, preferably East Coast. B. Architecture (Cornell), B.S. Industrial Design, A.A.S. Advertising Design. 3 years experience Industrial Design Consultant involved in all phases of design, rendering and client contact. Reply to 252 Cornell Quarters, Ithaca, NY 14850.

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French Architect: 34; fully qualified; desires position with progressive firm. 8 years experience in Africa and France with government and well-established firm; comprehensive experience in housing and office-building projects; concentrated on design and working drawings. Emigration formalities arranged for 1+ year. Portfolio upon request. Box 1361-319, *Progressive Architecture*.

June Graduate: Master of Architecture degree, specialized in computer aided design. Seeks position with firm using or planning to use the computer as a design aid, or university position teaching and researching the area of computer aided architectural design. For more information and resume contact: Norbert A. Howell, 102 E. Pacemont Rd., Columbus, Oh 43202.

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[continued on page 146]

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Architectural Tour Calling: Japanese architectural tour planned for May 24-June 8 will visit works of Isozaki, Maki, Tange, etc., in addition to Kyoto and Nara historical sites. James Tice, Assistant Professor of Architecture, USC, tour director. Contact Technology Transfer Institute, 700 South Flower Street #918, Los Angeles, Ca 90017, (213) 628-9381.

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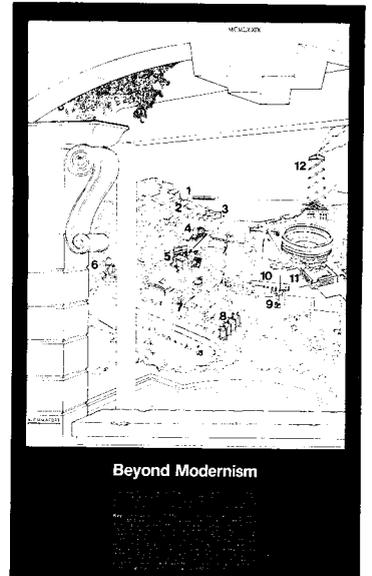
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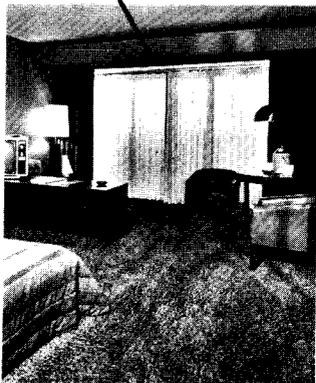
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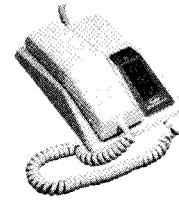
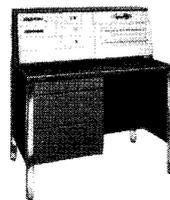
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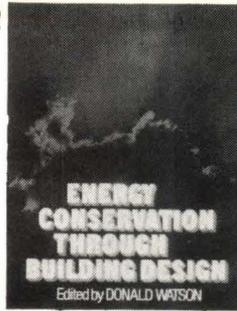
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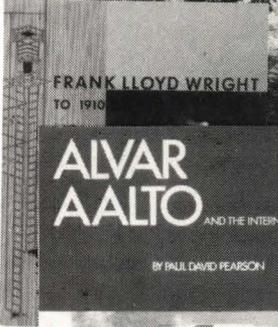
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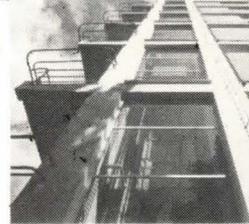
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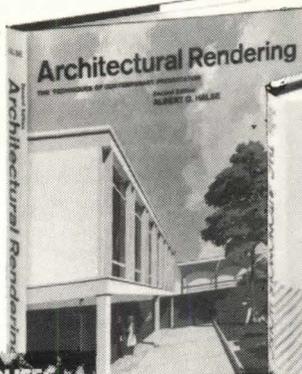
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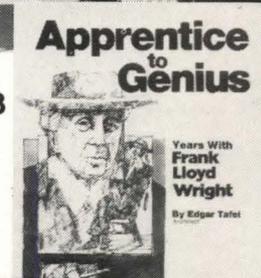
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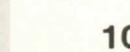
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By Grant Carpenter Manson,
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By Edgar Tafel,
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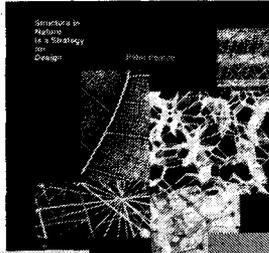


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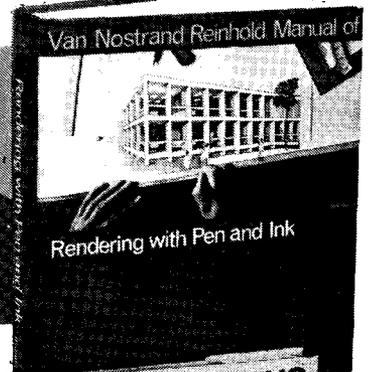
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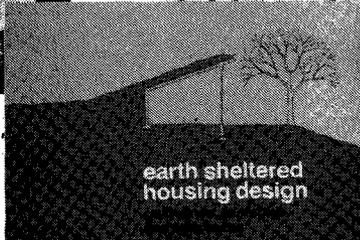
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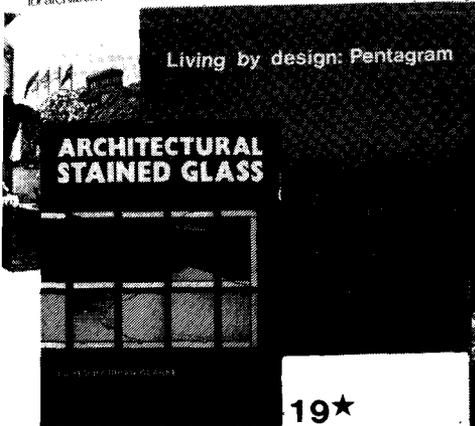
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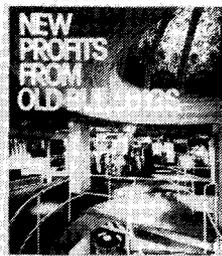


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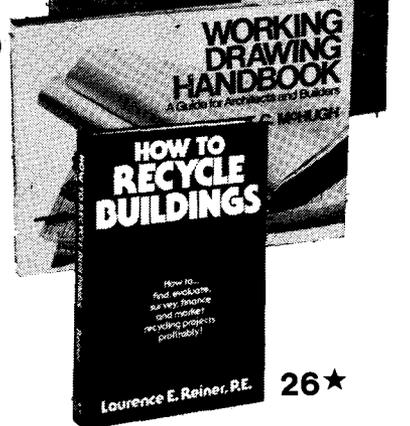
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Translated by Bobbi Mitchell,
120 pp., illus. . . . \$22.50

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By Paul Stevenson Oles,
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By Peter Pearce,
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By Robert C. McHugh,
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21 The Architecture of Frank Lloyd Wright A Complete Catalog Second Edition

By William Allin Storrer,
456 pp., illus. . . . \$15.00

This second edition, which documents all of the buildings designed by Wright, replaced a number of photographs with new ones that show the buildings to better effect, changed some copy in the text, and incorporated factual information that has come to light since the original publication in 1974.

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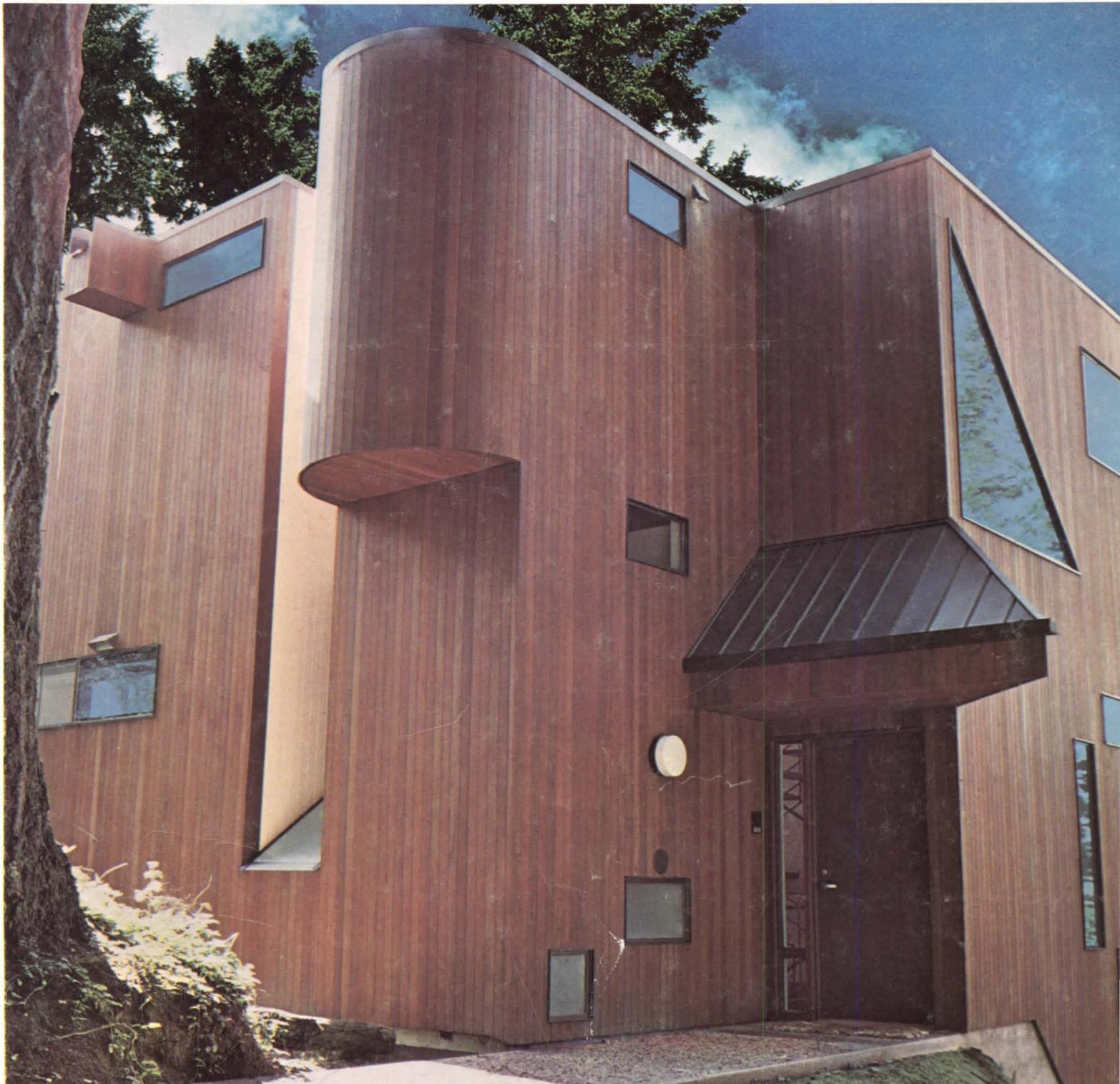


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