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HAWORTH
September 1979

Progressive Architecture

Editor: Ethics III—Wasting not

Interior design

Designer’s Saturday

Introduction: Interior design: On the threshold

129

The interior decade: A summary of the 1970s.

130

The ‘isms’ of pluralism

139

“isms” are defined as they relate to interiors shown in this issue.

A corner on the world

140

FDM Productions and Evans Partnership offices by Gwathmey Siegel.

Cool, calm and collective

144

Bray-Schlaible Design and D’Urso Design share renovated studio space.

Better and better

148

Two Sunar showrooms in Chicago and Los Angeles by Michael Graves.

Ace of clubs

154

Lounge area of First Ave. Squash Club by Robert A.M. Stern.

Modified Modernism

156

Offices by Tod Williams & Associates for New York financial firm BEA.

The CRA amendment

160

The California Redwood Association offices in San Francisco.

Sleek revival

162

Johnson and Holland’s offices for Yves Saint Laurent in New York.

Each to his own taste

164

The Esprit de Corp showroom and an apartment by Peter Wilson Associates.

Faux bois sans faux pas

168

A New York apartment designed by Richard Gillette.

Astir in the shopping mall

170

The Cook’s Spoon, Aurora, II, by Sisco/Lubotsky and Stuart Cohen.

Hot dog heaven

172

Franks for the Memory restaurant in San Francisco by Richard Fernau.

Insiders’ outlook: Design professionals look at the 1980s.

174

Conclusion: Reflections on a past, projections toward a future.

Technics

Specifications clinic: The furnishings game

197

Pa$st...Shhh!

198

Providing suitable office acoustics requires sophisticated techniques.

Departments

Views

250

Building materials

News report

254

Job mart

It’s the law

258

Directory of advertisers

Books

263

Reader service card

Products and literature

Cover: The ancient Roman god Janus surveys both past and present in this design by Michael Graves commissioned especially for P/A. Graves’s past work (p. 131) and recently completed projects (p. 148) are in this issue.
Concrete evidence

Structural harmony was only one of the beautiful reasons why these project architects chose Andersen® Perma-Shield® windows.

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We don't just have your ceiling. We've got your color. And if we don't, we'll do a little mixing. And then we will.
Design professionals are in a position to disclaim any major responsibility for allocation of our resources. Buildings, after all, consume only a fraction of our materials and energy, and our society is still jamming its superabundant highways with fuel-guzzling vehicles, while planes circle above our congested airports; millions of Americans still relax by roaring powerboats across our waters or skimobiles across our winter landscapes.

The only area in which architects in practice can be sure to help society conserve its resources is by reducing the energy demand of structures and their furnishings. They can design building envelopes that are not energy sieves, they can make possible the use of natural lighting and ventilation, or the artificial lighting of one desk without lighting up a whole floor. But even here, it is largely up to the occupants to adjust blinds and thermostats or flick light switches as they leave; with computer controls, someone must keep them working effectively.

When it comes to the resources consumed in construction, the situation becomes too complex for the architect to grasp. A few years ago, many were concerned that the demand for wood was leading to ecological destruction of forests and streams. Now they must concede that wood is one of our few "renewable" resources. Now that scarcity of fuel is a preoccupation, we've become aware that our plastics are synthesized out of petroleum components, that metals, glass, cement, and brick demand great amounts of energy in their production. Then varying amounts of energy are needed to transport materials to the site and put them in place.

Ideally, the architect could best serve the interests of society by calculating—through some unthinkably intricate computer programs—just how each building could be built with the least drain on the resources ranked as most critical to our future. Such a calculation would take into account the possibility of substituting labor—which seems, at least statistically, to be overabundant—for mechanical power.

In reality, of course, all of these myriad calculations are made by that ubiquitous, inscrutable mechanism known as the market. The market constantly weighs the relative availability of petroleum-derived synthetics, of stone, of sand, and of innumerable other building constituents; of transportation, of labor, etc., and comes up with evaluations in dollars that should reflect the relative importance of these resources to our survival. But the market is warped by innumerable instances of regulation, subsidy, price-rigging, tax inequities, labor-protecting clauses and export-import policies. Besides, the market has a notorious lack of foresight, hardly sensing shortages until they occur. But, having no better gauge, the architect might as well assume that whatever costs the least to build and operate represents the least drain on our crucial resources.

One step the practicing architect can take in the interest of resource conservation is to ask, "Is this construction really necessary?" Does the client really need new facilities, or would a software solution—a reorganization of activities—serve the purpose? If the architect is even asked whether a new facility is necessary, he faces an unaccustomed ethical dilemma. It takes exceptional integrity to say, "Consolidation in one new facility will not significantly improve the function of your organization." Can the architect trust his judgment in such situations over the client's presumed expertise? And won't some other architect get the job, anyway?

What the architect definitely can do to save resources—with the confidence of his own expertise—is to say, "The space you need could be best obtained in an existing building." This kind of advice American architects are now giving quite regularly, and the results are a genuine conservation of old structures and of resources that would otherwise have gone into unnecessary new ones. But this is not an entirely altruistic position: design for remodeling and rehabilitation is quite remunerative for the professional.

The broader questions of resource allocation can be addressed by architectural professionals as a group, working through their organizations. The American Institute of Architects has made its influence felt in Federal policies regarding reuse of old buildings, for instance, and strenuously for building energy polices that would stress real energy saving through design, rather than simplistic rules—on percentage of glass area, for instance—that might actually obstruct conservation.

On the question of energy sources, the AIA seems to recognize an obligation to oppose environmentally threatening processes, but a resolution condemning nuclear power plants, introduced at this year's AIA convention, was rephrased into a general one about energy policy; judging the risks of reactors was considered beyond the membership's expertise. AIA should not, however, let its responsibilities for environmental quality rest there; it should support an unbiased study (perhaps cosponsored with other organizations) to analyze this critical question—and the risks of alternative sources, such as coal and oil shale—with the authority AIA cannot find within its own ranks.

In the development and allocation of our resources, decisive power must be conceded to economic and political processes. But the market has no conscience at all and governments—alas—all too little. Architects and other environmental professionals must press for the rational management of the resources on which our future depends.
Height restriction calls for unusual design approach

...steel helps provide most economical solution

How do you build a 136,558-sq-ft building on a 7.5-acre lot that's restricted by a three-story height limitation? The builders of this project, Bannockburn Executive Plaza, Bannockburn, Ill., solved the problem with a steel-framed, "Y"-shaped structure featuring 30-ft-sq bays.

"We considered most of the alphabet before settling on a basic 'Y' configuration," reports Harry Dolan, vice president for the developer, Terracom Development Group. "Ideally, a building with this much area requires about nine stories to insure optimum floor layout and depths. The challenge was to compress this height to only three stories, yet leave the site open with good sight lines."

Preliminary framing analysis (PFA) requested

Early in the final design stage, the project's structural engineer asked Bethlehem to prepare a PFA based on a 30ft x 30ft bay size. Earlier, the designers conducted a similar study on a concrete frame.

After the results of both studies were compared, the steel frame came away the winner. The structural engineer reports, "Structural steel proved to be the best solution because of its economy, light weight, ease in spanning the 30-ft bays, and speed of erection."

The frame was erected in about 10½ weeks at a cost of $5.35 per sq ft. The unit weight of the steel frame was 7.5 lb per sq ft.

Construction economies were attributed to the ease by which the utilities and mechanical systems could be installed within the steel frame. Also, structural steel simplified the framing for the cantilevered balconies and the roof skylight in the center atrium.

Composite construction

ASTM A36 beams and girders are designed as simple beams. Lateral wind forces are resisted by beam-column moment connections utilizing Type 2 Construction per A.I.S.C. design specification. Single-piece, ASTM A572 Grade 50 high-strength columns were used throughout. The elimination of column splices contributed to fabrication and erection economies.

The floor system consists of 3-in. composite steel floor deck topped with 3½-in. lightweight concrete. The floor system acts compositely with floor beams spaced 10 ft on centers. The beams, in turn, are supported by composite floor girders.

Sales Engineering Services available

Bethlehem's frame analysis service team can be very helpful in determining the most economical steel frame for your building. Our PFA program is part of the broad range of technical and advisory services we offer.

Our District Office Sales Engineer and Home Office Buildings Group can work in cooperation with your consulting engineer to develop a detailed budget cost study on the total steel framing system package. The program utilizes the systems approach and includes all components of the building floor system, as well as wind and seismic/drift control. At the conclusion of the study, you are presented with a comprehensive material quantity summary and cost estimate in a convenient, easy-to-read form. No fee or obligation is involved.

For more information, get in touch with a Bethlehem Sales Engineer through the nearest Bethlehem sales office. Bethlehem Steel Corporation, Bethlehem, PA 18016.
A 3-story height limitation led to the Y-shaped design of Bannockburn Executive Plaza. Bethlehem furnished all of the structural steel for the project.

Each wing encompasses about 14,000 sq ft per floor. Entrance is gained through the 36-ft-high skylighted atrium. Structural steel simplified the framing of the cantilevered balconies and the skylight.

Floor plan of a typical level demonstrates interior space flexibility made possible by the spacious 30-ft-sq bays.

Developer: Terracom Development Group, Des Plaines, Ill.
Architect: Enviro-Technics Ltd., Skokie, Ill.
Structural Engineer: Joseph L. Heil, P.E., Milwaukee, Wis.
Fabricator: Rodgers Iron Works, Chicago, Ill.
General Contractor: Pepper Construction Co., Barrington, Ill.

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San Francisco (415) 465-6290
Seattle (206) 938-6800
Ask for Sales Engineer
Views

Johnson's date with history

That an architect and client may propose a neo-neo-Gothic tower based on remote and unbuilt precedents is within their collective prerogative. The imposition of the tower and its support structures on the urban fabric goes beyond that prerogative and suggests neo-60's bulldozer planning.

The construction of mechanically repetitious façades on a pedestrian square is only a minor improvement over the surface parking which currently exists. The six-story glass arcade added to the center of the south side of Market Square, however, effectively reduces this vital urban space to the subservient role of forecourt to another empty plaza intended to "echo at a smaller scale" the square itself. (The plaza may be smaller in size but its scale is clearly monumental and forbidding in the drawings.) Even the placement of the tower has ignored the precedent established by placing some glass contraption along Stanwix St. while its neighbors are building a wall of towers.

These few formal issues, however, are incidental to the social and economic destruction imposed on the small businesses and other occupants destined to be improved by the wrecking ball.

If the architect and client insist on arrogantly imposing their whimsey on blocks of urban space, let them select one of the large tracts of land on the North or South Sides which have yet to recover from the original bulldozer planning.

Richard W. Pohman, Assistant Professor of Fine Arts, Dept. of Architecture
Carnegie Mellon University
Pittsburgh, Pa

I viewed the "PJ & PPG" article in your July issue as an overpassionate desire of the East Coast publishing establishment to justify or pacify sensibility with historicism and indulgent semantics. I find it extremely difficult to contain my emotions when confronted with the absurdity of the AT&T Building and this latest insult of plagiarizing Mies van der Rohe, he quipped, "I copy from the best!" With the passing of the great masters, it seems that Johnson, left to his own talent, had to revert to a groping emasculation of trite historical details. With the wealth of new talent in the world, to persist in publishing such travesties will only impede rather than advance the profession of architecture.

Ronald Zocher
Architect
Stony Creek, Ct

The reason Philip Johnson's PPG and AT&T got so much publicity is because he is Philip Johnson; if an unknown architect did something like that it would probably never get published. Mr. Johnson is not a saint; it does not mean every building he designed is worthwhile to discuss, especially a trash design like PPG and AT&T.

What an insult to those architects who are honestly working on these problems which are desperately facing our nation today like energy, high inflation of construction cost and so on. Why waste your very valuable pages? Why? Why?
Ning Chang
Architect
Rockville, Md

Why? Why?

Addenda on grading of wood

Commodations to you on the excellent Technics feature, "innovations in Wood" (P/A, July 1979, pp. 90-99). A difficult subject to cover, but well done.

One omission (actually two) needs to be noted: (1) in the summary of association sources of information, the grading rules indication was left off of the Western Wood Products Association, a rules-writing agency which supervises quality standards for more production than the combined volumes of all of the other softwood lumber grading agencies shown; and (2) the American Plywood Association, which I believe holds a similar position on those products.

Malcolm Epiey, Jr., Director
Industry Communications
Western Wood Products Association
Portland, Or

[APA confirms that it does establish grading rules for plywood products.—Editor]

Atlantic City squeeze play

Although not an architect, but an engineer, I am a long-time subscriber to your publication. I could not let the enclosed go by without sending it along with my recommendation that for your next P/A Awards program a suitable category be established to recognize works such as this.

It is said that there is some merit in every project, although for some (such as this), it may be necessary to stretch the imagination to describe it in a positive manner. Perhaps it qualifies under "energy conservation for an existing structure." Certainly the elimination of sunlight from most windows and a reduction in the roof load could save money if the house were air conditioned in the summer. During the winter

months elimination of wind and infiltration will make the house more comfortable.

Maybe the architect could be commended for making the most out of a "difficult site." The photo does not indicate the exterior wall treatment for the casino, but perhaps the architect has used similar windows and maybe even a tile roof. Under those conditions, he could be given an award for blinding his building in with the character of the neighborhood.

When it comes time for the awards banquet, it may be appropriate for Mrs. Bongiovanni to present the award to the architect and so doing describe in her own words the beneficial aspects of the casino which may be lost to the casual observer of the photo.

Actually, the situation distresses me as it will others, because it proves that an individual's rights to privacy, sunlight, and a decent environment are only rights as long as someone bigger or with more money allows it. Those associated with the project, whether casino owner, architect, or local regulatory authority, should be ashamed of themselves.

George W. Johnson, PE
Johnson & Stover, Inc.
Middleborough, Ma

Atlantic City, the Bongiovanni house is enfolded in the wings of new Penthouse casino.

The city monumental

That brief quotation of mine on the importance of ornament in architecture in your article (Progressive Architecture, May, 1979, Introduction, p. 87) recalled a long-forgotten occasion which, for some of us, seemed a quasi-miraculous one.

In the spring of 1953 Christopher Tunnard, Chairman of the Department of City Planning, Yale School of Architecture, and Lamont Moore, Associate Director of the Yale University Art Gallery, organized an exhibition called Arts in Urbe. A lengthy subtitle began "An Exhibition of Civic Art from Renaissance to Present Times in Europe and the United States . . . " The gravamen of Arts in Urbe was the role of classical Rome through the centuries. In fact, it was the first clear statement for the classical tradition since the lapse of the American Renaissance in the early 1930s.

A key feature of the exhibition was a trompe l'oeil triumphal arch framing the entrance done by John Barrington Bayley, designer of the new wing of the Frick Collection. His inspiration? An arch from Raphael's "School of Athens.

As is the custom a conference accompanied the exhibition. Mr. Tunnard being in command,privileged to be one of the speakers. I took occasion to prophesy the end of Modern Art, especially Modern Architecture, and I added that it was time that we began to look at

(continued on page 14)
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classical tradition so marvelously revealed by Ars in Urbe. My address was subsequently published in Perspecta, a students' magazine.

I should report that the exhibition was sourly received by The New York Times. Aline B. Saarinen (then Aline Bernstein) was the newspaper's chief art critic at the time and, then as now, the art critics of that formidable institution enjoyed tremendous power. Mrs. Saarinen's condemnation set the cue for the attitude of the University administration to Ars in Urbe. It hardly helped Messrs. Tunnard and Moore.

A number of years later Mrs. Saarinen and Mr. Tunnard met. She remarked apologetically that she had been mistaken in her assessment of Ars in Urbe, and she had the impertinence to say "I was younger then." The damage had been done.

No doubt today's Paladins on Yale's staff and the "Big Blues" among the alumni would be surprised to learn that the University had a modest part in the rebirth of the classical tradition which, it would seem, is upon us at long last. Barkley Storey, President

**Atlanta at the crossroads**

I wish to record an erroneous and unfair characterization of the Georgia-Pacific Tower and Margaret Mitchell Square as portrayed in your July 1979 article, "Problematic return of the Prodigal Son."

First, Margaret Mitchell Square is a misnomer and a nonentity. It is presently a confluence of six streets identified solely by a single sign. As a public space it is nonexistent. As a locale, it is nondescript.

Secondly, the design responsibility for a real Margaret Mitchell Square rests with our agency as prime contractor to the City of Atlanta. Georgia-Pacific has graciously donated to the City of Atlanta the funds necessary to acquire a significant portion of the Square.

Margaret Mitchell Square will become a public space within the context of a commercial revitalization effort known as the Fairlie-Poplar project. The Square is to become the major entry to this larger project area.

Finally, to assume a corporate mind set adverse to the interests of Atlanta, and then to expend upon that false assumption in a burst of editorial fancy is cute, but very unfair and unprofessional.

E. Larry Fonts, Vice President
Planning & Urban Design
Central Atlanta Progress, Inc.
Atlanta, Ga

(The article expressed opinions on the design only, indicating no preconceptions at all regarding the client's "mind set."—Editor)

**Photo credits**

It has come to our attention that some of the photos of the Ward Bennett apartment (P/A. July 1979, p. 76, top two photos and p. 77, upper right photo) are by Tim Street-Porter.
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<tr>
<th>Base for BUR</th>
<th>Conforms to minor deck irregularities</th>
<th>Resilience</th>
<th>Ventable</th>
<th>Large sizes up to 4' x 8'</th>
<th>Easy to fabricate (in field)</th>
<th>Not damaged if wet (short term)</th>
<th>Excellent for covering old roofs</th>
<th>Stable &quot;K&quot; factor</th>
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<td>Owens-Corning Fiberglas Roof Insulation</td>
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*WHY OWENS-CORNING FIBERGLAS ROOF INSULATION IS THE BEST BASE FOR BUILT-UP ROOFING

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Circle No. 409
News report

Tents for interiors, ellipses, and music

How to top off a fabulous illusionistic loft, a coordinated piece of architectural and painterly trompe l’oeil, whose elegant interior by architect-owner Peter Nelson integrates murals by Richard Haas? (See p. 129 and P/A, Sept. 1977, p. 94.) The industrial skylights of the Canal St. loft building seemed a bit heavy and metallic for the subtle Adamenesque interior. The solution, completed in January 1979, was to install a translucent tent, or rather “vela” (the word comes from the Latin for membrane), an interior canopy in eggshell white which harmonizes with the gentle Palladiana and painted vistas on the interior, while providing a soft, evenly diffused illumination.

The architects of Nelson’s “vela” were Future Tents Ltd., a four-man New York firm that seems to think tents are an architectural answer to the nomadic lifestyle of modern times. Perhaps they have a point. Some of their other recent projects demonstrate that tents offer flexible responses to public as well as private, exterior as well as interior, situations. Other firms make bigger and more expensive fabric structures, but few come up with such practical and imaginative solutions.

All this summer, in Washington, DC, the 10,000 daily visitors to the White House waited, in inclement weather, on the Ellipse in the shelter of five Future Tents evocative of Camelot. (The theme seems outdated, but probably it’s hard to make a tent that looks like a peanut.) The double-spired sky-blue forms, each topped by ten colored windsocks, are, in fact, designed for maximum curvature, to make what the designers call “a more voluptuous surface as well as a more effective one.”

The tents, which cost a total of $50,000, replace five ill-fated earlier tents designed by the National Park Service and erected for the Bicentennial. Fabricated without a tailored cutting pattern, these poorly engineered structures ripped and blew away in high winds. The new tents, put up in early May, are to be dismantled in mid-September and stored for use next year.

The most prominent Future Tent erected to date is that constructed on the west lawn of the U.S. Capitol for the National Symphony Orchestra’s Summer Series. Designed and fabricated for $25,000, this tent is made of the same vinyl-coated polyester as the Ellipse tents were. Unlike the smaller tents, this structure is not fitted into a frame, but is supported by 40-ft steel truss masts, resulting in a freer form. The tent, 50’ x 80’ x 40’ tall at its highest point, was put up for each of the summer concerts and subsequently dismantled.

Engineering consultants to Future Tents for the NSO tent and the Ellipse tents were Buro Happold of New York, and acoustical consultants for the NSO tent were Jaffe Acoustics of Norwalk, Ct.

Rights to reproduce Wrights

"Frank Lloyd Wright designed this porcelain for Japan’s Imperial Hotel. Now it can be yours." runs the ad. For the first and only time, a reproduction of the dinnerware Wright designed for the cabaret of the Imperial Hotel in Tokyo is being issued in a limited edition. Surprisingly, the initiative did not come from Taliesin West, the architectural studio founded by Wright, but from an enterprising Chicago architect and Wright fan, Thomas Heinz, editor of the Frank Lloyd Wright Newsletter. Backed by
Chicago businessman Sidney Bowen of Consolidated Foods, Inc., Heinz persuaded Noritake, the Japanese manufacturer who made the original dishware, and the Imperial, which controls the use of the decal, to allow this reproduction, but no later one. Strangely enough, when Taliesin had approached Noritake with the same request in 1967, the manufacturer claimed to have destroyed the decals.

Taliesin is furious with Heinz for successfully appropriating what they consider to be their inheritance, but Heinz appears to be within his legal rights. Wright copyrighted little of his work; the design for the dishes was apparently never copyrighted in the U.S. Even if it had been, such a copyright would have expired by this date. Moreover, the reproductions are clearly differentiated from the originals and no registered trademark is used.

However, by stamping the dishes with “the characteristic red square which has come to be known as Mr. Wright’s signature”—as the ad puts it—the reproductions strive for a note of Wrightian approval. In fact, the red square with a black border with which the new dishes are marked is not the solid red square that Wright used as a stamp. It resembles the version of the red square that he used on his architectural drawings: a black square colored in red, so that it appeared to be a red square bordered in black.

Battle lines are forming over the use of the red square in any form. Bruce Pfeiffer, the architectural historian in charge of the Frank Lloyd Wright Memorial Foundation, fumes, “If they use the red square we’ll get them,” but Heinz says insouciantly, “How can you copyright a red square?”

The place settings that the “Oak Park Collection” (Heinz and Bowen) are selling for $175 apiece include seven of the ten pieces originally designed; the luncheon plate, demitasse cup, and saucer are missing. The reproductions are based on the version of the china that Noritake manufactured after 1953, in a somewhat heavier porcelain than the eggshell china made earlier. Noritake apparently recommended manufacturing the pieces at that date, following a request by Wright to the Imperial for some of the cabaret china. The hotel responded that they had discontinued it, but a year later, the dishes were again in production and available from the Hotel for $50 to $75 a set. The last set was made in 1968.

Although Heinz claims that he could not find any pieces dated earlier than 1953, some of the earlier dishware (dated 1935), along with samples of the three pieces missing from the reproduced sets, is kept in Taliesin’s vaults in Arizona.

In the pre-1953 ware, the design of intersecting and tangential circles, executed in blue, yellow, green, red, and 18k gold, folds over the lip of the cup or dish so that the circles complete themselves. An apocryphal-sounding anecdote says that Wright put the large red circle on the cup just where a lady’s lipstick would leave a smear—saving her embarrassment and the hotel stains on the china.

One can only guess what FLW’s reaction to the reproduction would have been, but perhaps he would have disapproved. Not so much because the dishes are being reissued independently of his studio as because, while they have no claim to being the collector’s items that the originals are, they are being marketed as an exclusive luxury item.

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China designed by Frank Lloyd Wright for the cabaret of the Imperial Hotel (reproduction).

NEOCON XI:
Two shows in one

Like the summer solstice, NEOCON, the annual summer rite of the American contract furniture industry, came to Chicago again during June. The eleventh installment of the mammoth trade exposition seemed to many observers, however, to be not one but two shows, operating simultaneously, independently, and concentrically within one another. The traditional split between the high-style faction and the business-is-business faction that has always been part of the comprehensive show seemed more pronounced than ever this year, giving rise to the two-shows theory. For want of better terms, the two shows might be characterized as the Italian NEOCON and the Polyester NEOCON.

The existence of the Italian NEOCON was made manifest at its first unofficial event: the opening of Michael Graves’s new showroom for Sunar (p. 148) on the tenth floor of the Merchandise Mart, site of the three-day event. The soft murmur of Italian, and French and German) was heard among the peonies and peonies (and French and German) was heard among the peonies and peonies and Moët, as it would be throughout the week in the other high-style furniture showrooms. The Italian NEOCON had little to do with Italians as such (though there were a great many in attendance in Chicago this year). The epithet represents, instead, the emphasis on high design exemplified by the Italians over the past 20 years, and seems to be a good symbolic tag for other “Italian” firms, some of them more American than apple pie. Conversely, the Polyester NEOCON takes its name from the favored (leisure-) suiting of its major participants.

Rarely did the twain meet, although in some settings they were seen to glide by each other with the ease of oil and water. Tastes, of course, diverged: the Italian NEOCON occupied itself with the quest for the best new chair (result: David Rowland’s striking design for Knoll), by common consent winner of the best-of-show category. His other new introduction was a fabric-covered prototype for Knoll. The Polyester NEOCON, on the other hand, seemed particularly obsessed with desk drawers this year, debating new designs including this or that component.
Why the architects for Sea World and the VA chose metal roofing by AEP

VETERANS ADMINISTRATION HOSPITAL architects wanted the rich look of copper roofing to complement this prestigious project. Their answer—AEP's precoated WEATHERING COPPER—pure ground copper particles liquefied in an acrylic carrier. This amazing coating, developed by AEP, ages from its bright, new-penny finish to a distinctive patina—at approximately half the 'in-place' cost of copper sheet. And, it has a 20-year warranty! AEP's WEATHERING COPPER Batten System provided this project with a modern approach to traditional roofing.

SEA WORLD SHARK EXHIBIT architects wanted warm 'earth-tone' roofing to blend with the natural atmosphere of the aquatic park. They also needed to integrate the roofing system with 6,000 sq. feet of solar panels without interrupting the architectural theme of the project. (This solar system heats the world's largest shark tank.) Their answer—AEP's Batten Roofing System coated with Duranar® 200 by PPG—the industry standard in 20-year warranty coatings.

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Senior Vice President
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News report continued from page 30

There were worthwhile events that had nothing to do with style—a lively briefing on Haworth’s advanced open-office wiring, for instance, and a deftly delivered 45-minute minicourse in lighting, without commercial, presented by members of the architectural firm Smith, Hinchman & Grylls for AmSeCo. In another part of the Mart, Armstrong showed a technically elegant multimedia essay about interior space.

Showroom designs reflected—and provoked—a great deal of the polarization. Easily the most controversial new showroom was that of Michael Graves for Sunar, which caused deeply divided opinions to break forth even as the attendees began to wit on Friday morning. Other new showrooms included the expanded Steelcase duplex, with an elaborate stairway by Harry Weese Associates linking the firm’s no-nonsense new lower level, dominated by chunky columns, to Warren Platner’s glassy 1970 landmark interior above. The new Angelo Donghia showroom is a curiosity that might be described as Decorator Post-Modern. All in all, NEOCON continues to be much like any other family reunion, alternately fascinating and boring. One wouldn’t want to miss it, if only to be in on the continuing saga. [MF]

Exhibits: Intro- and Retro-spectives

Interiors for Photographs
Light Gallery, New York
May 5–June 2


For the most part, the results had about as much to do with the effective display of photographs as do the designer-tablesetting invitationals held each year at Tiffany’s. For example, the legendary firm of Parish-Hadley, Inc. (still reigned over by the doyenne of upper-class New York decorators, the redoubtable Sister Parish) offered a conference room dominated by a hideous calla-lily print chintz of the sort one felt sure had died with Dorothy Draper.

The only room that seemed to take the alleged program at all seriously was that by Joseph D’Urso. A minimalist cubicule, D’Urso’s room was screened off the rest of the gallery by a wall of venetian blinds, which caused some nicely mysterious cross-hatching and proved that coloristic effects can indeed be achieved without the use of color. The only furnishings were a Corbusier chaise longue, a draftsman’s lamp, a pair of Bang & Olufsen stereo headphones, and a small black end table on which sat the sole touch of color: a bottle of Calvin Klein nail polish (D’Urso had worked on the design of the packaging). Hung low on one wall was a 32-in.-long, Japanese-simple print of a black-and-white Harry Callahan photograph of reeds, ravishingly effective in the spare space. This tiny room seemed surprisingly small on entering, as do many of the great monuments of Modernism, and showed with great persuasiveness that neither scale—nor quality—is a function of size.

With the exception of the D’Urso room, the only other part of the exhibition that addressed the issue intelligently was a back gallery in which was shown a small group of photographs of interiors in which photographs are displayed. Some of them, like Cervin Robinson’s shots of JoAnna Steichen’s Steichen-filled apartment in New York, and Norman McGrath’s portrait of Charles Gwathmey in front of his superscale photomural of some years back, had merit as photographs as well, a nice compensation of multiple meanings in an exhibition that for the most part lacked even single ones. [MF]

Aalto’s Scroll Chair, 1929.

Alvar Aalto
Cooper-Hewitt Museum, New York
June 16–Sept. 16, 1979
The exhibit will travel to Chicago, Houston and San Francisco in late 1979 and 1980.

Alvar Aalto, the great Finnish architect who died three years ago, was a genius. His perfectly resolved buildings stand as evidence of his architectural gift, of course, but Aalto’s oeuvres evince something more: that intense expressed consciousness of the human condition which is the touchstone of genius. Aalto’s concern was always with “tiny man.” A relatively large number of his projects were public buildings: town halls, apartment housing, concert halls, museums, libraries, schools, churches. He was extensively involved with urban design, from a plan for the center of Finland’s capital, Helsinki, to one for the tiny town of Avesta, Sweden. And the formal expression of every project was a vehicle to express the philosophic concerns about which Aalto constantly wrote: how to find a human order, a standardization which would allow diversity and freedom, a rationality which remained organic. Aalto worked for an accessible beauty. He designed chairs for the sanatorium in Paimio (1930–3) with as much care as the luxurious Villa Mairea (1938–9) for his friends. So it’s appropriate and timely that a retrospective of his work be seen in this country, where his four extant works are at [News report continued on page 36]
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relatively elite institutes of higher education. In bringing this exhibition, organized by the Museum of Finnish Architecture of Helsinki, to the U.S., the Finnish Cultural Service should have done us a great favor.

But perhaps not. The poorly organized, visually mediocre, and inadequately explained exhibit does not show Aalto to best advantage. It consists almost entirely of panels, each treating a single building (a few major works get two panels). The blown-up photos, ground plans, and occasional drawings do not describe the buildings well. The photos are largely of details; the ground plans do not include or even indicate the building's context; and the drawings are rarely labeled at all. Aalto's paintings and sculptural essays in bent wood are scattered over the panels without identification, or any relation drawn to the furniture or buildings.

While these shortcomings are not of the Cooper-Hewitt's making, one would expect the museum to do what it could to mitigate them. But unfortunately, the installation is confusing in the extreme. There is no clear rationale for the grouping of the panels—it is neither chronological, thematic, formal, nor philosophical. Not even basic data are supplied, so that not only is the appearance of a building unclear, but it is even doubtful how much of it has been built. The most successful parts of the show are the furniture and fabric, most of which was added by the Cooper-Hewitt (courtesy of I.C.F., New York). These objects can speak for themselves better than the absent buildings can.

In short, the exhibit serves neither the general public nor the architectural community, being insufficiently explained for the one and lacking insights or new material for the latter. (For example, there are no exterior photos of two buildings completed in 1978: the Church of Riola and the parish church of Lahti.) Nonetheless, the beauty of Aalto's design will out, and the viewer who can and is willing to provide the background and structure that the exhibit lacks might find the formal and philosophical themes that the exhibit fails to develop. The evolution of Aalto's fan shapes, for example, and the unique form they take in each project. The fanned-out plan of Wolfburg's Cultural Centre (1951-62) has a totally different context and meaning from that of the Bremen tower block built in 1963—yet both acquire form and function from their "fan" design, which links the separate spaces to a common center like the petals of a flower. Another theme might be Aalto's concern for the juncture of vertical and horizontal planes. Lessons learned from bent wood are applied to the church vaults of Wolfsburg and Vuoksenniska. Or, the overarching theme of Aalto's geometry, which, like Caravaggio's light, seems to come from within the structure, to be an expression of the forces contained within the building: those of sound, of focused attention, of reading, of prayer. Aalto's forms express not only their social function but also their relation to the surrounding landscape. The architecture that reflects natural forms is best known—Villa Mairea, in the flat woods of Noormarkku, or the Church of Riola, among the rocky outcroppings of the Apennines. But the urban insertions are equally resonant with formal echoes of their context—the pristine blocks of Finlandia Hall in Helsinki's new center, or the

[News report continued on page 41]
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D/R folds after 27 years

Design/Research International, the coast-to-coast chain which brought well-designed housewares to a receptive public for over a quarter of a century, went out of business in June, a victim of "severe mismanagement," according to the company's chairman, Peter Sprague. The nine-store chain, with headquarters in Cambridge, Mass., was begun in 1952 by architect Benjamin Thompson, who resigned as president six years later. Thompson's successful surmise that the American people—or at least a reasonably affluent and well-educated portion of them—were ready for home furnishings which expressed the principles of good design, turned D/R into one of the most influential transmitters of modern taste in this country during the 1950s and 1960s.

Based in large measure on simple, imported "discoveries," the D/R line for the most part eschewed the serious Museum Design Collection approach of some of its earlier competitors (such as the also-defunct Bonniers), and focused instead on functional, affordable objects. D/R also gained fame as the exclusive U.S. distributor for Marimekko fabrics, the Finnish textiles which enjoyed a particular popular-

[News report continued on page 45]
The challenge was to design a hospital to meet rigid requirements without sacrificing budget or appearance.

Only a Pella package had the flexibility to offer the best of both worlds.

Both cost containment and aesthetics were important considerations for the architect who specified Pella Clad Windows for the Atlantic City Medical Center. Outside, the attractive aluminum cladding requires next to no maintenance to keep up good appearances year after year. Inside, the natural wood adds eye and touch appeal.

Solarcool® Bronze Glass was chosen to filter sunlight and to help maintain a comfortable temperature level in the building. Louvered Pella Clad Panels that match the window cladding were chosen to ventilate the air conditioning system. Ease of maintenance was also a consideration. Pella Windows make it easy to clean both sides of the window from inside.

Overall, this cost-effective Pella package offered a multitude of features to help make the new Atlantic City Medical Center both functional and beautiful.

Pella's Clad Casement has a unique hinging system which moves the sash toward the center of the frame as the window is cranked outward. This open position provides plenty of room to clean outside glass from inside.

Pella's Double Glass Insulation System has a full 13/16" air space between panes. It actually outperforms welded insulating glass, yet costs less. Wood and vinyl separate the two panes of glass and function as a thermal barrier.

Pella's tough aluminum exterior cladding is cleaned and etched, then coated with a baked-on acrylic polymer. It won't chip, crack or peel. Available in three standard colors.

Pella's Clad System includes clad frames which will accept single glass, insulating glass, louvers, or matching clad panels like the one shown at top of photo above. They offer outstanding flexibility and freedom for your design concepts.

For more detailed information, use this coupon to send for your free copy of our 28-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.
The idea: space and dimension.

Some refer to Le Corbusier (1887-1965) as the Picasso of architecture. Visionary. Radical. Master urban planner. His ideas led to functional yet monumental buildings, their designs based on geometric principles and precise human-scale proportions. In the 20’s, he envisioned urban concepts that still serve as models for planners. Le Corbusier helped define modern architecture. His were innovative ideas of space and dimension. Nevamar in its own way is an innovator in dimensional surfacing concepts. Our laminate line remains a unique source for surfacing ideas. Possibly new ideas for you.
ity in the late 1960s. But in recent years the firm, which had outlets in New York, Philadelphia, Westport, Ct, Chestnut Hill, Ma, and four California cities in addition to its celebrated main store in Cambridge, fell on hard times. The superior marketing techniques of such good-design competitors as Conran's, Cost Plus, the Workbench, and the Pottery Barn (which all derived from the D/R philosophy) hastened the end of the far-flung D/R operation, an ironic victim of improvements on the idea it pioneered. [MF]

Conferences

ACSA Teachers Seminar
Cranbrook Academy, II
June 17-22

The official title was Design Process: Insight, Scholarship, Criticism. But the subject which the conference addressed was that of history and its meaning to the design studio and to practice. Speakers were: architects Charles Moore, Stanley Tigerman, Alan Greenberg, and Grant Hilderbrand.

Faculty participants in the conference were asked to present either their general methodology for teaching design or a description of a specific teaching problem illustrated by student work.

From the presentations, shared beliefs emerged. Many of the architectural community present neither believed in, nor taught design as straight problem-solving: rather, architecture was seen to be based on historical precedents, models, or typologies. When there was disagreement among the delegates, it was not over the legitimacy of looking at history, but rather the intention. Should historical precedents be the source of specific forms or of general principles? Even though many of the speakers apparently advocated the former, the most controversial presentations were those by Alan Greenberg and Thomas Gordon Smith, whose eclectic work incorporates elements and citations from specific historical styles. Equally controversial were the beautifully rendered "rationalist" projects by George Ranalli.

The one disturbing note of the conference was the emerging impression that, in spite of disclaimers, many faculty members felt that while all history was equal, some history was more equal than others. This prompted one irate delegate to accuse the umpteenth invoker of Soane and Lutyens of name dropping. Still, most delegates left agreeing that useful insights on teaching design had been exchanged. [Stuart Cohen]

Revised timetable for Paris competition

Sponsors of the international competition for the design of the Les Halles site in Paris (P/A, June 1979, p. 36) have announced an extension of the registration deadline to October 20, 1979. Date for submission of entries has now been set for Dec. 18. Judging and publication of results are to take place in January, 1980. Program can be obtained by sending registration fee ($60 U.S., $30 for students) to L'Architecture d'Aujourd'hui, 67 Avenue Wagram, 75017 Paris.

[News report continued on page 48]
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<th>Resistance</th>
<th>Variability</th>
<th>Large sizes up to 4' x 8'</th>
<th>Easy to manipulate (in field)</th>
<th>Not-damaged roof (short term)</th>
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The Belmont Retreat:  Design research

Design Research Report RR-20.2

Event: The Belmont Research Retreat
Place: The Belmont Conference Center, Elkridge, Md.
Participants: Robert B. Bechtel, Lynn Beedle, Richard Bender, John Bennett, Michael Brill, Neils Diffrient, Leonard Duhl, Charles Eastman, John Eberhard, John B. Jackson, Ralph Knowles, Gary Moore, Constance Perin, Raymond Studer.

Sponsors: National Endowment for the Arts/National Science Foundation.

Directors: Michael Pittas, NEA; Fred Krimgold, NSF; Michael Brill, Retreat Chairman.

Purpose: Answer or discuss the following questions: 1 What are the main problems of the designed environment? 2 What research would contribute to the solution of these problems? 3 How should it be funded? 4 How should proposals be evaluated? 5 How can we develop methods for fullest utilization of design research? 6 How can we more clearly define the field?

Background: The above mentioned participants are among the most talented and experienced researchers in the field of design research. The types of design research needed could be categorized as follows:

1 Private sector applied research: There is a need within the context of the design process for a research professional skilled in the acquisition of either material or social information which can aid and improve the more complete matching of environment, or product, and its use. Like all types of design consultants, this type of researcher must be able to justify his or her existence by proving to be profitable to the designer or client. The education and skill development necessary for these professionals needs formalization to establish a base of professional purpose as well as responsibility. Designers must be exposed to the existing skills and expertise in this field.

2 Public sector applied research: Society needs researchers to provide or improve the information base for solutions to social as well as environmental problems. The application of such information would be in design of public buildings, spaces, or planning. This kind of research is publicly funded in the context of the solution of public problems.

3 Nondirected basic research: The third type of research is the acquisition of knowledge which may as yet be undirected but which shows great potential for pertinent application either for the public good, but in the private sector, or for the good of society in general. This is the arena in which the skills and knowledge might be formulated for later directed use. This is the area which is most difficult to evaluate since the implications and directions of research may not be apparent until the project is finished or even later. It is also the function of this category to evaluate the process and ethics of design itself. Investigators might probe the success or failure of designed environmental elements, within their own context or in the culture as a whole. To the extent that it relates to the public good, it may be publicly funded. Subjects of this nature are also frequent topics of private research through educational institutions.

Present funding method: At present the merit of many government grant proposals is determined by a committee of eminent experts in the field. An accepted grant proposal usually couples a pertinent subject with convincing credentials, assuring by past achievement the potential of future results. Such a committee occasionally is influenced by the great potential of a topic studied by an inexperienced researcher or the presentation of a questionably pertinent topic by an experienced researcher. Peer review comes from the sciences and is relatively new to the arts.

The Conference: The conference found itself segmented into roughly three parts.

Part I—Friday evening: NEA/NSF invited John Cable, DOE; Harold Cannon, NEH; David Dibner, GSA; Andrew Euston, HUD; Richard Wakefield, NIMH; Robert Dillon, NIBS; Robert Shibley, U.S. Army Corps of Engineers; and Francis T. Ventre, NBS, to discuss their experiences with design research and delineate their needs.

Sample statements:

John Cable: "We must learn how to package things [like research] that are not products in order to sell them in a product-oriented atmosphere.

Harold Cannon: "We are all walking archives of our own experience."

David Dibner: "I need your help. We need practical solutions to problems."

Richard Wakefield: "In the field of behavioral responses and the impact of settings we have "seen the largest number of applications and the fewest number of grants."

Robert Dillon: "We are not really codifying the knowledge we have."

Robert Shibley: "If it is important enough to have the push—[often] you don't have time for the research."

Francis Ventre: "The built environment is not a problem on the consciousness of the country. There must be a public manifestation of need."

Evaluation by researcher: Government agencies do not make extensive use of design research in the design decision-making process. The research which does take place is primarily applied research with a definite problem and expected use, or is done after the fact. Research spans the spectrum from material to sociotechnical research. The emphasis seems to be on the long-term effects of design decisions. Obtaining the funds to sponsor research is complicated by politics and a
The secret of a great table is not why, but Howe.

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New York firm uses single source to solve two different design problems for Volvo.

Theodore V. Hinz, of Goldstone & Hinz, New York architectural consultants, planned this handsome Conference and Employee Dining Room for the corporate headquarters of Volvo of America, Inc., Englewood Cliffs, N.J. While the treatments appear totally different they share a common objective:

Hinz wanted to create an environment expressing orderliness, quality, good taste and openness for both locations.

He achieved his aims by selecting two types of special-purpose tables by Howe.

In the dining room, where employees enjoy an uninterrupted view of the wooded landscape, Howe's pedestal base Tempest table offers classic design with stability and obstruction-free seating comfort.

In the conference room—one of three, all with the same facilities—flexibility is the keynote. Here, Howe's conference room Tempest table met the requirements for inherent strength and a spacious working surface.

Once again, creative designers solve problems by showing Howe.
climate that prefers specific product orientation and finite goals. The definition of design research is apparently unclear. The evening, in some cases, amounts to an impassioned appeal for assistance and increased participation from the researchers present.

Part II—Saturday morning and afternoon:
The morning begins with rumbles of discontent about the task being too product oriented and narrowly defined. The chairman readily acknowledges that putting that much brainpower in a room does not demand an overly restrictive structure or specific product. There is no attempt to bridge the previous evening. Instead, the personal input of each participant is requested to explain his or her own research and attitude toward the role of design research.

Sample statements:
Leonard Duoble: "We must investigate the forces on the problem, rather than poll the solutions."
Lynn Beedle: "If there is anything new in the last ten years, it is the concentration on the need."
J.B. Jackson: "The design [of history] is already there, if you can comprehend it, it is yours."
Ralph Knowles: "Design research may not be a discipline—it may in some sense be about identifying the problem, rather than dealing with it."
Gary Moore: "If we only respond to building needs, we don't advance science. If we only respond to science, we don't build anything. We are caught in that tension. Part of design is to live with that tension."
Constance Perin: "All culture is arbitrary; why is it coming out this way? Environments are not made often enough to facilitate human purposes.
Richard Bender: "The funds are a trap."
Charles Eastman: "Errors keep repeating themselves. We don't use existing knowledge. Things could be much better even without any new knowledge.
Ray Studer: "Design is predicated on the notion that there is a need for change."
Neil Different: "The relative impact on society from products is not well understood. The only research many people do is find the right person for the job."
Robert Bechtel: "Belief systems are much more important than research in design."
John Bennett: "Why do the best and the brightest continue to do what is wrong?"
Mike Brill: "Research is gaining enough knowledge or enough feeling to have other people agree with you."
John Eberhard: "Design issues for buildings of the future will be influenced by outside forces such as: public attitudes, technology, economics, resource availability, and changes in fashion.

Researcher's afterthoughts: The great majority of those present are involved with socio-technical research. Their interests are diverse. Although they appear to be affable, it is clear that there are some emotionally charged disagreements under the surface. All have benefited from the exposure to the various attitudes and viewpoints. Some participants express concern that a more cohesive product is not being developed. No sparks fly.

Part III—Saturday evening and Sunday: At the opening of the Saturday night session, Chairman Brill presents the idea of breaking into three separate committees to discuss and document the following questions and answers:

1 What issues should be addressed by design research and why?
2 What values/ethics and whose values/ethics should underlie design research?
3 What are the best strategies for the fullest social utilization of design research?

The intention is that the group divide, discuss the questions independently, and draw up their responses. Sunday morning, the answers are to be presented for discussion. The intent is to begin to sketch what a meeting proposal or product might entail. With little dissent, the committees are formed.

The three groups presented their own work on Sunday morning. Although the product serves to sketch the concerns involved, more work is necessary. A "Belmont Manifesto" is outlined and discussed. It is generally agreed upon to prepare a document based on the responses from Saturday night and that the document will be reviewed by all present and signed if agreement seems appropriate. After lunch, a brief discussion returns to the events of Friday evening and suggestions are made as to how to more effectively help meet the needs of government agencies.

Researcher's evaluation: In the time period allotted, the task of originating a workable set of issues and funding suggestions, along with evaluation criteria, was an ambitious one. The participants had little choice but to opt for more time. Although the "jury is out" on the results, one can expect great things. The only task that the conference conceivably could have performed in the given time was to examine the existing system of grant awards and attempt to slightly modify or correct it. In coming to the conference, however, and discussing the broader question in such depth it is possible that the attendees will produce a document, to be known as the Belmont Manifesto, that will be of greater significance to the entire field of design research. It most certainly will still be of use to NEA and NSF in evaluating their own methods. The conference was also no doubt of great interest and importance to those who attended, including this researcher. If nothing else, communication occurred and vocabulary was exchanged. It was perhaps the birth of a new relevance and utility for design research.

There was ample recognition that people need research, people do research, and any mechanism to evaluate proposals involves live people as an intrinsic part. The gamble is on the people.

Opinion prejudice: This researcher was disappointed that there was not more controversy expressed by the conference attendees. There certainly were opposing views present and they should have been allowed to surface. Creativity and judgment will ever be opposed. It is this opposition which both implies the need for research and can nullify its effects. A healthy climate for creativity needs research for balance. Opposition assures that both forces are at work. [RR]

[News report continued on page 57]
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In perspective

Hillsboro Public Library, Hillsboro, Or.
Completed in 1975, the Hillsboro Public Library, by Martin Soderstrom Matteson of Portland, Or, won a 1976 Honor Award from the Portland Chapter of the AIA. A community use building, the simple low structure houses a meeting room, greenhouse, and children’s area as well as the library proper.

The building relates closely to its surroundings. The triangular configuration was determined by the site specified: the northeast corner of wooded Shute Park. Like a closed book, the building presents a blank cover to the street. The concrete wall of the façade is broken only by a glass greenhouse sloping back into the structure and flanked by the main entrance. A steel bent, set at an angle to the front wall, frames and indicates the entry. The rear of the building (the triangle’s hypotenuse) looks north onto the wooded park. Composed of ten setbacks forming alcoves for secluded reading, offices, and conference rooms, this side is entirely glass. To allow for further expansion, the west side of the building is an easily demolishable wood frame construction sheathed with industrial metal siding.

[News report continued on page 58]
Back glass side of library cuts reading nooks out of encircling woods.

News report continued from page 57

At the apex of the triangle is the children's section of the library. Lower scaled than the adult section, this includes a quarter-circle sunken storytelling area. The circle is completed in the exterior landscaping, and the overscaled exterior drainpipe, which runs along the north side, dumps its water into a concrete well within the circle, making a dramatic cascade.

Similar transformations of functional elements into formal drama occur throughout the design. Atop the concrete scree slant panels of the façade and concrete columns that support the rear sits a roof of steel trusses, joists, and exposed decking, a light and active architectural solution which is also less costly than a standard suspended roof. Clerestory windows over the bookstacks provide additional natural light. The exposed ducts of the mechanical system outline the circulation routes, visually linking the various spaces. The greenhouse adds an exotic touch.

Done for only $630,000, the building is as a library should be. A receptive public space, it offers privacy and choice on the interior. The design captures the excitement, the escapism, and the imaginative freedom of reading, while providing a pleasant, hushed place to read.

[News: Eleni Constantine except as noted.]
[News report continued on page 62]

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In progress

1 Family Health Center, Gary, In. The receptive design of the Family Health Center for the Methodist Hospital in Gary, Ind., by the architectural firm of Schmidt, Garden & Erikson of Chicago, reduces negative institutional connotations by its original and lively use of form and color. The five major functional areas—staff, support, examination, waiting, and reception—are each defined by color coding and unique volumes. The dominant corner cylindrical form, repeated at the other end of the building on a smaller scale, is echoed outdoors by curved walls defining pedestrian areas along the street. Construction on the $500,000 publicly funded project is expected to begin this fall, and occupancy is scheduled for 1980.

2 Equitable Life Insurance Society, New England Service Center, Milford, Ct. Designed by the architectural firm of Hellmuth, Obata & Kassabaum, the new 65,000-sq-ft regional headquarters for this insurance company fits neatly into the surrounding wooded landscape. A series of square and curved steps and setbacks, the two-story structure, faced in tinted glass and brick, might be seen as an abstract topological form, a suggestion completed by rooftop gardens. At the entrance, a freestanding curved wall, punctured by four portals, stands in front of the building’s curved glass front wall, suggesting that the “real” front wall has been detached. The $4.3 million structure should be completed by April 1980.

3 Winslow House, Minneapolis, Mn. Ground was broken in June for a $10-million condominium designed by Benjamin Thompson & Associates of Cambridge, Ma. The 58 luxury units are located on the banks of the Mississippi River in the historic St. Anthony Main area of Downtown Minneapolis. The condominium will complement another redevelopment by Thompson in the St. Anthony riverfront area: “St. Anthony Main,” a renovation of 19th-Century manufacturing buildings for retail use. (P/A Nov. 1977, p. 42). The condominium, whose completion is planned for 1980, is named after a luxury hotel built in 1856 which catered to wealthy Southern families who came up the Mississippi to vacation in the city of St. Anthony in the summer.

4 Syrian National Theatre and Opera House, Damascus. Designed by the London architectural partnership of Renton Howard Wood Levin, this multiuse theater complex planned by the Syrian Ministry of Culture and National Guidance for the capital is intended to be sympathetic to the Arabian vernacular of the city. The project, tentatively estimated at $25 million, is to include three theaters, a restaurant, and a drama school. Selected in an international competition, the winning scheme is based on a theme common to the geometry of Arabic architecture: orthogonal squares within diagonal squares. All the public foyers open onto a central garden court, another “Arabic” feature. The construction, however, is in reinforced concrete, decorated in “Arabic” style, using bands of colored marble with inset diagonal squares. Main contractor for the government-financed project is the Military Housing Establishment.

5 “Raffles City,” Singapore. I.M. Pei has been selected to design another convention center complex—this one in Singapore. The $300-million project includes a 66-story hotel, twin 31-story hotel towers, and a 42-story office tower, all of which are to rise out of a 7-story base housing the convention center, an auditorium, retail space, and parking. “Raffles City” will occupy the former site of the Raffles Institution, a boys’ school whose cornerstone was laid by the founder of Singapore, Sir Stamford Raffles, in 1821. The historic school was destroyed to make way for the complex, which will be a very different sort of landmark for Downtown Singapore; the taller hotel will be the city’s tallest tower. Financed by a consortium headed by the Development Bank of Singapore, the complex is expected to be ready for international business by 1984.
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9:79 Progressive Architecture 69
ANNOUNCING CRSI DESIGN AWARDS V

An open invitation to all design professionals to join our distinguished honor roll of winners.

Concrete Reinforcing Steel Institute announces a Call for Entries in Design Awards V. This is the fifth such national program honoring design professionals for their creative achievements. For the first time, a new optional feature of the Program will be special recognition of a new category of achievement: Energy-conserving design.

Awards are given to those cast-in-place concrete structures which use conventional reinforcing bars as the predominant reinforcement.

How to enter The following requirements correspond to those of the AIA Honor Awards Program. Entries prepared for the AIA Program may be submitted in duplicate to the CRl Design Awards Program. However, please also include the descriptive data sheet specified in item 4. All other entries should be prepared as specified in items 1 through 5. No entry forms are required.

1. BINDER—All material must be contained in an 8½" x 11" binder.

2. PHOTOGRAPlIIFS AND SLIDES—For every project, submit sufficient photographs (either black and white or color), slides, and plans to properly illustrate the design solution. All architect and project identification must be removed from all such submitted materials. Minimum requirements are set forth below:

   Exterior
   a. One 8" x 10" print showing each exposed side of the building.
   b. One additional 8" x 10" print showing the immediate environs of the building as these abut the selected side being shown (may be omitted if environs are included in above).
   For a group of buildings or an urban project (or segment thereof), one 8" x 10" photograph of the project sufficient to illustrate the concept including relationship to its environs.

   Interior
   a. One 8" x 10" print.

   Slides
   A minimum of five 2" x 2" 35mm color slides must be included for each entry—three exterior views and two interior views. They are to be of completed buildings and emphasis should be on adequate effective slides which show the merit of the project and each facade of the building.

3. PLANS—Site plan—at small scale, showing the project and its immediate environs. Floor plan or plans and one or more sections—sufficient to explain the solution. Plans must be at scale, but may be shown in any medium. Scale at discretion of entrant, as large as practicable. Scale must be shown graphically. Plans must be on 8½" x 11" sheets placed in transparent window sleeves.

4. DESCRIPTIVE DATA—To preserve anonymity during judging, submit the following data type-written on plain white 8½" x 11" paper.
   a. Description of type of structure.
   b. Size of structure in total square footage.
   c. Date structure was completed or scheduled for completion.

   IMPORTANT: Please provide complete information on the following three sections.
   a. Structural framing system: Indicate which portions of system are conventionally reinforced, prestressed, or precast concrete. (Remember, structure must be predominantly site-cast and conventionally reinforced.)
   b. Unique structural and/or architectural design features: Describe any that deserve special consideration by the jurors.
   c. Reasons for choosing reinforced concrete: Please be specific and include comparisons with other structural systems where applicable.

5. CONCEALED IDENTIFICATION—All information requested here must be included on a separate typed sheet. Please be certain that all spelling and all punctuation are absolutely accurate.
   a. Proper name of structure.
   b. Name, address, and phone numbers of: Architect Engineer Contractor Owner
   c. All titles or other designations such as consultant, associated architects, project architect, architect in charge, associate architect, etc.
   d. All city and state locations.

THE WHAT, WHO, WHEN, AND WHERE OF THE AWARDS. Categories of Awards—The program is open to site-cast reinforced concrete structures of all types.

Criteria of Awards—Esthetic expression, engineering achievement, functional excellence, or economy (or any meritorious combination of these qualities).

Architectural Award—Several Awards will be presented, each equally acknowledging excellence of achievement. Each Award will consist of (1) engraved commemorative plaques for architect, engineer, and owner, (2) publication of the winner’s story and structure in print advertising sponsored by CRl, and (3) presentation of the Award at a special ceremony at the CRl annual convention held at the Hotel Del Coronado, San Diego, California in May 1980. From each firm submitting a winning entry, one representative (and spouse) will be invited to attend the Award presentation ceremony as CRl’s guests. Appropriate local award ceremonies will be arranged for the remaining members of the winning design firms.
Winners CRSt design awards IV

NATIONAL PERMANENT BUILDING—Washington, D.C.

A COUNTRY ESTATE—Rancho Santa Fe, California

WILLIAMSON HALL—Minneapolis Campus, University of Minnesota

HUNTER MUSEUM OF ART—Chattanooga, Tennessee

GRAND RAPIDS FISH LADDER—Grand Rapids, Michigan

Energy Conservation Award (optional feature)—
A maximum of one energy conservation award (if warranted) will be given per Program. The award will be presented at the annual convention described herein. The jurists will give major emphasis to energy conservation achieved by the judicious use of the structural elements rather than HVAC systems. Items such as heat transfer through the building envelope, shading, positioning, and/or special sizing of windows, etc., are of prime interest.

Supporting documentation illustrating compliance with ASHRAE 90-75 (or similar) specifications is encouraged.

The Jurists—A distinguished panel of recognized professional architects and engineers from throughout the United States will select the winners.

Who is Eligible—The CRSt Design Awards Program is open to all registered architects and engineers (entrants may be individuals or teams). Eligible structures must be located within the continental United States and have been completed since January 1, 1977, or essentially finished by October 29, 1979.

AIA Approval—This program has been approved by the American Institute of Architects and is patterned after the AIA Honor Awards Program.

Announcement of Winners—To be made as soon after judging as practical.

Ownership and Publication of Entries—All entries shall become sole property of CRSt. No materials will be returned. CRSt reserves the right to use or publish all entries and accompanying materials in CRSt advertising, CRSt publications or for any and all editorial purposes and by entering, entrant grants a royalty-free license to CRSt to use any copyrighted materials. Such right includes publication of photographs and names of Award winners without compensation to winners.

Jurists' Decision Shall be Final—Upon entering the CRSt Design Award Program, entrants waive their right to make a claim against the panel of jurists (or any member thereof), or to make a claim against Concrete Reinforcing Steel Institute (or any member thereof).

All entries must be received no later than OCTOBER 29, 1979 at CRSt headquarters (address below).

For information on the CRSt Professional Membership Program, write to Director of Marketing.

CONCRETE REINFORCING STEEL INSTITUTE
180 North LaSalle Street, Room 21120
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Garden grades deck
Designer: Elsebet Jegstrup
The twelfth annual edition of Designer's Saturday begins with perhaps a greater sense of excitement than ever before. That excitement is epitomized by the joyful sculpture by the late Alexander Calder that has been chosen as the symbol of the two-day event. Part of that excitement comes from the realization that Designer's Saturday has at last been widely recognized as more than just a regional furniture mart for design professionals. It is now a highly influential showcase for the best of high-style contract interior design, with impact on a national—and even international—scale. That broader influence that Designer's Saturday has attained is reflected in the fact that, for the first time, the special Designer's Saturday section of P/A is this year being distributed to our national readership, and not only those subscribers in close geographical proximity to New York.

Each new year seems to be adding to the importance of Designer's Saturday, and with just cause, for its concentration of quality and its dissemination of design innovation is unsurpassed for a show of its size. For Designer's Saturday—membership in which is consciously limited—has always emphasized quality over quantity. This has resulted in the high degree of interest that New York design and communications professionals have shown in Designer's Saturday, and their authoritative voices (for both industries remain centered in New York) have carried the message far beyond the normal range of such events. And if quantity of exhibitors can be limited, apparently quantity of visitors cannot, for attendance has grown by leaps and bounds in recent years.

What visitors to the 29 Designer's Saturday showrooms in New York on the first Friday and Saturday in October will see is this: the finest contract furnishings produced in this country and abroad, seen, in turn, by the most inventive and influential designers. It is, as the name says, their Saturday, but if you are serious about finding the best in interior design, you should make it yours, too.
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28 Turner Ltd.
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29 Vecta Contract
689 Fifth Avenue

30 Whitney Museum of American Art
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Whitney Museum

31 4, 9, 28, 29

12 20

24

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3 19

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7 6, 25

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Circle No. 419,
Designer’s Saturday 1979

Airborne/Arconas: Primavera series seating by Andre Vandenbueck. Circle 100 on reader service card

Atelier International: Executive chairs and table by Giovanni Carini. Circle 101 on reader service card

B & B America: Coronado lounge series by Afra and Tobia Scarpa. Circle 102 on reader service card
The Davis Chairs
Design: Vico Magistretti, 1978

Would you dare to cover a contract chair in white? We would. The Davis office chairs and waiting room seating have covers that are removable for cleaning by the turn of one screw.

Castelli Furniture: Piano folding table and plia stacking chair. Circle 105 on reader service card.

Beylerian: Folding armchair by Masayuki Matsukase and Centrokappa. Circle 103 on reader service card.
Individually, as a striking executive chair, or in tandem, the precision engineering of the P-45 comprehensively integrates its aesthetic and functional values—choice of seat design, flame-retardant upholstery, tabletops, simultaneous translation equipment, microphones, fold-away writing tablets, and the ability to conform to any radius. The result: an amalgamation into a single optimum seating program.

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Circle No. 641, on Reader Service Card
CI Designs: Ash and aluminum folding chair by Michael Kirkpatrick. Circle 106 on reader service card

Dunbar: Storage column, chair, and desk, dePolo/Dunbar collection. Circle 108 on reader service card

Cumberland Furniture: "POD" chair line by William Sklaroff. Circle 107 on reader service card
Office designs with a flair for elegance...created by
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Circle No. 421, on Reader Service Card
Harter: 2300 Series high-back and low-back office chairs.
Circle 109 on reader service card

Haworth: TriCircuit ERA-1 open-plan office integrated power.
Circle 110 on reader service card

Helikon Furniture: DHC 140 executive armchair by Dewey Hodgdon.
Circle 111 on reader service card.
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I feel very fortunate that a relationship developed with Thonet. We have worked together to provide a product that is not only a different but a better chair."

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Seats and backs are of Soflex® a patented process of plastisol covering sinuous springs which provides a soft and flexible support for long-term seating comfort. The Soflex® colors are white, red, brown, orange, yellow and blue.

Tubular steel frames are available in polished chrome plated or white, red or brown powder coated finish suitable for outdoor use.

The 2001 chair stacks 30 high on a moveable dolly and is also available with ganging connectors for mass area usage.

A simple and unique upholstery option of zippered sleeves to slide over the Soflex® seat or back allows for quick, on-location installation or replacement.

Designed for Thonet by David Rowland

Patents pending

Thonet

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Designer's Saturday 1979

ICF: "Lobby Davis" lounge seating by Vico Magistrelli.
Circle 112 on reader service card

Intrex: Inter-Join Bench System of wood components by Paul Mayén.
Circle 113 on reader service card

JG Furniture: Drafting/engineering work surfaces.
Circle 114 on reader service card
For the office of the 80's—the award winning Race System, with its unique horizontal energy and communications distribution system. The basic concept, developed with innovative skill by designer Douglas Ball, gives a new meaning to flexibility in open office planning and offers an exciting alternative to conventional systems. Race System will be presented at Designer's Saturday, October 1979, in the Sunar showroom, 150 East 58 Street, New York.
**Metropolitan Furniture:** The Resin Group tables by Jules M. Heumann.
Circle 116 on reader service card

**Lehigh-Leopold Furniture:** The Personal Chair by Robert Whalen.
Circle 115 on reader service card

**Herman Miller:** Secretarial arrangement of C-Forms in white oak.
Circle 117 on reader service card
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Edward Axel Roffman Associates: Table desk from the 50 Series. Circle 120 on reader service card

Harvey Probber: #4111 Aspen chair with swivel-tilt base on casters. Circle 119 on reader service card

The Pace Collection: "Big" executive desk and chair by G. Faleschini. Circle 118 on reader service card

Steelcase: #454 chairs, one of four series in monochromatic colors. Circle 121 on reader service card
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Circle No. 432, on Reader Service Card
Stendig: #210 Omega executive double-pedestal desk.
Circle 122 on reader service card

Circle 124 on reader service card

Stow/Davis Furniture: Highland Heather, British Woollens collection.
Circle 123 on reader service card

Sunar: The Acom Chair with hardwood frame by Vignelli Designs.
Circle 125 on reader service card
Paradigm Series

Paradigm Series: A new landmark in office seating design. Designed by Richard Schultz for Stow Davis, the Paradigm Series incorporates functional, ergonomic and aesthetic qualities essential to open plan seating.

The basic design theme, characterized by sculptured seat and back, and structural side panels, is developed into six variations. This strong design continuity gives the Paradigm Series unique versatility and range ideal for the open plan.

Paradigm (párˈə dīm): 1. A model or pattern. 2. An example. 3. An archetype.

Stow Davis
New York, Chicago, Los Angeles; Grand Rapids, MI 49504
A BIFMA member

Circle No. 424, on Reader Service Card
Designer's Saturday scholarship award
For the third year, according to Leonard Eisen of Intrex, president of Designer's Saturday, the 29 members are sponsoring a $3000 Student Scholarship to be awarded to the interior design/architectural department of a college or university to be divided among deserving students as the recipient chooses. This year's award is going to the Parsons School of Design, and it will be shared by two outstanding students from the Department of Environmental Design: Rosemary Rees of Montreal, Canada, and John Scarnecchia of Mohegan Lake, NY. Both are entering their senior year at Parsons this fall. Awards jurors were Robert Bray, Joseph D’Urso, James Maguire, Norma Skurka, and John Vreeland. Presentations will be made at the concluding event of the week—the reception being held on October 6 at the Whitney Museum of American Art at 7 p.m.

*Vecota Contract:* "Ginkgo Biloba" conference tables by Gunter Eberle.
*Circle 128 on reader service card*

*Thonet:* #2001 Sof-Tech stack chair of tubular steel by David Rowland.
*Circle 126 on reader service card*

*Turner:* High- or low-back Consenso chair by Otto Zapf.
*Circle 127 on reader service card*
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Architect: I.M. Pei & Partners
Product Design: Peter Dickinson

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Circle No. 363,
on Reader Service Card
"We figured we could save the MGM Grand Hotel $8,000,000 in future energy costs. Only E CUBE had the capability to confirm our analysis."

That's the conclusion of Consulting Engineer Frank T. Andrews of Fullerton, California, who's had long experience in dealing with Las Vegas hotel complexes. When he was given the MGM Grand Hotel energy-saving assignment, Andrews knew that because of the many variables and intricacies involved, the job required a computer solution with a flexible input format and almost unlimited scope. After investigating several energy analysis programs, he selected E CUBE because it was the best way to:
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- Measure life cycle dollars saved by conserving energy.
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- Critically examine large complex buildings.
- Model exactly an infinite number of zones with complex exterior surfaces.
- Accomplish the energy analysis at low computer running cost.
- Secure impartial results.

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In recommending the best program for MGM Grand, and simulating the most appropriate series of conservation options, Frank Andrews was able to verify that:
- Chilled water pumping horsepower could be increased to adequate size and controlled to reduce electric consumption.
- Oversized variable air volume system in low rise building areas was wasteful and should be renovated.
- Existing fan coil units for tower guest rooms were inadequate for optimum guest comfort.
- Economy cycle cooling for public spaces in conjunction with airside balancing should be implemented.
- Modifications to air conditioning procedures in some of the Hotel's 53 individual zones were indicated.

With these and other improvements, the savings in energy costs to the MGM Grand, taking inflation factors into account, is projected to be in the area of $8 million over a 25-year life cycle.

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It states the economic case for ceramic tile in figures even your most skeptical clients will understand.
And I hope it convinces you to use real ceramic tile in your next job.
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Tile Council of America, Inc.
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Introduction: Review of the 70s/Preview of the 80s

Interior design: On the threshold

On the eve of a new decade, P/A looks back at interior design in the 1970s, and ahead to interiors in the 1980s.

Ten years ago, there was an almost palpable feeling of relief as the 1960s ended, for that wonderful and terrible decade had been (as the Chinese say) the most "interesting" of times. Now, as the 1970s draw to a close, there is rather a feeling of astonishment. The 1970s over? Compared to the tumultuous decade that preceded this one, the 1970s almost seemed not to exist; for some of the shell-shocked survivors of the 1960s, this has been the decade that never was.

Even before they end, the 1970s already have a byname: The Me Decade. As far as labels go, it is a fairly accurate expression of one of the most dominant social characteristics of the past ten years: a turning inward, an increased interest in self rather than others, on both an individual and a mass level. Author Christopher Lasch, whose book The Culture of Narcissism (New York, 1978) is a stinging indictment of this tendency, finds our increasing self-absorption to be a deeply alarming sign.

Others, with a more cyclical view of history, see the Me Decade as a natural reaction, a corrective to the often-misguided, sometimes destructive sense of altruism that was one of the hallmarks of The Love Decade. Regardless of which of these interpretations is closer to the truth (most likely the truth contains elements of both points of view), the fact remains that we are left with architecture and design which is (as always) the physical embodiment of the social characteristics of our times.

Thus, in the design profession in the United States, the 1970s could well be termed The Interior Decade, so significant a role did interior design play within our built environment. Among the major determinants of the course of history, one of the strongest has always been money. In the case of the 1970s, it was lack of money that caused so many architects to return to interior design work. But the recession abetted that internalizing phenomenon no less in the design world than in the nation as a whole. In some ways, the 1970s were not unlike the aftermaths of other wars in American history: the financial readjustment as the cost of war was felt by the economy at large, the desire of the people to turn to areas of life (however narrow) over which they could exercise some control, and a centering of attention on home and career rather than on larger, more abstract issues.

In this issue, we begin with a review of the past ten years in interior design, and then go on to examine over a dozen recently completed projects that represent significant currents in interior design today. Sam Johnson said, "The future is purchased by the present," so it is not unreasonable to expect many of these projects to signify a down payment, as it were, on developments in the future. Finally, we have asked a diverse group of interior design specialists for their opinions about the profession in the decade ahead.

We are reminded now of what James Joyce said in Ulysses: "The now, the here, through which all future plunges to the past." That indivisible trinity of past, present, and future is at the heart of this backward and forward glance.

[Martin Filler]
The interior decade

The 1970s were years of great change, diversity, creativity, and importance in the interior design profession. Here is a photographic and descriptive summary of the decade and its meaning.

The 1970s began like a throbbing hangover after the party of the 1960s. As the old decade gave way to the new, our president for the past year had been Nixon: the bitter medicine self-inflicted by the country after its cathartic seizure in that year of woe, 1968. But styles do not die as quickly as hopes, so as the 1970s opened, interiors were still dressed in their bright party clothes. The wild, breakaway design schemes of the late 1960s continued to be executed well into the current decade, with the real turning point between the two eras coming not with the flip of the calendar, but with the onset of the severe economic recession that had such a deep effect on so many things in American life, not least of all architecture and interior design.

Symbolic of where we had come from were the pop designs of painter William Tapley for the Lieb house in Narberth, Pa, and the Perkel house in New York (P/A, May 1972, p. 120): zappy, supergraphic treatments that made those interiors look much like psychedelic record album covers. An urban office building funhouse of equally exuberant spirit was created by Corcia-deHarak for the ground floor lobby of 127 John St. in New York (P/A, Apr. 1972, p. 76). The counterculture still lived in such interiors as the Madonna houseboat in Sausalito by Chris Robins (P/A, May 1973, p. 94) or the "House of the Cent-

Review of the 70s

In the 1970s, architects looked for work wherever they could get it, and in the 1970s that meant interior design. The work of such architects as Alvar Aalto (ill. 1, and P/A, Apr. 1977, p. 53, and P/A, Mar. 1979, p. 57)—who continued to design the insides as well as the outsides of his buildings until his death in 1976—was a reminder of the traditional role of the architect as interior designer. Aalto's conception of interior and exterior as one inseparable design entity epitomizes one of the most noteworthy developments of the decade: the return of the architect to interior design. In fact, no history of architec-

Review of the 70s

ture in the 1970s could be accurately written without a strong emphasis on the major role interior design played.

The reputations of a number of innovative young architects who emerged as important creative influences in the 1970s were based in large measure on interior design commissions. For example, the members of the so-called New York Five (announced to the world during this decade in Five Architects, New York, 1972) all have been involved in the design of the interiors of their buildings. Peter Eisenman (ill. 2), Michael Graves (ill. 3), Charles Gwathmey (ill. 12), John Hejduk (ill. 6), and Richard Meier (ill. 16) all had a significant impact on architecture through their interior designs. This was no less true at the other end of the polemical spectrum, which posed the “Whites” (a/k/a the Five) against the “Grays.” Thus such architects as Frank Gehry (ill. 18), Romaldo Giurgola (ill. 14), Hugh Hardy (ill. 15), Charles Moore (ill. 5), Robert Stern (P/A, Dec. 1973, p. 50, Apr. 1975, p. 78, June 1976, p. 70, and Feb. 1977, p. 58), and Robert Venturi (ill. 8) were as involved with interior design as were their alleged philosophical opposites.

Yet even by identifying two such influential groups—to say nothing of the Silvers (P/A, Oct. 1976, p. 70) and other regional factions—we have also identified another of the major characteristics of the 1970s: the emergence and acceptance of pluralist design values. Any number of approaches to architecture and interior design became permissible during the past decade, reflecting the growing distrust of one authoritative architectural “line” in these times of diverse solutions for a diverse world. Thus the Albany State Museum interior by Richard Meier (P/A, May 1978, p. 76) could draw forth results quite different from those achieved by Louis Kahn in his British Art Center at Yale (P/A, May 1978, p. 76). This was true in every building type: in residential interiors—such as Michael Graves’s Modernist-influenced Snyderman house (P/A, March 1978, p. 80) and Charles Moore’s vernacular-influenced Burns

Review of the 70s

house (P/A, Apr. 1975, p. 74), as well as in
office interiors—contrast Frank Gehry’s
Rouse Co. headquarters (P/A, Feb. 1976,
p. 58) with his own later interiors for a
Toyota warehouse in Maryland (ill. 18).

The growing acceptance of many differ­
ing styles and solutions was a contributing
factor to yet another major influence in the
1970s: the growth of remodeling and
restoration. What previous generations
often despised for being different, ar­
chitects, designers (and the public) in the
1970s prized for being different. Different,
that is, from the often sterile and unin­
imaginative architecture—debased de­
scendants of the International Style, in
large part—that continued to impose a
bland sameness on our built environment.

It is safe to say that such period master­
pieces as Frank Furness’s Pennsylvania
Academy of the Fine Arts (ill. 9) or Timothy
Pfleuger’s Oakland Paramount Theater (ill.
7) appeal to a mass public much more
readily than many contemporary struc­
tures do. For architects, an increased
awareness of the importance of history
makes the preservation of such structures
all the more timely.

There were, of course, more practical
considerations for the reuse of old build­
ings. Remodeling makes sound economic
sense, especially during a decade when
the costs of materials and labor rose at a
staggering rate. Thus the renovation of the
landmark Foundation Building of Cooper
Union in New York by John Hejduk (ill. 6)
combines all of those benefits: the restora­
tion of a historic structure, the creation of
new interiors of high design quality, and
the intelligent expenditure of the client’s
construction budget.

Every decade in interior design can be
characterized in terms of certain objects
and materials which immediately summon
up a concise image of the times (P/A, June
1970, p. 150). The 1930s was the decade
of blue mirrors and rose-beige walls, the
1940s the decade of natural burlap and
the split-leaf philodendron, the 1950s the
decade of white plaster, beige velvet, and
travertine. The 1970s will come to have

13 deBretteville house, Los Angeles, by Pe­
14 Rockwell Kent Gallery, State University of
New York College Library, Plattsburgh, NY, by
Mitchell/Giurgola Architects (P/A, Oct. 1978,
p. 80). 15 Brooklyn Children’s Museum, Brook­
lyn, NY, by Hardy Holzman Pfeiffer Associates
Room, Solomon R. Guggenheim Museum, New
1978, p. 68). 17 Southern Alleghenies Museum
of Art, Loretto, Pa, by Roger Ferri (P/A, May
Review of the 70s

such an image in our memories, too, and no doubt it will in some way relate to natural materials, another of the significant characteristics of interior design in the past decade. The cliché might be seen as asparagus ferns in macramé hanging baskets, or anything made of butcher block, but the pervasive return to natural materials of all sorts will be the truth behind the easy label. An outgrowth of the counterculture movement of the 1960s, this preference for organic and man-made materials grew tremendously during the 1970s. Although natural materials have always been part of the interior design traditions of some regions, as reflected in Ricardo Legorreta's Camino Real Baja hotel (ill. 4), the degree to which this tendency has been accepted everywhere is evidence of its widespread importance.

And far from having this review reflect only the influence of the architect in interior design, it must also be noted that the interior designer has grown to full professional stature during the 1970s. Significant changes in education, licensing, and professional accreditation have put interior designers on a professional footing that they had already earned on a de facto basis. The work of such leading interior designers as Ward Bennett (ill. 19, and P/A, Sept. 1978, p. 82) is as influential as that of any high-style architect. The inescapable relationship between these two branches of the profession (P/A, Sept. 1978, p. 70) bodes well for the 1980s.

The 1970s end on a note of greater optimism than they began. The emergence of an extremely talented younger generation of architects and designers holds high promise for the future. Among them are Emilio Ambasz (ill. 10 and Sept. 1978, p. 98), Peter deBretteville (ill. 13, and P/A, Oct. 1977, p. 72), Joseph D'Urso (P/A, Sept. 1977, p. 60), Frank Gehry (ill. 18, and P/A, Sept. 1978, p. 74), Susana Torre (ill. 11, and P/A, May 1977, p. 68), and Lella and Massimo Vignelli (P/A, Sept. 1978, p. 102), to name just a few. The names of many others who will rise to prominence in the 1980s are unknown to us now, but the inevitability of their rise is one of the great lessons of the 1970s. Let us hope that the achievements of this decade past, which was born amidst repression and despair, and which died amidst expressiveness and hope, will be exceeded in the ten years to come. [Martin Filler]
The multiple currents of design that periodically merge or diverge are here examined in recent interiors projects.

During the 1970s one of the most frequently invoked words in architectural design was "pluralism." In some ways that word represented a healthy recognition of equally valid approaches to our built environment. Yet to some extent it also masked a certain confusion about the real direction design has been taking since the first major cracks in the Modernist monolith began to appear circa 1960. This contradiction seems especially acute to anyone who seeks to plot our exact position at any given moment in the ebb and flow of events, for especially in the world of design, the proverbial crystal ball has often been more cloudy than clear.

Recent years have taught us, however, that uncertainty and ambiguity can become more or less permanent characteristics of life. And as comforting as logical, unified developments in any area of endeavor might be, we can scarcely expect them to prevail in design when they exist so infrequently in other realms of human existence. This condition appears with particular complexity in architectural interiors today: while many designers seek to go beyond orthodox Modernism, they do so without uniformly adhering to one school of thought. Their responses, while all pouring forth from the same source of Modernism, tend to spray out in many different directions. In some cases, those directions are difficult to classify and describe: thus our recourse to "isms." And in some cases we find another "ism"—neologism—a necessary response to identification and explication.

Thus, among current directions in contemporary interior design we find:

- **Methodicism**: Two offices by Gwathmey Siegel Architects (p. 140) continue in the formulaic development of that firm's characteristically dependable design.
- **Minimalism**: Joseph D'Urso's and Bray-Schaible's own offices (p. 144) epitomize the reductivist approach to design.
- **Neo-Modernism**: Two showrooms by Michael Graves (p. 148) continue his development of an architecture that does not exclude Modernism from its collage of historic styles.
- **Post-Modernism**: Robert A.M. Stern, a leading exponent of that style, puts polemics into practice in a squash club (p. 154).
- **Modernism**: An office by Tod Williams & Associates (p. 156) shows that reports of that style's demise have been exaggerated.
- **Regionalism**: Offices for the California Redwood Association (p. 160) recall the hallmarks of the Bay Area style.
- **Revivalism**: Judith Hollander & Jed Johnson's office design with Michael Hollander (p. 162) is part of a strong return to antecedent styles.
- **Pragmatism**: Two projects by Peter Wilson Associates (p. 164) exemplify an approach that alters style as program requires.
- **Exoticism**: An apartment by Richard Gillette (p. 168) gives full expression to an undercurrent in much design today.
- **Eclecticism**: An amalgam of styles in a housewares store by Sisco/Lubotsky and Stuart Cohen (p. 170) reflects another strong development.
- **Metaphoricism**: The fusion of real with surreal elements in a restaurant by Richard Fernau (p. 172) speaks of revived interest in communicative architecture.

Other "isms" abound, but which will flourish and which will run dry is a story for some future day. For now, we can reflect on the richness that this often confusing confluence represents, watching with interest as the stream of design continues on its willful, wayward course. [Martin Filler and Suzanne Stephens]
These two offices by Gwathmey Siegel represent the richest, most elaborated expressions of volume using color and texture by the partnership to date.

This is where the action is. Every corner is an event. No wall can be taken for granted. But far from being visual chaos, Gwathmey Siegel's FDM and Evans office interiors are models of design choreography. The interventions have a precise logic, adding up to Gwathmey Siegel's definition of space.

As opposed to designers who read space as a series of overlapping planes, Gwathmey and Siegel perceive volumes. But, as distinct from those who conceive a sequence of closed volumes (rooms), they create a single complex, which, unlike a room, can't be taken in all at once. Thus, motion (space in time) is built into the design and the perception of it.

The use of color to effect this space was a fortunate outcome of the hard times of the early 1970s, when interiors became Gwathmey Siegel's bread and butter (P/A, Feb. 1977, pp. 72-83). By now the architects have attained a refined subtlety.

Working the corners
The new rich materials are used to "work the corners," as Robert Siegel puts it. Each wall is activated by investing it with a unique content of tone and texture. Every intersection is explored as an interaction of two (or more) design components.

The entrance lobby of the FDM offices, for example, is a composition of "broken" corners. A sea-green curve suppresses one potential corner to create another where it meets a mirror wall. Like a waterfall, the design moves in steps and flows from right to left, ending with a splash confronting the receptionist's desk.

Each element in corners "worked" in this way has an implied continuation beyond any intersection. In the receptionist's area of the FDM entry, a second mirror wall visually realizes the implicit continuity of the perimeter wall, making it appear as though the latter, with its puncturing window, is extended through the mirror. In fact, the mirror's illusion reveals the truth: the perimeter wall does continue along that plane, periodically broken by fenestration.

The route of progression through the office is defined by a continuous pink wall. Not a flat plane, but a flexible object, this wall is wrapped around the central service core of the building and extended into the offices. The pink wall transforms several problematic conditions into design elements. The large obtrusive core, which leaves only a narrow band of space for the offices, is transformed into the heart of the floor, a pink center with members extending out to the perimeter.

At the center, at the edge
The circulation space, as the central intersection, is the reference point. The wraparound hall in the FDM office is defined and measured by a gray tile floor and a reachable 7'-6" ceiling. The fourth side of this envelope differentiates various points en route. In the secretary area, the pink backdrop is contrasted with a large purple column (a structural leftover) anchoring the center of the space. The glass-block walls marking the conference room and small executive office allow the outside bounds of the floor to be sensed from the center. Narrow mirrors flank the doors of a bathroom and the president's office, in the corners, visually extending the glass-block walls perpendicular to them and thus implying the invisible space between the floor's core and skin.

As the circulation space is the central intersection, so the perimeter offices constitute the intersection with the outside. Here, design elements refer to and contrast with...
FDM and Evans offices

those defining the hall. A spatial contrast between the perimeter and the circulation area is set up by raising the ceiling a foot and a half in all the perimeter offices. The sensation of emerging from the center is accentuated by lighting set in the fascia over the office doors, illuminating the ceiling. Underfoot, gray tile gives way to gray carpet. Such consistent perimeter elements—the carpet and ceiling or the dark gray used on the perimeter wall—link the separate spaces and increase the scale of the whole. Furniture is also employed as a design constant—and to adjust the scale of the volumes.

The conference room and the larger executive office are particularly happy solutions. A curved wall in the conference/projection room organizes the space around the tongue-shaped table while allowing the room to have two windows. François de Menil’s office, the seat of command, is directed to the desk, which, backed by a wall of machinery, becomes an instrument panel. But the most elegant accommodation are the three work carrels fitted into the 10-ft-wide north passage. Open to the corridor and, like it, paved in light gray tile, the carrels are demarcated by panels of dark gray. The result is to move the perimeter wall in, so that anything beyond it appears to be extra space. The bay window effect is completed by a painterly use of shades of gray to overscale the window. The magnificent illusion of spaciousness works because all pieces of the design support it, providing references for the colors’ meaning, or for the volumes’ rationale.

Entrée spectaculaire

Such sensibility to the psychology of spatial perception is fundamental to Gwathmey Siegel’s work. In the Evans Partnership offices, on the same NW corner of the same building, floors below FDM, a different spatial relationship is set up. Where the FDM office is two concentric rings—core and perimeter—the Evans offices are a dumbbell with a weight on each end—entry and executive office. In the entry, a spectacular freestanding curve of glass block, illuminated from within like a huge vertical chandelier, is reflected in a black glass wall opposite, a mirror in the corner, another black glass wall facing the entry, and the dark green marble floor. The potentially grand effect resolved the deadend ell of the entry, allowing the receptionist, who sits at the other end of the office, to control the entry via the mirror in the corner. A less felicitous function of the entry, which destroys all its glass grandeur, is to act as a gallery. Against the black glass wall, a row of back-lit technicolor photos of Evans-developed buildings is mounted. Along with a derivative placed smack in front of the mirror, these reduce the elegance of the reflective effects. First-class architecture shouldn’t be used to set off such banalities.

The glass-block curve, a G S specialty (see P/A, Feb. 1977, p. 82) encloses the conference room. A theatrical space, it is illuminated by lights mounted on a fascia that cuts diagonally across the hemisphere, emphasizing the ceiling and the glass block. The conference table projects into this space; its curve is repeated in the third wall of the room. The design moves through and around the glass materials that reflect and allow penetration.

The circulation space, like the entryway, is betrayed by what seem concessions to a client’s taste. Colorful decorative paintings are hung against the white wall as focal points. This sort of thing smacks of “interior decorating” and the paintings are mediocre to boot. It’s too bad, because the design has strong basics and clever details. But the G S spirit is not present the way it is in the office above, and even familiar G S gestures are not always turned to best advantage. One of their 45-degree cornered cabinets—a great solution to the problem of “which is the front?”—is here wedged in a corner, obstructing a window.

The dumbbell’s squishy thud

The brilliant glassy entry demands something equally glittering and hard, but the executive office is disappointing soft. The client reportedly wanted something “normal and livable,” but no room is an island. The cushion furniture and fuzzy carpet bear little meaningful relation to the rest of the office, while the paintings decorating the walls and the objets d’art are too reminiscent of the touches that mar the hall. Again, the decorating fluff obscures several fine architectural effects using glass, which were clearly intended to provide the counterpoint to the entry. On the north wall, the two large windows have been turned into a solid wall window, by flattening the intervening section of wall and placing mirrors at the windows’ ends. The splendid views of Central Park and the grand window are multiplied by a mirror wall opposite. But unfortunately, a sort of white bas-relief doily, stuck to the central divider, interrupts the effect.

Smoke and stone

Although its realization is blurred, the design part in the Evans office makes a fascinating complement to that of the superbly effected FDM interior. The two offices represent dialectically related thrusts of Gwathmey Siegel’s explorations in color and texture. While both color and texture weigh in each, the sophistication of the effort is concentrated on one or the other. Simplistically, the FDM offices concentrate on color, the Evans offices on texture. The color dialogue in the Evans offices is a relatively simple one between extremes: black (or dark green) and white. In FDM, shades of gray (and pink) enter into a complicated interchange. Conversely, where in the Evans office several types of smooth, reflective materials play off each other at corners, in FDM, textural juxtapositions are restricted. Planes absorb light in FDM, reflect in Evans. Where the former is subtle, the latter is clear. To sum up the qualities expressed, one is stone, the other, smoke. [Eleni Constantine]

Data


Architect: Gwathmey Siegel Architects.

Program: offices for film production company on 34th floor of 1930s building.

Major materials: walls: mirror, canvas/paint, glass block; ceiling: aluminum tile, gypsum board; floors: carpet, quarry tile (see Building materials, p. 252).

Consultant: mechanical: Thomas Polise, PC.

General contractor: All Building Construction.

Costs: withheld at request of client.

Photography: Otto Baitz.


Architect: Gwathmey Siegel Architects.

Program: offices for development corporation on 16th floor of 1930s building.

Major materials: walls: canvas/paint, glass block, black glass, mirror; ceiling: aluminum tile, gypsum board; floors: carpet, verde antique marble (see Building materials, p. 252).

Consultants: mechanical: Thomas Polise, PC.

General contractor: All Building Construction.

Costs: withheld at request of client.

Photography: Otto Baitz.

Opposite: Evans conference room and entry.
Cool, calm, and collective

Two interior design firms known for minimalist work share renovated space in a Manhattan Beaux-Arts studio.

Long before SoHo's industrial lofts became the normal habitat for New York's artists and designers, many such people used to live and work in buildings that were specifically designed for them. Some of those studio buildings still exist, such as the famous Gainsborough on Central Park South and, in its less-known function, Carnegie Hall itself. Another one, the Bryant Park Studios, on West 40th St. overlooking Bryant Park behind the New York Public Library, recently became the new offices shared by Bray-Schaible Design, Inc. and D'Urso Design.

The rather elaborate, 80-year-old Beaux-Arts/High-Gothic Revival structure is the last place one would expect to find Bob Bray, Mike Schaible, and Joe D'Urso, who by now must be recognized as the young masters of High-Tech, minimal interior design. The huge, eighth floor studio room is also the last place they expected to find themselves. When the group, who have shared offices for the past ten years on the Upper East Side, began to look for larger space, they never considered leaving the old neighborhood. They certainly never considered the West 40s. "But we came to a party in this building one night," Mike Schaible says, "and that's all it took." Irving Penn's old photography studio was available, and the group decided to take it.

Having the principals of two separate firms design an office space, even for their own use, would not seem like the best prescription for smooth sailing. "But the job actually went very smoothly," Bob Bray recalls. "All of us had a clear idea of what we wanted, and agreed that the space didn't need much more than to be cleaned up."

"The only compromises we made," Mike Schaible says, "had to do with the height of things like partitions and some counters, which relate to the (rather great) differences between our own heights."

The major change the designers made to the 23' x 37' x 18' high space was to remove the walls and French doors that
Bray-Schaible/D'Urso offices

blocked off the back half of the room, thus opening up the mezzanine level and the handsome spiral staircase leading to it. Where the stair's risers and treads extend beyond the spiral supporting structure (detail, p. 144), the designers have left the existing enclosure intact, but removed the unneeded portions of the wall. This straightforward gesture brings to the space a very attractive design element, which is doubly appealing because of its total lack of contrivance.

The 1500-sq-ft room seems much larger than its measured dimensions. Part of this is due to the 18-ft-high ceilings, and part also to the scale of the large north windows facing Bryant Park. In responding to these conditions, the designers, in their own intervention, have generally kept new elements large, unbroken, and with smooth surfaces. At the lower level, the principals' oversized work tables take most of the front space; at the back, the conference, file, and reception areas are simply partitioned by carpeted dividers of varying heights. Four work stations have been put on the mezzanine where, now that the doors and wall have been removed, the area is pervaded with a sense of spaciousness. The height at this level gives the best relationship to the windows, and also the best view of the park and the skyline beyond.

Continuing the attitude of boldness and simplicity, the entire interior has been painted with high-gloss white enamel, and all the floors have been carpeted with charcoal commercial carpeting. Industrial lighting and exposed, round collars of the air conditioning complete the picture. If this room shows anything, it shows how simplicity, straightforwardness, lack of artifice and contrivance can, when properly administered, present an artfulness every bit as appealing as the opposite attitude at its best. [David Morton]

Data
Program: renovation of 1500-sq-ft space for two interior design firms' offices.
Major materials: charcoal commercial carpeting, high-gloss white enamel (see Building materials, p. 252).
General contractor: Van Hyning Construction; air conditioning, Airconda; painting contractor, Roth.
Cost: withheld at request of client.
Photography: Peter Aaron, © ESTO.
His second and third Sunar showrooms demonstrate how Michael Graves has repeated his earlier success without duplicating it, while further adding to his client's new high-style image.

It is axiomatic that success often presents as many problems as failure does—only different ones. Thus the success Michael Graves scored with his innovative showroom in New York for Sunar, the contract furniture and fabric manufacturer (P/A, June 1978, p. 86), gave him little more than a pleasant moment's pause before he plunged ahead with further—and far more problematic—showrooms for his client in Los Angeles and Chicago. Deadline pressures have been severe in all three Sunar projects to date. Sunar wanted at least a temporary exhibit ready in its new Los Angeles showroom space at the Pacific Design Center in time for WestWeek (the annual contract interior design mart in LA), and likewise wanted its new Chicago showroom at the Merchandise Mart completed in time for the opening of NEOCON (see News), the national contract furnishings exposition held there every June.

Against this background of high-style anxiety, it is all the more amazing that such exceptionally fine designs emerged. Though of similarly high quality, the Los Angeles and Chicago showrooms are quite different from one another. They represent in the first instance a very sketchy temporary scheme, and in the second instance, the first permanent design Graves has completed for Sunar. (The New York exhibit was an interim installation, and has since been dismantled.) But both new efforts are complementary aspects of the same design sensibility, and both have qualities that mark them as worthy continuations of this increasingly admirable chapter in interior design patronage.

The Los Angeles Sunar showroom is located in an oddly shaped space tucked into a far corner on the second story of the Pacific Design Center (P/A, Oct. 1976, p. 78). In order to increase the number of tenants able to face onto the "interior streets" of the building, the lessors have carved some extremely strange spaces from what looks to be (from the exterior of the PDC) a rather simple orthogonal plan. In reality, it is quite the contrary: when he was preparing the plans for the Sunar showroom, Michael Graves asked the architect of the Pacific Design Center, Cesar Pelli, to try to guess the location of the new project. The fact that Pelli was unable to surmise where that ungrateful space might be says something about how the Blue Whale has been subdivided, and comments on the quality of the shell Graves was given to work with.

Curtain up, light the lights

The Sunar showroom is composed of three major spaces: a trapezoidal entry area, a long narrow corridor slanting diagonally toward the back of the showroom, which is in turn a fairly large rectangular space. For the temporary exhibit scheme, Graves decided to emphasize the discrete nature of those spaces, and likewise chose to underscore, rather than to vainly mask, the ephemeral quality of the design solution. His inspiration came primarily from stage set design: a specifically theatrical frame of reference is created by the undulating curtain that unites front and back rooms, and by the rented theater lighting fixtures which cast a cold, flat light on the space. Some elements have been designed by the architect, others not: the concrete floor was painted pale aqua, but the mechanical elements have been designed by the architect of the Pacific Design Center, Cesar Pelli, to try to guess the location of the new project. The fact that Pelli was unable to surmise where that ungrateful space might be says something about how the Blue Whale has been subdivided, and comments on the quality of the shell Graves was given to work with.

Los Angeles showroom (opposite page) contains (clockwise from top right) reception area; corridor leading from reception area to open office systems display; open office display area; office furniture and fabric display; corridor flanked by columns and undulating curtain; detail of fabric display.
Graves drawing for invitation to opening of Chicago showroom (above left) is further development of design for P/A (see cover). But Janus, the Roman god of entrance, was transformed into Terminus, the Roman god of boundaries, by the time Graves designed the painted cardboard sculpture (below right) at the far end of the Chicago showroom (overleaf). Graves sketch for the Terminus sculpture (below left) shares bust-on-pedestal theme with Janus.

**Intimations of immortality**

Reaction to the Chicago showroom was no less strong, but was quite a bit more divided. In fact, it might be said that it was the main topic of conversation at NEOCON this year. Graves set out to create an entirely different kind of showroom for the Merchandise Mart, and succeed he did. Yet he proceeded not (as some suspected) from a desire to attract attention through oddity, or to promote his own personal style of design. Rather, he acted in response to some of the real inadequacies of contemporary furniture showroom design, discernible with encyclopedic completeness at the Merchandise Mart. The vast majority of showrooms at the Mart are rather much the same, with floor-to-ceiling plate-glass window walls facing the corridors, and interiors that more or less objectify the furniture within them. Chairs, for example, are often placed on pedestals or are put into plexiglass vitrines, floating within pools of light that give no sense at all of believable interiors, only a kind of vague Universal Space that says little about how those objects are meant to be used in real life.

Graves, however, wanted this showroom to have a sense of apartness from the surrounding corridors, with its interiors visible only through the main entrance (on the narrow side of the rectangular space) or through small windows cut into the otherwise opaque walls. His other major idea was to have the showroom read as a series of discrete rooms, so as to create an interior that would better suggest how the Sunar offerings might look in other settings.

Chicago showroom is intersected by a cross-axis perpendicular to the main entrance axis, and, like the principal threshold, it is floored with verde antique marble (above). Cross-axis is topped with a barrel vault, painted cerulean blue. Semi-circular tympanum is painted metallic gold, adding to feeling of richness. Room proved to be a great success of an otherwise lackluster WestWeek, and it is easy to sympathize with the many visitors who expressed dismay at the thought of this intriguing design being dismantled. How often does interior design gain that kind of response from the public?
than would be possible in the more standard kind of showroom design. That latter desire was particularly difficult to plan for, since Sunar's new furniture design program is still young, and there are as yet few pieces to design rooms around. Thus, the relatively complete nature of the Chicago scheme, in which few elements are left in a state of design neutrality, helps diminish our sense that there is little to be sold there, while creating a high-style image for Sunar. Graves has given the Chicago installation a variety of rooms—large, small, high-ceilinged, and low—which seem likely to meet the client's needs as new introductions are added to the Sunar line.

That feeling of variety creates an immediate impression as one enters the showroom from the corridor. Two pairs of gold-tipped white columns frame the main portal, looking like the exquisite cigarettes of a fin-de-siècle aesthete. The threshold beneath those four columns is paved with squares of verde antique marble, as is the floor at the major cross-axis within the showroom, used in both places to signify an important passage. (Elsewhere in the showroom the floor is covered with rose-mauve carpeting.) Stepping inside, one seems to be in quite a different atmosphere from that of the New York or Los Angeles showrooms. Here it seems a great deal cooler, richer, quieter: perhaps it has something to do with the predominant gray and blue color scheme, which also includes a warm rose-beige, but does not go
so far as the salmon pink of the earlier showrooms. The lighting also helps achieve that placid effect. Sconcelike segments of Classical moldings conceal indirect lighting that softly diffuses a relaxing, even glow throughout the rooms.

The illumination also helps to intensify the perception of layered space, which makes the showroom seem like a collage on an environmental scale. The diverse parts add up to a scheme of great sophistication and daring. That the Chicago Sunar showroom offers an alternative to the unthinking cliches of conventional showroom design would be significant enough even if it did not—as it does—also offer functional improvements in addition to its stylistic achievement. That its importance was lost to so many is not surprising, since it requires a rethinking of narrow attitudes that have habitually segregated the imperatives of function from the dictates of pure design. Graves has joined both into one superb unit here. Although the Chicago Sunar showroom is an assemblage of many fragments, that unity of the beautiful and the useful, of the real that is life and the more-than-real that is art, gives it a completeness that is much more than the sum of its parts. [Martin Filler]

Data
Project: Sunar showroom, Los Angeles.
Architect: Michael Graves. Steven Harris, job captain.
Program: temporary exhibit for showroom of contract furnishings manufacturer.
Major materials: painted existing walls, floors and ceilings, fiber column forms (see Building materials, p. 252).
Client: Sunar, a subsidiary of Hauserman, Inc.
Cost: withheld at request of client.
Photography: Adam Bartos (p. 149).

Data
Project: Sunar showroom, Chicago.
Program: showroom for contract furnishings manufacturer.
Major materials: carpeted and marble floors, gypsum board walls and ceilings (see Building materials, p. 252).
General contractor: Colt Construction.
Client: Sunar, a subsidiary of Hauserman, Inc.
Cost: withheld at request of client.
Photography: Sadin/Karant, pp. 150-153, except as noted.

Seen from showroom entrance (right), the Chicago Sunar interior is a rich composition of receding planes, accentuated by Graves's choice of colors and the soft, diffuse lighting. Sculpture of the Roman god Terminus (see p. 150) stands at far end of enfilade.
Ace of clubs

Working within strict limitations of space, budget, and client cooperation, architect Robert A.M. Stern has made a basement squash club in Manhattan into a witty architectural syllogism.

Banner-bearer of Post-Modernism, Robert A.M. Stern has spent the first two decades of his career defining, refining, and teaching the principles of the movement. Now, each novel use is a test. For example: How do P-M principles work in narrow situations, where functional demands, structural constraints, and a tight budget limit the architectural intervention?

Well—as proven by this squash club in the basement of a newly completed Manhattan apartment house. When Stern got his hands on it, the dimensions and layout of the basement had been predetermined; the operable space was a narrow, low area flanking the courts, accessible by a stair descending steeply from the street. Two of the squash courts are separated from this area by glass walls, a prefab feature installed as part of the court by the client. The third, on the far end, is the traditional solid box entered via a tiny door.

The functional program was to transform this circulation area into a lounge space. For this dead-end shoebox (14 ft wide, 57 ft long, with a ceiling that drops to 8 ft) to have any meaning, the design had to relate the lounge to the courts, yet give the space a unique, unifying identity.

Sterne is appropriate and witty solution, a chain of architectural reasoning, answers perfectly. As any squash player knows, what stops the white box of a squash court from spinning into a white whirl during the game is the service line, which, together with the baseboard, defines the front wall. The inch-wide red stripe stretching across the flat, white expanse at a height of 6½ ft, and the darker metal baseboard, 2 ft high, maintain the right angles of the space.

Like the string course and rustication each respectively connotes visually, the service line and baseboard define the spatial layers of the box they adorn. Above the line, the game begins with the serve; between line and baseboard, the action is focused, and a ball that hits the baseboard ends the rally.

Out of these two architectural elements, synecdoches of a squash court, Stern has constructed the lounge. The red stripe runs around the cool blue wall, as does the base, rendered here in two gray bands that play up the suggestion of rustication. As a string course would, the stripe breaks at the "windows" (the glass walls) and the doors. Between these two is, by architectural definition, the main floor; by squid definition, where the game is played.

On this first conceit, a metaphor is built. The desk, set between the two stairs, is treated in a manner suggestive of a porch; the cut-out front over the counter is scalloped into capitals at the top. A door is treated as an outdoor terrace. The illusion is completed by slate-gray carpeting and an aluminum-paneled, stepped ceiling, which picks up the sky blue of the walls. Regrettably, some changes by the client dull the impact of the architectural part. A second French door was to be painted on the back wall, to add symmetry and thus more credibility to the "façade," but this touch was nixed at the last minute. The reception window onto the entrance stair has the red line across it, reportedly for fear that people would otherwise put their hands through the glass. Corners appear to have been cut on lights and furnishings.

The architectural quality emerges in deft touches. A red banister down the stair announces "squash"; Art-Decoid gray and white bathroom tiling patterns pick up the vaguely retro atmosphere of the lounge-terrace. The bulletin board is related to the baseboard-rustication and the stripe-course as a stucco wall might be, with the two textures suggestively juxtaposed.

Clearly an architectural winner, Stern's P-M squash club represents a somewhat ambiguous social benchmark for the style. Post-Modernism, like LaCoste sport shirts, loses out when adopted without appreciation of the design's quality. It would be too bad if being merely "in style" were the price of P-M's success. [Eleni Constantine]
Reconciling almost opposite needs for open and closed offices, for a strong corporate image with personal needs, prompted a careful balance between Modernist and non-Modernist attitudes.

Two chronic afflictions plaguing the design of open office plans cannot easily be solved: the need and desire for acoustical privacy and the expression of hierarchical relationships. The term "hierarchy" here refers not just to corporate structure, but to the division of functions in terms of public, semipublic, private, and semiprivate zones.

In this case, the offices for BEA, a financial investment firm located in New York's Citicorp building, involved a slightly more intense deference to these two above-mentioned characteristics of the working situation.

Tod Williams & Associates, architects, has devised a scheme that confronts these issues extremely well through a balance of Modernist rigor and the lavish though understated use of natural finishes and fabrics. It is the kind of "comfortable-modern" effect that chichi decorating houses usually claim to achieve with chrome furniture, brown suede walls, and floral prints.

Modernist substructures
The disposition of open-plan spaces at the BEA offices, wrapping in an "L" around two sides of the tower, is executed logically and legibly. The south arm contains managers' offices and a reception lounge with a conference suite at one end; the other arm, where the more behind-the-scenes functions of investment counseling take place, faces west, with lunchroom adjoining. Between, at the crook of the "L," is the president's office. In other words, from the perspective of understanding office functions, the clarity, serviceability, and hierarchical nature of the planning make a
Planters separate work space from circulation (below); stoalike columns and glass walls divide areas from conference and lunch rooms.
strong impression.

Modernism's democratizer, the grid, reigns throughout. The theme is established immediately at the elevator bank where squares of white oak flooring, 1'-10½" x 1'-10½", are set into a grid of metal strips. This grid motif repeats in custom-designed office partitions for the managers, where the panels (also 1'-10½" square), covered with Kansu silk, are set within a lacquered wood frame. At the ends of the wings, separating the conference rooms and lunchroom from the work areas, the architects sandblasted a grid pattern of 6½" squares on sliding glass walls.

The design of the lighting illustrates another area where custom detailing enriches architectural features. A tubular stainless steel fixture with fluorescent lighting is mounted in a barrel vault carved out of a dropped ceiling. It creates a cove lighting strip that extends from the elevator banks through the reception foyer. Incandescent spots mounted into a ceiling lowered over the main circulation path establish another kind of space. The ceiling over the work area is composed of metal reflective panels pierced by eight-ft-long slots three in. wide, above which a luminous fluorescent fixture is inserted. Task lighting at the work stations supplements this ambient glow.

Softening up the effect

The most noticeable thing about the offices is that the noise level is appreciably low, softened not only by the metal panel acoustical ceiling and the acoustical paneling of the managers' offices but the ⅛-in.-thick carpeting on the floors and core walls. The only nonabsorbent surfaces are the oak flooring in the foyer and waiting area, the lacquered wood partitions of the managers' offices and work stations. These and the freestanding lacquered columns in front of the etched glass walls form nicely polished, brittle counterparts to the cushioniness of the fabrics and furnishings. The furniture, a straightforward and simple "modern," has been upholstered in various muted beige tweeds, patterns, and solids, as was the architect-designed carpeting.

Where there are strengths...

Despite the interior's successes, one does find flaws. Because the detailing and architect-designed carpeting, hardware and lighting are well done and so many problems thoughtfully resolved, criticism borders on carping. Nevertheless, out-of-place aspects attract attention. For example, the architects have chosen not to try to accommodate the tower's heavy-handed cross bracing into their design scheme. Not that they should. However, there are points when these diagonal members intrude into the design in a way that fights the rigorous geometry to which the scheme ascribes. Particularly disturbing is the way the bracing member smashes through the sliding glass wall in the lunchroom, blocking the intersection of one translucent plane (sliding glass doors) and one transparent one (tfenestration). Second, the row of Pompeian-red columns in front of the etched-glass wall creates a smashing visual effect, a set piece of three-dimensional elements montaged against two-dimensional ones. However, the freestanding columns are not part of any formal or structural system: they are sui generis, not repeating or referring to anything but themselves. They are clearly there for pizzazz. This stoalike treatment, of course, signals the separation of semiprivate areas (work spaces) from semipublic (gathering places for conferences or lunch). However, one would expect to see the motif there picked up in the treatment of the library enclosure, a freestanding, circular, oak-sided object painted off-white. Because it occupies the node where the two arms of the "L" intersect, it obscures the view out. Furthermore, when seen from a distance, the off-white curved walls don't read as distinct from work stations and managers' offices. Even though the column and gridded-glass motif may have provided an instance of overkill, that or some other treatment would have been more legible.

Views out are obscured in another crucial area: when one enters from the lobby, the axial orientation of the cove lighting leads the eye directly out the window towards the Chrysler Building. However, the eye is stopped by the placement of a planter in the line of vision, located there to conform to the spacing of the planters along the length of the arm. Nevertheless it should be said that the surprise glimpses out through windows and doorways punched into the managers' partitions work exceedingly well.

Other cavils have to do with the choice of furnishings—that is, the burlap walnut furniture in the offices. While this is a matter of subjective preference, in this kind of muted ambience, a patterned wood gains too much attention; a little goes too far.

Despite these observations, the architects have demonstrated a rare talent for combining various kinds of elements and materials sensitively. The handling of the open-plan offices, even if the budget was ample ($80 per sq ft), merits commendation. If there are aspects that don't come off, or prove excessive, they are only mentioned with regard to similar endeavors elsewhere, whether executed by these or other architects. [Suzanne Stephens]

Data

Project: BEA Offices, New York

Architects: Tod Williams & Associates, Architects, New York. Tod Williams, principal; Peter Wheelwright, associate in charge; Billie Tsien, associate, Alexandra Stoddard, Inc., interior consultant.

Program: design 16,000 sq ft (gross) of offices, work areas, conference and lunchrooms, accounting storage system, reception.

Major materials: custom cabinet work, lacquer finish on plywood for managers' office walls, wool carpeting, floors white oak, Kansu silk acoustical panels, metal pan ceiling, glass with sand-blast etching (Building materials, p. 252).

Consultants: Joseph Loring, mechanical; Richard Shaver of Joseph Loring, lighting; Todd Williams, structural.

Contractor: Citibank (general).

Client: BEA

Cost: $960,000 including fees, furniture, graphics, planting, or $80 per sq ft.

Photographs: Norman McGrath.
The CRA amendment

An association representing seven redwood suppliers makes a new home and showcase in reclaimed quarters.

Like many turn-of-the-century buildings in San Francisco, the Union Can Company building (1896) has had several lives. One Lombard Street, as the building is called, is now the home of the California Redwood Association, two architectural offices, and three other firms. Originally, the structure was directly on the harbor; it is now some distance inland, because of subsequent landfill operations. After some 40 years as a cooler building for Merchant's Ice and Cold Storage Company and conversion to freezers in the mid-1950s, the facility has been defrosted.

Part of the rebirth of the area near the Embarcadero, One Lombard Street was rehabilitated initially by the developer and contractor. The California Redwood Association turned to Environmental Planning & Research, Inc. to create its new office space within the existing building. Part of the program, of course, included the extensive use of redwood, demonstrating various cuts, joints, and surfaces. As EPR President Darryl Roberson points out, that request alone constitutes a complete design challenge. There were others implicit in the existing building, including the depth of the given space, and the limitation of windows to only one (narrow) end wall. Diagonal steel bracing members were added, in compliance with Bay Area earthquake standards.

Beginning with sandblasted Douglas Fir columns, beams, joists, and brick walls, EPR sought to create a warm and relaxed setting. Walls around perimeter offices are kept low, allowing the limited natural light to penetrate further, and giving a more spacious feeling. These areas surround the central conference room/audio-visual core, which extends up to the 15-ft ceiling.

Legend

<table>
<thead>
<tr>
<th>Area</th>
<th>1 Reception</th>
<th>2 Work/mail</th>
<th>3 Waiting</th>
<th>4 Printing</th>
<th>5 Coffee</th>
<th>6 Exhibit</th>
<th>7 Office</th>
<th>8 Meeting</th>
<th>9 Audio-Visual</th>
<th>10 Accounting</th>
<th>11 Library</th>
<th>12 Secretary</th>
</tr>
</thead>
</table>

Typical wall surfaces are in shiplap redwood siding, both horizontally (sapwood-streaked clear grade) and vertically (all heart tongue & groove) applied, and finished with clear penetrating oil. The entry area and the executive office have specially milled redwood paneling to call attention to their special functions.

To complement the sympathetic combination of redwood and old brick walls, brass was used for hardware, blinds, and some furnishings. Accents of blue and rust in the furniture, door colors, office wall inserts, and overhead fixtures, combine with beige carpeting; a custom-made rust, blue, and beige inset carpeting graces the gallery floor. Ducts are painted in two shades of red/brown, pipes are painted out in off-white, and fluorescent light strips are tucked into the joist spaces.

The showcase of the offices is, quite naturally, the meeting/conference room. A dropped ceiling over the center of the room conceals the lighting system, and the glass wall at the entry end allows each space to be experienced as part of the other. Behind diagonal-panelled redwood sliding doors at the other end are fabric-covered display panels which also slide away, to reveal projection screens for audio-visual presentations. This room, in conjunction with adjacent exhibit, waiting, and reception areas, may be used for entertainment or other informal association gatherings.

CRA's offices are respectful of the existing building shell, simultaneously warm, informal, cheerful, and a fine display for the association's favorite subject. They are also another quality step in the renewal of a deserving city sector. With the coming development along that stretch of the Embarcadero, we can only hope subsequent participants will take a cue from One Lombard Street. [Jim Murphy]

Data

Project: California Redwood Association offices, San Francisco, Ca.

Architects: Environmental Planning & Research, Inc. (EPR); Darryl T. Roberson, principal in charge; Joseph D. Chance, project architect; Suzanne Straith, Allison Lasley, interior design.

Client: California Redwood Association.

Program: 6500-sq-ft headquarters for 16-person staff.

Structural system: steel braced frame and plywood floor diaphragms in existing 3-story brick and heavy timber building.

Mechanical system: exposed spiral duct heating and ventilating.

Major materials: redwood siding, gypsum board walls, carpet.

Consultant: Peter Culley, structural.

Developer: The Ron Kaufman Companies.

General contractor: Plant Brothers Corp.

Cost: $33/sq ft, excluding furnishings and fees.

Photography: Joshua Friedwald, courtesy of the California Redwood Association.

Existing wood columns and cast-iron caps form a matrix for the design, appearing as elements within the space. Strong horizontal bands tie low perimeter partitions (opposite, top left) to full-height meeting core and reception area.
Offices for a fashion design firm recreate the texture of a certain period with richness of details and materials.

Revivalism is back. One of the most fashionable sources for forages into the past has been the Art Deco Style because of its combination of simple lines, smooth surfaces, exquisite detail, and elegant materials. Unfortunately, however, interior designers and architects too frequently miss the point. They “recreate” restaurants and hotel lobbies, hair salons, and even offices in a claustrophobic congestion of chrome and suede that has little to do with the design qualities of the original period.

The executive offices for Yves Saint Laurent quite pointedly illustrate an appropriate approach; here two designers have sought revivalism without sacrificing a sense of contemporaneity.

The two, Jed Johnson and Judith Hollander, came together several years ago because of their mutual interest in collecting antiques, objets d'art and plain old period paraphernalia. Their object-fixation developed into a passion for all the decorative arts of a period—whether it be American Empire circa 1820 or Le Style 1925—and creating entire settings. The use of original fabrics and authentic designs for wall coverings or even stenciling has become their trademark, although finding the actual fabrics is almost as difficult as locating the craftsmen to perform the stenciling. Nevertheless Johnson, a former film director, and Hollander, a private dealer, have developed a clientele that admires their intense and academic approach to decoration.

Since the offices required a certain soigné chic in keeping with the image of the firm, the usual office furnishings were avoided. On the other hand, the interiors did have to look straightforward enough, as if business could indeed be conducted there. Johnson and Hollander came across a suite of Art Deco furniture designed around 1931 reportedly for an English couturier who had commissioned the set for an office in a private home. The pieces were correct in style and tone. The furniture, made of copper-plated steel tubing, copper sheet, copper banding, and lacquered wood, comes as a surprise from a period when most of the Bauhaus-designed or -derived tubular furniture was silver—because of the nickel or chromium plating.

Since the Art Deco pieces had to be restored, Johnson and Hollander decided to relacquer the wood from black to dark brown, and reupholster the seats in French suede cloth. While the set included one large desk—now in the reception office—several cabinets, a chaise, a bench and stool, plus a table lamp and floor lamp, other pieces had to be added. The two designers were able to locate an American-designed copper-banded desk from the 1930s for the director’s office, plus some copper-plated lamps. In a couple of instances they have had 1930s lamps replated in copper. They also found two Paul T. Frankl chairs that have been relacquered to dark brown.

To emphasize the totality of this ensemble, Hollander and Johnson designed a frieze based on an American Indian motif and had it stenciled around upper walls of the reception room. The frieze, of bronze powders on an oil-base paint, subtly picks up the reverse glass trim stenciled on the desk tops. For this application, a stenciling process, developed in the 18th Century by Jean Giromi for framing prints, was used: the stenciling is applied to the underside of the glass top so that when the glass is turned over, the bronze powder pattern shows through, given extra coloration by the dark brown lacquer behind it.

While most of the operation involves selection of furnishings and application of ornament to surfaces—design problems still had to be solved. Because of the small size, 600 sq ft, of the offices (they are now being expanded), Hollander and Johnson decided to separate the rooms with sliding partitions—the old Modern way of opening up the space. To accommodate lighting fixtures, HVAC supply and return ducts, and sprinklers, they needed a hung ceiling but wanted cove lighting to wash the walls. Architect Michael Hollander designed the dropped ceiling with continuous fluorescent strip lighting around the edges to emphasize the room’s ten-ft height. These and other elements, such as the sliding doors, have been deftly handled by the architect to provide the neutral background for the decor. The total ensemble works quite well: one can fully appreciate the furnishings, and the revivalist touches; in other words, one gets the full sense of the period, without being suffocated by overly pungent effects. [Susanne Stephens]

Data

Project: Yves Saint Laurent Enterprises offices, New York.

Interior designers: Jed Johnson and Judith Hollander, Associates.

Program: renovate about 600 sq ft of space in an old 1920s skyscraper for executive offices of fashion couture firm. Space to include reception area, executive office, conference room, kitchen, and workroom/closet.

Major materials: paint, lacquer, carpeting, suede cloth.

Consultants: Michael Hollander, architect in charge of design; Bier, Baxt & Hirsch, detailing and construction; Benjamin Baxt, partner in charge.

Cost: withheld at request of client.

Photography: Norman McGrath.
Esprit de Corp showroom and apartment, New York

Each to his own taste

Peter Wilson Associates designs two interiors that place greater emphasis on the clients' requirements than on the architects' own design philosophy.

The successful development of a readily identifiable “look” is quite often a much-sought-after (and highly marketable) commodity in the world of interior design. Clients will flock to an architect or designer who provides an easily recognizable product, in much the same way that some people are drawn to the status objects created by this or that clothing, jewelry, or luggage designer. This is not to imply that consistent stylistic development need be an act of calculated commercialism. But it is rather unusual, especially in interior design, for one firm to shift styles markedly from one project to another. And it is even more unusual for a firm to do so with any degree of design integrity or credibility.

But Peter Wilson Associates, a young New York architectural office specializing in interior design work, has managed to achieve that difficult combination of flexibility and consistency in several of its recent projects. Two of them, a New York garment-center showroom, and an apartment for a former employee of that initial client, illustrate how it can be done.

Esprit de Corp is a fairly small manufacturer of women's inexpensive sportswear. Their New York showroom is located in a large high-rise on Broadway between 39th and 40th Sts. This underappreciated structure, built in 1950 to the designs of Kahn & Jacobs, is a superb example of office building design. Its unusual exterior cladding of pale green brick set off by red-framed horizontal strip windows is further distinguished by the sawtooth plan, which creates a welcome contrast to the orthogonal uniformity of the Midtown area.

The existing showroom area leased by Esprit de Corp reflected the staggered ex-

SHOWROOM AXONOMETRIC

At Esprit de Corp showroom (opposite page), buyers' desks are ranged along arc that runs through space to informal seating area at rear of installation. Subtly silkscreened glass panels afford some privacy, but allow visibility, too. Clothing samples are hung along outside of arc (below).
Esprit de Corp showroom and apartment

terior of the building. Zigzagging on two sides, the space was difficult to accommodate to the client’s two major desires: the visibility of himself and his goods from the corridor outside the showroom, and the creation of a feeling of activity within the showroom itself. The garment trade places great store in both personality and the herding instinct, so it was deemed necessary to make both the owner’s office and the buyers’ tables the two visual focuses of the design. The architects thus placed the glass-walled executive office on a diagonal facing the glass-walled entrance, and ranged the buyers’ tables along an arc that curves from the reception area into the farthest corner of the space. A beautifully detailed brass framework suspended from the ceiling describes the arc, and from it are hung spotlights and glass panels. The panels are silkscreened with subtle, semitransparent photographic images of fashion models, giving a sense of some privacy to the viewing areas, but still allowing the activity in those cubicles to be clearly seen.

The net effect created by this showroom design is one of dynamic movement, legibility, and a strong sense of organization. The restraint of the scheme makes other showrooms in the building seem overdressed by comparison. The chief salesman at Esprit de Corp liked the results so much that he asked Peter Wilson Associates to remodel his own apartment on Manhattan’s East Side. The outcome of that project was so different from the showroom that it would be hard to guess that they were both done by the same architectural firm. Yet they both share, beneath the obvious stylistic divergences, a similar attentive response to the client’s desires, which dictated the design direction of each project.

The first thing one thinks upon entering the East Side apartment is that the people who live there live differently from you and me. Looming against one wall of the sunken living room is a gigantic Advent television screen, the first of several TVs that one sees throughout the apartment, and which furnished the major design cue for the architects. The client might be fairly termed a television addict, and he does not like to be out of the sight of a TV for too long. His favorite form of entertaining is to have friends over to watch the Advent, and thus the living room has been turned into a carpeted amphitheater to accommodate unobstructed group viewing of the huge projected image.

The apartment has an Art Deco feeling to it, but without any specifically historicizing quotations. Stepped bands of pink, gray, and black ceramic tile in the living

Master bedroom (below) is linked to guest room by dressing room and walk-in closet.
and dining areas are echoed by a similarly shaped red neon band that frames the back of the banked platform seating in the living room. Pale pink walls, gray carpeting, and brushed aluminum doors and moldings in the master bedroom suite give the apartment a soft and sensuous feeling. Yet the lack of certain cultural references (there is not a book in sight, nor any art), without the rationale of a minimalist aesthetic (which this surely is not), seems at first disquieting. Until, that is, one realizes that it is no more our concern than it was the designers', who have given both clients just what they wanted. That is a goal worthy of any designer, and one that is not always so carefully sought nor so adequately achieved. [Martin Filler]

Data
Program: renovation of existing showroom for women's sportswear manufacturer.
Major materials: glass and plywood walls, brass pipe suspended ceiling, carpeted floors.
General Contractor: All Building Construction.
Cost: withheld at request of client.
Photography: Norman McGrath.

Data
Architect: Peter Wilson Associates. Peter Wilson, principal; Jon Evans, associate; Barbara Weinstein, project architect.
Program: renovation of apartment to create clear and open spaces, and to accommodate client's television viewing.
Major materials: painted plaster walls, carpeted and hardwood floors, plaster ceilings.
General contractor: J & N/1 Tomlin, Ltd.
Client: withheld at request of client.
Cost: withheld at request of client.
Photography: Norman McGrath.
Art collector's residence, New York

Faux bois sans faux pas

An apartment in New York abstracts design elements from the past as a setting for an unusual art collection.

For some years now, the accepted way to display paintings to prove they were being taken seriously, whether in the museum or the home, has been against the white wall. But with a more relaxed attitude toward all of the arts today, that convention seems finally to be on its way out. Nowhere is this more convincingly shown than in the apartment Richard Gillette (P/A, Sept. 1977, p. 92) has designed around the private collection of a New York art dealer. There is theatrical use of color, as often as not combined with such opulent fabrics as taffeta and silk. Wainscoting and other decorative moldings have been applied at will and covered with gold leaf or paint. Mirrors (on the bedroom ceiling and elsewhere) create illusions of spatial depth, while screens (across the living room windows, where you cannot believe a garden lies beyond—but doesn't) give suggestions of (nonexistent) delights beyond. If all of this has been done before, there nevertheless seems to be a new twist here, which can probably best be accounted for by the fact that Gillette is by training neither an interior decorator nor designer, but a painter. This, one could suppose, might give him an edge on knowing the limits of combining colors and decorative elements, and on knowing just how far to push without going over.

The task for this apartment was not simple. As a collector, the client’s eye runs toward the meatier side of late 19th- and early 20th-Century art, with impressive holdings from the Symbolists and pre-Raphaelites. These, with furniture by Gallé, Majorelle, and Mackintosh, with Victorian wicker and Streamline-Moderne, are underlined with Art Deco and Chinese rugs, and expected to work. Miraculously, they do.
Gillette was asked to provide a sympathetic setting for rather special paintings and furnishings, and he has done so mainly through an admirable exercise of restraint relative to the objects. In the dining room, the walls and the window treatment are kept simple. Except for the colors, the space is more suggestive of the purity and calm of an 18th-Century setting than a 19th-century one. Track lighting illuminates the room, and the fireplace surround has been gilded to blend with the frames of the paintings. Although the objects in the room are undeniably florid, there are no excesses to the room itself.

Perhaps nowhere does Gillette's painter's eye come through better than in the living room. Here, where Mackintosh, Streamline-Moderne, Art Deco, and Victorian coexist, Gillette has pulled the whole ensemble together by wrapping it in a soft, misty green, and then tying it with a wainscoting and door treatment that make a heroic, but mock, attempt to simulate real wood grain or marble—it's hard to tell which. Nevertheless, this sort of comment—a burlesque of the real that has an inherent beauty of its own—requires special vision. The flesh-tone bedroom, its mirrors and black satin, make a space as seductive as the art housed within it. Throughout, Gillette shows the way towards a new opulence, but it is an opulence that judiciously abstracts from the past with an economy of means that only one who sees beyond the surface of things could achieve. [David Morton]

Data
Project: private apartment, New York.
Interior design: Richard Gillette.
Program: to create appropriate setting for specialized art; in existing apartment.
Major materials: paint, gold-leaf, fabric (see Building materials, p. 252).
Costs: withheld at request of client.
Overscaled architectural elements are used to foreshorten the tunnel-like space of a suburban housewares shop.

An unpromising sliver of space confronted architects Sisco/Lubotsky Associates and Stuart Cohen at the Fox Valley Shopping Center. Situated on the second floor of an enclosed mall, the area leased for a housewares store begins with a generous angled front, set prominently at the head of an escalator well. From there, however, the space stretches back 140 ft, only 25 ft wide, with a major air supply duct running its length and others crossing it midway.

The design had to offer a flexible, non-competitive background for displays of visually lively merchandise, yet the architects realized that merchandise alone would not draw the eye deep into this tunnel. To delineate the space all the way to the back and minimize its apparent depth, they placed architectural elements in it that were simple in form and color, readable from a distance, and deceptively oversized. In a central portion, where crisscrossing ducts would permit it, they raised the head height above the prevailing hung-ceiling level to accommodate a small fabric sales mezzanine: in the spaces at either end they constructed counters projecting from the side walls in large curves, anchored at the outer ends by big round columns of no structural use whatsoever. Spanning between these "columns," a dropped soffit, suggesting a beam, gives the mezzanine a display wall and defines a smaller-scaled area along one wall between the counters.

The crucial scale trick is accomplished by giving the mezzanine pipe railings of a more or less familiar kind—but made up of 4-in. pipes, rather than the usual 1½-in., and rising almost to shoulder height. (The 1⅝-in. pipe is used—by contrast—as hefty support for displays.) Once such heavy pipe was chosen, it was only logical to make the railings support the stairs by fabricating the pipe into trusses. The play of the straight chords of these trusses against the angles of stairs and landings is of some interest, but stringent safety requirements resulted in addition of some rather clumsy steel plate inserts.

All materials have been chosen to compose a neutral, yet distinctive, backdrop. The pine board walls—treated with fire retardant that turns them gray—conceal standards for shelf brackets, but they can also be nailed into. The off-white tile floor is subtly zoned, with 4" x 8" tiles in an area along the left wall—alligned with doorway and mezzanine stairs—and 8" x 8" units in the larger space. A band of more intense lighting in the aluminum vane ceiling marks off a path from door to the stairs and reinforces this division.

Entrance to the shop is through a prominent trabeated portal in the clear glass wall. Its tubular columns hold up an I-beam, with steel impost blocks where column capitals belong—somehow suggesting a version of Classical detailing. Bracketed from the back of these transitional elements is the distinctive sign, designed by the architects, with chunky Moderne letters air-brushed apple green. Originally, this green was to appear on all the steel elements—the door frame, the pipe rails, the display supports. But the client could not accept such a strong color competing with the merchandise, so the rest of the steel was painted white.

Before this article went to press, The Cook's Spoon shop felt the much more drastic impact of the client's needs. For reasons beyond the architects' control, the shop was closed after only a few months of business and all portable elements removed. Today you will find no Cook's Spoon in the Fox Valley shopping center.

[John Morris Dixon]
A whimsical fast-food restaurant by Richard Fernau neatly avoids cuteness, while providing an appropriate image that far surpasses those of most other such establishments in this country.

While eating hot dogs may be a national pastime, serious architectural odes to the dog are rare. A poetic rendition of this American habit is the commendable achievement of San Francisco's new eatery, Franks for the Memory.

Both designer and client are new to the restaurant world. For Richard Fernau, a recent architecture graduate of the University of California at Berkeley's College of Environmental Design, this was his first commercial job. For Lewis Jonas, a recent law school graduate, this was a first step away from the legal profession.

Jonas leased ground floor, street corner space in a bland new high-rise in San Francisco's burgeoning south-of-Market office building area. Exterior alteration and signage were strictly limited; the rent was not. Jonas commissioned Fernau to create a setting that would make eating hot dogs a compelling choice for the sophisticated office worker on the go. Another client request was a mural by their mutual friend, Patrick Kennedy.

Fernau worked the givens of space, program, and artwork into a design that celebrates the dog in plan, section, and elevation with spatial illusion. A skeletal screen wall with a cut-out hot dog arcade and hamburger pediment evokes the image of a gleaming white, light-filled pavilion. A seaside setting is specified by the mural's subject matter, a whale-sized wiener gently nudging the strand. The scene is not intended to advertise the hallucinogenic properties of hot dogs, if any. Nor is it subtle propaganda for Greenpeace. The real source is a childhood dream of the architect's; its visual transla-
tition is nicely calculated to lift the beholders out of their possibly dogged existence.

A seating capacity of 75 is accommodated by a combination of long benches on either side of the wall with single and double tables to provide flexibility of arrangement. The food preparation area is matter-of-fact and completely visible from the order counter. Lighting fixtures and underground pipes painted white and cut in half also testify to the kinds of budgetary priorities that resulted in a $29-per-sq-ft cost for the project.

Of the $28,000 total cost, $15,000 went into the construction of the elliptical screen wall. Fernau counts himself lucky to have had the services of the ace dry wall team, who turned out a beautiful seamless wall. Another well-crafted element is the green painted, slatted wood bench. The elegant simplicity of the design's formal parts is complemented by a color scheme that, by picking up colors in the mural and maintaining a light overall tonality, also serves to expand the apparent size of the interior.

Although there is nothing new in the use of architecture as metaphor, particularly in food-oriented projects, a graceful escape from cliché is one of Franks for the Memory's winning aspects. Nearby are restaurants aplenty that have been ordered up over the telephone to fill vague prescriptions for expense account posh. They may showcase the fashionable formulas in food and decor, but they are rarely memorable.

[Sally Woodbridge]

Data
Project: Franks for the Memory, San Francisco.
Program: fast-food restaurant with 1200-sq-ft dining area and 600-sq-ft kitchen.
Site: ground floor of office building in downtown business district of large West Coast city.
Structural system: steel studs and hung ceiling.
Major materials: steel stud and gypsum board walls, acoustic tile ceilings, VAT floors.
Mechanical system: standard HVAC system.
General contractor: Dinwiddie Construction Co. with Golden State Drywall.
Client: Lewis Jonas.
Costs: dining area: $28 per sq ft, exclusive of furniture and fees.
Photography: Richard Fernau.
Insiders’ outlooks

To discern the shape of things to come, P/A has asked leading professionals involved in interior design to predict what is likely to happen in the 1980s. Excerpts from their statements follow.

Rita St. Clair; president, Rita St. Clair Associates, Baltimore; president, American Society of Interior Designers: Economics will define, as it usually does, the function of interior design in the 1980s. To me, that forecasts two very distinct and extremely divergent trends in the design of our interior spaces of the near future.

Due largely to cost considerations, and mostly to our sense of what cost considerations should be, I expect to see our most functional interiors adapt very comfortably to the minimal school of design. Transportation terminals, educational institutions, public buildings—interiors that house the necessary functions and assemblage of society—will impress us by their lack of embellishment and dramatic dedication to convenience, energy efficiency, and lower construction costs. It is not wrong to include in this list both the residential kitchens and bathrooms of tomorrow.

This leads to what I believe will be a most opposite side of the coin for our more personal and socially used interiors. Because the human psyche will demand a relief from minimalism, I predict that our living rooms, bedrooms, restaurants, and hotels will be designed as our "Fantasy Environments." While we will create and accept the minimal in spaces we must use, we will seek out and escape to fantasy when there is a choice to be made or a moment to relax.

Edgar Kaufmann, Jr.; architectural historian; adjunct professor, Columbia University; New York: In the next decade designers of every kind will be busy shaping symbols of energy, dramatizing the dissipation of original values. It will mean considerable emphasis on space enlivened by the changes of natural light, on ease of movement through space inside and out, on awareness of natural rhythms as sources of human refreshment. It may well lead to an increase of interest in architecture designed for change and adaptation rather than piecemeal restructuring destructive of original values.

Donald T. Chadwick; Chadwick Design Development; Los Angeles: In probing into the 1980s for some directions on where interior design may be heading, one is obviously confronted with the ever-expanding concerns for energy conservation and distribution along with the increasing use of data communication and its impact on the work environment. With the cost and size of microprocessors being reduced, a new range of small computers will be finding their way into both the home and office, which could have alarming effects on the man-machine environment.

Having a deep concern for man's dignity while respecting the machine, I would hope that the interiors of the 80s become more humane, with less emphasis on the machine-system aesthetic. By this I mean a greater concern for spatial interest and variety, a broadened sense of personalization of work spaces, a renewed awareness of freestanding, multiseat furniture, and an enlightened view of appropriate technologies and materials on the part of manufacturers, specifiers, and users.

Today there still persists a rather distinct difference between office and home environments predicated on outdated principles and traditions. The challenge for management and interior space planners is to reassess the direction of office system planning by placing a higher priority on the investment in qualities that will help people become more "at home" in comfortable working environments. With this redirection of priorities we should see a refreshing period in the 1980s upon which interior design can have profound influences.

Lisa Taylor; director, Cooper-Hewitt Museum; New York: There is strong evidence of the emergence of a new design ethic based on the conservation of natural resources and concern for the environment. Its effect on our life style, architecture, and interior design will be visible in the 80s. In what ways, do I think?

The decline in buildings and products that pollute or squander energy; the exploration of many different forms for providing supplementary heat and energy; a rediscovery of the city; the increased recycling and restoring of older buildings; a trend toward buying rather than renting; more single people sharing houses and apartments; a preference for raw rather than finished space; interiors organized in a more practical way to serve different purposes and to meet individual needs; large, open kitchens becoming the focal point of a home; the popularity of communal bathtubs; a return to ornament, natural fibers, and old-fashioned products (down comforters, wood-burning stoves, and ceiling fans); antiques and handcrafted objects being sought after; windows taking on a new importance, whether they include greenhouse units, heavy draperies, shades, or film, the increased use of mirrors, wallcoverings, floor coverings, heat-absorbent paints and colors; a major breakthrough in electronics reflected in home computer terminals, projection television, revolutionary lighting, and new gadgets for waste sorting and disposal.

The predicted "throw away" culture will...
not materialize, nor will the hearth replace television as the center of the living room. Let's hope that we shall not forget to talk and to think. The 21st Century will require extraordinary flexibility and imagination.

Terence Conran, chairman, Conran's; London: I expect that energy problems will greatly influence the design of both domestic and commercial interiors in the 80s; undoubtedly conventional ideas of heating and ventilating will have to be dramatically revised, and eyes could be usefully focused on traditional Indian and Arabian methods of using natural air currents for cooling and Chinese methods of conserving heat.

The medieval upholsterers' art of quilted hangings for the subdivision and insulation reach its maturity. And, as in any other disciplined profession, specialization will be necessary. The "general practitioner" interior designer/space planner must become the health care design specialist, the business systems design specialist, the restaurant, hotel, and motel design specialist, as each interior type requires different areas of design skills. The result of this design specialization will be more vital and productive environmental spaces. This concentration by the designer on the productive use of interior space instead of the decoration of interior space can be the resolution of the traditional design battle between practicality from a business standpoint and aesthetic value, design based on a reason-to-be rather than design just-to-be-different.

Lawrence Lerner; interior designer; chairman, president, Saphier, Lerner, Schindler, Environetics; New York: The 80s will bring us new alternatives. Collective global forces, dominated by resource limitation, will dominate our choices. This will influence us to provide interiors that will work well with less artificial light and air. We will go back to "skinny" buildings in all but the extreme climates, so that occupants can work adjacent to operable sash to optimize natural light and fresh air. This will affect layout, traffic flow, and appearance. In extreme climates we will provide local controls for lighting and climatic variability. Design will show more respect for individual reactions to color, texture, light, air movement, and traffic distraction. We will have to contend with a new era of government regulation regarding fire-proofing, energy conservation, and employee safety, of comfort and—most frustrating—of aesthetics. We will be working for a more educated, receptive, sophisticated, and critical clientele. We will have to do all of these things in a manner handicapped by the diminution of availability of skilled personnel.

Charles D. Isaac; president, JG Furniture; Quakertown, Pa: Interior design will be merged with the building; both will be part of a systematic program to maximize benefits to the user. The most important benefit will be fast and low-cost change, so the users may constantly update the interior (and exterior) to match their new needs. Other benefits will include lower energy consumption, lower long-term maintenance costs, and certainly, a much improved environment for the users. This has happened first in the office with "open planning." It will spread to all other...
Preview of the 80s

places where people live and work. Expect soon to see variations of it, adapted to the very different requirements of each area—in education, hospitals, factories, and nursing homes. In each case, the building will be part of a program to support the people who work or live there.

Consider the possibilities of an open nursing home, with all amenities designed to work together for the inhabitants' benefit. For instance, a hallway with specially designed bacteria-resistant carpet, and lighting which reduces power consumption while vastly improving visibility for the sight-impaired.

Massimo Vignelli; designer; Vignelli Associates; New York: The pluralism of our contemporary culture allows for many creative expressions to coexist, interact, and stimulate each other at the same time. From minimalist rarified atmosphere to the eclecticism of Post-Modernists, from high-tech reality to decorators' surrealism, the range of experience is full of complexities, contradictions, and excitement. It is a period of transition; eventually one of the strong form-givers from any one of these main currents will prevail and set the style.

Personally, I have a renewed interest for the classical elements of the architectural tradition. The value of shadows, the value of the wall, its entity, the sense of weight and permanence. But all this could be perceived only through the framework of our experience, conditioning the results. Design and redesign, our work is proceeding in this direction.

C. Ray Smith; author, Supermannism: New Attitudes in Post-Modern Architecture, E.P. Dutton, New York: As Post-Modern architects in the 1980s continue to develop the historical allusion and symbolism that was pioneered in the 1950s by such architects as Minoru Yamasaki and Edward Durell Stone, they may find that they are as out of sync with the interior design profession—and with the mass of potential interior design clients—as the two professions have been for the past 50 years. For while architects who consider themselves in the vanguard are rediscovering the historical ornamentation that has been the staple of most interior designers for 50 years, interior designers who consider themselves in the vanguard are increasingly developing the mainstream directions of the Modern movement that many architects have rejected.

The Modern movement has had 50 years of commercial exposure to the mass of population that forms the client base of the two design professions. That population is only now, 30 years later, rather universally aware of what the flak was all about and, liking what it knows, is showing itself consistently interested in Modern Design. Vanguard architects have passed this all by and are no longer interested in serving these human needs or desires, it appears. It will be unfortunate for architects if they are also out of touch with a general audience for interior design commissions for another 50 years. Let us hope they can remember the lesson of inclusion—to include the full range of design possibility in their options.

Mildred Friedman; curator, design, Walker Art Center, Minneapolis, editor, Design Quarterly: In any discussion of interior design it is essential to recognize that the majority of interiors are designed not by architects but by entrepreneurs, primarily by the vendors of waterbeds, furniture "suites," and breakfast-room chrome. Of course, there are the hip equivalents of these things. Sold in the urban culture centers, they can be characterized as ad hoc, modular, and anonymous.

Another aspect of interior design and architecture involves the apparent schism between the historians of the Post-Modernist school and those practitioners of what is still termed Modern architecture. Interior design's long-practiced historicism has become acceptable architectural form, and historic modes or attitudes are now applied to contemporary buildings—the most notorious example being Philip Johnson's use of a somewhat modified Chipperendale breakfront cornice on the façade of the proposed AT&T headquarters building in New York.

Positive images in the crystal ball are conjured by those architects working with the totality that has always fascinated great designers: Soane, Adam, Hoffmann, Wright, Rietveld, and Mies did not make arbitrary distinctions between the ins and outs of architecture. The hope for the 80s lies in a resurgence of that sensibility and the ability of even a few to respond to newly identified attitudes and needs.

Robert A.M. Stern; architect; New York: I cannot predict where interior design or any other kind of design is headed. But I know where it has been and where I think it ought to go. I feel certain the movement we now call Modern is over; that Modern is a style and can be reproduced. The most obvious confirmation of my claim is the media's enthusiasm for such interior design movements as "high-tech" and "minimalism" in which the vocabulary of Modernism as it flourished between the two World Wars is stylishly manipulated in order to complement the gray flannel fashion-look of the Calvin Klein generation. The revival of Modern is to be celebrated as one of a number of signs that historical memory is a part of design again. I myself prefer to look to other non-minimalist, non-reductionist periods for inspiration, because I prefer the presence of color and texture, and a sense that the imprint of human size can contribute to the design product as well as to the processes of its making.

If I were to try to isolate the hallmark of a new Post-Minimalist way of making interiors, I would say it is the discovery that the vertical plane and not the space it defines carries most of the meaning that a work of architecture has. The wall has traditionally conveyed meaning. On it can be drawn and modeled representations of traditional architectural elements as well as everyday things and the forms of nature. Having spent 50 years attempting to erase the meaning of the past, architects should, I suggest, get serious about writing on walls again, lest spray-painted graffitiists prevail and their angry illiteracies represent the only publicly legible architectural meaning in our time.

Joseph Paul D'Urso; D'Urso Design; New York: Interior design today is a more serious business, being accepted on a popular level with fashion and finally, on a more "intellectual" level, with art, music, and dance. This is the way it should be. Feeding this new awakening of public awareness to interior design is a generation of designers educated in schools that grew out of antiquated home economics (decorating) programs that blossomed with an input of architectural thought and direction and an emphasis on the intimate aspects of the environment. The widespread and unfortunate misunderstanding of what a high school graduate needed to become an architect inadvertently resulted in an incredible influx of talent and energy into the "interior design" profession. The results are just now being felt.

The social upheavals and breakthroughs, the energy crisis, women's liberation, and the demand for equal rights by various minority groups are making a positive contribution to the quality of design being produced today.

Certain clear messages are hitting home: certainly that design must make sense in terms of maintenance and economy. The American casual life style will find more appropriate solutions, as arbitrary and ultimately shallow re-creations of "period" rooms are now being seen as demeaning, unrealistic, and uninspiring. Americans, in particular, are sensing a strong and unique freedom of expression in what we create and support; we are more comfortable with the visual vocabulary and logic of engineering and are feeling less inclined to "warm things up."

Finally as daylight is welcomed into suburban homes and city apartments
(skylights have been accepted as never before), and as meaningless clutter is being questioned, we are sensing the vitality and vibrancy of pure architectural space as opposed to static, uncomfortable (and burdensome) decorated "rooms."

Emilio Ambasz: architect, designer; Bologna and New York: In their first heroic period, Modern architects and designers were mainly concerned with arriving at "the prototypical solution," that impeccable conceptual model that would lead us slowly but surely from today to tomorrow. In their quest for that conceptual ideogram that would insure the success of "the long journey" [from an imperfect today to a harmonious tomorrow] they neglected to consider the succession of constant and new experiences, conceptual and perceptual, that occur and recur between today and tomorrow.

Our task, therefore, is to reconcile one scale with another. One possible approach may be to search for the meanings of the rituals and ceremonies of the twenty-four hours of the day, and to design artifacts and spaces that give it structure. [excerpted from Emilio Ambasz (ed.). Italy: The New Domestic Landscape, Museum of Modern Art, New York, 1972]

Jorge Silvetti; associate professor of architecture, Harvard; partner, Machado-Silvetti; Boston: It is possible to foresee that the field of interiors will be, should be, and in fact is becoming a subject of specific concern within the realm of architecture—clearly defined as an architectural problem to be explored and studied by architects. Two years ago, my partner Rodolfo Machado presented, in the "Country House," the concept of Rooms and Attributes (drawing right) in polemic opposition to that of abstract "space," a notion which requires an interpretation of the interior as a qualified and specific architectural entity of its own. The interior is a result of integral conscious architectural effort, and not "neutral" space that results from structural grids, mechanical and modular systems, and ready-made paneling, to which "Interior Decoration" is fashionably applied, changing with every decade. These thoughts seem now to underline developments in architecture that we are beginning to see in both professional and academic projects, such as, for example, the revival of the technique of "poché" and "figural" interior space.

All of this seems tentative and at times clumsy and questionable, yet undoubtedly it is clear that these new developments express a genuine concern and interest that to me points to more important facts: that the current professional differentiation between architecture and interior design might disappear; that architecture is beginning to recover a part of itself that has always been its own; and finally that these new developments together with the recovery of architecture's runaway offshoots—namely city planning, urban design, and landscape design—bear witness to strengthening the whole of architecture as a discipline.

Paige Rense; editor-in-chief, senior vice president, Architectural Digest; Los Angeles: Since people design their living environments according to their tastes and in response to the world around them, the only sure prediction for the 1980s is that the field will continue to hold surprises.

I hope that interior design and architecture, after many years of a love-hate relationship, will marry and live happily ever after. One factor that will help is the increased use of built-in furniture, in part a response to the excessive amount of time it takes to receive custom pieces. Interior design should be closer to the bones of good architecture, encouraged by the inclusion of first-rate interior design courses in architecture school curriculums.

It may be true that less is more, but when this principle is reduced to the inevitable grouping of two Barcelona chairs and a glass table, less is not enough.

Style and fine workmanship continue to offer timeless value. Discerning people will appreciate these qualities in the 1980s, just as they have always appreciated them. As journalists of fine interior design, we should keep our sights on that which is lasting, rather than get caught up in the passing fashions of the moment.

Ward Bennett; designer; New York: The 80s, I suspect, will bring an end to the stylish avant-garde of the 70s. In considering where we are, we should remember with Robert Graves that "only a mediocrity is never out of step with the prevailing fashion." What is required now is a serious reevaluation of the popular vogue with its cardboard, staple gun, window display, stage set, Coney Island billboard design for interiors and exteriors. What I would hope for is a return to craftsmanship, quality, and substance. Let design be for people, not mannequins—for living, not for life style.

We should take another look at Horta's residence, at the Soane Museum, at Wagner's Post Office, Chareau's Maison de Verre, Wright's Fallingwater and Luis Barragan's house. But let's not look at them the way Corbusier's Villa Savoie was reexamined and appropriated by "avant-garde" designers and architects. This magnificent building was dissected and its parts made into Mickey Mouse design and Swiss cheese architecture from Bridgehampton to L.A. Compare these fragmented efforts with the evolutionary and integrated achievements in art, architecture, graphics, costume, shown in the recent "Paris-Moscow" exhibit at Centre Pompidou. There is a difference between art and fashion.

Read and re-read Gaston Bachelard's Poetics of Space. Today, designers are polluting that space. Are these inward-turning efforts a reaction of anxiety to the expansion of our knowledge? We must question the validity of exhibitionistic (stylistic) architects creating design for money-quality clients and in so doing destroying village, town, and city.

Deborah Sussman/Paul Prejza; Deborah Sussman & Co., graphics plus; Santa Monica: The simplistic approach of paint-
area or an institution; using regional furniture, objects, or crafts can reinforce a sense of place; and mini-exhibits and artifacts can be used aesthetically and also educationally.

**Space planning:** The established office hierarchy that physically locates executives (usually male) in corner offices with good views and clerical workers (generally female) in interior spaces with no windows will be further eroded. The increasing participation of women in public life will affect the physical structure of interiors, and offices will become less rigid and compartmentalized as they gain warmth and fluidity.

**Art and design:** Artist, architect, and designer will collaborate more closely as the studio painting on the white wall is traded in for "art" that is more integral with the interior design. The work of artists will be considered at the outset of a program—as a force, rather than an applied afterthought. The fascination with the plain (plane) surface is on the decline. Surfaces will be warped, perforated, textured and "decorated." Decoration will return as a concept and a word that can be used without apology.

**Neils Diffrient:** Industrial designer; Henry Dreyfuss Associates, New York: Future projections invariably build on what is current and often miss widely what actually happens. The saving virtue of this anomaly is that most people have long forgotten the projection when the expected date arrives.

My own opinion, saving you from all the details that bring me there, is that interiors of buildings will control the exteriors. Also, manufactured products used for interiors will guide built form and develop into the first manufactured architecture. Though it was expected that architecture would industrialize itself by translating the traditional construction elements from field fabrication to factory, this has never really happened, for a variety of reasons. But, the movement to industrialized interior components and systems is already established and going strong.

As an adjunct to this happening, I think there will be increased emphasis on interior performance and "features of amenity." To deal with the first point: design research will bring about better human engineering and social-behavioral planning of spaces and artifacts. Naturally, the shortage of energy will have a strong effect, and with any luck it will result in a more efficient interior environment in the same way automobile design was made more efficient in its interior space to exterior volume ratio. The last point is that the release from the iron grip of Modernism will allow features of amenity to return from the cellar of lost styles. These would be everything from bay windows to wing-back chairs, that elicits sympathetic human reactions, but was discarded for stark and pure Modernism.

**Robert L. Propst:** President, Herman Miller Research Corp., Ann Arbor: If there can be such a thing as a total communications environment, we are likely to see it attempted in the next decade. By communications environment I mean an effort to make virtually every living space a successful theater of communication arts...rich in the ability to express our most elemental desire to explore our personal dimension and to be known to others in the most eloquent and favorable light.

As physical places, they can no longer be frozen-in-time set pieces, formal design statements. The graphic display and enrichment capabilities of upcoming communication technologies will make it possible to more and more determine the form of the interior settings. Design, as we know it, will have to grow into a partnership with much more dynamic and information exploratory skills.

Far from being mechanistic or cold, these new living spaces will be yielding and expressive of the individual user—living environments that can grow and restate as fast as society and cultural norms dictate.

This is by no means a matter of casual choice by leaders in the design or architectural profession. The partner in this new era will be the incredibly energetic and vigorous electronics industry, which is just now discovering its entry potential in the living environment. It will make its mark, and the challenge will be to participate in this very profound new potential.

**Michael Brill:** President, BOSTI, Buffalo: I see interesting trends in the home and the office, which are related to each other and to the diffusion of electronic communications and computers. Home and work start to blur. The home computer and CRT are used for education ("archaeology mapping at home"), for entertainment (video games and programmed music, TV and movies), for household affairs (budgets, taxes, inventories), for video mail-order shopping, and for office work without going to the office. The constantly dropping costs of this equipment and the increased costs of auto fuel make the home interior more important as a "school," a "store," a workplace, and an entertainment center. These functions will be accommodated—first, in a slipshod manner, and then modular units and whole environments for these purposes in the home will be designed and marketed.

The changes in the office will be towards increased and more intelligent use of open office, to work stations shared by a few people, some of whom will always be out of the office or "hooked up" at home. Interestingly, much more emphasis will be placed on design of conference spaces—where persuasion, nuance, and body language really count—and of thinking spaces, carefully designed to support this fundamental work activity. The office environment will be much more responsive to individual and small group needs than it is now, with less emphasis placed on corporate image and large group identity. Much of the office will be sensitively controlled through microprocessors, operating the lights, security, sound-masking and air quality. More will be known about which aspects of the physical environment impact on productivity and job satisfaction, and designers will be asked to design for these by clients concerned with cost-effectiveness.

**Robert Blaich:** Designer; Vice President, Corporate Design Communications, Herman Miller, Zeeland, MI: The office information explosion has resulted in hardware and software innovations falling into three major categories: information generation, via word processing systems, copiers, dictating systems; information filing, storage, and retrieval, where developments have focused on micrographics; communication, which combines techniques, such as automated telephone systems, video networks, etc.

These factors have influenced our approach to office interiors. But the comparatively recent wave of research into human productivity in the office will have as great an impact. The emergence of the open-plan office in the past decade has allowed workers and management a greater degree of control over their environment, a more flexible attitude toward change; this now requires a new awareness of process on the part of the planner.

Another idea is what I call homework. As the need to provide offices grows at an exponential rate, the need to provide alternatives may well make home offices a commonplace. It works in Europe. Basic tools—phone lines, computer terminals, and the like—and basic trust in the ability of individuals to work without supervision are required.

Staggered shifts of office workers, flex-time arrangements, multiple shifts of white-collar workers—all these solutions will emerge as the office changes from inside pressures, such as growth, and outside pressures, such as two-career families, the more active role of fathers in parenting, etc. The office of the future may not even be an office, as we think of it today. It may be a concept, a geographically distributed network of work stations that feed into central sites where data bases are maintained and the organization's
business is controlled. The designer will have to be less of a soloist. The interrelationships inherent in the design of process link architecture, interior design, product design, regional and city planning, managers—all sorts of people not on the scene when design dealt with objects alone.

Karen Daroff; interior designer; Daroff Design; Philadelphia: The desire to eliminate unproductive space within the office of the 80s will give rise to a sharp increase in group work areas such as shared conference facilities. With the exception of the highest level executive positions, private office interiors will be reduced to a size based upon the purest functional requirements. The design of furniture equipment, office and conference facilities will be increasingly more responsive to the human anatomy and job function.

Efforts to reduce energy consumption will play a major role in the organizational design of the corporation of the 80s. We may begin to see executives and co-workers conducting the business of the day “on line” at home, rarely finding it necessary to go into the office at all.

The possibilities for interior design in the 80s seem endless, but become more limited upon closer examination. As the availability of our most basic resources appears to dwindle, it will become more and more necessary for function to dictate the allocation of space within the corporate environment. In the 80s, status will take a backseat to economy, making way for advanced energy-saving devices, from word processing equipment to heat recovery and cooling systems. The use of such equipment, resulting from improved technology, will become increasingly common as our clients become more sophisticated and more knowledgeable about what is available to them, and more confident in the recommendations that we as professionals can make.

Pat Hoffman; executive vice president, ICF; New York: I believe we can expect to see changes occurring in the 1980s in our perception of what is a status symbol in the office. Businesses have always used interior design as a means of expressing their wealth, but in the 1980s I believe a finer line will be drawn between the expression of success and the expression of opulence. We are today appalled by the garish displays in the offices of the old Victorian railroad barons. In the corporate world of our own generation we have replaced Victorian gilt with the more “tasteful” status symbols of Barcelona chairs and burl-veneered desks.

Now that we are driving smaller automobiles, living in servantless houses, universally wearing blue jeans in public, and becoming afraid to wear our furs and jewels on the streets, we are also becoming more subtle about our offices. While many are still demanding hierarchical office interiors, I predict that the more sophisticated, more secure executive will become embarrassed by these outward signs of success.

I predict in the 80s, we will see a return to simpler materials in the executive office. The quality will be there but the opulence will be the detailed workmanship, not the impressive flash. We will see more use of simple upholstery fabrics like bleached canvas, more colored painted metal rather than the shine of mirror chrome, more industrial carpets, and chair-back heights that are anatomically reasonable rather than throne-like.

Harvey Probber; president, Harvey Probber; New York: Two significant factors will influence office interiors, creating demands on the interior designer of the 1980s for a more creative attitude toward space planning and design.

The first, energy, will shape interior architecture. Look for systems furniture designed in the latter half of the 1970s—systems with versatile internal wiring, hidden but accessible, requiring only random outlets for the truly integrated ambient and task lighting developed for the system, not clipped on as an afterthought. The savings in initial electrical work and in on-going electrical consumption will be enormous.

The second is competition among large corporations for the well-trained, highly motivated, stable employee. Look to the system that encourages the personal imprint of the interior designer and the client by means of a systems versatility that allows status differentiation. Only with the versatile system can the interior designer individualize the working condition that brings psychic and ego satisfaction to the executive. That thinking can have strong impact on interior design.

Carleton Varney; interior designer, Dorothy Draper & Co.; New York: The 80s will bring more and more soft simplicity into interior design. The hard-edge line of the 70s with its plastic laminate furnishings...
Preview of the 80s

today's energy-saving programs.

The natural woods will be the desired finishes. Wall coverings will replace painted finishes as their effects will be greater designwise, and their costs of installation will be less than painting.

William Stumpf, industrial designer; Chadwick/Stumpf & Associates; Winona, Mn: My measure of a good restaurant, no matter how glorious its credentials, rests on two simple but seemingly contradictory notions. The first relates to the quality of a single cup of coffee. I find a really good cup of coffee an open act of civility, an expression of love between the restaurateur and myself in an otherwise banal world of bouqitism. The second notion deals with the feeling expressed by the place: that it is fulfilling a dream or purpose it once held or is currently holding dear. Places invested with good coffee and dreams are sure to be worthwhile in the 80s. Or, as Charles Moore aptly put it some time ago: 'Houses still have an important place in our society, that they can happily express the care and energies...even the pretensions and dreams, of the people who live in them...'. (from "The Place of Houses" by Charles Moore, Donlyn Lyndon, and Gerald Allen, Holt, Rinehart & Winston.)

Michael Pittas; director, Design Arts Program, National Endowment for the Arts; Washington: Interior design as a profession has become increasingly focused and defined in the 1970s. We believe a more formal recognition of the profession itself during the 1980s might serve to strengthen the role interior designers play in the broader region of environmental design.

Interior design is currently very component oriented. As we move into the next decade, products will continue to proliferate, but increased familiarity with them will allow designers to produce design solutions more customized to users' needs. The economics of interior design, as well as hard data about behavioral needs and responses, are areas in need of exploration. In the 1980s we may begin to see the formulation of community interior design assistance teams, similar to what has existed for urban design through the Regional/Urban Design Assistance Teams (RUDAT) of the AIA. At the National Endowment for the Arts we will continue to support excellence through the grant-making categories and the Design Excellence Project. The grant categories include funding for research and dissemination of information vital to the profession as well as design demonstrations. The Design Excellence Project

will include encouraging the use of design competitions, continuing to support the hiring of only the most qualified interior designers into the federal government, and increasing awareness by the public of the enrichment of life through design excellence in all areas.

Rick Hendricks, chief, Space Planning Office; Lawrence Vanderburgh, architect; General Services Administration; Washington: Most of the trends in government design are linked in some way to awareness that space costs money and that skillful planning can obviate many space-related costs. Our greatest concern is to curtail the expansion of the federal space inventory, without impairing the operational viability of the work environment. Coupled with this is a growing understanding of life-cycle costs, which allows the use of high quality hardware and professional planning up front if future payback can be projected, as well-planned projects have demonstrated. Computers will enable planners to exercise greater professional judgment, the level of professionalism will increase, and penny-wise, pound-foolish attitudes about fees will fade, as will blind acceptance of professional opinions formed without regard to the realities of managing such a vast inventory. Managers and designers alike must be more tough-minded. The greatest challenge will be to plan and design environments which enhance the productivity of office workers on whom $9 of every $10 is spent to operate the government. It is not known precisely how great the environment's leverage on productivity is, but we fully intend to pursue destructive potential. The design profession will do no small part in helping to improve government office environment and earn the benefits of increased productivity.

Norman DeHaan; architect, interior designer; Norman DeHaan Associates; Chicago: The public wants to believe the designer is a private illusionist at the same time the government wants to impose more codes and standards in the interiors field. The question remains whether the profession can satisfy and balance both demands. This double expectation unfortunately coincides with a shift in national policy, imposing "smaller is better" on a public accustomed to "big is best." Real space will continue to be the true luxury, and creating the illusion of space will be a direct design manifestation of our redirected national policy. In the context of an uncertain future, allusive design will become more discernible in both interiors and architecture, with the extremes represented by illusive interior design in low-end furnishings while abstract architectural allusions go off the perceptual deep end. This leaves the interior designer with the problem of how to remain the successful illusionist with both feet on the ground, while doing his high-wire act.

Charles Gwathmey; architect; Gwathmey Siegel Architects; New York: As one reflects, what is reassuring is that the socio-political and cultural purges of the 60s and the early 70s, which had an effect upon design orientations and decisions that are questionable today, are now seen as negotiable.

There is an obvious new awareness of architecture. Architects must question, reevaluate, and redefine. These actions force us to reexamine continually the history of architecture and its qualitative relevance in both literal and formal terms. Our response is not superficially directed to tenuous historical borrowings, but rather confronts real constraints, references, and orders which support the artist's obligation to fulfill the ordinary while transcending what is expected.

The result of this awareness must evoke a more rigorous and demanding quest for interpretive accuracy. By rendering this interpretation in a more complex manner, architecture will be enriched in both form and space.

Interiors, as defined enclosures, offer a more limited reference. This opportunity for experimentation, which supports and extends the architect's perceptual and formal palette, produces occasions for continued reinterpretation and application in other projects.

Hugh Hardy; architect; Hardy Holzman Pfeiffer Associates; New York: What I wish and what I predict are two different things. I wish the adventuresome exploration which commercial clients permit on the interior would suffuse the design of exteriors. I wish the private celebrations and intimate pleasures so common to interior design could enrich the institutional hulls of our built landscape.

This is not to suggest the public display of private matters, but rather to emphasize the foolish and artificial distinctions imposed upon designers when they are cut off from the healthy discipline of resolving conflicts between exterior and interior.

Architects have, under the pressure of giant-sized opportunities to build, become preoccupied with abstract questions. The buildings which justify their profession become inhuman because they leave no direct personal concerns beyond the movement of people.

Interior designers know better, but they have become engrossed with the manufacture of special theatricalized worlds shut off from outside realities.

My wish that the two could join forces would be an optimistic forecast. My suspicion that they won't is my prediction.
Reflections on a past, projections toward a future

The conscious expression of the self through interior design is one of the more encouraging manifestations in our recent cultural development, and points to a future of greater possibilities.

Interior design, as much as architecture, has always served as an accurate mirror of social attitudes and human aspirations. In some ways it even forms a microcosm of our sense of our place in the world. This understanding of the importance that interior space plays in the life of man was expressed with emotive perception in Gaston Bachelard’s philosophical examination entitled *The Poetics of Space* (Paris, 1958). Using the house as the prototypical interior space, Bachelard observed “that the house is one of the greatest powers of integration for the thoughts, memories and dreams of mankind. . . . Without it, man would be a dispersed being. It maintains him through the storms of the heavens and through those of life. It is body and soul. It is the human being’s first world. . . . The space we love is unwilling to remain permanently enclosed. It deploys and appears to move elsewhere without difficulty; into other times, and on different planes of dream and memory.”

These are good words of which to be reminded as we seek to put into perspective the importance that interior design has attained in recent years. The practical aspects of this issue are easier to grasp than the deeper significance that has been faced by many who have thought seriously about the subject. Ours is a world of limits, but the outward boundaries of our lives are more readily apparent to us than the confines within. Thus when that inner landscape—whether in its literal or metaphoric sense—is the focus of our increased thought or action, it is as much an indication of the larger world as it is of the more controllable sphere of the interior.

Perhaps that very notion of control is the key reason that both the general public and designers began to pay so much more attention to interiors during the 1970s. Control of their careers (and even more, the ability to practice their art) slipped away from many architects no less palpably than did the ability of many of the rest of us to control other aspects of our lives in the greater world. As the Romans of the Decadence took to their country villas during the final fall of their imperial rule, or as the rich folk of London fled their city in the Year of the Plague, so have we found refuge in our interiors these past ten years, finding the experiential truth in Bachelard’s words of comfort and insight.

But to extract an active virtue from a reactive necessity is the task that now faces us if we are to make this interest in our interior lives and spaces into anything other than a solipsistic retreat from the increasingly complex world around us. The future of interior design can be a meaningful one only if we use the possibilities design gives us to clarify, to accommodate, to delight, to stimulate, and to promote our physical and psychic well-being. But the future of interior design could also be meaningless, if we allow it instead to become the victim of false fashion, conspicuous consumption, crass commercialism, heedless hedonism, and a host of other vices that conspire to rob our human experience of its authenticity and worth.

Not only is the choice ours, but it is one the truth of which will be impossible to conceal from others or ourselves. What we build is no less an artifact of our inner lives than the way we act is an expression of our unconscious selves. In a world of ever-diminishing possibilities, it is up to us to push our horizons to their limits. There are more things in heaven and earth than are dreamed of in our philosophies, it is true. But it is also true that we have the ability to express a great many of those things, as much in what we build as in what we dream. Let us always keep in mind that as we make new spaces, we are creating not just shelter, but rather a home, for as Bachelard recognizes, that is just what interior space is: a home for man, both outside and within. [Martin Filler]
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Specifiers often find themselves floundering when trying to develop bid documents for interior furnishings—rugs, carpeting, lamps, furniture, draperies, and accessories. The designer is talking about quantity lists and item descriptions in the bid form. The familiar AIA A201 General Conditions and old standby ASTM talking about quantity lists and item descriptions in the bid form. Specifiers often find themselves floundering when trying to develop bid documents for interior furnishings—rugs, carpeting, lamps, furniture, draperies, and accessories. The designer is developing bid documents for interior furnishings—rugs, carpeting, lamps, furniture, draperies, and accessories. The designer is talking about quantity lists and item descriptions in the bid form. The familiar AIA A201 General Conditions and old standby ASTM reference standards do not seem to fit. Our rules for "normal" architectural documents no longer apply. Somehow the contract furnishings industry has a different way of looking at things.

The primary difference is found in the method of bidding work. Like civil engineers, interior designers prefer to receive bids on a unit-price basis. The documents establish the quantity for each line item, and bids are evaluated on a summary of extended unit prices. Although actual quantities are usually known at the time of bidding (unlike much civil engineering work), the unit-price approach allows the designer to revise quantities within a specified range after the work is under contract. The unit-price bid also provides a reliable breakdown of the total cost for negotiation before signing the contract.

The major difficulty with the unit-price system lurks in its documentation. Some designers find themselves trying to correlate several overlapping schedules—item numbers, finishes, quantities, alternatives. Some properly show the location of each item on floor plans, then duplicate the information on schedules. Bid forms become unreasonably long when a full description of each item is included with the item number. Quantities are sometimes shown in three places. It is almost impossible to make accurate last-minute changes.

A reasonable solution is found in consistent, simple numbering on the drawings and a full description of each item in the specifications. The bid form lists only numbers, item names, and quantities with blanks for the bidder's unit prices and extensions. Duplication of information is reduced to a minimum.

Specifications for furnishings (most are under CSI Division 12) vary greatly in required verbiage, particularly for furniture items. If a unique product has been selected, the manufacturer's model number (and data on finish, color, fabric, and construction options) will be adequate. When competition is mandatory, as for public work, at least two acceptable products must be named, or the item described in greater detail. Enough must be said about materials, construction, fasteners, hardware, and finishes to assure bidding at the desired quality level.

Carpeting, draperies, and accessories are specified in the same manner. With few existing reference standards available, carpeting construction (minimum number of tufts and rows per inch, height of pile, backing, etc.) must be defined in detail unless selected products can be named. In both instances, bidders need to know exact installation requirements. Construction of draperies is usually specified in terms of pleat spacing and height, percentage of fullness, linings, hems, and seams. Accessories are normally culled from standard product lines and specified individually or in sets.

One-of-a-kind items, such as an antique breakfront, artwork, or an oriental rug, escape the normal specification and bidding process. They are best purchased under a stipulated allowance or directly by the client.

Equally important in specifying furnishings are the contract provisions under which they will be fabricated, shipped, assembled, installed, and cleaned. By far, the most reliable starting point is AIA Document A271, "General Conditions of the Contract for Furniture, Furnishings, and Equipment." 1977 Edition. It covers most normal conditions in court-tested language. Supplementary conditions are required, however, for insurance limits, bonds, and assignment provisions when they are applicable. Submittal of shop drawings and samples, final cleaning, acceptance of portions of the work, and coordination with other contractors must be amplified in Division 1 of the specifications.

Perhaps of greatest impact on successful completion of the contract are the coordination items. Coming on the job last and laboring under the ultimate occupancy deadlines, the furnishings contractor finds other finishing trades racing to complete their work. Use of the freight elevator becomes critical. Storage areas for delivered merchandise are suddenly not available. Access to work areas must be scheduled with the general contractor. So must delivery of built-in casework and items requiring final electrical connections for lighting and convenience outlets. Carpeting must be protected. Rubbish must be removed. Somehow, the specifier must anticipate as many potential problems as possible and at least alert bidders to the conditions under which they will be working. Their job will be difficult enough under the best of circumstances.

**Author:** William T. Lohmann, AIA, FCSI, is Chief Specifier for C.F. Murphy Associates, Chicago, Illinois.
Office acoustics is a tough design task. Although the principles are simple, solutions use sophisticated techniques expanding on the acoustical technology.

Sounds can delight us, alarm us, embarrass us, or make us laugh. They can also bring us pain, or just be plain annoying. Sounds are part of the richness of life. They are part of architecture whether they come as featured performers, invited guests, or just bang on the door.

The most common role of sound in our lives, however, is probably communication. Although not so swift as light, sound can communicate at any time of day, overcome barriers, and can admirably combine the voice, ear, and even sense of touch to great advantage in communication. When the Quickborner Team experimented in Germany in the late 1950s with their Bürolandschaft concept of office planning, communication was at its core. When Eberhard and Wolfgang Schnelle brought their management expertise to office planning, they literally tore down the walls and paved the way for the open-plan office. The acoustical technology to make the shift was, at that time, undeveloped.

When the Bürolandschaft came to this country in the late 1960s, it found good company. The Herman Miller Action Office concept was then well underway. This exciting history of interior design revolution has been well documented by P/A, as far back as October of 1968. In the June 1977 issue, John F. Pile's 14-page article, "The Open Office: Does it Work?" explained and explored the history and future of the open office or office landscape concept. A chunk of history that has taken place since the story by John Pile was the "Steelcase National Study of Office Environments: Do They Work?" The poll, commissioned by Steelcase Inc. in April 1978, was conducted by Louis Harris & Associates and surveyed office workers, corporate office planners, and professional office designers. The study is a fascinating array of information on the anatomy of office design and performance. One conclusion stands out as of paramount interest to office workers and are, in general, the least satisfactory aspects of office workers' offices today. The report continues: "Visual privacy is considerably less important to office workers than conversational privacy or ability to concentrate without noise and other distractions."

The acoustical technology to cure this major ill of the open office exists today. It is relatively simple to understand but sophisticated to apply. Its ramifications extend beyond open office to other conditions of privacy.

In the mid-1940s, the researchers at Bell Laboratories analyzed the sound structure of the conversational human voice to optimize performance of microphones, telephones, and receivers. The study resulted in a methodology for expressing the situation called Articulation Index. The conversational human voice has an upper and lower range in loudness of about 30 dB. This range is expressed by graphing the upper and lower intensity ranges of speech as a function of sound frequency. The higher-frequency sounds are the most important to our speech comprehension. More recent extensions of the concept show weighting of the frequencies, expressed by a pattern of 200 dots dispersed at each frequency according to their relative importance to speech clarity. Perfect articulation in a microphone meant all of the dots were exposed, for an evaluation of AI = 1.

Closed office: Articulation Index was not applied in architectural acoustics until the early 1960s. Owens-Corning Fiberglas
NORMAL SPEECH LEVELS SHOWING CONTRIBUTION OF FREQUENCY BANDS TO SPEECH ARTICULATION INDEX

asked acoustical consultants Bolt Beranek & Newman Inc. to simplify the method by which office acoustics could be designed and evaluated for privacy. Several significant discoveries were made in the process. In a paper published in 1962, BBN explained that speech privacy was related to speech intelligibility rather than the sound level or loudness of the source. More important: “An increase in the background level has the same effect on intelligibility as an increase in noise reduction [between spaces].” Noise reduction alone is ineffective in fully describing the privacy situation. BBN chose, therefore, Articulation Index as the basis of their system of designing for speech isolation in closed offices. AI is based completely on intruding level of signal and the masking sound.

The result of this study was the development of “The Speech Privacy Design Analyzer,” a set of manuals designed to aid architects and consultants in acoustical design. The analyzer serves to delineate the possible paths that sound might travel from one work space to another. The sound generated on the listener’s side of the wall was usually “masked” by a combination of office sounds, mechanical noise, and the possibility of a sound speaker system solely for the purpose of masking sound. By identifying the part of the speech spectrum which was left audible and unmasked, a calculation was possible that would rate the listening space in AI. Remember, an AI of one leaves the entire speech spectrum exposed. An AI of zero means that speech has no intelligibility. On the basis of experimental proof, an AI of .05 was defined as confidential privacy. An AI up to .20 represents a normal standard of speech privacy. It is important to recognize that AI was originally intended as a number to be kept high for a microphone and now was to be kept low for sound isolation in the closed office.

Speech privacy in the open plan: Richard Hamme has been called the “father of open-plan acoustics.” Whether Hamme’s work is the cart or the horse, his contribution to our understanding of acoustical technology is undeniably large. Hamme’s first professional contact with the “open plan” was as acoustical consultant for the Toledo Edison building in Toledo, Oh. In combination with the Quickborner team, Hamme admittedly approximated his way to successful acoustics. As a result of this experience in the late 1960s, the Public Buildings Service of GSA approached Hamme to research and formulate an acoustical specification which could be used for open-plan applications in government buildings.

Hamme’s specification, finished by 1969, required a thorough study of users’ needs, objective testable criteria, and effective methods of test. The result was a
set of performance specifications for the open plan. Hamme's story of the project is a fascinating one.

To solve the problems of the office landscape, Hamme literally took the issue to the natural landscape surrounding his laboratory near Ann Arbor, Mi. Two researchers in the open field could plainly converse at close range. The background noise level was measured as being approximately 40 dB, but the roughly 60 dB level of the voices could easily be heard above it. With the two people separated a distance of ten feet, the conversational sound level was measured as being reduced by about 10 dB. The 40 dB of background noise, combined with the added spreading reduction in sound (or sound attenuation) of 10 dB, still left 10 dB (out of the conversational 60 dB level) to be shielded. A sound-absorbent screen five feet high equally spaced between the two speakers finally produced speech privacy in an open field.

Armed with his success in Michigan farmland, Hamme and his staff returned to the laboratory to try to achieve the same result. Two major differences were present in the laboratory. The background noise had to be artificially introduced, and the ceiling was not as perfect as a sound absorber as the sky.

Experimenting with human response to background masking devices proved that there were definite limitations on the shape of the sound spectrum used to mask spoken words as well as the loudness (or intensity level) of the sound. People with average hearing were annoyed by higher-frequency sounds at high intensity. They were more comfortable with a masking sound that simulated sounds in the building that were already familiar to them, such as air conditioning. Similar masking devices had been used in the closed office as early as 1961. Hamme formulated a successful masking device that averaged the complaints and could effectively replace the 40 dB background sound which was present in the open field. He found that raising the masking sound beyond this level caused people to raise their voices, defeating its purpose.

With the ceiling, however, Hamme was temporarily stuck. The sound was traveling over the five-foot partition and bouncing off a reflective ceiling, gaining back the 10 dB which had been lost to the sky. The ceiling was acting as a mirror for the sound. As Hamme puts it: "What we did was to take the mirror and paint it black."

The acoustical ceilings then in common use had an absorption characteristic of about 50 percent, meaning that about half the sound reaching the ceiling was absorbed. Adding this ceiling in the lab increased the sound attenuation by 3 dB. If the ceiling could be 25 percent more absorptive, 3 dB in sound attenuation could be gained over the screen. At 75 percent, the ceiling was still 25 percent away from perfect. By halving that difference (86.5 percent absorptive), 3 dB more was gained in attenuation, totaling 9 dB lost. To achieve the total 10 dB attenuation necessary, the ceiling had to be over 90 percent absorptive.

Old becomes new: In the 1940s, when partition walls extended from structural floor slab to structural floor slab, available ceiling treatments had this type of high absorption capability. With the predominance of the demountable partition, the dropped ceiling, and the development of the modern office building, the product lost effectiveness. The sound went up through the ceiling of one office and down through the neighboring ceiling. To prevent this flanking path, some of the porosity so effective in ceiling products for absorption had to be filled with gypsum plaster. The panels were also sometimes backed with other, more solid materials. The typical ceiling became a fire-rated ceiling board, while the old product stayed in the background. With the new use of the open plan, the full-height partitions all but disappeared. The office became one large room again, and the absorption characteristic of the ceiling had to return to its former efficiency of over 90 percent.

Armstrong research: Ceiling manufacturers responded to the news with some research of their own. With the comments and suggestions of Hamme, for example, G. Robert Spalding and Dr. Thomas Mariner performed a series of tests at the sound laboratories of Armstrong Cork. The work at Armstrong concentrated on understanding the characteristics of speech privacy as a function of design variables. They found, for example, at a separation of 3 ft, in a sound-absorptive environment, speech sound attenuation could be doubled by turning the talker and listener back to back. The attenuation could be doubled again by increasing the distance between the people to 10 ft-6 in. Placing a barrier between them again halves the speech sound level. (The rule of thumb inside a highly absorbent space like the office is that 5 dB are lost every time the distance from the source is doubled.) The researchers also discovered that light fixtures had a significant destructive effect on the sound attenuation when the hard surfaces of the light lenses were placed where they could again reflect sound over the screen. They found that increasing the height of the screen made only marginal additions to the attenuation over it, depending on its covering. Allowing sound to reflect off a carpeted floor under the panel sound barrier (by raising the panel off the floor) significantly alters its effectiveness. Square panels, five feet on a side, worked almost as well as very long screens of the same height. Spalding presented many of these results at a symposium on word intelligibility held in Liege, Belgium in 1973.
One hour spent in an acoustical laboratory is sufficient to demonstrate the rudiments of sound isolation in the open office. Experiments such as those of Hamme and Spalding are at the base of the theory and practice of design for acoustical privacy. Unfortunately, acoustical failures in application are much more accessible to most of us. The designer stands between the simple truths of the laboratory and the actual office space being used by 50 percent of the working population. The design methodology must be accurate, consistent, and relatively fast. There are today many schools of thought about how such design for effective speech privacy can be accomplished.

**BBN and the OPLAN:** To accommodate the open-plan office, one large acoustical consulting firm, Bolt Beranek & Newman, has resorted to the computer. In a nutshell, what Parker Hirtle of BBN has done in writing the program is to extend the principles of the “Speech Privacy Design Analyzer” developed in the early 1960s to the open office. Hirtle was one of the original authors of the “Analyzer.” The difference between the two design situations is largely the number of possible paths the sound can follow and the time it takes to make the necessary calculations to predict Articulation Index. In use since 1976, OPLAN has been devised for designer interaction with the program. By means of questions and simple responses, the user is led through the basic design decision-making process. P/A has reproduced a sample application of the program on the following pages to demonstrate its use.

**The PBS system**

When Richard Hamme wrote his performance specifications, he did not choose to use AI. Based on the experimentation already discussed, he felt two other variables were necessary to evaluate the speech privacy potential of a space. One variable is the level of the masking sound; the other is the measure of the speech attenuation from one space to another. If the two contributions add up to sufficiently destroy speech clarity, the assumption is that privacy is maintained. For masking-sound measurement, Hamme used the Noise Criterion (NC) curves that were already established and in common use for evaluating sounds from air-diffusion equipment. The NC40 contour was made the basis of the masking sound. The noise isolation class contour was redefined in the eight one-third octave band frequencies within the normal range of speech privacy and were renamed NIC°. Hamme then originated the formula:

\[ \text{SPP} = \text{NIC}° + \text{NC}40 \geq 60 \]

**Why does it work?** What we want to accomplish is speech privacy. We could meet this requirement by specifying that the sum of the masking sound level and the sound attenuation for each third octave frequency common to human speech should not fall below 60 dB. We would also have to specify that the masking sound not exceed certain sound levels for certain frequencies. The NIC° and NC40 are single numbers. If the sound-masking system conforms to the NC40 contour, it will never have a high-frequency sound which is too loud. The NIC° rating for the ensemble will always be equal to or greater than NIC° = 20 (assuming the total rating of attenuation and masking will always destroy speech clarity). Normal variations in a real space permit minor variations.

**The tests:** The shape and intensity of a sound-masking device are usually controlled by a sound equalizer. Basically, a sound equalizer is a random sound generator and speaker with a volume control and several levers which are connected to electronic sound filters. By adjusting the levers, intensity of each one-third octave sound frequency can be separately controlled. Commercial sound-masking devices are sold either with a fixed sound spectrum or with the ability to alter the shape as described above. In the laboratory, a variable adjuster is of course always used.

Hamme devised two separate tests for determining the SPP values. One is objective; one is subjective. With the objective test, a series of measurements is made using an electronic speaker in one hypothetical work space and a microphone and sound-level metering device used on both sides of the screen to measure attenuation. The location of the microphone is varied and the sound attenuations at different frequencies are measured at each new location. When the process is complete, the sound-level measurements are averaged for each third octave frequency and the resulting curve is then fitted to the prescribed NIC° contour to arrive at the NIC° rating.

The subjective test involves the judgment of three separate jurors. A voice tape is used or a live speaker is asked to maintain a constant level of speech in one simulated work space while a listener in the other sits at the controls of a sound equalizer. He or she is asked to raise the level of the masking sound until the voice is sufficiently masked. Clearly the need of raising the masking sound to an undesirable level, if unanimously necessary, will disqualify the system being tested. The SPP rating for a system need only comply with one or the other of the tests.

To use the PBS system in the design process, the designer must either use previously established data for his choice of materials or actually conduct laboratory testing. Various laboratories throughout the country do this type of testing. The construction of the mock-up can be an expensive process.

**Delta Dee Bee Aaay:** A simple-minded...
method exists for folks who can't believe it has to be all that hard. For lack of a better name it is called Delta dB"A". A speaker is placed in one work space and a sound level meter (adjusted to the "A" scale) "listens" to it in the adjacent space. The search has been for a sound source that will yield meter readings which accurately approximate NIC numbers. The "A" scale on a sound level meter is itself weighted to favor the sound frequencies more likely to be heard by the human ear. Armstrong's Robert Spalding has published results of his studies using Delta dB"A". The idea is to be able to measure actual sound attenuation in a space quickly and simply. The technique is most commonly used as a diagnostic tool in the field. The problem is that the averaging that takes place in the meter makes it impossible to discover those particular frequencies that may present problems for the masking device.

One and the same
All these systems are just three different rulers for measuring the same thing. They all have their strengths and weaknesses, their proper place and use. Like a Polaroid snapshot, the Delta dB"A" method can make a series of acoustical records in rapid succession. There are certainly situations where cost would prohibit any other method. The accuracy is only marginal. Using controlled laboratory methods to evaluate work situations and obtain NIC data allows for the introduction of many real-life variables that could never be programmed into a computer. Allowing the subjective test procedure returns the ultimate standard of the acoustical privacy to its source—the human being. Manufacturers complain, however, that the laboratory size requirements and specifications (5'-0" screens and 9'-0" ceilings) are too limiting. If government officials do not permit the use of prior data in accepting NIC numbers, the expense of the duplicate testing can be considerable.

The computer is an excellent analytical tool and a flexible design aid. It can give us a hundred possibilities while we contemplate building a single laboratory mock up. The computer, however, is only as good as the person who uses it and the data that are put into it. The OPLAN program does include years of data collecting from real-life experience. Its critics attack the fact that light fixtures are not part of the primary program (they can be added manually by an experienced programmer). The absorption coefficient of a material can change significantly with age, but this information is as yet un-
Here, a full-height barrier is considered, but because of the low background noise, as well as the dominant importance of the sound reflection off the side wall, the improvement is, again, insignificant. At this point, the arrangement is very similar to an enclosed office situation, but with the door left open. The 4-ft "door" opening even simulates the presence of an open, sound reflective door since the plaster core wall that runs along the right-hand side of the talker's desk is not yet treated with a sound absorbing material. Even with the full-height barriers, the AI is still too high.

7 By raising the background noise 6 dB to the "design ambient" level, there is a significant improvement—but the AI is still much too high. The side wall reflection is now the major problem.

8 Eliminating the sound reflection off the core wall (or open "door") can achieve a conditional degree of privacy, even with a 4-ft-wide clear opening.

9 A normal degree of privacy, not confidential, allows a smaller barrier. The program suggests that even a 5-ft-high barrier will be adequate, with the proper ceiling material, a 6 dB higher ambient noise level and sound absorbing treatment on the side wall. An open-plan arrangement may be far superior to an enclosed office situation where the door is left open, a common situation in most enclosed-plan offices.

10 Elapsed time indicates that this analysis required less than 10 minutes of time working at the computer terminal.

known and therefore cannot be entered accurately into a computer memory (or a human one). Gasket failures in open office systems can play a large role in acoustical failure. Poor workmanship is difficult to predict in any design situation or computer program. Complex geometries still involve hand calculations before they are entered into OPLAN, but all ceiling heights and panel dimensions are possible. In its defense, Parker Hittle explains: "You can't use the program without judgment." He continues: "At the present time we are relying on the experience of the user."

Hittle cannot predict total accuracy; he only "can predict better than anyone else."

How are they all the same? The NIC curve and the NC40 contour can be superimposed on the graph showing the Articulation Index dot array. Subtracting the NIC curve from upper and lower speech frequency curves will yield new curves that represent the signal that reaches the listening room. All of the dots below that curve that are not masked by the NC40 contour represent the portion of speech that actually is heard in the listening space. Calculating the AI for the area between the signal and masking sound yields an Al number of about 10, almost confidential privacy. Using PBS or AI methods, the results are nearly identical.

Why so many names for the same thing? This acoustical technology is less than 15 years old. It is changing faster than we can monitor it. The noise criterion curves have been altered, for example, since Hamme began using NC40, and the Canadians prefer the term SPNAC (Speech Privacy Noise Attenuation Class) to NIC, confusing labeling problems. For the moment, PBS is the only published standard. It is time for someone to step in and create order. ASTM Task Group E33.04C is about to do just that. It may take one year; it may take three. The committee is now in session to write the standard for recommended practice and testing procedures.

The design

Clearly, designing a good work environment needs careful acoustical consideration. Each designer has his own design methodology but there are always four basic ingredients: the envelope of the space, the furniture (and equipment), the masking sound, and the people. All of these contributions must be coordinated and conceived as a single system.

The envelope: Traditionally, most of the research money gets poured into the en-
A library is thought of as quiet, yet a creased awareness in the closed plan. The technology is on the threshold of was learned in the open plan, that acousti­
was very expensive to install as an after­thought. (The future holds the potential for sound masking incorporated into furni­ture.) A centralized system holds the addi­tional advantage of providing a paging system or fire protection warning.

The masking sound: Successful office design needs an integrated system. It should also be clear that sound is an integral part of our total perceptual powers. Light, for example, is psychologically linked to sound. In a candle-lit restaurant, the speech often comes in whispers. At the brightly lit PTA dinner, the room rings with laughter and conversation. Sound can be linked to thermal comfort. When masking sounds are stopped abruptly, office occup­ants who believe it is the air-conditioning system begin to sweat. (Cool and warm colors can create a subjective reaction to temperatures of as much as 3 F difference.) Psychologists also ask: Is the dis­comfort of the open plan due to actual loss of privacy or the fear of loss of privacy? What is disturbing to one person may not be disturbing to another. One acousti­cal specialist adds: “Most people don’t re­quire confidential privacy.” A pressroom has a din of unintelligible voices, and therefore speech privacy is maintained with artificial sound masking. How does the comfort of the chair af­fect our sensitivity to intrusive noises? One justification for the laboratory simulation of acoustical environments and subjective testing is that the real objective is the sen­sation of privacy, not necessarily the mechanical measurement of it. Maybe what we all need is earplugs.

A more perfect match: Perhaps the greatest guarantee that we have of su­ceeding at the design of a successful of­fice, open or closed, is that we recognize its function as a tool and use it effectively. Open plan, for example, cannot be suc­cessful for confidential privacy at the sound level of the raised voice (about 70 dB). Even the natural landscape, as dis­cussed, can only accommodate a voice level around 60 dB. A comprehensive study is needed that will relate the acceptable sound levels for various kinds of tasks, not only for confidential privacy, but for normal working conditions. We have the technology to control speech privacy. What level do we need?

For BBN’s Robert Newman, “The prob­lem is making architects aware of knowl­edge that is already there.” As architects, we have several possible methods for achieving design success. We can, of course, hire a consultant experienced in office acoustics and even buy time on OPLAN. He or she may calculate AI or pre­fer the PBS system. Unfortunately, the pri­mary design tool to date, if we are to believe the Steelcase report, has been dumb luck. We can do better.

The Office “Landscape” Users Group is an organization of 46 office planners who are involved in implementing the office landscape planning concept. Their goal in meeting and dispersing information is to pool their resources to make it all work. Manufacturers are also becoming acutely aware of design problems and are offering system packages which incorporate light­ing, ceiling, masking sound, and furniture elements. (Even air handling must be con­sidered part of the system.) In certain situa­tions, manufacturers will even guarantee their system’s performance. Eavesdropping versus concentration: If you don’t believe all of this about sound privacy, find the two biggest gossips in your office and try to reread this article while sitting 10 ft from them. If hearing about the best chicken salad in New York doesn’t destroy your concentration, you can at least rest assured that it does mine. [Richard Rush]

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For office acoustical product and literature in­formation see p. 238.

Technics: Office acoustics
veloppe. The concept most often ignored by designers is that perimeter space condi­tions can destroy the acoustical efforts in an interior zone. A window or masonry wall, for example, can provide a reflective surface that could return to the space the 10 dB that we soak up in the ceiling. Vertical surface geometry and acoustical coverings help to avoid such problems. (Investigation of these problems is sometimes done using visible light beams and mirrors.) Normal carpeting has been shown to absorb over 20 percent of the sound that strikes it. Its main contribution, however, is to dampen the sound of feet and scraping chairs.

The choice of light fixtures should be made with care. The placement of a ceiling light fixture on a path of reflection can wreck the privacy of the space. Coffered ceilings have proven to be very successful in helping to create sound privacy. They should not be used without clear understand­ing of the coffers angles and their possible destructive reflections.

The furniture: Much of the progress in furniture design so far has been through common sense and ingenuity, rather than precise research. Combining task lighting with the furniture, for example, might elimi­nate the need for lighting in the ceiling and give full benefit to the sound absorption in­stalled there. Layouts that avoid reflection and direct sound paths also help.

Much of the ongoing laboratory re­search today, however, is turning to a more precise understanding and measure­ment of the acoustical contribution of furniture. Manufacturers are also intent upon reducing the office equipment sounds at the source. The attraction of open plan often begins with the furniture. An owner may feel when he has bought the furniture, he is finished. He is in for a big surprise!

The masking sound: In the early 1960s, acoustical masking sound was effectively used to augment air-conditioning noise in closed office acoustics and often as a remedial measure for designs which did not work. The real discovery of open-plan acoustical technology was the rediscovery or extension of masking sound. So much was learned in the open plan, that acousti­cal technology is on the threshold of in­creased awareness in the closed plan. The use of masking sound has caused us to reevaluate the concept of the word “quiet.” A library is thought of as quiet, yet a squeaky new pair of shoes can interrupt reading there. Rather than spend money and time making it soundless, perhaps we should study the potential of using the proper background sound for reading and concentration. Hospitals are also sup-

posed to be “quiet,” yet a nurse’s footfalls can be heard down the hall. Why not use masking sound? The open-plan school? Says Hamme: “We could go back to the open plan now and handle the situation very well.” Hotels and apartment buildings could also make use of masking sound.

One important reason other than improving the quality of the acoustics is cost. The per-sq-ft cost of sound masking is consid­erably less than that of solid acoustical materials. To date the most effective sys­tems are speakers mounted within the ceiling plenum on 10–15-ft centers. They are very expensive to install as an after­thought. (The future holds the potential for sound masking incorporated into furni­ture.) A centralized system holds the addi­tional advantage of providing a paging system or fire protection warning.

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The Office “Landscape” Users Group is an organization of 46 office planners who are involved in implementing the office landscape planning concept. Their goal in meeting and dispersing information is to pool their resources to make it all work. Manufacturers are also becoming acutely aware of design problems and are offering system packages which incorporate light­ing, ceiling, masking sound, and furniture elements. (Even air handling must be con­sidered part of the system.) In certain situa­tions, manufacturers will even guarantee their system’s performance. Eavesdropping versus concentration: If you don’t believe all of this about sound privacy, find the two biggest gossips in your office and try to reread this article while sitting 10 ft from them. If hearing about the best chicken salad in New York doesn’t destroy your concentration, you can at least rest assured that it does mine. [Richard Rush]

Acknowledgments
We wish to thank the following acousticians, or­ganizations, and manufacturers for their help in preparing this article: Attic Corporation; American Institute of Physics, Aca­oustical Society of America; American Seating Co.; ASTM; Ar­mstrong Building Products; Armstrong Cork Co.; ASARCO; Bolt Beranek & Newman Inc.; L. E. Carpenter & Co.; Castle Assoc.; Ceilings & Inter­rior Systems Contractors Assoc.; The Celotex Corp.; Chicago Metallic Corp.; Control Elec­tronics Co.; Conwed Corp.; Donn Products; GSA; Geiger & Hamme, Inc.; General Fire­proofing; GF Business Equipment; Gold Bond Building Prod., Div. of National Gypsum; Harter Corp.; Haworth, Inc.; Haws-Domore, Inc.; Insul-Acoustic Corp.; JG Furniture Co.; Johns­Manville Corp.; Knoll International; Masonite Corp.; Herman Miller Research; National Gyp­sum; The Office; Office “Landscape” Users; Owens/Corning Fiberglas; Proudfoot Co.; Rosemount Office Systems; Simplicex Ceiling Corp.; Soundaler, Inc.; Stack Ceramics Inc.; Steelcase, Inc.; 3M Co.; U.S. Gypsum; West­inghouse ASD; Zero Weather Stripping Co., Inc.

For office acoustical product and literature in­formation see p. 238.
GRAPH A: The two curves above enclose the upper and lower limits of conversational speech. The dot array emphasizes the importance of certain frequencies to speech comprehension. It represents the conversational speech spectrum of a male talker at three feet in front of a listener. (The spectrum has been lowered 5 dB from the original graph made in the early 1940s by Bell Laboratories to more accurately portray true speech.)

GRAPH B: The two base contours are shown above for NIC and NC determination. No real test situation will yield a curve matching them precisely. By matching real curves to these, under rules designed to average the deviation from them, a single number can be assigned to each test situation. The hollow dots represent the sum of the NC value and the NIC contour at each band frequency. The sum approximates 60 dB.

GRAPH C: Using the NIC contour from graph B as an idealization of the sound attenuation characteristics of a space, a new conversational spectrum can be created. In each third octave band frequency the value of the NIC curve is subtracted from the contour values of conversational speech. The dashed line approximates the new upper limit in the listening space. This curve represents the new "signal" for the space.

GRAPH D: Using the NC contour from graph B as an idealization of the shape of a masking sound curve, the conversational speech spectrum that remains from graph C can also be reduced. The masking sound will destroy the speech clarity of the sound below its curve. The AI can then be calculated for the area of sound which remains comprehensible between the upper level of the signal curve and the NC masking contour.
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A builder with a valid permit has vested rights when the foundation is completed prior to a zoning change barring such a structure. What if he is unreasonably prevented from completion until after the zoning change is made?

A change in the municipal zoning ordinance, which prohibits a property use which had been appropriate prior to such change, cannot be constitutionally applied to a property owner who had acquired a vested right to such use. If, for example, the property owner had completed the foundation for a project which would be barred by the change in zoning, it has been generally held that the builder has acquired a vested right to complete the project for his originally intended use. On the other hand, if the foundation was incomplete at the time of such change, many jurisdictions would hold that no such vested right was acquired, unless the municipality had interrupted construction by unlawfully suspending the building permit or had intentionally or negligently delayed in acting on the application for such permit, until the change in zoning had occurred. In either of such latter events, the courts could enjoin enforcement of the ordinance as modified.

A different question is raised, however, if a builder fails to acquire a vested right before a change in zoning because of the interference and obstruction of community groups who oppose his intended use of the property. This was the issue litigated in the recent case of Faymor Development Co., Inc. vs Board of Standards and Appeals, 45 N.Y. 2d 560. The plaintiff in the Faymor case was the owner of an undeveloped parcel of land. He applied for a building permit to erect a six-story multiple dwelling which was authorized under the prevailing zoning ordinance, and such permit was granted. Some weeks later, the Building Department revoked the permit when a community planning board raised various objections, but upon appeal, the Board of Standards and Appeals reinstated the permit. Community groups then brought a legal action against the Board to annul its determination. Simultaneously, hundreds of residents of the community proceeded to the work site, surrounded it with parked cars, and refused to allow the owner's construction crews to enter. The owner's efforts to enter his property and resume construction on subsequent days continued unsuccessfully. The owner obtained court orders directing the protesters to cease interfering with the construction, but these orders were ignored. The owner also requested assistance from the police and fire departments in order to gain access to his property, but this assistance was not forthcoming or was ineffectual. The vehicles blocking the site remained in place until the city legislature rezoned the property, placing it in a category which only permitted the construction of one- and two-family homes.

The Building Department then informed the owner that its building permit had been revoked in that the foundation of the project had not been completed by the date the change of zoning took effect. The owner appealed the decision of the Building Department, pointing out that it had incurred costs and obligations in excess of $1,380,000 and had been prevented from completing the foundation and thereby obtaining a vested right because of mob action by area residents abetted by the inaction of city agencies who had the duty and obligation to enforce the law. The Board of Standards and Appeals supported the action of the Building Department in revoking the permit on the ground that it had no discretion but was required to strictly apply the provisions of the zoning resolution. The owner then challenged this decision in court, and the lower court ruled that the owner had not acquired a vested right and that he was not entitled to equitable relief because, unlike other precedents relied upon by the owner, "the City had not actively interfered with construction."

The court ruled that it could not "be said that the independent action of private citizens, even if illegal, is sufficient to give rise to a vested right."

Upon further appeal, the decision of the lower court was reversed, and the appellate court directed that the building permit be reinstated. The appellate court said:

"... the city relies on the principle that 'A public body cannot be commanded... to perform an act not authorized by the statute from which it derived its power.'... The city argues that once the property was rezoned, the board... was only permitted to reinstate the permit if the foundations had been completed. ..."

"(However) petitioner's efforts to proceed with construction were delayed, obstructed and ultimately frustrated because of violent opposition from area residents. They commenced dubious, if not frivolous lawsuits... They took to the streets and physically excluded petitioner from its property in disregard of law and court orders to cease interference.

"But the city played a part as well. Throughout the period city officials displayed a willingness to appease the protesters at petitioner's expense... City police officials stood by while a lawless mob prevented petitioner from vesting its rights under the existing law.

"The rule of law must prevail. The right to proceed pursuant to a valid building permit, no less than any other civil right, is not to be lost because others resort to the streets, or because governmental authorities have improperly placed hurdles barring the appropriate exercise of such right."

In concluding that the building permit should be issued, the appellate court stated:

"In sum, as a result of the combined action by area residents and the action and neglect of public officials, the petitioner was denied all opportunity to proceed with construction as it had a right to do under the permit. In fairness the city cannot now rely on the failure of the petitioner to complete its foundations as a ground for denying reinstatement of the permit."
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Big Mac

Hill House, 1902.


It is 80 years since Charles Rennie Mackintosh's most prominent buildings were constructed. During this time Thomas Howarth has been the only major chronicler of his achievements. Howarth became familiar with these buildings firsthand from teaching at both the School of Architecture and the School of Art in Glasgow from 1939 to 1946. His 1952 publication of Charles Rennie Mackintosh and the Modern Movement has been the only available text in English that describes in detail the events of Mackintosh's life. The book provides information about his personal dealings and an understanding of the context and circumstances in which he worked. Recently this book has been reissued.

The factual parts of the text are informative and enlightening, but interwoven throughout is an almost unstated critical measuring stick which is not appropriate to Mackintosh's architecture or his philosophical intentions. Howarth makes his position clear in a paragraph about Windy Hill and Hill House, two of Mackintosh's most picturesque projects: "Originality and unorthodoxy in themselves are not always to be commended, though in our present unstable society they are usually considered to be so. Neither have anything whatever to do with the merit of a building—or a painting, or piece of sculpture—as a work of art. It is always the unity, the wholeness of such a work, and the beauty of its form and proportions, the relationship of part to part, which proclaim its true worth. Unity and wholeness in the architectural context, of course, imply fitness for purpose..." As elements of an architectural philosophy, "unity" and "wholeness" are more than a satisfactory premise, but these were not the underlying concerns or influences in Mackintosh's architecture; they are rather the author's imposed means of measure.

Mackintosh was employed by the successful Glasgow firm of John Honeyman & Keppie, where he eventually became a partner. The design for Queen's Cross Church was his first significant work to be constructed. In a 1945 lecture at the Glasgow School for Architecture, Howarth presented some of his early thinking about this project: "The main façade to Garscube Road is more..."
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Queen's Cross Church, 1897.

noteworthy for its interesting details than for its general form and proportions, which seem to have been sacrificed largely for internal considerations." Howarth's opinion solidified by the time of his 1952 first edition, and is still unchanged in the current edition. The building is relegated to a chapter on miscellaneous projects: "Queen's Cross Church is not one of Mackintosh's best buildings: it lacks unity and is interesting mainly for its ingenious details and bold constructional features."

In the Church design Mackintosh created a building whose outward appearance was determined by a combination of different elements, rather than one of unified form and proportion. The Church exterior relies on a number of classical shapes and is rooted in the past, but it is significant because it establishes the parameters for his future work: definition of building form through profile, solid massing, and additive geometric forms; variation in fenestration and massing as a means to change apparent building scale and size; asymmetry; and nonhistoric decoration.

In Queen's Cross Church and subsequent structures Mackintosh did not opt for an expressionistic use of new technology—cast iron and skeletal frame construction. Instead he developed a unique adaptation of masonry construction employing current structural techniques to further his design intentions. His work was infused with a knowledge of historical conventions but resulted in an admixture of modern and historic elements with a distinctive architectural image. Rejection of the elaborate details of the revivalist and the puritanical vocabulary of the engineers eventually allowed Mackintosh the liberty of producing completely different façades for the same building.

The north façade of the Scotland Street School (another project Howarth placed in the chapter on miscellaneous projects) combines various geometrical elements to determine the overall form. By comparison, the south elevation could belong to another building. The façade is a shear plane ground to eave with special masonry and terra cotta details plus three horizontal rows of unornamented double-hung windows. In the text Howarth describes changes in the exterior design of the building which would make it a better project by providing more "unity" to the design.

This book is required reading for those interested in Mackintosh, but it leaves obscure the architect's philosophical intentions. Mackintosh's buildings have been difficult for most histo
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Books continued from page 220

Scotland Street School, 1904.

Mackintosh's architecture was not Modern nor 19th Century,
and it cannot be measured by the standards of either; rather it
was a transition and resolution between the two. Perhaps his
work will be critically revaluated during the current era, when
many architects are addressing or are confronting similar
conflicts between concerns generated during the "Modern
movement" and current ideas about historical references. Mack­
intosh's work is not even vaguely similar in "look" or "style" to
today's architecture, but his intentions and impulses to resolve
conflicts were.

Mackintosh: Architecture, edited by Jackie Cooper with an in­
troduction by Barbara Bernard. St. Martin’s Press, New York,
1978, 111 pp., heavily illustrated, $15.95.

This large-format, 111-page volume catalogs the body of Charles
Rennie Mackintosh’s architectural achievement, which spanned
the years between 1894-1906. With only a very brief foreword
and introduction, the remaining contents are divided into three
sections, arranged chronologically, that document with visual
material and short, factual statements the 14 completed build­
ings, the interiors and alterations, the unexecuted designs and
competition entries. This book, unlike the Howarth volume re­
viewed above, does not attempt an exhaustive, scholarly analy­
sis of the work of Mackintosh, but it could serve as a handsome
survey for anyone wanting a quick introduction to the brief 30-
year career that produced one of the most important bodies of
work of the transitional period from 19th- to 20th-Century ar­
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Circle No. 305 on Reader Service Card
The following items are related to the theme of this issue, interior design. They are grouped here for the reader's convenience.

**Interior design Products**

**Radial rubber floor tile** has 1-in-diameter raised studs to allow spilled liquids to drain off the walking surface and provide traction. The tough, resilient surface contributes to safe footing and makes the tile suitable for high-traffic areas, such as air terminals, shopping centers, ramps, elevator lobbies, and stair landings (stair treads are also available). High profile (0.50-in. raised design) is suitable for areas requiring exceptionally safe footing; low profile (0.025-in. raised design) can be used in areas having light vehicular traffic, such as shopping carts. Tiles are 18 in. square and come in ten solid colors. Flexco Division of Textile Rubber Co., Inc. Circle 129 on reader service card

**The Satinesque Designer Collection** of textured wallcoverings in fabric-backed vinyl have the look of grasscloth, burlap, corduroy, tweed, linen, leather, silk moiré, and other materials. Subtle stripes, plaids, and patterns are primarily in gray, beige, and oatmeal, with soft pastels also available. Metallics with a muted sheen are in the group. Columbus Coated Fabrics. Circle 130 on reader service card

"Natural Classics" Victex vinyl wallcoverings include linens, wools, wool knits, and woven cottons. Shown is I.C.-702, an Indian cotton in a textured weave. L.E. Carpenter and Co. Circle 131 on reader service card

**The Sof-Tech stack chair**, designed by David Rowland, is made of plastic-coated meshlike springs, of the type formerly concealed in furniture, that are thin enough for stacking and soft enough for comfort. Frame finishes include polished chrome and powder coatings in a choice of colors. The powder-coated versions can be used outdoors. An optional detachable upholstery sleeve is also available. The chairs stack 30 high in about 5½ ft of space. Thonet Industries, Inc. Circle 132 on reader service card

**The Chicago Chair**, designed by Geoffrey Harcourt, has a laminated beechwood shell, upholstered in fire-retardant materials. It is available without or with arms, which can be wood or metal. Five-prong bases, also in wood or metal, are fixed, swiveling, or swiveling with height adjustment. Turner, Ltd. Circle 133 on reader service card

**Additions to the Le Corbusier Collection** are "Siege Tournant," a padded stool with or without backrest, "Siege Salle de Bains," a bathroom stool with a removable seat, and two- and three-seat sofas to coordinate with LC12 and LC3 armchairs. The stools, designed in 1929, were part of a catalog of metal furniture designed by Le Corbusier in collaboration with Pierre Jeanneret and Charlotte Perriand. They are shown with existing classics in the collection. Atelier International Ltd. Circle 134 on reader service card

**Energy distribution system**, part of Action Office* system, provides two- or four-circuit capacity, with outlet flexibility. Designed for use with power supply sources in walls, ceiling, columns, or floors, it distributes power only as far as needed. The system consists of wire management via raceways below panels and multi-outlet electrical distributors that provide additional receptacles at varying heights on the panel. It meets National Electric Code standards and is Underwriters Laboratories listed. Herman Miller, Inc. Circle 135 on reader service card

**Oak executive series, Circa 90**, includes executive and secretarial desks, credenzas, bookcases, conference and occasional tables, executive and side chairs. Designed by Carlos Lopez-Benitez, the group has rounded edges and finishes of oak and oak veneers. A correlated lounge group is available. Monarch Furniture. Circle 136 on reader service card

**Contract upholstery fabric**, circular knit of 100 percent nylon, is a 54-in.-wide textured fabric available in two patterns, Majestic and Premier. Colors of both include a wide range of solids and heathers. Pliability of the knit makes it easier than woven fabrics to mold around contours and edges of chairs and sofas. Collins & Aikman Corp., Cavel Div. Circle 137 on reader service card

(Products continued on page 234)
Consider the bird nest. Functional perfection. Something you as an architect strive for along with the esthetics that give your design pleasing form. We’re reminded of your goal each time we produce signage for you.

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Circle No. 368, on Reader Service Card
Circolo lounge chair, designed by Vignelli Designs, has a lacquered or veneered wood shell with flexible foam padding and 10-in. foam and kapok cushion. Chair height is 26 in.; seat height is 16 in. Circolo is also available as a 72-in.-wide settee or a 96-in.-wide sofa. Sunar Ltd. Circle 138 on reader service card

The String, a ceiling-attached floor lamp, has a bottom weighted to create tension and adjusted to hang just off the floor. The light fixture, in black only, glides along a black nylon cord to desired height. Light is controlled by a foot switch on the electric cord. Koch & Lowy. Circle 139 on reader service card

Office, lounge, and conference room tables, with wood-grain tops and leg panels, have top edges banded to protect the surface. Laminate plastic tops resist burns, stains, and scratches. Tops are supported on square, chromium finished tubular steel legs. Viro Manufacturing Corp. Circle 140 on reader service card

Lounge seating group 122 consists of 36-in.-wide chair, 62-in.-wide settee, and 90-in.-wide sofa. Knife-edge cushions on seat and back are reversible. Covering is leather, suede, or customer's own fabric. Cumberland/Orsenigo. Circle 141 on reader service card

Modular lounge seating is upholstered over high-density foam for firm seating. Units are joined in the field by simple u-shaped channels. Chair with or without arm, and inside or outside wedges can be joined in a variety of configurations. Hiebert, Inc. Circle 200 on reader service card

Folding tables, in 19 top sizes, have tubular steel base and column, equipped with concealed locking mechanism. Aluminum skirt is finished in black epoxy, with protective bumpers on each corner for stacking. Folded table stacks in 3½ in. of space. Berco Industries. Circle 201 on reader service card

Hardware dining/conference tables, designed by Mario Bellini, have walnut, acacia, or ashwood bases with either glass or wood tops. Because of their simplicity of design and materials, they complement many seating styles. Tops are available in round or rectangular. Atelier International, Ltd. Circle 202 on reader service card

String wallcoverings, called "Kind Regards," consist of ten vertical yarn variations and five overprint patterns, which can be coordinated with five background yarn solids. Prints are 28 in. wide; solids are 30 in. Gilford Inc. Circle 203 on reader service card

Lounge seating, a companion group to office and conference seating of Maslan 9000 series, is made up of one-, two-, and three-seat modules, with or without arms. They can be combined to form longer seating using a common arm. Also available are tables and benches. Fuxtures Manufacturing Corp. Circle 204 on reader service card

All-wood office furniture in the Rondo Plus group includes desks, credenzas, and tables in a choice of designs to meet individual needs. L-shaped executive and secretarial desks have a one-piece side panel. Woods are natural grain walnut or oak. Domore Office Furniture, Inc., IKD Corp. Circle 205 on reader service card

Literature

Office and lounge seating and tables are illustrated in color, with brief descriptions, in a 10-page folder. Office chairs, with or without arms, have swivel, five-prong bases and adjustable seats. Lounge groups, including leather- or vinyl-topped tables, are modular and easily interchangeable. Edges of seating are rounded for added comfort. Euro-Chair of America. Circle 206 on reader service card


Resource list of residential/commercial carpet using Anso fibers provides mill name and address, fabric name, type of construction, and fiber content. Recently introduced products are listed first, followed by a list of carpets made of Anso and Anso-X fibers. Allied Chemical. Circle 208 on reader service card

Open office system components and features are described and illustrated in a 16-page full-color brochure. Features include: flexibility of panel and cabinet arrangement; acoustical panels for noise control and privacy; pre-engineered power and communication systems; paperwork storage adaptability to suit tasks; and ambient and task lighting. American Seating Co. Circle 209 on reader service card

Mipolam floor and wall coverings with high PVC content are said to provide unequaled indentation recovery rate, excellent resistance to abrasion and chemical attack, and dimensional stability. Flooring comes in 40 colors and patterns, with antistatic and conductive grades available. Wallcoverings are Wall System T, 4' x 8' rigid panels in standard white, and flexible Finish 2000 in rolls 3'4" x 34'6", available in 15 colors. Specifications for floor coverings and wall coverings, and list of chemicals to which floor coverings are resistant are provided in eight-page brochure, along with product descriptions and illustrations. Dynamit Nobel of America, Inc. Circle 210 on reader service card

Literature continued on page 238

'Decorating Ideas With Ceramic Tile.' Sixteen-page color brochure shows pictures of design ideas for kitchens, baths, living rooms, foyers, and recreation areas. Shown are suggestions for color coordination of tiles and bathroom fixtures. The brochure is 50¢ a copy from: American Olean Tile Co., Lansdale, Pa 19446.

'Modular Grid Ceiling System' is a 4-page color brochure describing metal framing from which decorative baffles or fins can be suspended vertically. Lighting fixtures, dividers, and other components can be attached easily to the grid. There is also easy access to mechanical and electrical services. Power-Strut, Van Heflin Tube Corp. Circle 211 on reader service card
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This unique new rubber floor tile is designed especially for the interior floors where safe footing is required and handsome, easy to maintain appearance is desired. 1" diameter raised studs molded onto a special compound of tough, extra resilient rubber provides greater traction by allowing dirt and spilled liquids to drain off the walking surface. Extra resilience contributes substantially to safe footing.

Radial rubber tile is recommended especially for high traffic areas such as air terminals, shopping centers, ramps, elevator lobbies and stair landings. It is made in two profile designs and in overall thicknesses of 1/8" and 3/16" with smooth back, and .210" and .235" with Acoustibak™.

Flexco also makes matching radial rubber stair treads as well as a complete line of rubber and vinyl treads, risers and stringers, rubber tile, conductive vinyl tile, cove base and vinyl carpet accessories.

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Shown are a few of the many components available to create a CADO wall system.

151 Bar cabinet with flap.
112 Cabinet with filing, tray, shelf.
124 Cabinet with doors.
134 Cabinet with optional refrigerator.
109 Desk with drop front.
110-F Chest of drawers with file drawer for legal or letter size.
150 Record cabinet.
139 Cabinet with wooden framed glass doors.


Circle No. 327, on Reader Service Card
The following items are related to the article on acoustics appearing in this issue beginning on page 198. They are grouped here for the convenience of the reader.

Acoustics products

Soft Look ceilings, with a nonglare, porous, modacrylic fabric surface on a mineral fiberboard substrate, absorb 60 percent of the sound striking them and reduce sound transmission into adjacent areas. Tegular edges of the 2' x 2' panels, which can be installed in any type of suspended grid system, extend 1/16 in. below the grid. Armstrong Cork Co. Circle 212 on reader service card

Acoustical panels for open-plan offices have a fiberglass core and a dimpled surface to provide a greater area for sound absorption. An aluminum foil back is bonded to the panel. Privacy 2' panels are designed for maximum absorption of less desirable high-frequency sound in the range of 1000-8000 cps. American Seating Co. Circle 213 on reader service card

Acoustical mineral fiber ceiling panels, LeBaron and Texture-Tone, have a Class A fire rating. The 2' x 2' lay-in panels, for residential use, are 3/4-in. thick. Acoustical rating for both is NRC 65-75, and they meet Federal Specification SS-S-118A. The Celotex Corp., Building Products Div. Circle 214 on reader service card

Background Sound System to mask sound has two basic components. The Sound Center transistorized control system comprises a sound generator, a set of 1/3-octave band filters, and a power amplifier, enclosed in a compact cabinet. The Speaker Array loudspeakers and transformers, in circular aluminum baffles, are suspended 10 to 15 ft apart in the overhead plenum space and provide uniform masking sound. Individual speaker adjustments are possible to meet specific needs. Owens-Corning Fiberglas Corp., Building Materials Group. Circle 215 on reader service card

Standard acoustical panels, with a noise-reduction coefficient of .85, also have a Class A fire rating. The aluminum-framed panels are covered with flame-resistant, color-fast polyester fabric in a variety of colors, stripes, and graphic designs. Panels are 2 in. thick, 48 in., 62 in., or 80 in. high, and 1 to 5 feet wide in 1-ft increments, except for graphic designs, which are 62 in. or 80 in. high, 2 to 4 ft wide. Haworth. Circle 216 on reader service card

Vieracoustic 80 panels are lightweight, noise-absorbing, 1-in.-thick panels of dimensionally stable glass fiber with rigid edges. They come in 47 in. wide, 95 or 119 in. long, or in custom sizes. The panels are mounted with two clips to wall-mounted Z-bars, or directly to the wall with adhesive, magnets, or Velcro. Sound absorption is said to be excellent in middle range and exceptional at high frequencies. L. E. Carpenter. Circle 217 on reader service card

Vandalproof Krinklglas combines reinforced, impact-resistant, transparent fiberglass and a metal inlay, which is sandwiched between plastic layers. It provides vandal protection in outdoor installations such as windows, skylights, canopy roofs, fencing, and railings. Various thicknesses and over 75 color combinations are available. Dimensional Plastics Corp. Circle 218 on reader service card

Insul-Art® acoustical products, with cores of glass fiber materials for sound control, include wall panels and ceilings suitable for offices, schools, auditoriums, gymnasiums, and other commercial buildings. Wall panels ranging up to 5' x 12' x 2" thick are available straight or curved, with square-cut, beveled, or radius cut edges, and square-cut or radius-cut corners. Ceilings include coffers, lay-in panels, and duct-type tubs. Company's standard fabrics [Products continued on page 240].

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Los Angeles (213) 657-8922

Circle No. 348, on Reader Service Card
Acoustics literature

'Acoustical Ceilings: Use & Practice.' Discusses sources of sound, its reduction by absorption, and the basic properties common to all acoustical ceiling materials. Describes tests used to evaluate materials for sound and other properties such as light reflectance, flame spread, fire resistance, and maintenance. Installation information covers job site conditions, methods of installation, and thermal insulation aspects. A glossary explains the terminology. Copies, at $2 each, are available from: Ceilings & Interior Systems Contractors Association, 1800 Pickwick Ave., Glenview, IL 60025.

Acoustical ceiling suspension systems described in a 12-page brochure include exposed tee and concealed grid systems. Fire-rated suspension systems and Coordinator modular systems, which can be installed flat, coffered, or pyramidal, are also included. Donn Corp. Circle 220 on reader service card

'National Study of Office Environments: Do They Work?' Report, based on a questionnaire designed by Louis Harris & Associates and on personal interviews by their staff, presents a summary and a detailed analysis of their findings, tabulation of results, and explanation of the methods used. The 130-page report is the result of interviews conducted with 1047 office workers, 209 executives responsible for office planning, and 225 office design professionals. Areas of questioning were: job satisfaction; job performance; satisfaction with tools, equipment, tasks, and workspaces; participation in office planning and design; and anticipation of changes on the job and in the workplace. Steelcase, Inc. Circle 221 on reader service card

Acoustical Systems catalog for 1979, 24 pages, describes the various acoustical ceiling panels available and provides thermal conductance data in tabular form. Specifications, insulation practice, and maintenance procedures are included. Color photographs show typical ceiling installations. The Celotex Corp. Circle 222 on reader service card

'Plywood Construction for Noise Control' is a 12-page publication about plywood floor/ceiling assemblies and wall systems for the effective reduction of sound transmission. It includes information on the types, control, and measurement of noise and the results of acoustical tests on several plywood construction systems. American Plywood Association. Circle 223 on reader service card

Soundsoak® fire-resistant and Soundsoak 85 wall panels are shown, in an installation, in a six-page brochure. Physical properties, and installation drawings and information for both types are also provided. The 1-in.-thick Soundsoak 85 panels absorb 85 percent of the sound striking them. Both panel types are available in six neutral, natural colors and six accent colors. Armstrong Cork Co. Circle 224 on reader service card

The Action Office Acoustic Handbook. A guide to controlling noise in open plan offices, this handbook is a source of information for the manager, planner, and designer of these facilities. It discusses objectives, noise sources and their control, and how sounds travel. A checklist helps to determine where acoustic problems are and how to adjust elements in the area to eliminate intrusive sounds. Special problems and possible solutions are also covered. There are a glossary of terms and a list of useful sources of information about acoustics. The Handbook, $7.50 per copy, can be ordered from: Publications Department, Herman Miller Research Corp., 3970 Varsity Dr., Ann Arbor, MI 48104.

Acoustical materials. Wall and ceiling panels designed for sound absorption and reduced sound transmission are covered in a 28-page brochure. Panels also offer fire endurance and thermal insulation. Color photos illustrate the several types, and detail drawings show installation methods and panel profiles. Charts of sound performance and architectural specifications are included. Gold Bond Building Products Div., National Gypsum. Circle 225 on reader service card

[Literature continued on page 244]
An Eye-Catching Stage Shelter
By Helios Tension.

This tensioned membrane stage shelter at the Florida State Fairgrounds at Tampa is both beautiful and practical. Besides forming a backdrop and shelter for performers, it serves as a highly visible landmark for the fairgrounds. Its exciting curvilinear shape, though light and delicate in appearance, is exceptionally strong. It has been thoroughly engineered to withstand the rigors of hurricane force winds, rain, and ultraviolet rays of the sun.

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Find out how you can break barriers to efficient washroom design. Send for our Bradpack catalog. A 30 minute educational film, "Barrier-Free Washroom Design" is also available for viewing. Contact your Bradley representative or Bradley Corporation, 9101 Fountain Blvd., Menomonee Falls, WI 53051 (414) 251-6000. TELEX 26-751.

Another right idea from Bradley
Rarely if ever has metal roofing been employed with more stunning visual impact than on Robin Hood Dell West, the Philadelphia Orchestra's new summer home, which will also serve as a creative center for other groups in the performing arts.

In specifying over 80,000 square feet of TCS (Terne-Coated Stainless Steel) on this exciting structure, the architects were primarily influenced by several practical as well as aesthetic considerations. Among them was the material's unsurpassed durability which is measured in generations rather than years. They were also aware that TCS weathers naturally to a uniform and attractive warm gray; that, properly installed, it will never need maintenance; and that it is highly resistant to even the most severe corrosive attack.
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Literature continued from page 240

Sound absorber panels and screens are illustrated and described in an eight-page, full-color brochure. Panels attach to walls, pillars, and backs of files. Freestanding divider/screens are framed in oak or walnut, with open or closed base, and feet that can be set in desired position. A choice of standard fabrics is offered, or coverings can be in customer's material. Conwed Corp., Office Interiors Div.
Circle 226 on reader service card

'Speech privacy in the open office' discusses the elements of a system to control speech privacy in these spaces with: office dividers, acoustical ceilings, masking sound, and light selection. Each is described in relation to its acoustical contribution. A 12-page brochure.
Owens-Corning Fiberglas Corp., Interiors Marketing Div.
Circle 227 on reader service card

'Acoustics and the Open Plan' is a 28-page brochure which discusses the history of architectural acoustics and efforts to eliminate annoying, fatiguing, high-frequency noises. It covers the components to be considered in creating an effective system: ceilings, furniture, interior surfaces, and work station orientation. A glossary of acoustical terms is included. American Seating Co.
Circle 228 on reader service card

SCAMP® (Self-Contained Audio and Masking Package), which produces a sound spectrum to mask noise, is described in a six-page brochure. Guidelines are offered for providing an acoustically better working environment in open office plans, with criteria for ceilings, lighting, acoustical screens, draperies, flooring, and background masking. SCAMP System specifications are included. Control Electronics Co.
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'Acoustical Environment in the Open-Plan Office' was prepared by an ASTM Task Group of the Applications Subcommittee of the Committee on Environmental Acoustics. It discusses open-plan office theory, taking into consideration noise sources, noise transmission elements, and the people who occupy the offices. The report summarizes the elements that must be balanced to make the best open office design. Owens-Corning Fiberglas Corp., Architectural Products Div.
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Aluminum acoustical ceilings. Eight-page brochure discusses several types of aluminum-clad ceiling panels, perforated and unperforated, to suit various installations. Flush-panel acoustical ceilings have an 80 percent noise reduction coefficient. Ceilings with two-hour fire rating are scrubtable WashAlume® and acoustical Pyroson®. Both of aluminum-clad %-in.-thick water-felted mineral board. Illustrations show panels, typical installations, and details of assembly, lighting integration, and panel construction. Simplex Ceiling Corp.
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(Literature continued on page 250)
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Building materials

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


[Building materials continued on page 252]
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Job Mart continued from page 254

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Thonet Industries ..................................... 95
Marjorie Katz Design ................................. 95
Tile Council of America, Inc. 118, 119
Vansant Duplantis & Co., Inc. ...........................
Turner, Ltd. ............................................. 126
Turner Agency .......................................... 126

Urich Planting Equipment Corp. ......................... 188
Tal, Inc. ................................................ 188
Unistrut—GTE Sylvania ___________________________ 45
Doyle Dane Bernbach, Inc. .............................. 45
United Airlines ......................................... 64
Leo Burnett U.S.A. ...................................... 64

F. G. Co. .............................................. 118, 119
Marstrat, Inc. ..................................... 118, 119
U.S. Gypsum Co. .................................. 118, 119
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F. G. Co. .............................................. 118, 119
Marstrat, Inc. ..................................... 118, 119
U.S. Gypsum Co. .................................. 118, 119
Marstrat, Inc. ..................................... 118, 119

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IFC ................................................. 118, 119
Gleno, Bozell & Jacobs, Inc. ............................ 118, 119

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Turner Agency .......................................... 126

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United Airlines ......................................... 64
Leo Burnett U.S.A. ...................................... 64

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Marstrat, Inc. ..................................... 118, 119
U.S. Gypsum Co. .................................. 118, 119
Marstrat, Inc. ..................................... 118, 119

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