Progressive Architecture

December 1976 A Penton/IPC Reinhold Publication

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

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

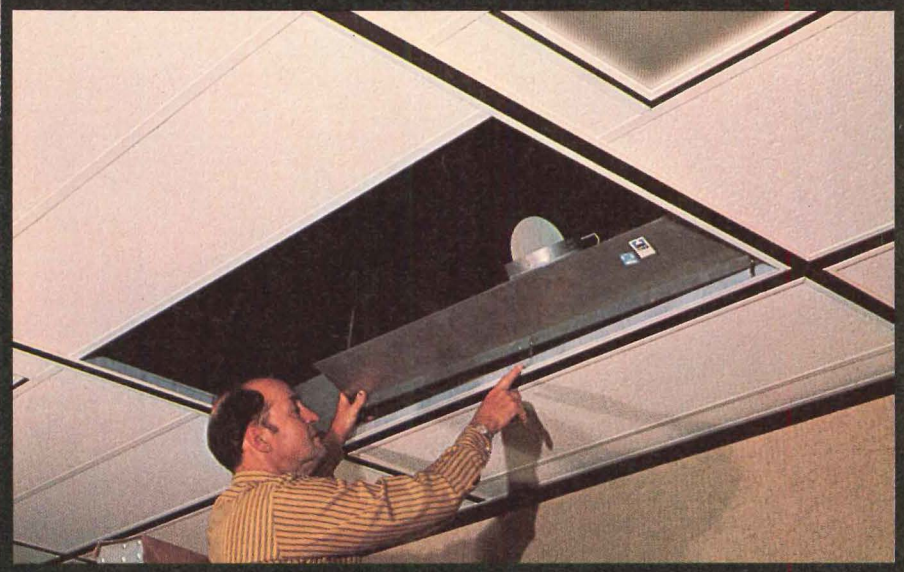
The Synercon 60 Ceiling System from Armstrong is all new from the grid to the board, from the lighting options to the air handling. More important than even its newness, however, is its innovation. Innovation that serves to increase design flexibility, decrease energy consumption, and enhance lighting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

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

With the Synercon 60 Ceiling System, h ever, that's only the start. Because there are two ot lighting options as well. The newly designed reces troffer you see above that also saves energy becaus normally requires fewer fixtures than competitive s tems. And the energy-efficient sodium fixture has b

ing includes 14″ x 48″ troffer (2- or 3-lamp) with standard
larized lens; parabolic louvered fixtures (8- or 16-cell).

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



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

ecially designed to control brightness without seri-
sly reducing the lamps' efficiency. Optional polar-
d lenses with these fixtures can further lower energy
quirements as well as improve lighting quality by
ducing veiling reflections.

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

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

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

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

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

FROM THE INDOOR WORLD® OF
Armstrong

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Quiet Zone® II flooring from Armstrong. A combination of cushioned comfort and vinyl practicali that adds up to one beautiful prescription.

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

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

ı Quiet Zone II, practicality is built right in along with all its ɔenefits. Seams are readily sealed to provide essentially a ess floor. Spills wipe up, promoting constant cleanliness. ; for meeting Hill-Burton requirements, Quiet Zone II has TM E-84 flame-spread rating of 75 or less and an average moke density of 450 or less — as well as a Flame gation Index of less than 4.0 in the UL-992 Chamber test.

Quiet Zone II comes in rolls six feet wide and up to 75 feet long; in three different designs — Random Texture, Houndstooth Check, Grand Central; and in a total of 13 colorings. One of which can make this remarkable floor covering fit like the beauty it is into the beauty of your surroundings. To learn more, write Armstrong, 310 Watson St., Lancaster, Pa. 17604.

FROM THE INDOOR WORLD® OF Armstrong

December 1976

Progressive Architecture

Cover: At Sheridan College in Oakville, Ontario (p. 50), dark, protruding exterior panels diminish buildings' scale. Photo: Applied Photography.

Penton/IPC

Progressive Architecture is published monthly by Reinhold Publishing Company, Inc., a subsidiary of Penton/IPC. Philip H. Hubbard, Jr., President; Harry I. Martin, Vice-President. Penton/IPC: Thomas L. Dempsey, Chairman; Sal F. Marino, President; N.N. Goodman, Jr., Benjamin L. Hummel, Joseph P. Lipka, Paul Rolnick, Executive Vice-Presidents.

Executive and editorial offices, 600 Summer St., Stamford, Conn. 06904 (203-348-7531).

For all subscription information write Circulation Dept., Progressive Architecture, 614 Superior Ave., W., Cleveland, Ohio 44113 (216-696-0300). When filing a change of address, giv former as well as new address, zip codes, and include recent address label if possible. Allow two months for change. Subscriptions payable in advance. Publisher reserves right to refuse unqualified subscriptions. Professional rate ($7 per year) is available to architectural and architectural-engineering firm personnel and architects, designers, engineers, and draftsmen employed in allied fields. Professionals outside U.S. and Canada $18 per year. Nonprofessionals outside U.S. and Canada $30 per year. Single copy $3, payable in advance. Indexed in Art Index, Architectural Index, Engineering Index. Second-class postage paid at Stamford, Conn. and additional offices. Volume LVII, No. 12. Printed in U.S.A.

Soundsoak™ Wall Panels from Armstrong. Their quiet good oks are almost as pleasing as their acoustical efficiency.

The wall that contributes to beauty doesn't always con- te to silence. Carpeting or other fabrics, for instance, look terrific, but their effect on interior noise leaves a lot e desired.

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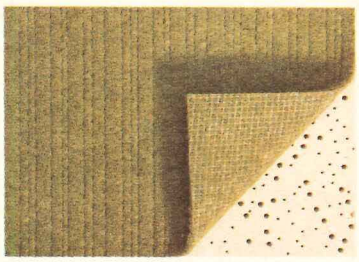

Soundsoak Wall Panels are 30 inches wide and 9 feet high. They can be easily installed on interior plaster, drywall surfaces, brick or block walls by simply attaching aluminum splines and locking the panel edges around the splines for total concealment.

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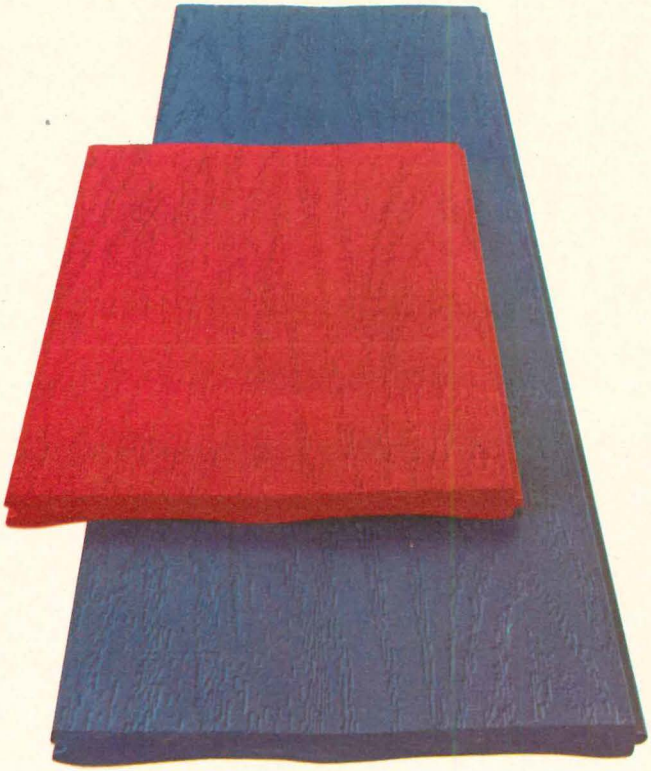

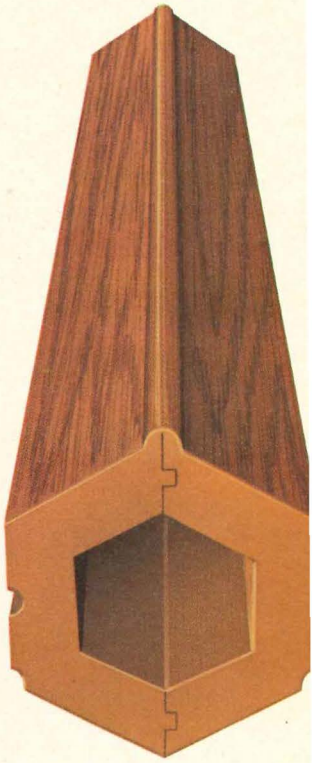

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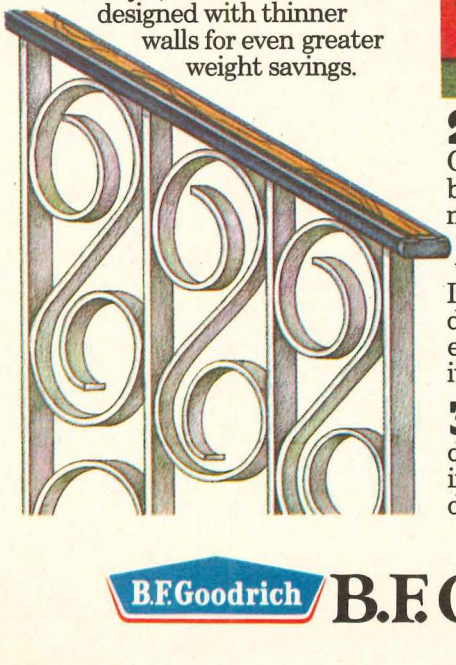
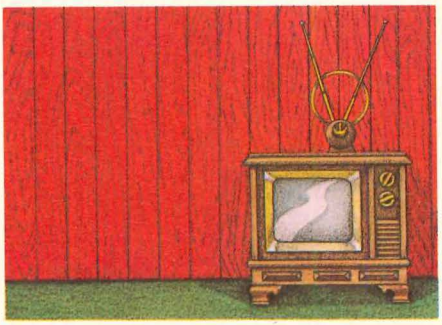
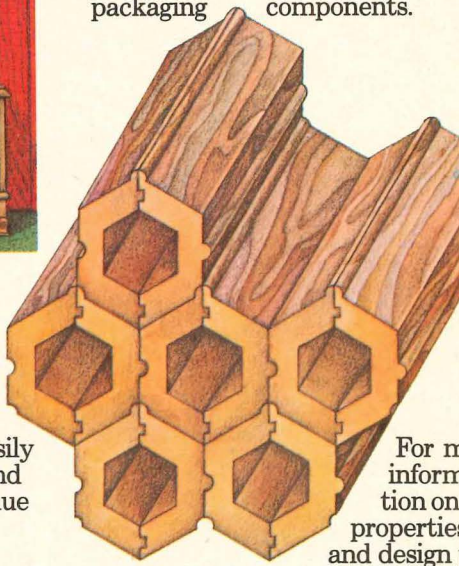




2. Tongue-and-groove board of Geon 87001 rigid cellular vinyl boast some advantages including: moisture resistance, thermal properties, visual appeal, light weight, and a broad color range. It's electrically non-conductive, easily decorated (such as embossing). And easily worked – nail it, screw it, glue it, saw it.

3. A bee hive? Could be. Unusual design possibilities are endless. Snap-in or interlock configurations can be designed in numberless ways. For grille work, decorative patternwork, packaging components.



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Pre-inaugural auguries

December 1976

In this month's News Report (p. 25), we have assembled for you some of the latest forecasts of construction activity over the short-term future—the period so critical to just about everybody in the field of architecture. And the outlook is—at long last—positive. Responsible economists and other prognosticators seem to be in virtual agreement that the Western World's economy will inch steadily upward—wavering a bit some months—for the next year or more. And next year, this slow recovery should finally yield noticeable increases in design and building.

Economist Robert Dederick of The Northern Trust Company, Chicago, summed up the outlook neatly before a Producers' Council meeting in September. "Dederick's Law" (one of his many handy rules): "Once under way, expansion will persist, unless something happens."

Economist Sidney Jones of the U.S. Treasury Department, speaking in October before the PC's annual meeting, went beyond commenting on the building outlook (see p. 28) to explain some of the long-term weaknesses besetting our economy. According to Jones, the U.S. now ranks *lowest in the world* in the rate of capital investment as share of gross national product; we also rank last in rate of increase in productivity. These sad ratings may begin to improve as recovery allows capital projects to go ahead and gives workers on the pay-roll more to actually *do.* But subnormal performance in these areas will continue to slow down recovery and prolong the unemployment problem. Improvement in employment will be, he acknowledged, "too slow for anyone with social sensitivity." Finally, Jones reminded us that economists cannot, by themselves, *change* any priorities—merely take them into account and make recommendations, which business and government leaders may not accept.

Now, of course, we can look forward to—or stoically endure (your choice)—a new set of leaders in Washington. What—everybody is asking—will the Carter presidency mean to *us*? For one thing, it won't change the volume or type of construction to any significant degree for the next 12 months, since federal initiatives will not come instantly—or have instant effect. In the longer run, a democratic administration is likely to have a stimulative effect on construction, since it will be more favorable to public programs that involve construction; McGraw-Hill's annual forecast (made before the election) said plainly that a Carter victory would tend to increase construction. One advantage of federally-sponsored or subsidized building programs for architects: though they may involve years of planning before actual construction, the architect begins to benefit at the earliest stages.

We have heard—from our Washington correspondent and others—that Carter is likely to make departmental appointments based strongly on *expertise,* as against political or philosophical accord. "Top-notch administrators" are expected—but then architects who remember them from previous administrations are bound to greet the news skeptically. On the negative side—at least in the view of organized architects—Carter is apparently committed to legalizing common situs picketing on construction sites, a position that could bring on more delays at the job site. For the moment, however, construction labor seems in no mood to obstruct any available work.

Whatever architectural work turns up out there, you can be sure that competition for it will be severe. At this point, big prestigious firms are going long distances to compete for commissions they would have scorned until recently. And clients are scrutinizing their qualifications—demanding documentation of their capabilities. It matters a lot today—inordinately—whether the firm has done this type of work before. Design reputation alone—to the despair of many prestigious firms—is being underrated in many of these contests. And, needless to say, much potential income is being spent in advance by firms scrambling after work. If fee becomes one of the competitive considerations—and it does—the chance of coming out ahead on the job declines further.

In the coming months, opportunities should become more numerous. And—following the predictable spurt in single-family house construction—remaining growth will be in areas demanding full architectural services. Competitive pressure will persist, and architectural employees will be up against very cautious hiring policies. But signs are finally favorable: for many of you, this new year can turn out to be a prosperous one.

John Morris Dixon

Views

On the beach

Your critique of William Morgan's recent condominium project in Maryland and its comparison with Ricardo Legorreta's very fine project in Baja California (P/A, Sept. 1976) was misleading. The weaknesses of Morgan's project had less to do with the architect than with the impoverished context (in every sense of the word) in which he had to work. Ricardo Legorreta, as his project so aptly demonstrates, was fortunately working in a more enlightened atmosphere. An examination of the ecological, architectural, and urban conditions in Ocean City, Md. might have been more to the point and certainly more instructive.

Michael A. Manfredi
College of Art, Architecture and Planning
Cornell University
Ithaca, N.Y.

[In our discussion of the Morgan condominiums, we carefully outlined in the opening paragraphs the drawbacks of the Ocean City context, which we also illustrated. We then attempted to analyze fairly the design solution as a typological model that might be applicable to other situations—urban housing, for instance. One of the photos of Cabo San Lucas (p. 71) shows that even that low-density context is no guarantee against obtrusive architecture.—Editors]

Isozaki's bow

It was a joy to see Arata Isozaki's Kitakyushu City Museum on the cover of the September issue of P/A. His work is clearly some of the most original and intriguing being done in Japan and deserves to be shared with American architectural audiences. The comprehensive coverage of his work by P/A is an important contribution to architectural journalism in this country.

Michael Franklin Ross, AIA
Daniel, Mann, Johnson & Mendenhall
Los Angeles, Calif.

Facing East

From an architect who rarely writes letters to architectural journals, your October issue reporting on architecture in the Middle East deserves comment from one who has made many trips to that part of the world. The accurate reporting is excellent and responsible and tells it "as it is!"

Sharon Lee Ryder's expert and beautiful photography of Iran coupled with a superb description of the prevalent confusions and conflicts is excellent.

Suzanne Stephens' tale of Harry Barber is not only a true picture of the architect's frustration and dilemma in those parts, but more importantly, Suzanne reveals herself as an extraordinarily talented writer. Many of those same experiences happened to me on numerous occasions.

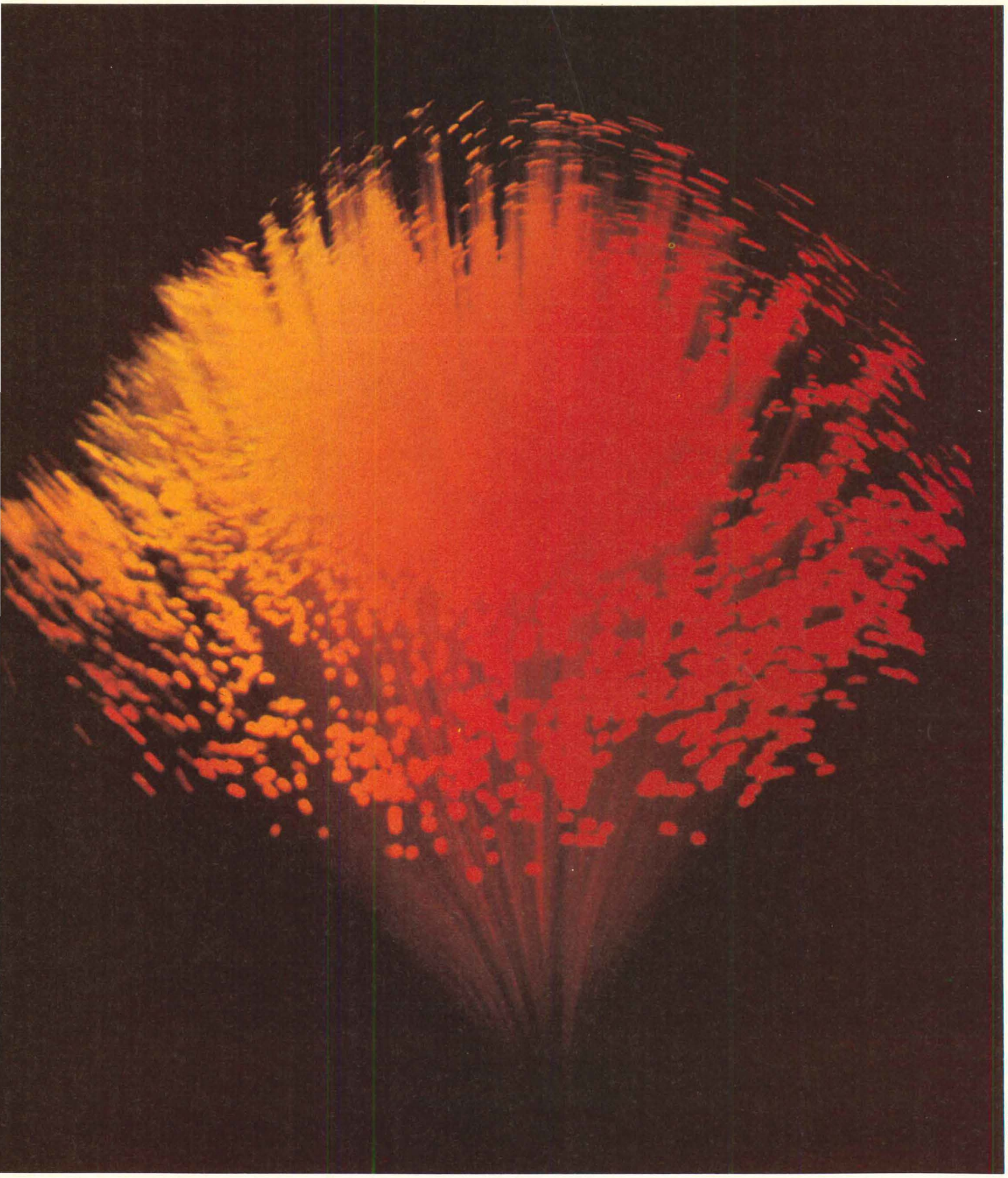
The multitude of profanations concerned with the practice of architecture in those lands is of serious concern to many.

Der Scutt, Architect
New York, N.Y.

Add one more paradox to the "1001 Paradoxes" (Oct. 76)—an editorial expressing no opinion. Your failure to advocate any particular ethical position for architectural practice relative to the Arab boycott is at best confusing and at worst frightening. Your lack of commitment leads me to assume that you are willing to allow Justice Department initiatives and "Gold Rush" economics to determine what is ethical. However, our present Standards of Ethical Practice require as an obligation to the public that "an architect shall practice in a manner that will support the human rights of all mankind and shall not discriminate . . . because of sex, race, creed or national origin." This implies that qualified persons have the right to practice free of such inequities. Without an affirmation of this right, debate of other ethical issues seems quite meaningless.

That is my opinion as an architect. As a Jewish architect, I am hardly reassured by your noncommittal rhetoric—I am concerned that you seem unwilling to encourage my colleagues to fight the inequities that are being peddled along with and as a condition of alluring contracts. It is a sad note indeed that they accept such conditions so easily and in spite of governing ethical standards. Is the paradox, if not hypocrisy, of Jewish principals seeking and accepting work from Arab clients expected to excuse the inequities suffered by those who sympathize with Israel "(i.e. Jews)". It should be obvious from your extensive list of paradoxes that someone else may be singled out tomorrow. Perhaps spreading inequities around a bit will make them more equitable. Then again, those who reach out to us

[continued on page 11]



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JM Johns-Manville

Views continued from page 8

editorially might just inspire us to resist such a blessing. After all, they could happen to single out editors.

Stewart Gordon Straus, AIA
Portland, Ore.

[There is no question that we at P/A are opposed to discrimination ". . . because of sex, race, creed or national origin." We are expecting organizations such as the AIA and the Justice Department to act *against* such discrimination and we may be guilty of giving too little encouragement to such efforts. One problem facing us all is that the discrimination is not clearly defined or demonstrable. The boycott is not being applied rigorously or consistently. Whatever discrimination is actually occurring is concealed, and perhaps all the more sinister for being so. The collusion of Jewish principals and employees in this process is mentioned not to excuse anyone, but to indicate the reluctance of American architects, of any persuasion, to drive away potential clients—whose private dealings are less militant than their public postures—in a time of economic hardship. Inequities in this profession—based on such factors as race, sex, and life style—are *already* "spread around a bit." This is one more sad chapter in a shameful history.—Editors]

Hospital fire strategies

I read with great interest the article "Where There's Fire There's Smoke" (P/A, Sept. 1976). I believe the article is an accurate representation of the total scope and complexity of the problem of life safety in health care facilities and applaud the effort given to portray different viewpoints.

I would like to comment on two specific items within the article for clarification. First is the table which shows a comparison between fire-resistance ratings required by various codes. The hourly ratings shown for the BOCA Basic Building Code are correct, but they represent BOCA's highest or most fire-resistive type of construction (Type 1A). Not all health care facilities are required to be built of Type 1A construction. Depending on the height and area of the building a lower type of construction may be permitted, i.e., a smaller building has a lower occupancy load and lower fire load and may therefore be of less fire-resistive construction.

Second, and more important, is the idea portrayed that horizontal evacuation of a hospital or nursing home to a safe area on the same floor is desirable, ". . . but this presupposes that the institution has a sprinkler system to fight the fire and/or the fire department will arrive before it is too late to control the fire". The concept of horizontal compartmentation is based on provision for an area of refuge created by fire-resistance rated separation walls with opening protectives sufficient to accomplish a) protection of the refuge area from heat and flames for a specified period of time, and b) prevention of the passage of smoke and hot gases from one compartment to another by limiting openings in the wall and by using smoke and draft control doors.

This is not in conflict with Mr. Degenkolb's recommendations for a complete life safety system. A total life safety system should include automatic sprinkler protection, but the area of refuge through compartmentation is not solely dependent on sprinkler protection. Compartmentation (without sprinklers) is used in many multistory buildings and is a concept which is valid from the life safety point of view. Likewise, life safety is a direct function of prompt fire department response in all buildings and the problem of prompt response is no more critical to a compartmented building than to any other building. After all, I would suspect the area of refuge will undergo concurrent evacuation procedures through the exitways provided.

Again, the total concept of life safety in health care facilities is complex and there are no pat answers. I did feel however, that proper credit was not given to compartmentation.

Kenneth M. Schoonover
Staff Engineer
Building Officials & Code Administrators International, Inc.
Chicago, Ill.

Correction

Credits for the Mount Tochal, Tehran project (October P/A, p. 58) should read Marcel Breuer and Robert Gatje, Architects.

Building materials

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

William S. Hart, Sr. Middle School, East Orange, N.J. (p. 56). *Architects: Uniplan, Princeton, N.J.* Reinforced concrete roof and floor: CECO. Acoustic ceiling tile: Armstrong. Cavity wall insulation: Dow Chemical. Roof and deck insulation: Pittsburgh Corning. Demountable partitions: LMT Steel Products. Steel windows: Hope's, Windows. Door hardware: Corbin. Hydraulic elevators: Westinghouse. Fluorescent lighting: Metalux Corp., Lithonia Lighting, Marvin Electric. Plumbing fixtures: American Standard.

Faner Hall (Humanities and Social Sciences Center), Southern Illinois University, Carbondale, Ill. (p. 45). *Architects: Geddes Brecher Qualls Cunningham, Princeton, N.J. and Philadelphia, Pa.* Vinyl-asbestos flooring tile: Armstrong. Acoustic ceiling tile: Armstrong. Roof insulation: Zonolite (W.R. Grace Co.). Built-up roofing: Philip Carey Co. Elastomeric waterproofing: Volclay, Keeper Chemical Corp. Drywall partitions: Wade, U.S. Gypsum. Windows and entrances: Hope's Windows. Hollow metal doors: Superior Fireproof Door and Sash Co. Rubber stair treads and landing mats: R.C. Musson. Locksets: Corbin. Door closers: LCN, North American Door Co., Von Duprin. Side-coiling door: Von Duprin. Paint: Pratt & Lambert, Benjamin Moore, Glidden. Kitchen equipment: Dwyer Mfg. Co. Folding partitions: Modernfold. Lecture room seating: JG Furniture. Elevators: Dover Mfg. Exterior lighting (mercury vapor): Indy Lighting, McPhilben. Interior lighting (fluorescent): Holophane. Electrical distribution: Square D Mfg. Switching gear and transformers: Westinghouse. Plumbing fixtures: Kohler. Flush valves: Sloan. Sprinklers: Stockham. Unit ventilators: American Air Filter. Induction and air-conditioning units: Carrier. Thin-tube radiation: ITT-Nesbitt.

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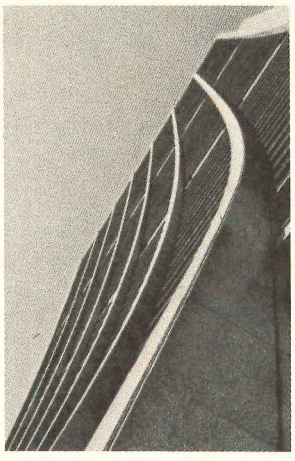

*Engineering News-Record, May 20, 1976

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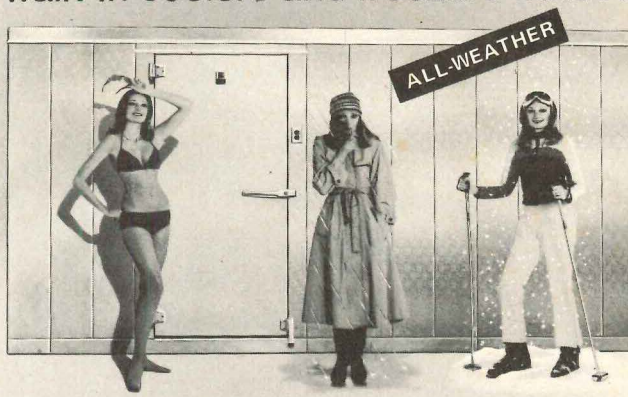
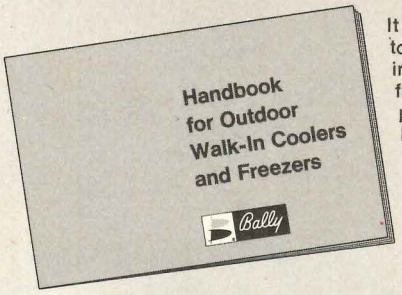
A comprehensive guide for erecting walk-In coolers and freezers outdoo





It contains everything you to know about erecting ins outdoors, including c facts that many refrige people don't even kn has 16 pages of drawing specifications covering crete slabs, weather roofs, electrical and eration characteristics other needed informati

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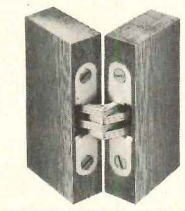

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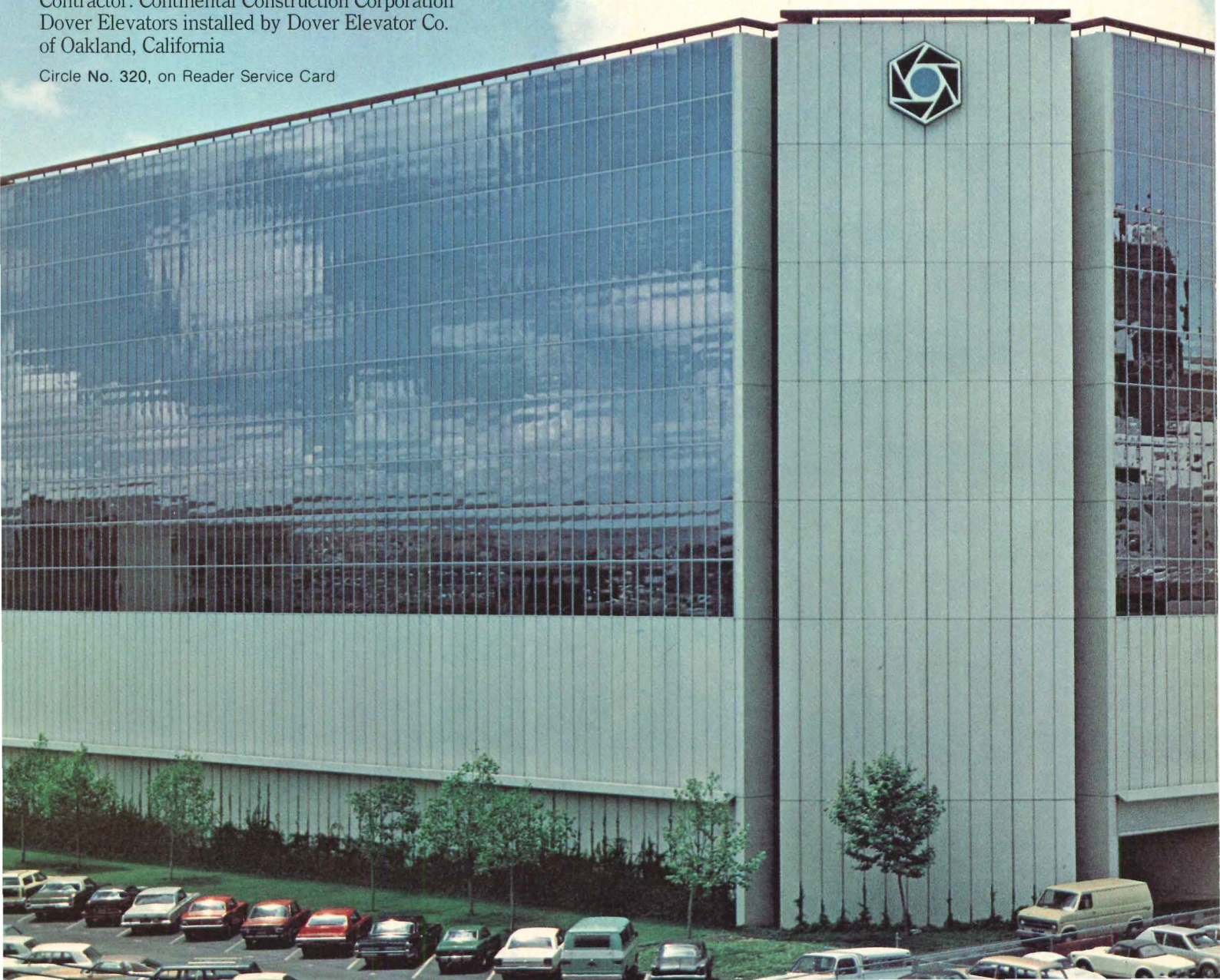
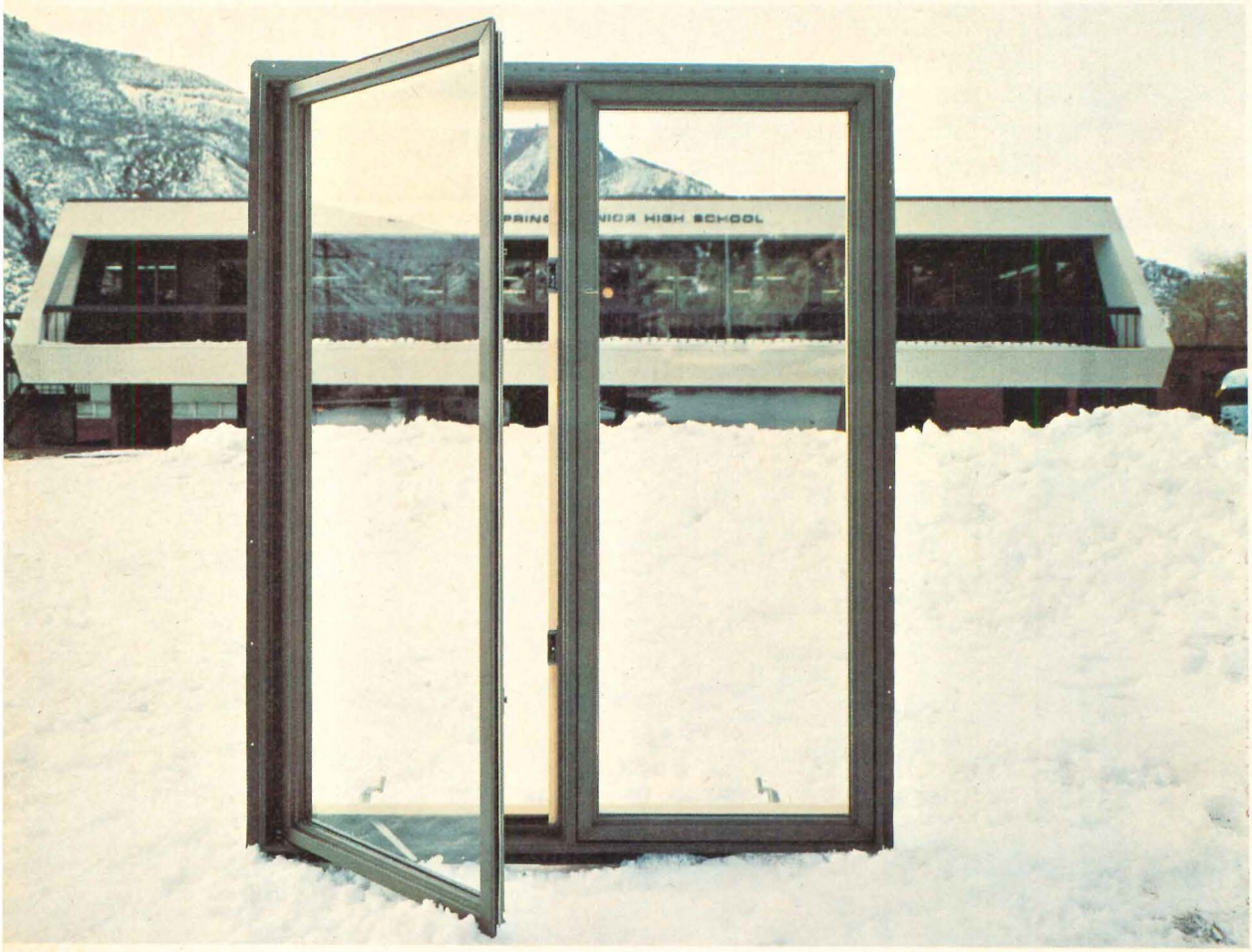
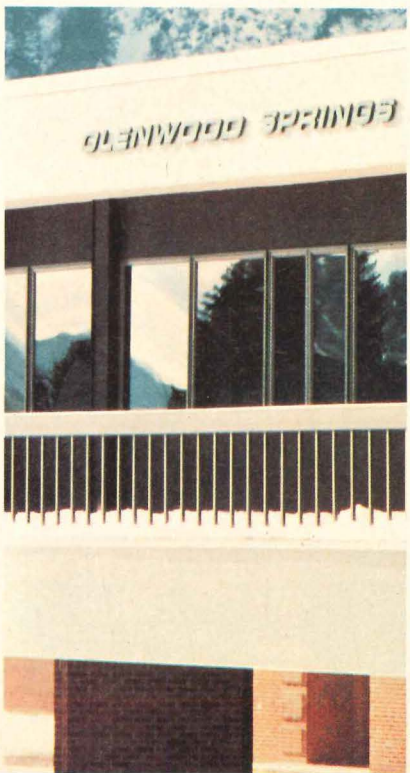
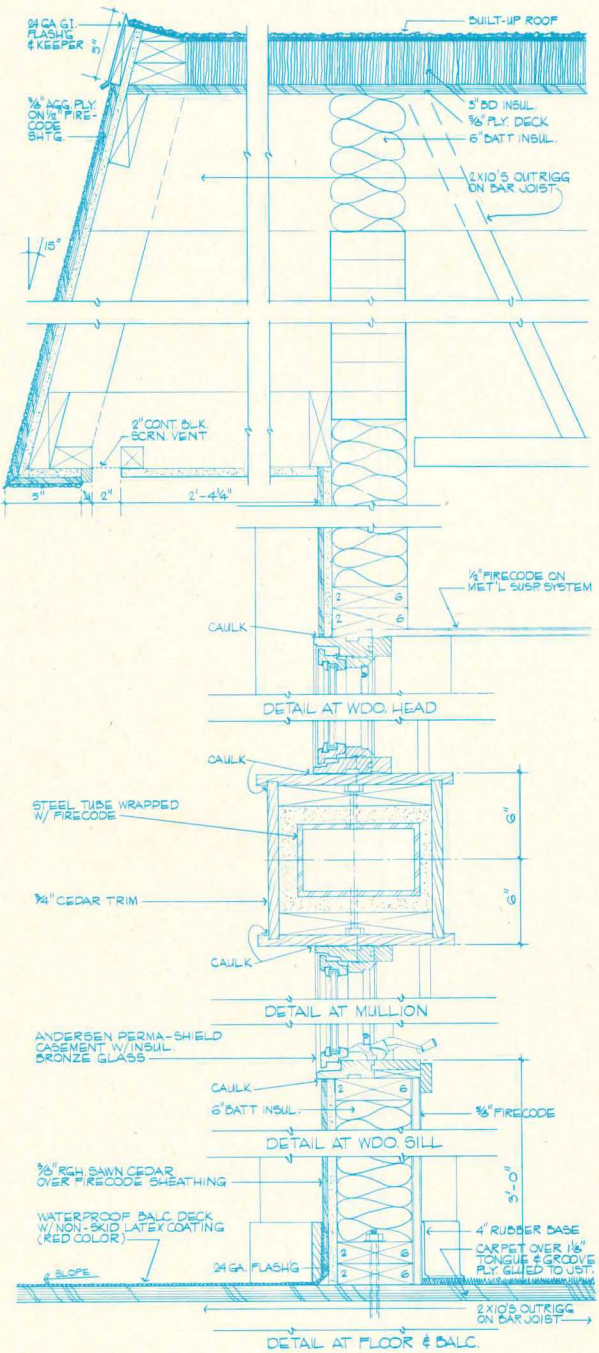





GLENWOOD SPRINGS

At Glenwood Springs High...

Andersen helps the students maintain their link with the land.



Glenwood Springs High School Addition
Glenwood Springs, Colorado

Architect: Lincoln Jones/AIA
Glenwood Springs, Colorado

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Use actual sample for building specifications.

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He knew the students would like how Terratone's earthy color brought the look of the land to the face of their school. And the natural match Andersen's earth-tone hue and the bronze insulating glass made with both the cedar paneling around the windows and the mountain landscape around the school.

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News report

Annual Estimates	1976	1977	1978	1979	1980	1981
Office & Bank Bldgs. — sq. ft. (millions)	108.3	122.2	128.8	135.8	137.1	139.5
Stores & Mercantile Bldgs. — sq. ft. (millions)	191.2	207.9	214.7	222.4	232.5	243.7
Other Commercial Bldgs. — sq. ft. (millions)	155.5	170.8	168.3	172.7	182.2	198.7
Manufacturing Bldgs. — sq. ft. (millions)	153.6	194.3	198.5	196.1	219.8	231.1
Educational & Science Bldgs. — sq. ft. (millions)	138.8	143.3	143.1	144.3	145.3	147.2
Total Non-Residential Bldgs. — sq .ft. (millions) — including bldgs. not included in above categories	968.1	1067.4	1097.2	1097.6	1150.4	1201.7
Housing starts (Total Public & Private SAAR — Thousands)	1503	1717	1670	1724	1902	1987
% Single-family starts	(75)	(69)	(65)	(65)	(63)	(62)

Source: Producers' Council, Inc.—Marketing Research Committee, Oct. 1976

Producers' Council five-year forecast predicts steady, but slow, recovery. Story on page 28.

P/A survey finds mixed '77 forecast

Surfacing from a two-year recession, the position of architectural firms across the country looks strongest in the Midwest, according to findings of a *Progressive Architecture* survey of 58 of the largest firms in the country. The most severely hit region and the slowest to recover is the Northeast, and in between the two are the South and the West Coast. Half the firms queried (29 out of 58) anticipate higher billings in 1977—some expect an increase of more than 10 percent.

Work in the Mideast which promised to supply work for U.S. firms when the domestic economy looked bleak in 1974 actually helped mainly the largest firms. Several firms see other overseas work as offering major opportunities as Mideast commissions level off; areas mentioned include North and West Africa, the Caribbean, Latin America, Indonesia, and Southeast Asia. One big firm predicts an overseas bonanza—most of the commissions coming from U.S. developers.

A rise in the number of rehabilitation/renovation projects appears to have rescued some smaller firms. Specialization was the reason given by a dozen respondents to their staying power, and the area most mentioned was health facilities. Sometimes a firm specialized in an area which dried up—such as projects sponsored by local governments.

Assessments of the economic picture are varied. "It's not a recession but a depression," said a principal in a firm that does over $20 million a year in billings. "We're busier now than we've ever been," said the head of a firm in a nearby city. At least two others reported 1976 the best year they've ever had.

"We're looking for a very good year," said the spokesman for a firm in Florida, a state which suffered worse than others in the South. Another Southern state, Texas, hardly knew there was a recession, some say. However, one Dallas firm contacted apparently didn't share in the abundance of work. Two hundred architects in that city were unemployed at one point, said a principal of a firm there which dropped 40 percent in its billings over a recent 12-month period. Houston, the most prosperous area, is described as "very competitive." Three hundred architects reportedly responded to an employment ad run by one office.

From the West Coast comes a report that it will take California another year or two to recover. Washington state activity seems to have stabilized—but no more than that—thanks to Alaska pipeline activity.

Curiously, most architects interviewed told of difficult times for other offices in the area but said somehow their own firm was spared. In the opinion of a few, the recession was strengthening because it allowed them to get rid of dead wood on the staff and hire "first class" talent at salaries far below—as much as half—what was being asked several years ago. Little hiring was reported, even among firms with rising output—indicating caution in re-staffing and/or resumption of full output for those retained through the slump.

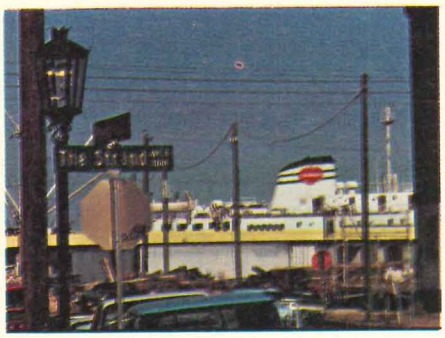
A Chicago architect said the heyday for architects is over, and another in Atlanta said the peak of 1973–1974 will never be seen again. The Chicago architect said his firm, for one, is exercising more discrimination in accepting clients by looking for those who can prove *their* professionalism and reliability. As a result of the architect's "suffering image," he added, Chicago has the highest errors and omissions insurance rates in the country.

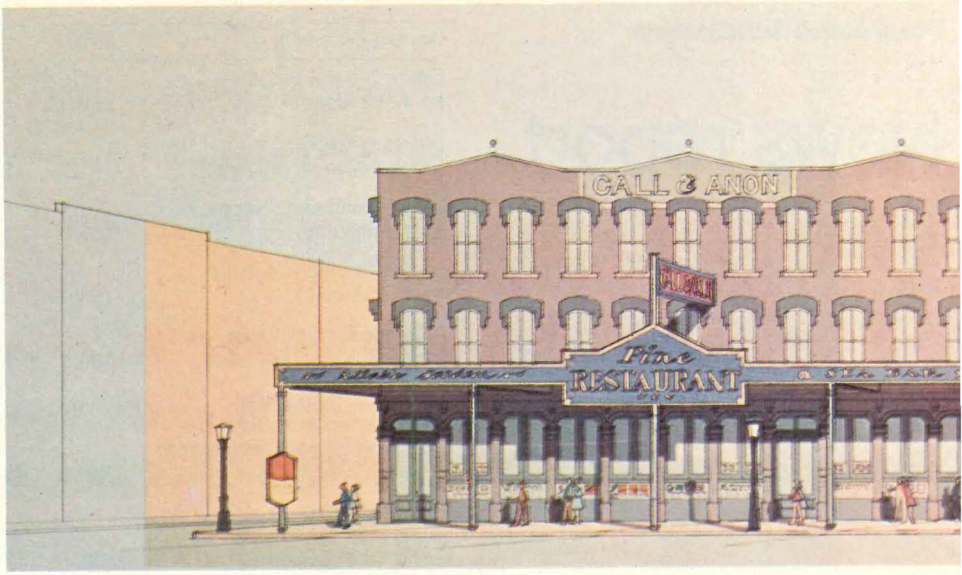
During the slowdown some firms went on the four-day week, and New York architects found themselves with salaries lower than those in Houston. According to a survey of the New York Chapter of the AIA, employment in New York architectural firms dropped 36 percent and business was down 55 percent from 1969–1975. Lack of work in the city led New York firms to enter joint ventures elsewhere. Another source of work has been planning and design for companies moving out of the city. "It's discouraging, frankly," said a principal of a well-known New York partnership. For now, the New York situation seems to have stabilized, with a few firms of all sizes reporting increased activity.

Identifiable trends show renovation and rehabilitation work on the increase, although some large firms seem reluctant to go after it. One building-type category mentioned as prom-

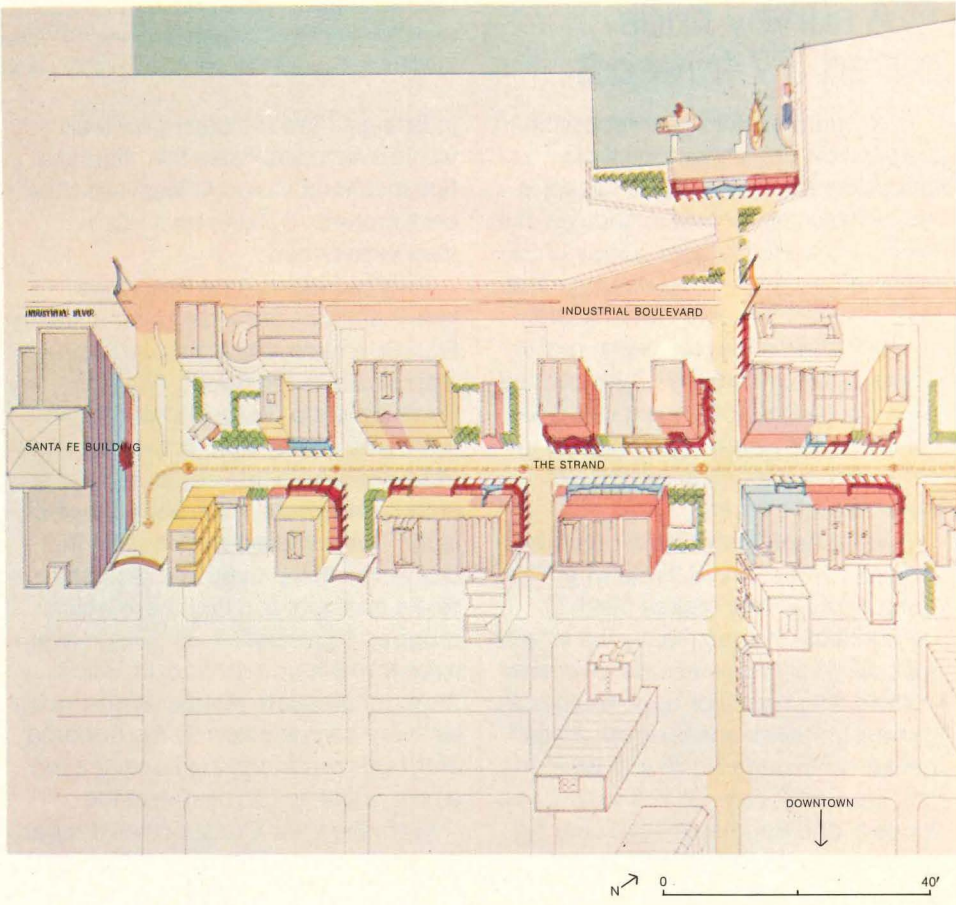
[continued on page 28]

Report from Galveston





Typical street elevation (above) from Venturi & Rauch 'Action Plan for The Strand'.



'Action' more than just a name

It's been only a year since public acceptance of "Action Plan for The Strand," a study by Venturi & Rauch of Philadelphia for the Texas port town of Galveston—which has a historic waterfront district known as The Strand (P/A June, 1975 p. 30). But within the year at least a half-dozen buildings have begun to undergo restoration and eight others have been sold for renovation or adaptive reuse—all within the scope of the Venturi plan.

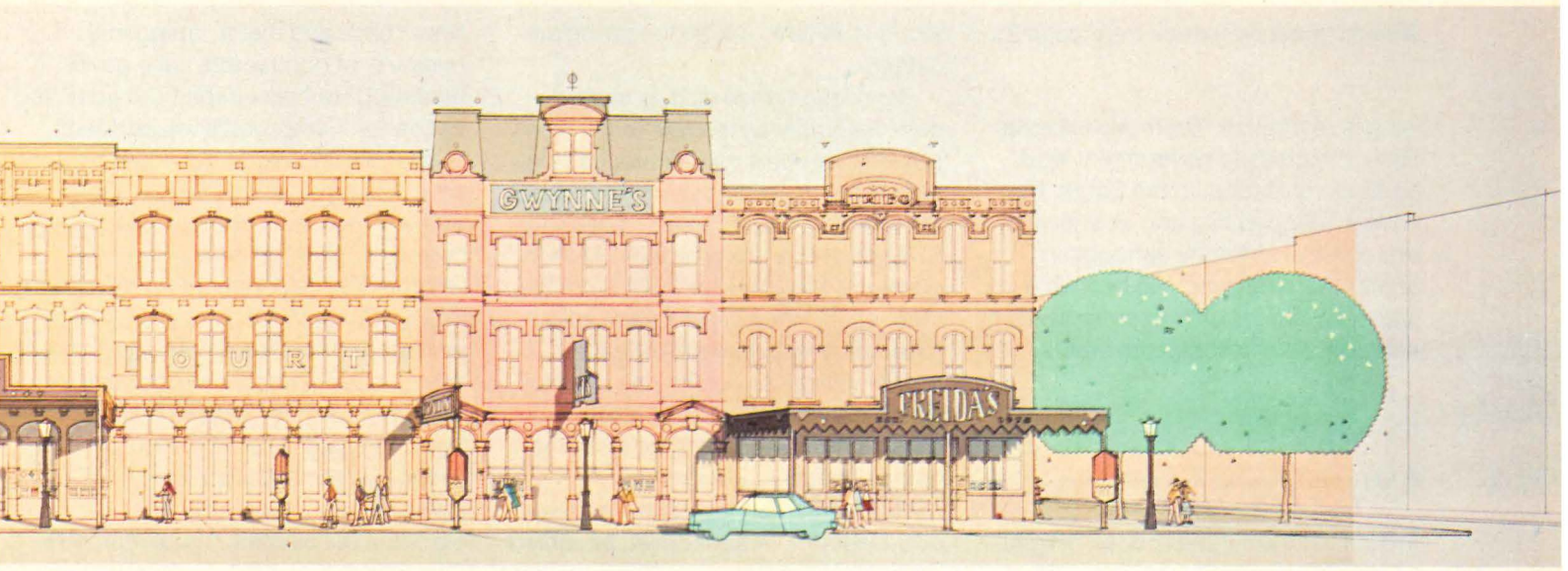
The study was commissioned in 1974 by the Galveston County Arts Council and the Galveston Historical Foundation. Denise Scott Brown was partner-in-charge of the Action Plan, which appraised the situation and sympathetically chose its punches, arguing for improvements which have both immediate and long-range impact. Essentially, the Strand study endorses what already is there and addresses the issue of how it can be enhanced and how to handle any negative factors. But the vitality, diversity, and excitement seen in the Strand are not like that once found in Chicago's Old Town or St. Louis' Gaslight Square.

The Strand is viewed rather as a place functioning for real people; as a regional center for specialty retailing and entertainment; and particularly, as a center for the creative arts. Its proximity (one block) to the Port also adds to The Strand's liveliness. Key to the restoration attitude advocated by Venturi & Rauch is that of using historical imagery ". . . artistically and symbolically . . . artful but impressionistic . . . the effect eclectic rather than pure. . . ."

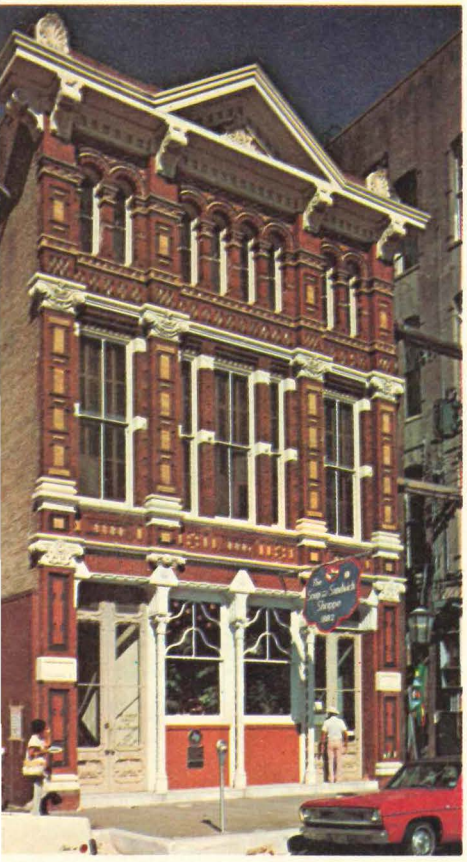
Overall goals of the scheme include a commitment to preservation of The Strand's structures and restoration of their cast-iron façades and linkages with other parts of Galveston by relating both to the wharf area as well as to the downtown. Physical improvements advocated are ". . . those that can serve as catalysts to stimulate further improvements and that lie within the economic means of those who can best carry them out." Historical accuracy was not regarded as either desirable or attainable for the interiors if new uses are to thrive in old buildings.

A color chart was prepared for guidelines and a multi-level system of signage was presented to create not only an awareness of The Strand but also to communicate information about its history and present-day activities.

Conversion of loft buildings into residential units began with the innovative design for the Whiteside Townflats by Ford, Powell & Carson of San Antonio (a firm which had earlier produced a restoration and revitalization study, to which extensive reference was made in the Venturi report). Adjacent to the Whiteside project are two developments designed by Taft Architects of



Color and activity are qualities of The Strand contributing to its potential as a regional entertainment center.



Restored building (left); street festival (above) with Santa Fe Building backdrop.

Photos this page: Peter Papademetriou

Houston: 213-215 Tremont Street and the Rosenberg Building. Altogether they provide a mix of apartments from efficiencies to luxury units with commercial space at street level.

The Galveston Historical Foundation has implemented one of the Action Plan's major recommendations: a Richard Haas-designed *trompe l'oeil* wall mural visually "infilling" a portion of The Strand where a building's cast iron façade had long ago been removed. Also, part of the Art Deco-style Santa Fe Building (recently rescued by the Moody Foundation from possible demolition and now under study by Ford, Powell & Carson) is being used by the Galveston Historical Foundation for a Taft Architects exhibition of Strand revitalization.

While the Venturi & Rauch study has directed activities alongside the Port, residential neighborhoods also have received loving attention (such as the "Silk Stocking District"), and the 1894 Grand Opera House has been taken over by the Galveston County Arts Council and is under design by Hardy Holzman Pfeiffer Associates of New York. First phase reconstruction of the Opera House is expected in the spring of 1977. The Opera House would create one of the first important functional "linkages" proposed by Venturi & Rauch to relate The Strand to the central business district.

The juggling of study and action plus the search for potential developers would seem, after five years, to have paid off for the Galveston Historical Foundation. As *New York Times* critic Ada Louise Huxtable recently observed about The Strand: ". . . art and life turned out to be the same thing." [Peter Papademetriou]

News report continued from page 25

ising is recreation. There are expectations of increased government work, particularly federal, in the South. Few have mentioned housing as showing any signs of strength, although in areas where housing has been at a standstill there is growth potential as financing becomes more favorable.

Producer forecasts of future construction

Insights and estimates concerning future building activity were the substance of two meetings this fall sponsored by Producers' Council: a Construction Marketing Seminar in Chicago (late September) and PC's annual meeting in Phoenix (mid-October). The annual meeting produced, as usual, a five-year forecast compiled by averaging the predictions of marketing experts from several major building materials companies.

Figures excerpted from this forecast (p. 25) represent a virtual consensus on housing starts for 1976 (half over when the survey was made), and then individual estimates vary only about 10–12 percent from average from here on out to 1981; in the nonresidential area, however, figures submitted vary as much as 23 percent from the average for this peculiarly unpredictable year, and then converge into the future, varying about 15 percent from average for 1981.

At PC's September seminar, speakers saw a sustained, but slow, recovery for construction. Industrial construction was cited as promising, because of favorable financing through bond issues in this field, according to Charles A. Ernst of Armco Steel Corporation; public construction (schools, etc.) was seen as continuing a slide that dates from 1968. He foresaw ready availability of loan money, despite heavy federal borrowing.

James Rice of Pease Company cautioned that short-term loan interest rates would rise again before the end of 1977, and stressed the cautiousness of lenders: from now on they are going to be scrutinizing the financial projections of all income-producing properties—and a claim that future operating costs simply will be passed along to tenants will no longer be accepted.

Renovation, Rice said, is viewed quite favorably by lenders today, if improved cash-flow can be proved to result. Morry R. Robinson of the Bureau of Marketing Research estimated that $18 billion of a projected $105 billion construction outlay for 1976 went into renovation. Housing recovery, said Rice, will encounter more local-approval obstacles, but may be spurred by federal schemes to make mortgages less burdensome for first-time home buyers.

At Phoenix, Sidney Jones, a Treasury Department economist, predicted that improvement in the general economy would be slower than expected—"too slow for anyone with social sensitivity." He reminded his audience of the inevitable lags in the effect of federal programs: three to six months for tax revisions, one year for fiscal policy adjustments, about two years before funded programs can be felt in the construction market. Architects, by the nature of the process, might benefit from such programs somewhat sooner.

Outlook as seen by various experts

At the annual Building Products Executives Conference held by McGraw-Hill, publishers of the Dodge Reports, outgoing Commerce Secretary Elliot Richardson put in a plea for President Ford's economic policies, which have reduced inflation "more than half." He said the $92.9 billion construction put in place through August was 10 percent higher than in 1975.

Rep. Thomas Ashley (D-Ohio), chairman of the Subcommittee on Housing and Community Development of the House Banking, Currency, and Housing Committee, said that the U.S. Department of Housing and Urban Development is considering a block grant revenue sharing system similar to the two-year-old community block grant program, and that by late 1977 or 1978 there will be comprehensive new legislation on systems housing and inner city neighborhood revitalization.

Robert Georgine, president of the AFL-CIO's Building and Construction Trades Department, reported that 20 percent of the construction labor force has been unemployed (67.5 percent in New York), and that a "staggering number" of contractors have gone bankrupt. He blamed the Ford administration for these conditions and said, "Our industry should no longer be the whipping boy to slow the economy."

One of the most enthusiastically received speakers at the conference, George Sternlieb, director of the Urban Policy Research Center at Rutgers University, said one reason the South has experienced an economic boom in recent years is that it kept re-electing legislators with seniority who could influence government spending. He predicted continued out-migration from big cities but warned, "Look out; now there's a stampede."

Multifamily housing leads in 1977

The somewhat slow construction recovery—led for the past year by single-family residential building—will be followed in 1977 by gains in multifamily residential and retail construction. As a whole, construction industry dollar output will rise 12 percent, to $114.3 billion. These predictions and observations were voiced by economic analyst George Christie, vice-president and chief economist of McGraw-Hill Information Systems Company, at his company's annual Building Products Executives Conference held this fall in Washington, D.C.

"This is the most optimistic outlook I've talked about in a long while," Christie told the gathering of business men and women. "More of 1977 gains will be real—not just paper."

A hot issue besides the 1977 construction forecast was the effect of the Presidential election on the economy. Christie said Carter's election would produce no significant economic changes next year but probably would around 1978. A McGraw-Hill editorial panel thought Carter's policies would be slightly more inflationary than Ford's; the Ford administration, Christie said, didn't give the kind of stimulus, such as fiscal policy or federal programs, that the construction industry traditionally requires.

The Dodge/Sweet's Construction Outlook shows for the Northeast a 14 percent increase in construction dollars to be spent in 1977 over 1976 [continued on page 32]

Robin Hood Dell West, Philadelphia, Pa. • Architects: John H. MacFadyen and Alfredo De Vido, New York • Associate Architect: I. Demchick, Philadelphia, Pa. • Roofing Contractor: Warren-Ehret-Linck, Philadelphia, Pa.

TCS...THE LOGIC OF ITS USE

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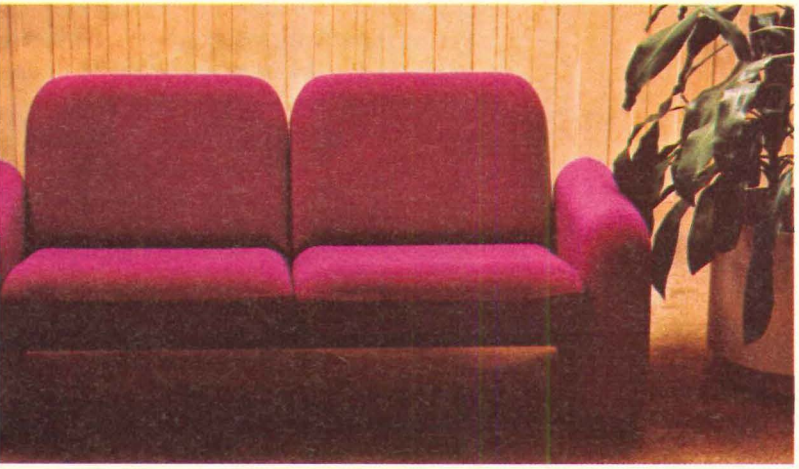

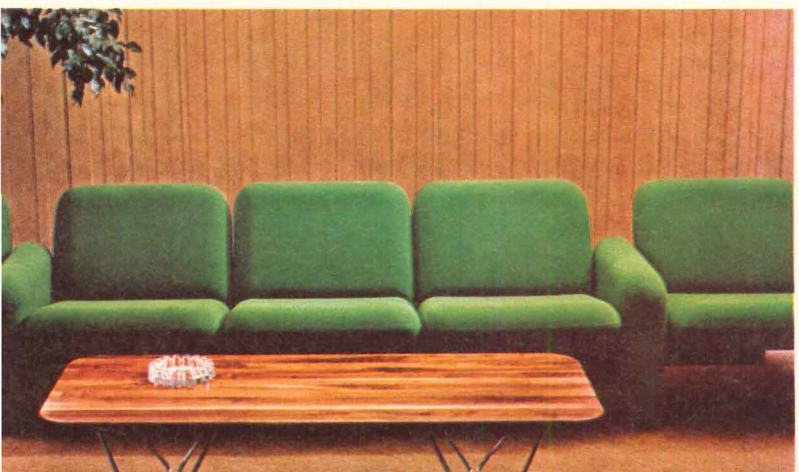

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Ray Wilkes designed the Modular Sofa Group to be exciting to the eye and welcoming to the body. The urethane foam is molded round and soft and clean and amazingly supportive. Built-in tables may be interchanged with any seat unit to provide a surface of soft black vinyl, white plastic laminate or solid walnut. Low, occasional tables with the same top finishes are also part of this handsome family.

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News report continued from page 28

(from $17.4 billion to $19.9 billion). The Midwest will see a 12 percent increase (from $26 billion to $29.2 billion); the West also a 12 percent rise (from $24.7 billion to $27.7 billion); and the South an 11 percent increase (from $33.7 billion to $37.5 billion).

Apartment building, of all construction types, will undergo the biggest proportional gain—50 percent—in the coming year, followed by a rise in retail and other commercial construction by 22 percent. Single-family home building will hold steady at $36.3 billion. Significantly, while the dollar value of nonresidential construction will rise by 10 percent, the amount of square footage built also will rise by 9 percent, showing that the inflation rate is expected to be almost zero.

The construction industry is on its way back, but it's still behind, in square footage, the pre-recession peak of 1973.

Philharmonic Hall's fourth debut

Susanne Stevens

New Avery Fisher Hall

Nothing achieves public recognition like an opening, and the Lincoln Center hall where the New York Philharmonic performs has had four. Since its first opening in 1962, the hall has undergone substantial renovations to correct acoustical problems, and each time has re-opened with fanfare. In 1975, management decided to have all work completely removed and to start afresh with a new architect, Johnson & Burgee of New York, and acoustical consultant, professor Cyril Harris (P/A May 1975, p. 23). The results, unveiled in October with the opening of the Philharmonic's 1976-77 season are, by most reports, a clear improvement.

The appearance of Avery Fisher Hall still is subdued—none of the crystal and crimson opulence of the neighboring Met opera for the orchestral crowd.

The focus on Philip Johnson's interior is the stage itself, paneled in a dark oak studded with brass fasteners. The boxed tiers also are framed in gold with rows of incandescent lights, and the upholstered seats are gold velvet. The sculpted heavy plaster ceiling is cream-colored.

The Daily News critic said the hall is much better than its predecessor and would improve with aging. Harold Schonberg, chief music critic of *The New York Times,* wrote that the new hall—"infinitely superior to the old"—has a cool, clear "modern" sound like Kennedy Center compared to older halls, like Carnegie, which produce warm and velvety tones.

Cooper-Hewitt design museum

Architects played a major role in the opening exhibit, "Man Transforms," of the nation's first museum of design, the Cooper-Hewitt Museum in New York. Of the 10 men commissioned to produce the first show, which will run through Feb. 6, the architects are Hans Hollein, Buckminster Fuller, Richard Meier, Oswald Ungers, Arata Isozaki, and Nader Ardalan. The others are Ettore Sottsass, designer and writer; Peter Bode, writer; Murray Grigor, film director; and Karl Schlamminger, artist.

The museum houses a 79-year-old collection of designed objects assembled by the Hewitt sisters—Sarah, Eleanor, and Amelia. Only a few of these objects were on display for the opening. The first exhibition itself apparently was conceived to set a philosophical theme for design by showing how change, nature, and the creative genius of man interact to produce objects of the man-made environment.

As a showpiece, the exhibition lacks impact—perhaps because there were 10 designers and not one, even though Hollein was in charge. Most of the displays are participatory and look worn or are non-functioning after several weeks of use. The Fuller tetrahedron models are engaging, but probably few walk away from them knowing more than they did before about the mathematical principles.

The Meier word game (picture yourself in a three-dimensional crossword puzzle) was too dark and tight to encourage participants to actually create words with the letters provided.

Cooper-Hewitt's "cage" exhibit by Isozaki.

Overall, the exhibition seemed to depend more on literal effects (filmed sequences and pictorial displays) than design to impress the museum-goer. For example: Hollein's ordinary room with a fireplace in which the "fire" is a TV set showing films of fire disasters. The exhibits have no relationship to their environment, the ornate, dark mansion. There's no special system designed or provided for display.

A symposium was held at the Institute for Architecture and Urban Studies in New York to discuss the museum and its opening exhibit. Lisa Taylor, director of Cooper-Hewitt, noted that while professionals have strongly criticized the show, the public adores it. One person questioned the effectiveness of asking an international group to produce a show for an American museum of design. Others said the show fell into an awkward state of being neither an exhibition of objects (didactic) or ideas (metaphorical). The question of how design should be presented remained unresolved, however.

Flooding devastates Houston art museum

A summer storm that dumped more than 10 in. of rainfall on Houston and caused extensive flash flooding so severely damaged the Contemporary Arts Museum that it's uncertain whether or not the structure will be restored. The parallelogram-shaped, warehouselike museum is by Gunnar

[continued on page 34]

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News report continued from page 32

Birkerts & Associates of Birmingham, Mich. (P/A Mar., 1975, p. 52).

In less than an hour eight ft of water filled the museum's lower level which contained all administrative offices, two galleries, shops, and storage. The total volume of water is estimated at 600,000 gallons. Most of it poured down a rear service ramp, which acted as a culvert from the flooded streets.

Estimates place the total damage from $500,000 to $1 million. Some pieces of art literally were hurled from one end of the building to the other by the rush of incoming water. These works of art represented extended periods of irreplaceable activity on the part of the artists. James Harithas, director of the museum, said that 90 percent of the office equipment, 95 percent of the bookstore, all catalog inventories (representing potential income), all video and audiovisual equipment and archives were lost, along with half of the museum's records.

Museum staff members were confronted by rising water in various parts of the museum. They were forced to swim distances under water to avoid colliding with floating objects and furniture as well as to pass through doorways which were below water level. No one drowned.

Lloyd Koenig

Broken sculpture in flooded Houston museum.

Many staffers returned to rescue the art: a large Dorothy Hood painting was ripped from its stretcher to be carried up the main public stair—the only unflooded means of egress. Soaked drawings, paintings, and photographs were sent across the street to the Museum of Fine Arts (designed by Mies van der Rohe) where the large spaces eased the crisis, and to the nearby Institute for the Arts at Rice University, where the salvaged pieces could dry in air-conditioned environments.

Spokesmen for the museum have been unable to answer the question of whether or not the controversial Birkerts design was a contributing factor to the extensive damage.
[Peter Papademetriou]

AIA names 1977 honor awards jury

William Turnbull Jr. of San Francisco has been named jury chairman of the American Institute of Architects 1977 Honor Awards program. Turnbull was a member of the *Progressive Architecture* 1976 Awards jury. Serving on the jury with Turnbull will be Lewis Davis of New York; Henri Jova of Atlanta; Charles McAfee of Wichita, Kan.; and Jann Wolfe, student at the University of Pennsylvania at Philadelphia.

Ralph Rapson of Minneapolis has been appointed jury chairman of the 1977 Honor Awards for Extended Use. Members of the jury will be O'Neil Ford of San Antonio; Huson Jackson of Cambridge, Mass.; A. Quincy Jones of
[continued on page 37]

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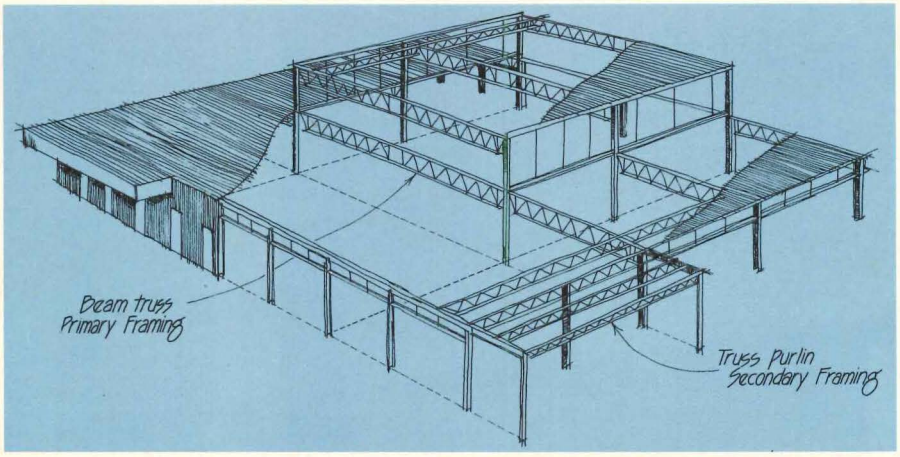

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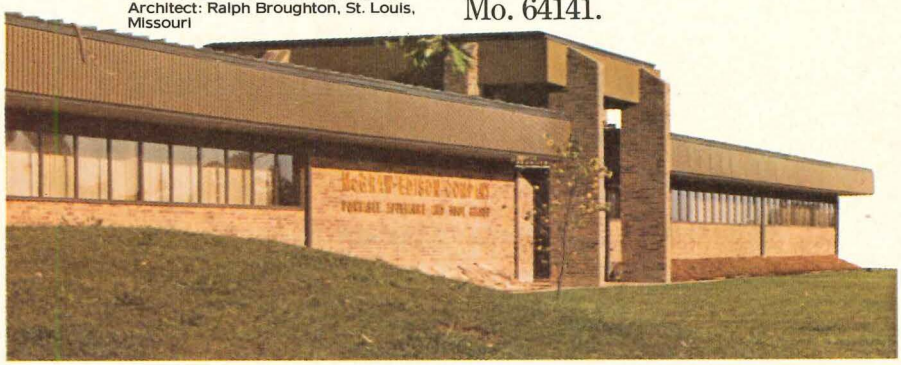

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News report continued from page 34

Los Angeles; and Kyle Hallsteen, student at Washington University, St. Louis. This is the second year the AIA has held an honor awards program for projects which involve rehabilitation and reuse of older buildings. Awards will be presented at the AIA convention, June 5–9, in San Diego.

AIA blackballs Brunelleschi

With the U.S. Department of Justice calling such traditional professional practices as the lack of advertising an unlawful restraint of trade, debate at the recent Illinois State AIA convention focused on one particular break with tradition: the volatile subject of the architect as contractor.

"Brunelleschi could never have been a member of the AIA or have obtained liability insurance," declared Chicago architect John F. Hartray, who spoke eloquently in favor of ethics code changes at the American Institute of Architects national convention.

"Brunelleschi," exclaimed Hartray, "served on the building committee of the Florence Cathedral and gave not just free sketches but a 1/12 scale model of his design to promote his services. When he finally was hired, he not only designed and engineered the cathedral but also ran the scaffolding and marble quarrying, and who knows what else. Out of all that chicanery, we got the Renaissance." The AIA today, he said, gives gold medals all the time to foreign package dealers.

Hartray's analogies to history and foreign practice where the architect is still the master builder were well-taken. Leonard Currie spoke of Nervi, Candela, and Eiffel, whose works never would have been realized if they hadn't been builders as well as designers.

The debate continued for two hours; it could have lasted for six. The mood swung from that of indifference to an eagerness for change. Few of the staunch traditionalists who seemed to dominate in Philadelphia raised their voice. Perhaps recession had mellowed them. [Nory Miller]

Ms. Miller is managing editor of Inland Architect *and is recipient of a Graham Foundation study grant.*

San Diego AIA design awards

New in design awards programs of the American Institute of Architects was a recent entry by the San Diego chapter of the AIA: the Spreckels Building designed in 1912 by Harrison Albright in what he called the Chicago School style. The awards jury responded by giving the building a special honor award—for just being there—in the 1976 Honor Awards Program of the San Diego chapter.

Located in San Diego's downtown, and spared in spite of rapid clearing of the area for new construction, the Spreckels Building preserves a trace of classical detailing in masonry among the curtain walls. Its offices are filled, and the 1900-seat theater, with the best acoustics in town, regularly schedules performances.

Courtesy: Union Title Co.

San Diego's award-winning Spreckels Building.

The jurors noted that in honoring the building they were urging that it be architecturally vitalized. Jurors were Joseph Esherick, Frank O. Gehry, Robert S. Harris and P/A correspondent Esther McCoy.

Other old buildings cited in the program were two owned by the San Diego Federal Savings & Loan Association. The owner received special citations for adapting the structures into company offices: a landmark railroad station in Los Altos and a Victorian mansion in Sacramento. The architect for both conversions was Krommenhoek & Associates of San Diego.

Bookstore a plus for Union Station

The main problem facing Hartman-Cox, architects for the new National Bookstore in the National Visitor Center, formerly Union Station, was deciding how to handle what was a grand

Carleton Knight III

Visitor Center bookstore, Washington, D.C.

architectural space.

This they accomplished with bookcases—black on the outside and bright red inside. The innermost space is a seating area with red couches built into low bookcases creating a library-like atmosphere. This inner space also includes a children's reading area.

Personalities

Reyner Banham has joined the faculty of the State University of New York at Buffalo School of Architecture and Environmental Design.

Charles Moore and **Jurg Lang** have been named joint program heads of the Architecture/Urban Design Program at the School of Architecture and Urban Planning, University of California, Los Angeles.

Joseph F. Morbito, director of the Kent State University School of Architecture and Environmental Design, has received the 1976 Gold Medal of the Architects Society of Ohio.

Jonathan King has been appointed professor of architecture and director of the Architectural Research Laboratory of the College of Architecture and Urban Planning, University of Michigan, Ann Arbor.

Calendar

Jan. 10. Deadline for entries in the Solar Dwelling Design Competition sponsored by the AIA Research Corporation and supported by a grant from Exxon Corporation.

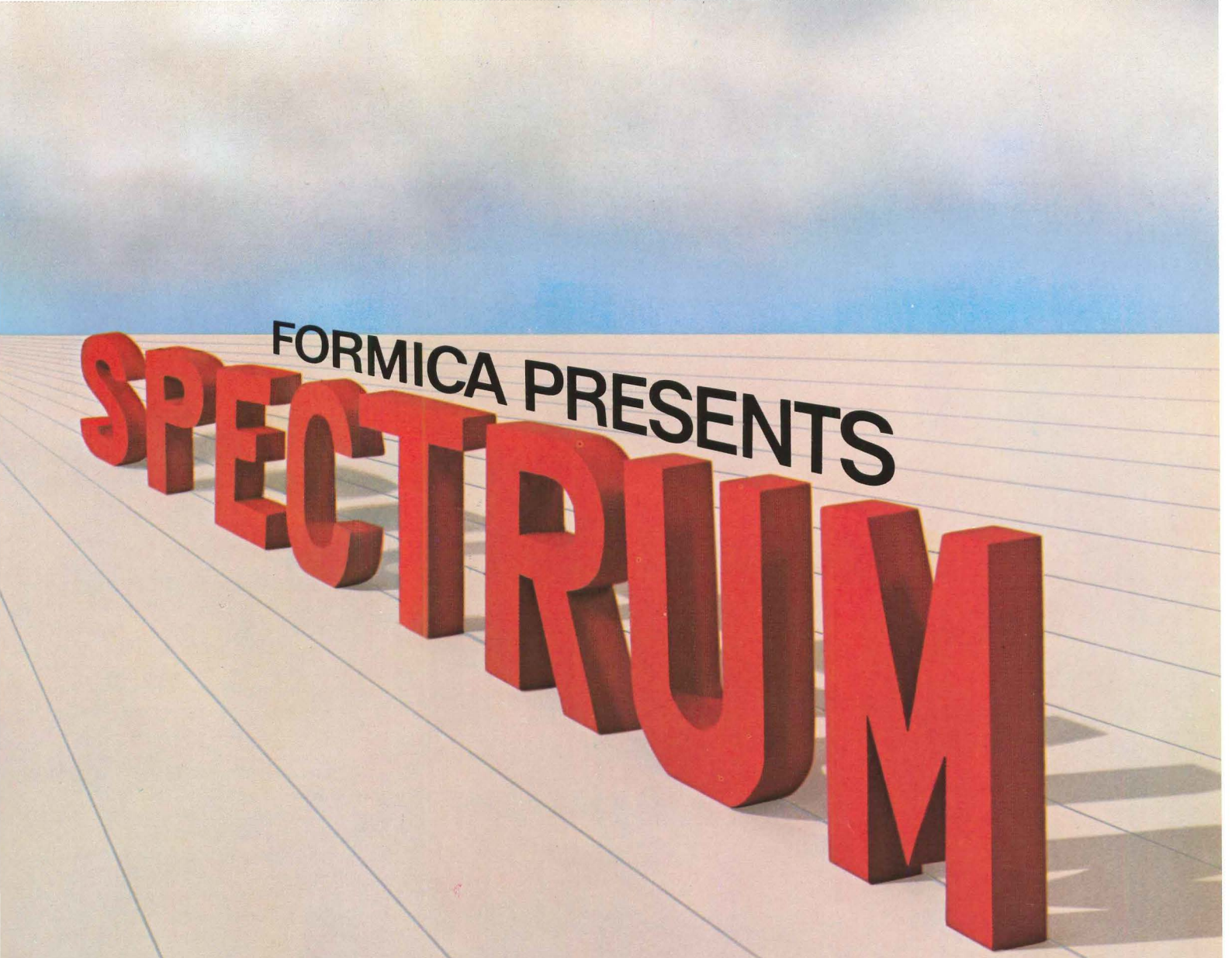
Jan. 12–28. Building Construction Institute, Univ. of Wisconsin-Madison.

Jan. 19–21. Annual Dallas Contract/Design Show (CONDES IV), Tex.

Jan. 21. Deadline for submissions to the 21st R.S. Reynolds Memorial Awards program for distinguished architecture using aluminum. Program is administered by the AIA.

Feb. 24–25. Federal Programs Conference sponsored by The Committee on the Federal Procurement of Architectural/Engineering Services, Hotel Hyatt Regency, New Orleans.

[continued on page 40]



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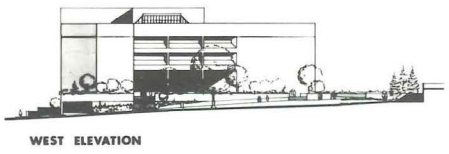
In progress: energy

Interest in energy conservation makes appropriate an 'In progress' spotlight on an important program honoring such projects. In the fifth annual Owens-Corning Fiberglas Corporation Energy Conservation Awards, three architectural firms are winners and three have received honorable mentions. Jurors were Samuel Hack of the Energy Research and Development Administration; architect C. Herbert Wheeler of Penn State University; Charles Schaffner of Syska & Hennessy; William Louie of Smith, Hinchman & Grylls; and architects John Street of John Portman & Associates and Nathaniel Curtis Jr. of Curtis & Davis Architects and Planners.



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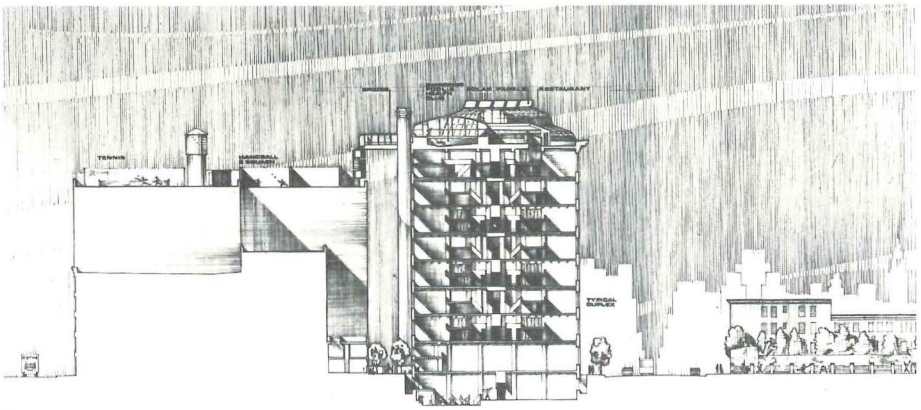

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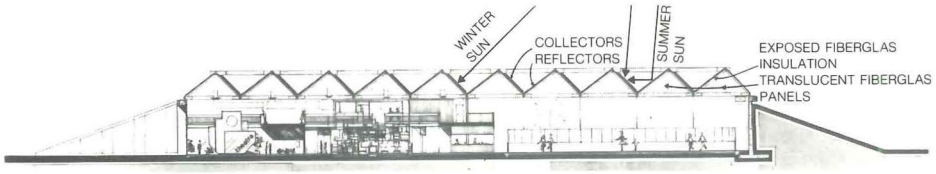

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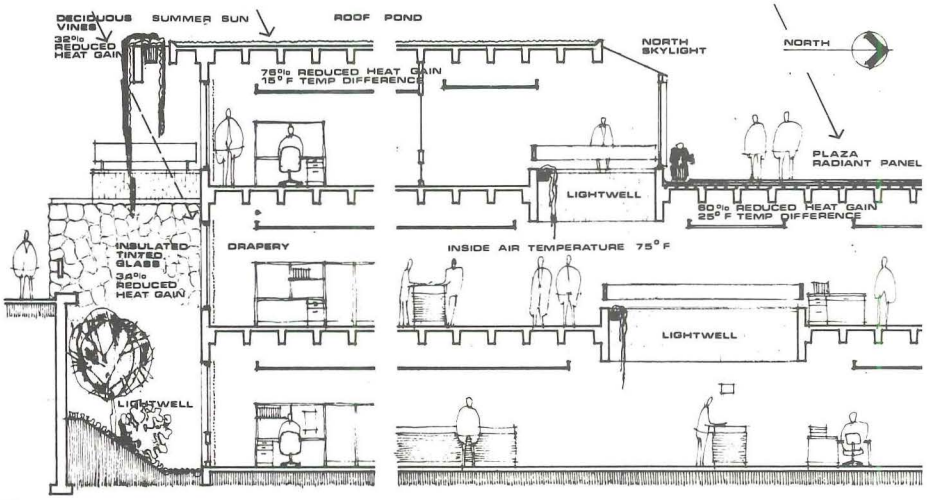

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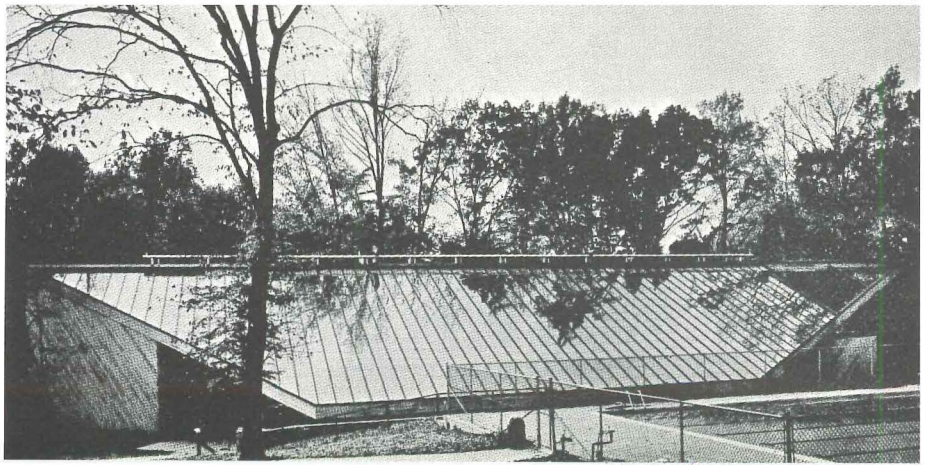

1 Federal building, Topeka, winner. In the category of government projects, the winning firm is Kansas Architects & Planners Associated of Lawrence, Kan. The project is twice as energy efficient as the current standard: one-quarter the energy consumption per sq ft compared to buildings designed before the energy crunch. The architects used existing technology, concentrating on insulation, to achieve economy.

2 Fremont Elementary School, Santa Ana, winner. The award in the institutional category went to Allen & Miller Architects of Santa Ana, Calif., for an underground school built also to meet state requirements of withstanding earthquakes (P/A Oct. 1975 p. 30). The building position shifts heat gain to a later time in the afternoon; earth berms surround a third of the exterior making heat gain or loss negligible in these areas. The roof is used as a play area.

3 Printing House, New York, winner. An adaptive reuse project converting a former loft building into a mixed-use complex of apartments, retail shops, rooftop restaurant, and health club won top place in a special category. The award went to architect Stephen B. Jacobs & Associates of New York and Mountbatten Equities, developer. A 300-panel solar collector on the roof will heat water for a 9000 gallon tank formerly used for the sprinkler system. The project will be completed in July.

4 Community center, Shenandoah, Ga., honorable mention, commercial category. The Atlanta firm of Taylor & Collum, Architects was commended for the design of the Solar Community Center in the new town of Shenandoah near Atlanta. The roof-level solar system in this underground recreational facility resurfaces the ice rink and heats the outdoor pool as well as provides hot water, 95 percent of the heating, and two-thirds of the building's cooling.

5 County service building, Eugene, honorable mention, government category. Unthank, Seder, Poticha, Architects of Eugene, Ore., and Marquess Engineering Co. of Springfield, Ore., were cited for a three-story building for Lane County; the roof contains both a plaza and a pond. Hot water pipes under the plaza reduce heat loss in the winter by 83 percent; the pond reduces heat loss by 37 percent in the winter and heat gain in the summer by 76 percent.

6 Science building, Greenway, Va., honorable mention, institutional category. Arthur Cotton Moore/Associates Architects of Washington, D.C. was cited for the science classroom building at Madeira School in Virginia (P/A Feb. 1976, p. 54). The building was noted for its form-follows-function design evolved from the solar collector. The collector heats 10,000 gallons of water used for hot water and heating, accumulating enough for three days without sun.

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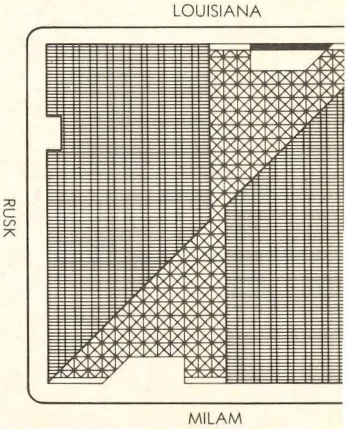

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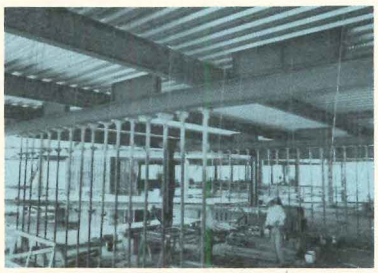

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The stub-girder concept resembles a Vierendeel truss system. The composite concrete and steel floor deck system forms the top compression chord of the Vierendeel and a high-strength steel section forms the bottom tension chord. Stub pieces, shop-welded to the bottom tension chord and connected to the composite concrete and steel floor deck system by welded stub-type shear connectors, serve as the verticals of the Vierendeel.

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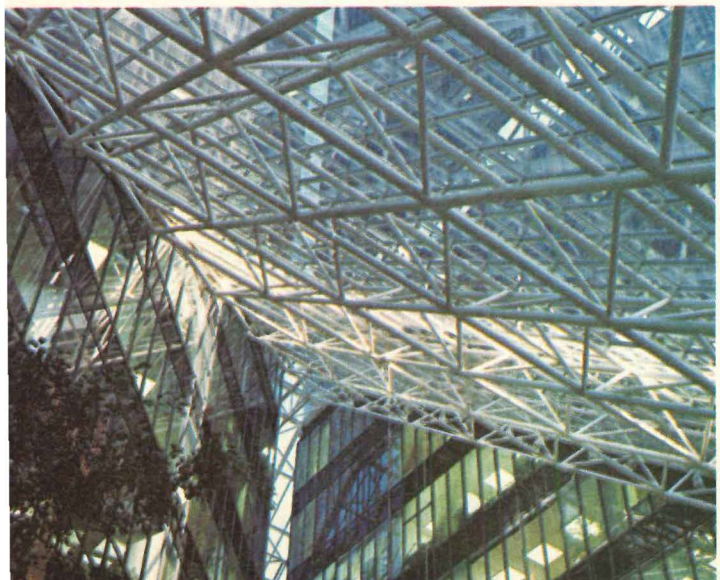

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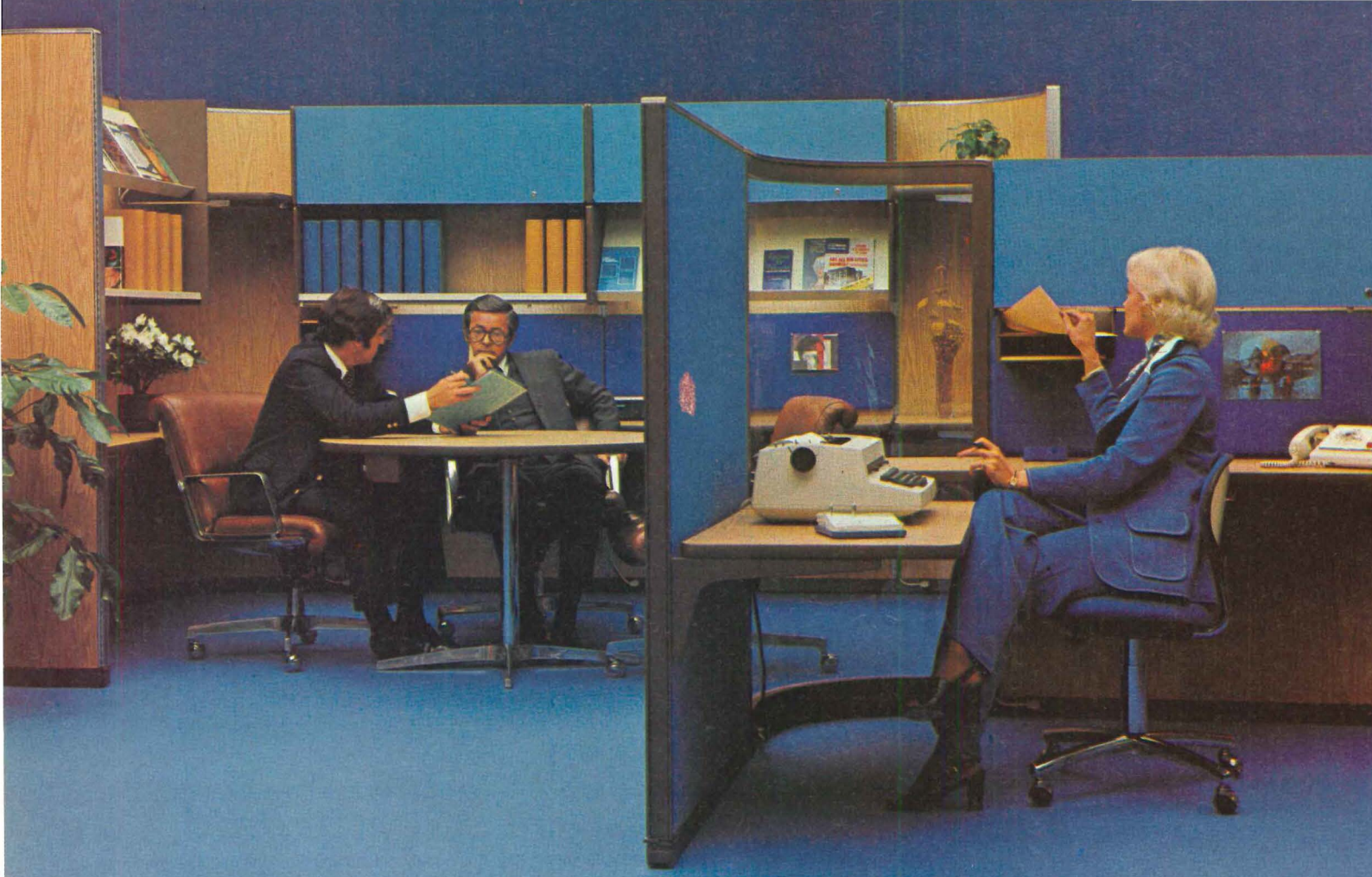

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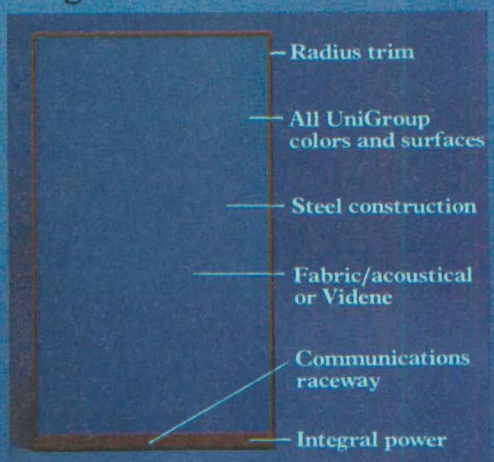

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Faner Hall, Southern Illinois University, Carbondale, Ill.

Social coordinator

All walks lead to the 900-ft-long spinelike structure sited and designed by Geddes Brecher Qualls Cunningham to improve and enhance circulation while defining open spaces on a sprawling, 21,000-student campus.

If the building under discussion doesn't jump out of the site plan at right, the drawing is true to the architects' intentions. For Faner Hall—the new Humanities and Social Sciences Center at Southern Illinois University—represents a conscious continuum between building and campus—a continuum that merges master planning with the building design process, and the completed building with its surroundings.

Robert Geddes' convictions about the landscape-to-building relationship have been set forth succinctly in an earlier P/A article ("The nature of the built environment," June 1974 P/A). He sees man as seeking or creating a "forest edge" situation as his most comfortable habitat. In the university campuses of the American Midwest, this ideal takes the form of groves set on the prairie, of which SIU is a large, luxuriant example. Within this man-made environment, Geddes has sought to point up the subtle relationships between woods, lawns, and buildings.

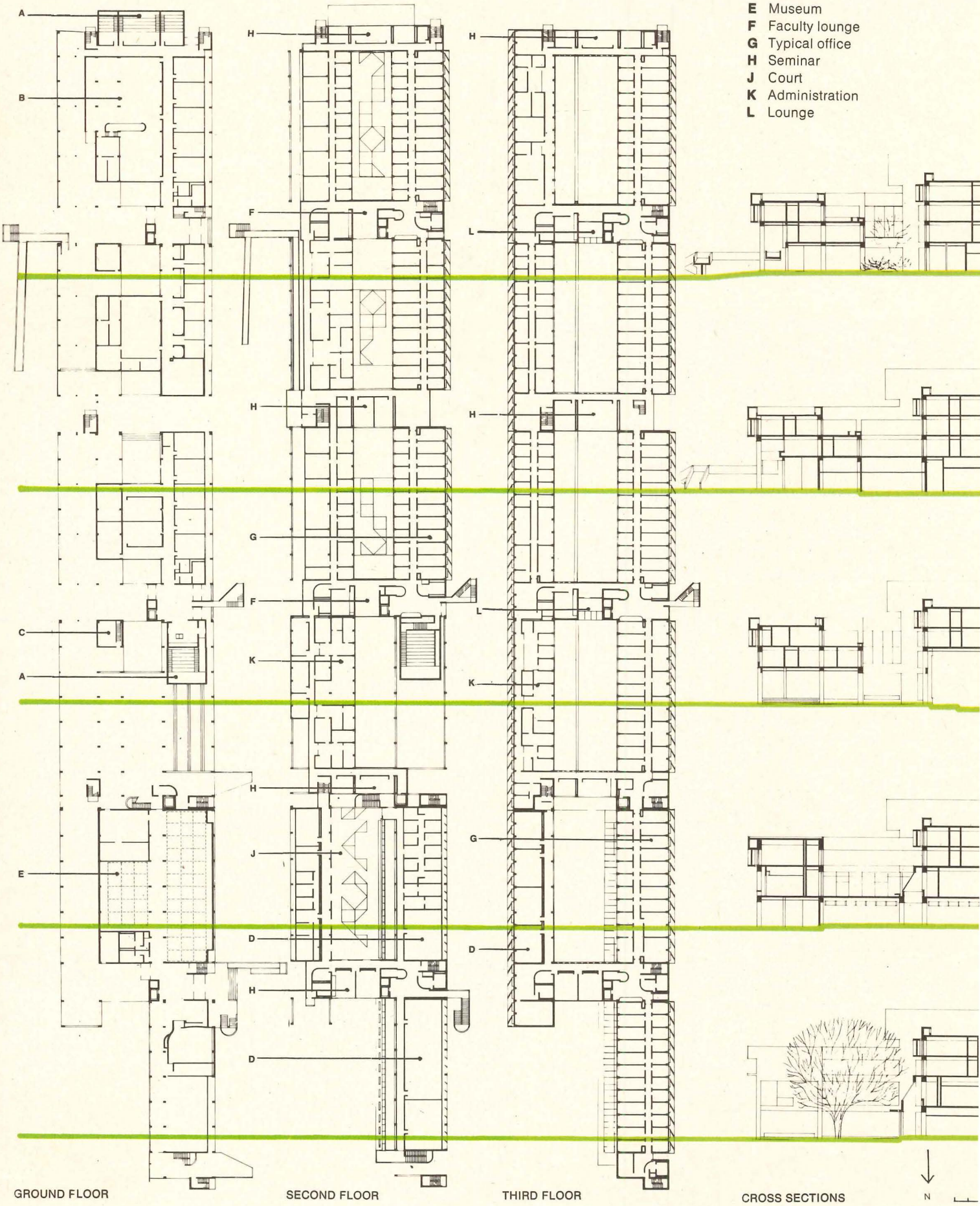
GBQC's two-stage commission at SIU—first, in 1967, for master planning of the campus core, then for design of this building—represented a departure for this state institution. Back in 1966, an architecturally concerned trustee encouraged appointment of a Board of Architectural Consultation, all of them architect-educators and all out-of-staters: Charles Moore, Lawrence Anderson, and Joseph Passoneau (replaced when he resigned by George Anselevicius). Working closely with University Architect Charles M. Pulley, this board was able to revise procedures and look for talent outside Illinois.

GBQC's planning strategies were appropriate to any number of sprawling universities: increasing density at the center to limit walking distances and reinforce identity, enhancing existing green spaces, and banishing parking areas to the campus periphery. Their solution hinged on one linear megastructure slipped in edgewise along an existing boundary (a concept that recalls Diamond & Myers' scheme for the University of Alberta, P/A Feb. 1974, where

Tying campus circulation paths together with broad covered passages and colonnades, Faner Hall preserves and defines two major green areas, one wooded, the other open, plus several small-scaled quadrangles.

Faner Hall, Southern Illinois University

Legend
A Lecture
B Language lab
C Mechanical
D Classroom
E Museum
F Faculty lounge
G Typical office
H Seminar
J Court
K Administration
L Lounge



GROUND FLOOR SECOND FLOOR THIRD FLOOR CROSS SECTIONS

linear structures span streets within the campus).

Faner Hall was sited along the edge of the 20-acre Thompson Woods, on a strip occupied previously only by temporary buildings and parking lots. At the south end, it picks up the axis of the central corridor that animates the otherwise bland, bulky student union (but without the covered connection that the architects wanted).

Originally, Faner Hall was to extend 1200 ft, in phased construction starting from the south. The loss of SIU's original "Old Main" in a fire resulted in the simultaneous construction of the first 900 ft. The modular design concept allowed for last-minute changes in plan—even where concrete framing was already in place. Further extension to the north is now unlikely, because of reluctance to demolish an existing building in its path.

Modular order, with variations

The completed Faner Hall articulates the positions of Geddes and his associates on several basic design issues:

1 landscape-to-building relationships, discussed above—here demonstrated in the continuity of campus pathway systems through the ground floor and—more metaphysically—by the colonnade as a metaphor for "forest edge."

2 movement systems as generators of form serving here as an underlying armature of stair towers, corridors, and colonnades—the latter designed for social street life.

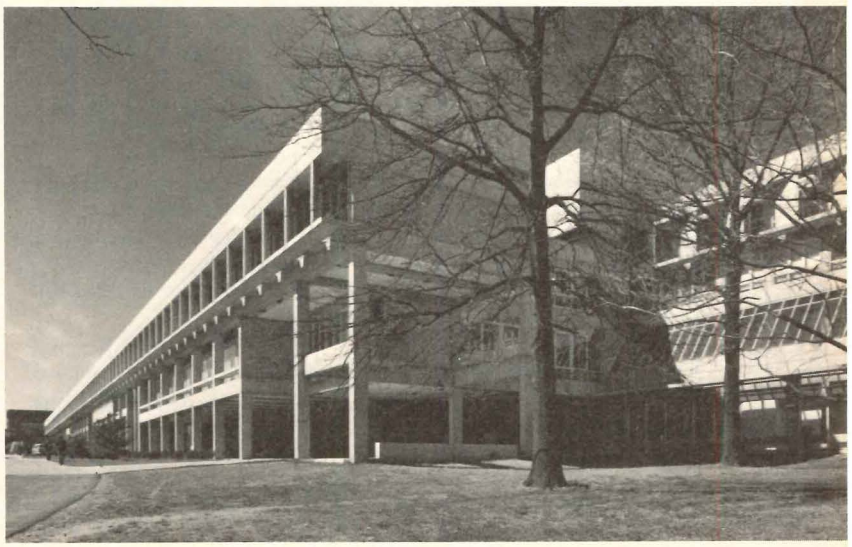
3 structural-mechanical modules tailored to differing needs—uniform bays along the length, in this case with unequal transverse spans—some adjusted by cantilevers or recesses—to meet the needs of offices, classrooms, etc.

4 general vs. special spaces—special spaces here being limited to lecture halls (given exceptional forms) and the museum (given its own variations within the module).

5 size vs. scale—scale here ranging from intimate to more expansive at the central passage, but keyed to the building's uses rather than its overall expanse.

6 relation of new buildings to existing—here, for instance, in scaling façades to smaller, nearby buildings to the east, overall volume to the larger structures and green spaces to the west.

7 response to sun and climate—evident here in sun baffles to the east and west—with verticals deleted wherever sun would be blocked (see roof deck photo); also in the use of



Despite its 900-ft length (only about 600 ft visible in elevation view from west, top of page) Faner Hall is seen from most viewpoints as an unassertive backdrop (above), largely open at ground level. View from north end (below) makes cross section of structure apparent.

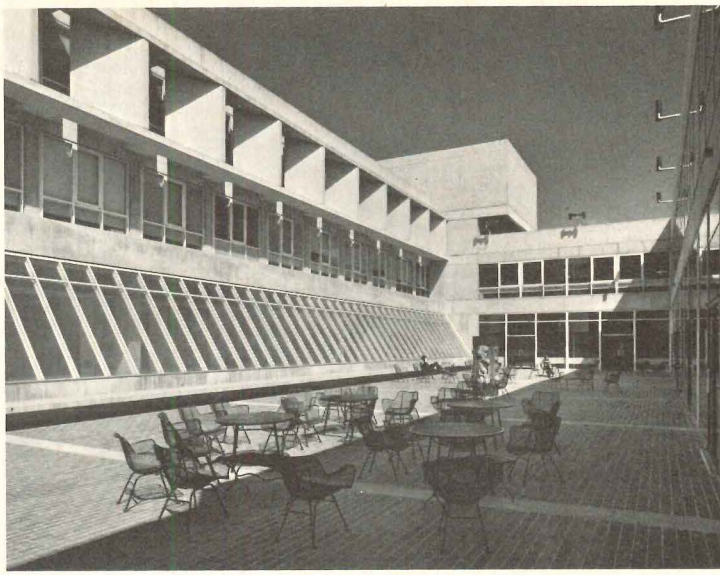
the colonnade in the mild climate of Carbondale (at roughly the latitude of Richmond, Va.) and its placement on the east for morning sun, afternoon shade.

GBQC's design suffered a few compromises along the way: roof deck designs were stripped down to simple paving; walks and planting bordering the building were laid out by university staff, creating linear scars where GBQC had envisioned invisible seams.

Speak softly and carry antennae

There is no flamboyance in Geddes' design principles, nor in his buildings. They show, instead, a judicious balance between intellectual rigor and adaptation to circumstances. At Faner Hall, the rigor tends to dominate in distant views and in the long interior corridors, but is relieved by the sensitive modulation of ground floor colonnades and the views from most interior rooms—nicely framed by sun baffles (no blinds or drapery needed). A minimal, consistent range of materials—"honest" by Modern tradition—includes exposed concrete and clear glass set in white-painted aluminum. (Imperfections in concrete are minimized by contrast with white, as Sert-Jackson has demonstrated before.) GBQC's receptivity to lessons and ideas from others is apparent in sun baffles and the thin white mullions which recall—as they do in Sert-Jackson's work—Georgian detail.

User response has been mixed. The student newspaper complains—justifiably—about the problems of navigating the long, repetitious corridors, and calls the continuous concrete envelope a "monument to redi-mix." In some respects, this is architect's architecture, but users have gained more than they may realize at first.
[John Morris Dixon]



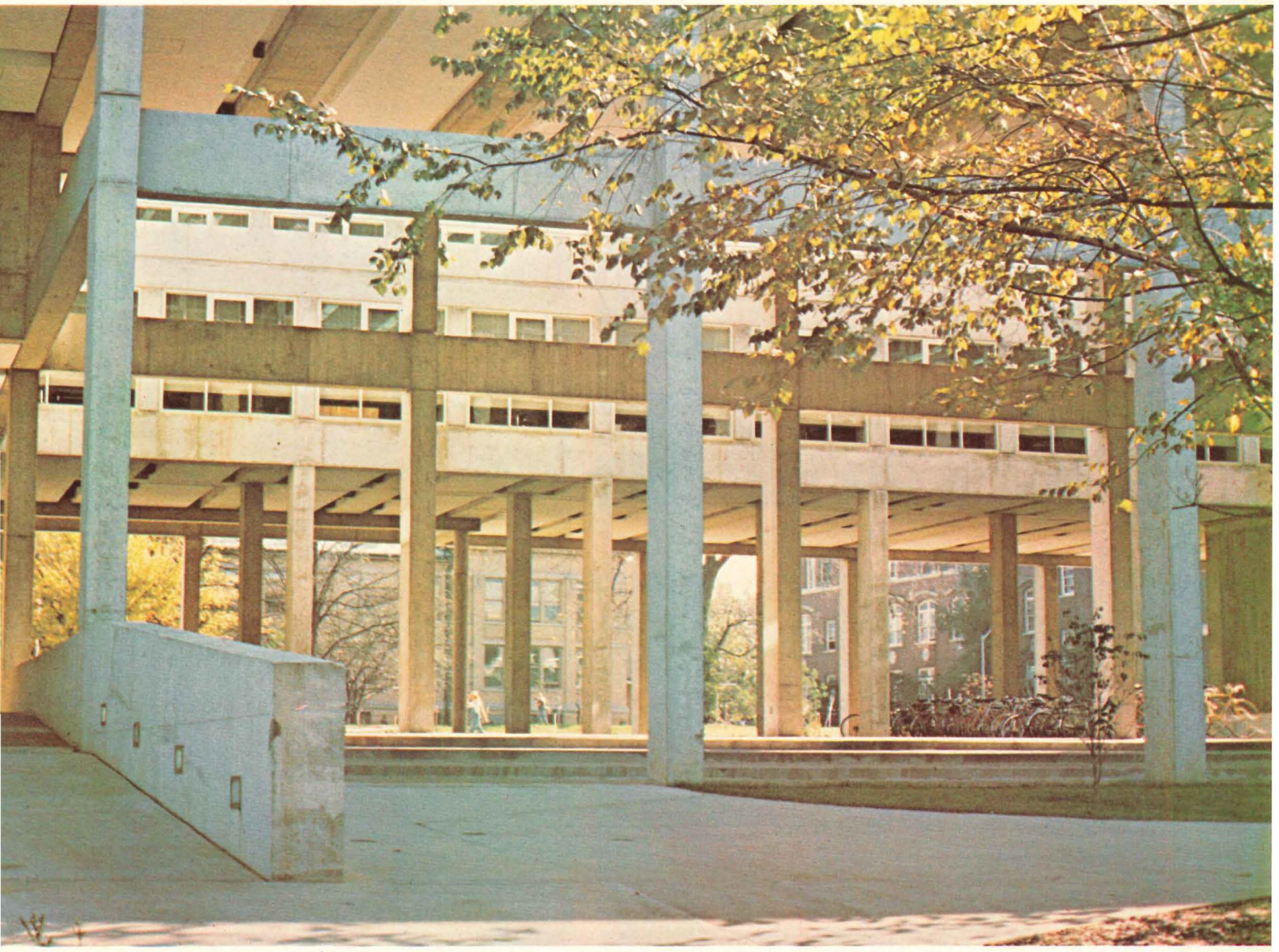
Rooftop court (above) is one of three along center line of structure.

Lounge (above) facing same court replaces light well planned for museum below. Projecting landings and lecture halls punctuate south end (below).

Data

Project: Faner Hall, Southern Illinois University, Carbondale, Ill.
Architects: Geddes Brecher Qualls Cunningham, Philadelphia, Pa. and Princeton, N.J.; Robert L. Geddes, design partner; M. Neville Epstein, design associate; John R. De Bello, project architect; Melvin Brecher, management partner.
Client: Illinois Building Authority, Chicago.
Site: key element in a university master plan for the 640-acre main campus by the architects, calling for a linear structure at this point to preserve and define existing green spaces, concentrate activity without violating established scale, provide covered pedestrian links.
Program: to house university departments of Social Sciences and Humanities, including museum and small lecture halls; total enclosed square footage, 250,000; covered outdoor area, 35,950 sq ft.
Structural system: cast-in-place concrete frame, economically advantageous for building structure of regular bays and moderate spans.
Mechanical system: integrated with structural bay system, includes window induction units, individually controlled, for both heating and air conditioning, using heated and chilled water from central campus plant; sunshades reduce heat load and disperse daylight.
Major materials: exposed cast-in-place concrete frame, walls, and sunshades, with various finish techniques; white epoxy-painted aluminum (designed by architects with manufacturer); brick paving. (See Building materials, p. 11).
Consultants: United Engineers, mechanical engineers.
General contractor: J.L. Simmins Company.
Construction cost: $11,912,394 (actual); $45.64 per sq ft.
Photography: George Cserna, except as noted.

Photo above: Robert L. Geddes



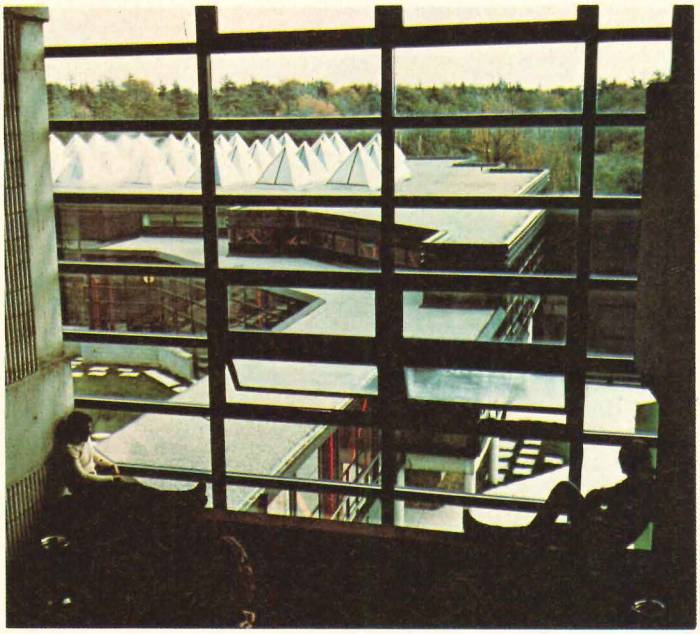
Colonnade along east side of building (top left) gets morning sun—only—and varies in width with traffic flow. Widest of east-west passages (top right) passes through open interior court to prominent west gateway (above). Occasional stairs reconcile ground floor paving to gentle rise in terrain; ramps flanking these stairs—and long ramp to second floor—accommodate the numerous wheel chairs and bicycles used at SIU. Concrete divider strips in brick paving show imprint of structural plan.

Sheridan College, Oakville, Ontario

Changing forum

Sheridan College is a dark, hard-edged complex of industrial-type buildings that gives an air of warmth and humanity which vigorously belies its materials.

A new college is emerging on the outskirts of Toronto that may alter our traditional, and even not-so-traditional ideas of what a campus should be. In designing Sheridan College, architects Terry Casey and Klaus Dunker, who have been the master planners and either design consultants or design architects throughout the entire five-year program of phased construction, have seriously questioned the accepted models of campus organization. They have come up with what is perhaps the freshest approach to the problem seen in many years. Although the college is not yet completed—it is part way through the fifth of six planned phases—enough of it is visible now to see in real, physical



Bridge spans stream from core building (right) to skylit applied and general arts wing (above). Detail (below) of porcelain panel system.

terms, what some of these precedent-breaking ideas are.

Basically, the architects questioned the three traditional forms of the college campus. For them, the problem with the typical American "village" campus, which is still the prevalent form in the U.S., is that it isolates disciplines and thus discourages a cross-fertilization of ideas which, if encouraged, could be of great importance to the academic setting. The problem with the "street" or "spine" model, they say, is that even though it locates facilities along a path in order to encourage interaction, the path itself establishes an order of importance from its middle to the poles that is both arbitrary and monotonous, and not capable of satisfactory resolution. In the "Berlin Free University" model, which integrates all facilities into a non-directional and non-hierarchical coexistence, the problem is that there is no "place," no forum or natural focus where ideas and knowledge can be easily shared and exchanged.

In designing Sheridan College, the architects circumvented all of these problems by inventing an organizational plan that views the campus not as a village, a spine, or a homogeneous framework, but as an urban form similar to a pedestrian-scaled town or city, built to focus upon a central "market" or forum area. The only problem with this model, Dunker explains, is that future growth cannot be accommodated without destroying essential parts within its most established areas; the center cannot expand without destroying the supporting rings of buildings. So the architects modified the town model by leaving the center open on one side. Because it is still not known precisely how the campus may eventually grow, this scheme allows "fingers" of growth to occur (and to expand later) in most directions around a central core without being locked into a final, unchangeable network. The final form will be determined when the school reaches its planned maximum growth of

6000 students. At present, there are 2700 students.

Sheridan College is, strictly speaking, a vocational and technical college, but not in the traditional sense. Essentially, its courses are oriented to the arts, and specifically to the arts that serve commerce and industry. The largest departments are in photography, fashion, television, communications, and graphic arts, and it is because of this particular nature of the school that the concept of openness and flexibility to encourage the exchange of ideas has been so vigorously pursued. The open-ended, flexible nature of the school does not stop with the master planning concept, but is carried through to the individual spaces within the buildings of the complex. The large studios are housed in areas of 30-ft bays that can be easily closed off or opened to each other for desired size. They are skylit, with corridor-like mezzanines running through for circulation and for faculty members' desk areas.

Tapestry of spaces

In addition to the studios, however, there are also traditional classrooms, seminar rooms, demonstration rooms for spontaneous discussions adjacent to the studios, formal lecture rooms, and "pits" for intense small-group discussions. Together, all of these arrangements provide the proper kinds of spaces that may be needed at any given moment. What is important at Sheridan, however, is that the architects have not abandoned the traditional classroom in favor of open-plan areas, which is often the fashion today. Instead, they recognize there is still a need for the classroom, as well as for other kinds of space when needed. "The College had to become a tapestry of physical conditions" Klaus Dunker explains, "in which each situation could be found, each specifically designed for a purpose, all interwoven with each other in order to allow easy access and availability."

Basically, there are three categories of space within the building complex. The large, open, one-story studios are constructed of steel or concrete columns on a 30′x30′ grid, with exposed steel roof and natural skylighting. The multistory classroom/administration portions are constructed on a 25′x25′ concrete column grid with exposed concrete ceilings. All other spaces do not fit into the standard structural systems and are articulated differently. For instance, the cafeteria, which was deliberately designed to give a different character, is of heavy timber truss construction with large windows overlooking a stream. Lecture theaters and film rooms are constructed of load-bearing concrete block walls and open-web steel joists.

Façade panel system

Because the college is being constructed in phases, and must be capable of expansion at any given point at later dates, most of the façade is of a panel system of porcelain enameled steel on 4′x10′ grids that accommodate 2′x5′ windows. In addition to allowing for easy expansion, this system also lets windows to be changed easily if interior space functions change. Window placement is controlled, however, since heat loss computations for the cold climate dictated a limitation of glazed surfaces to only three sq ft of window per lin ft of façade. Consequently, ample glazing occurs mostly in public circulation and meeting areas. Windows are placed more cautiously, where they are demanded, in other areas.

Industrial materials

The complex is constructed predominately of extremely inexpensive industrial materials (average cost to date over the five-year construction period has been $27 sq ft). Throughout, the structural system is exposed, as are all the mechanical service runs, which descend from above to be easily alterable. This kind of cheap, factorylike construction and materials can be used, as numerous examples have shown recently, to create a very exciting kind of architecture. Yet, however stimulating it may be, this architecture has usually not produced buildings widely recognized for their humane qualities. At Sheridan College, the lack of that quality should be compounded even more by the color of its porcelain panels, which are blue-black.

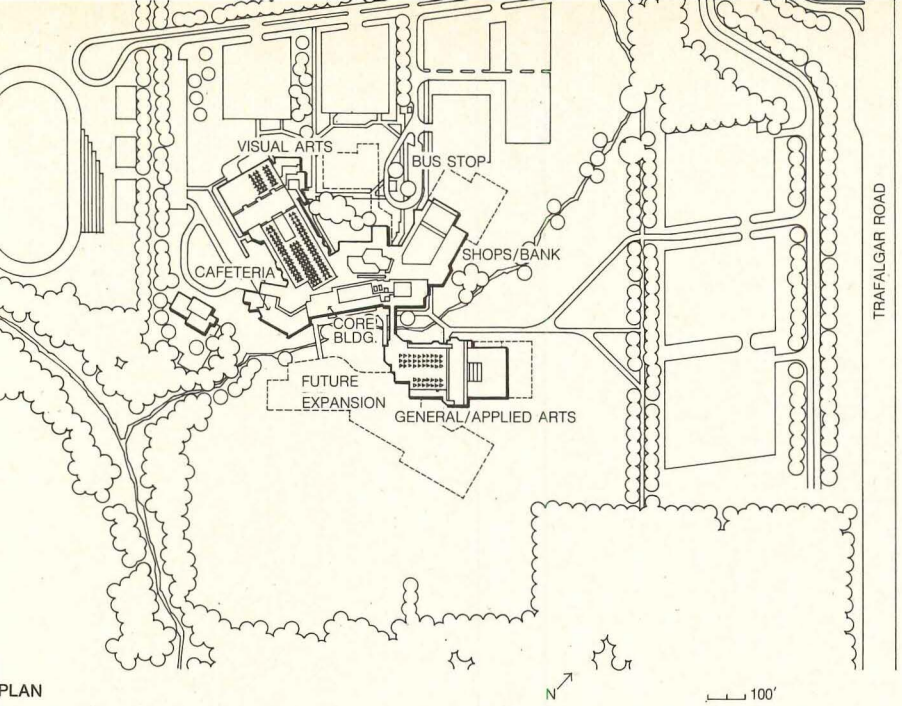
It comes almost as a shock, then, that this dark, hard-edge, uncompromising industrial complex exudes an extraordinary sense of warmth and understanding of human needs. At Sheridan the buildings of the complex are clustered in a parklike setting around a small stream. The core building, which faces the stream, houses the cafeteria, administrative offices and classrooms, a pedestrian street of services, the theaters and bookstore. Other wings extend from it, as "fingers on the palm of a hand." Numerous entry points occur throughout, which lead to systems of perimeter circulation on the wings that all funnel into various lounge areas, and ultimately to the core building's interior street. This system, accented with strong colors, ensures a constant flow of people and activity throughout the buildings that enhances the pedestrian-oriented, townlike atmosphere of the complex. Within the wings, light courts of various use and design become additional points of congregation and exchange. One light court, next to the library, is treated as a huge greenhouse where seating is separated only by a profusion of lush plants.

Diminishing the scale

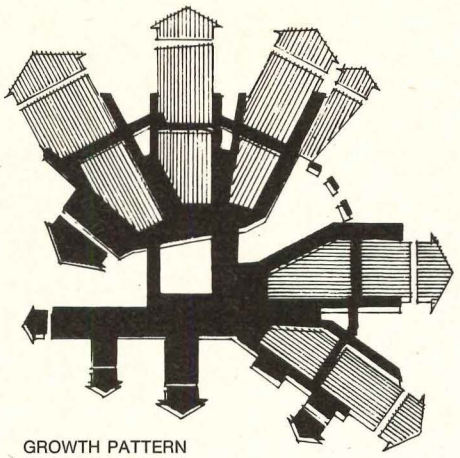
The low buildings—the highest is only three stories—sit snugly into the ground. Their scale has been diminished both through the use of the dark color for the exterior panels, and in the way the panels are applied. Contrary to the normal application, the panels here protrude from their supporting grid, thus emphasizing the individual elements. In addition, the panels are employed in differing, diminishing sizes to reduce the scale further.

One important consideration that was always in the architects' minds is that Sheridan is a community college. Although the community it serves today has only about 30,000 people, the population is expected to grow to over 100,000 by the end of the century. For this reason, the campus, its buildings and their circulation patterns have been planned now, in the early stages, to be as open, ac-

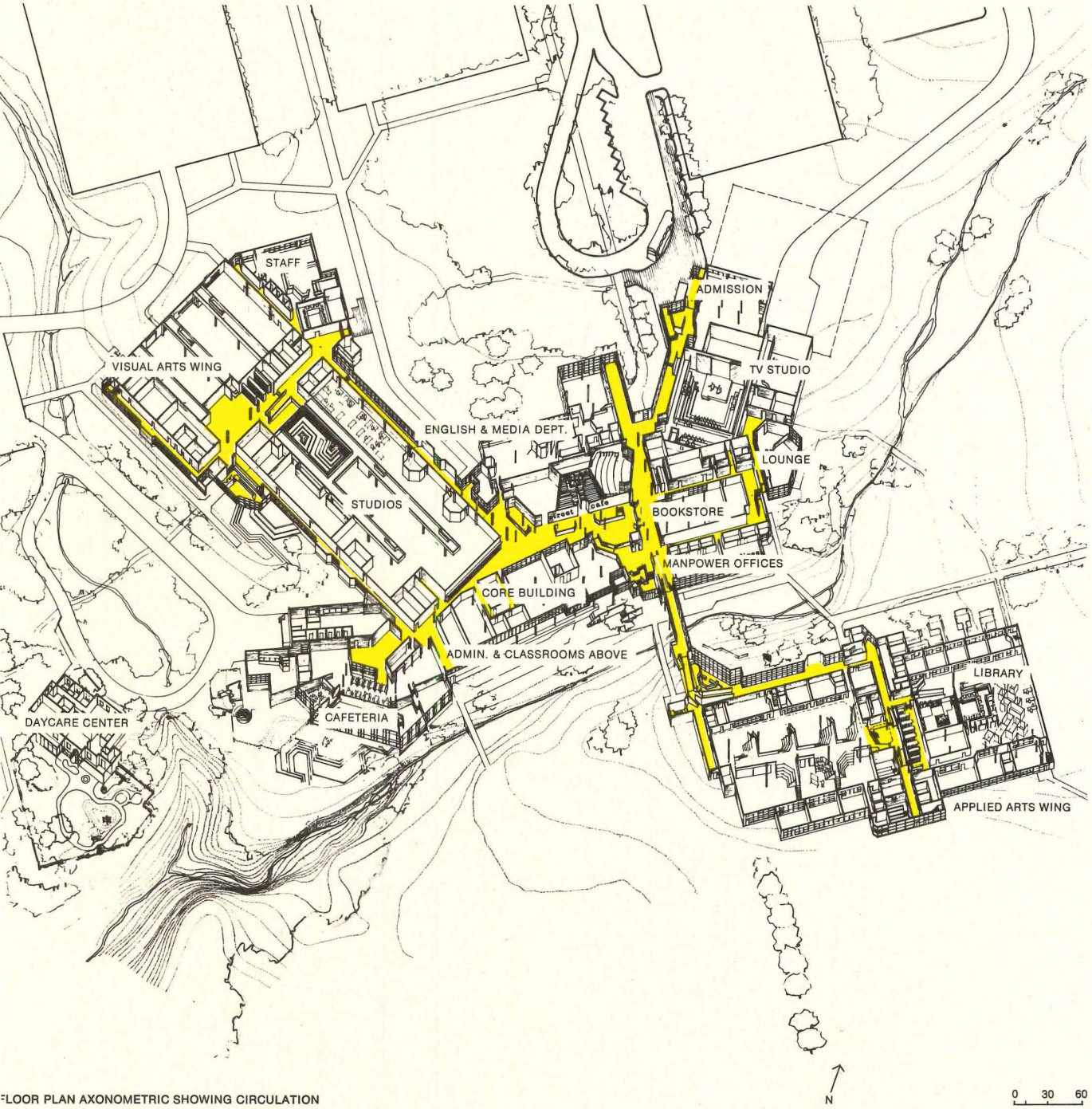
Sheridan College is designed to expand, like fingers around the palm of a hand, from a central core area (see Growth Pattern, facing page, top). The entire complex will accommodate future change, with the circulation, structural, interior partition, and exterior cladding systems all designed for easy extension, removal, or reapplication at any time.



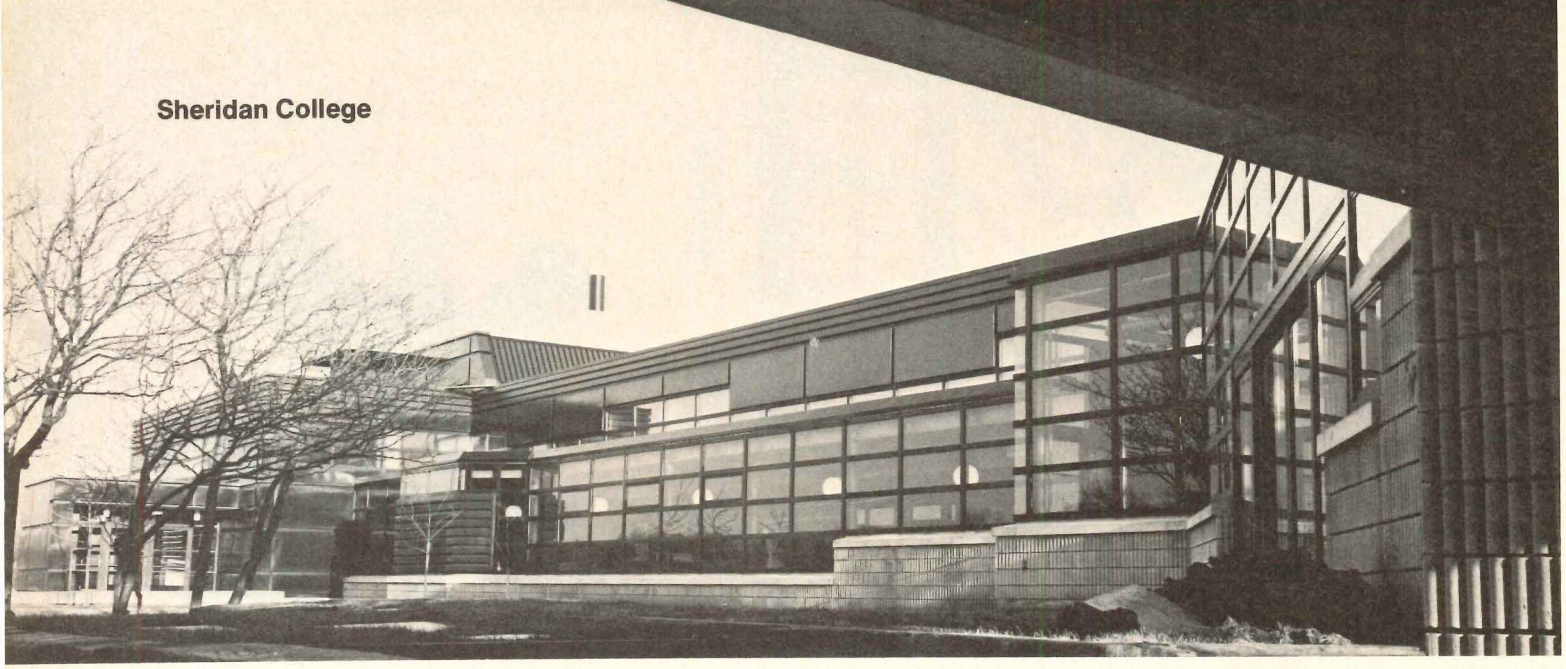
PLAN

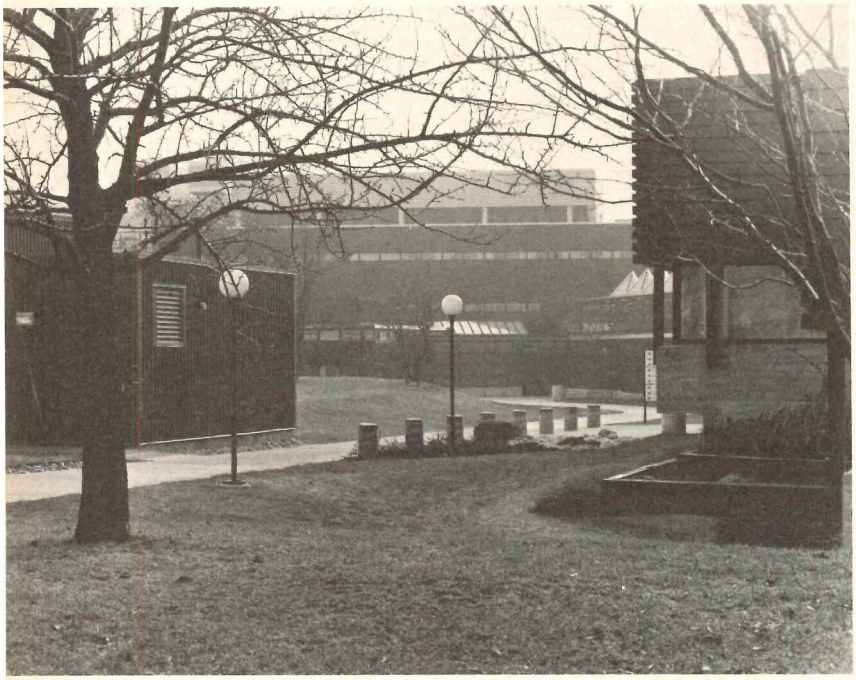


GROWTH PATTERN

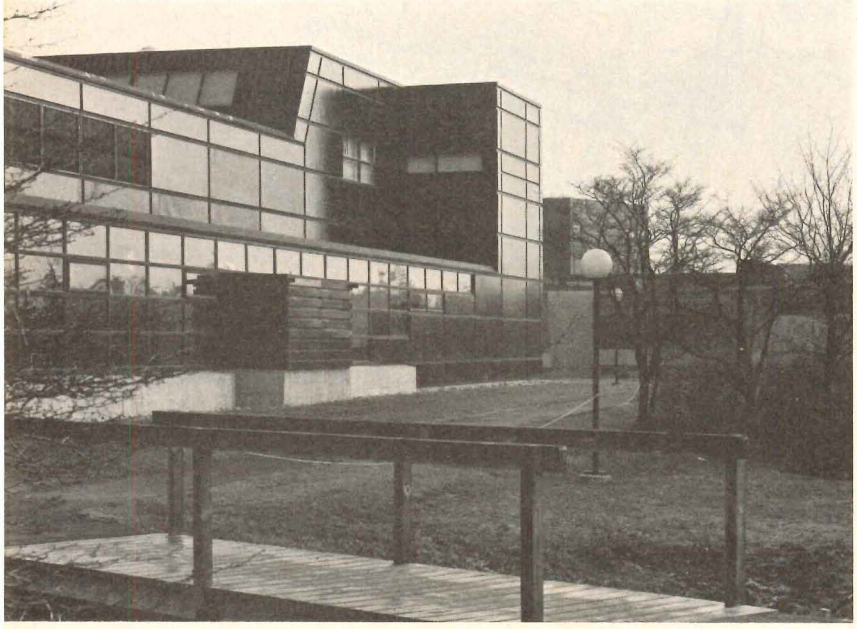


FLOOR PLAN AXONOMETRIC SHOWING CIRCULATION





Vehicular drop-off is on north side of complex (above) near auditoriums. Amply glazed perimeter walls (top and bottom) indicate circulation areas.



cessible, and inviting as possible. It is envisioned that this will become a school not just for enrolled students, but that it will also become an important cultural resource for a community that as yet does not fully exist. With what is completed to date, it is easy to see that Sheridan College could become just that in the years to come.
[David Morton]

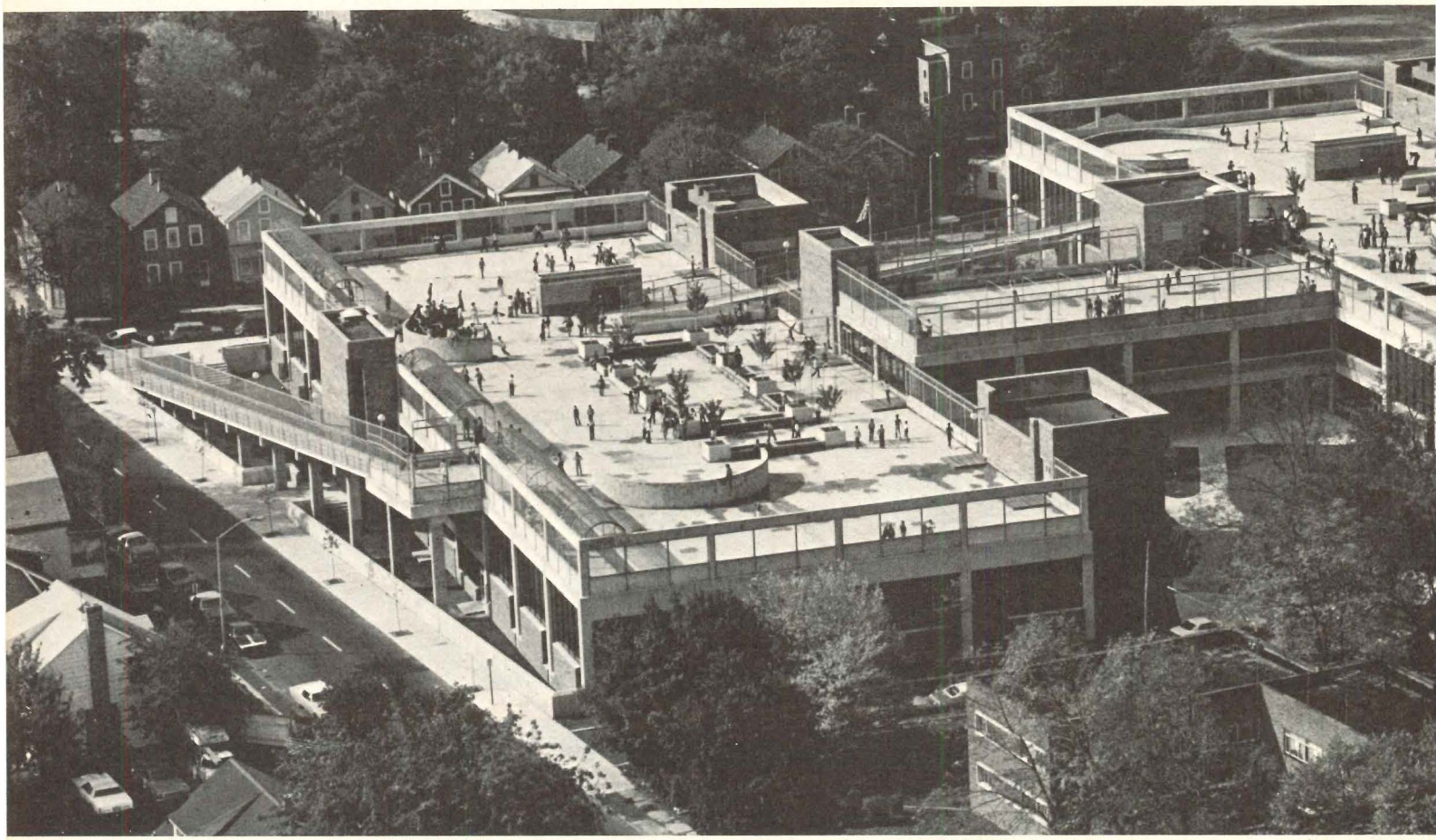
Data

Project: Sheridan College of Applied Arts and Technology, Oakville, Ontario, Canada.
Architects: phases 1 through 4, Marani, Rounthwaite & Dick; Casey & Dunker, design consultants. Phase 5, Dunlop, Farrow & Aitken; Klaus Dunker, design consultant.
Construction management: phases 1 through 3, Milne & Nichols, Ltd.; Phase 4, Mitchell Const., Ltd.; Phase 5, Ivey/Preger Const., Ltd.
Program: a community college of applied arts and technology planned, through phased construction, to reach a student population of 6000.
Site: an old farm 20 miles from downtown Toronto. Campus is clustered around a stream; existing groves remain.
Structural system: frame: structural steel, reinforced concrete. Walls: concrete block, aluminum grid to receive panels. Floors: suspended concrete slab, slab on grade. Roof: steel joists and deck, reinforced concrete.
Major materials: porcelain-enameled steel panels prepainted, ribbed steel siding, fluted concrete block, concrete block, gypsum board.
Mechanical system: heating: air, low-pressure steam, hot water distribution. Air conditioning: air, chilled water coolant, terminal re-heat.
Consultants: phases 1 through 4: G. V. Kleinfeldt, structural and site services; Rybka, Smith & Ginsler, Ltd., mechanical and electrical; Don Hancock, landscape; Valcoustics, Ltd., acoustical; Marjut Dunker, interiors. Phase 5: Robert Halsall & Assoc., Ltd., structural; Dunlop, Farrow & Aitken, mechancial and electrical; Liberia Marcuzzi, graphics and interiors.
Client: Board of Governors, Sheridan College.
Costs: average $27 sq ft.
Photography: Applied Photography Ltd., except p. 51, David Morton, p. 54, Dan Thrasher.

The library (facing page, top left) looks directly into huge, plant-filled reading atrium (top right). Circulation and lounge areas (facing page, middle) are usually on building perimeters and are the most highly glazed places within the complex. Studios (right) are artificially and naturally lit. Cafeteria (far right) has different character from rest of complex.

Hart Middle School, East Orange, N.J.

A second look

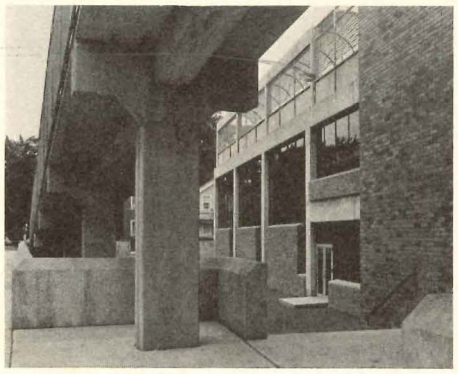


Uniplan: Matt Sinclair

Designed in a downtown storefront, William S. Hart, Sr. Middle School blends educational philosophy with community involvement and difficult site problems.

This is a sequel. It follows an article in the February 1972 issue of P/A, in which we discussed the process by which the city of East Orange, N.J. arrived at the design of a new middle school. At that time, the architects—Uniplan of Princeton, N.J.—were quoted as saying that the final design process would begin when kids and activities filled the school. It has begun. The facility opened in 1975, after an extensive and impressive planning phase beginning in the fall of 1972. The reasons for the process being extensive were exactly the reasons for its being impressive.

No discussion of the William S. Hart, Sr. Middle School can begin with anything other than a brief recap of how it came to be, because that is so wrapped up in *what* it came to be. The school was designed in a storefront on the main street of the town it would serve. Since the architects' office was roughly 50 miles away, the design center was located in East Orange to encourage community involvement and participation in the early decisions that would effect the parti. The site was a somewhat limited tract of land in a residential-cum-urban section of East Orange. It would draw students from every direction, and the school would serve a



Rooftop play areas (opposite page and right) are accessible from the ground and from adjoining blocks (above and below) via the prominent ramp system. Two dining areas link the three major teaching blocks at the second level, allowing grade level circulation between the blocks and permitting students use of roofs at lunchtime.

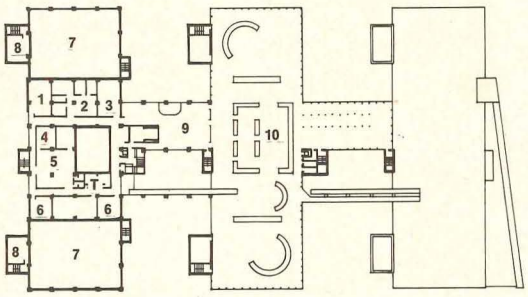
Uniplan: Matt Sinclair

total capacity of 1800. Because of population distribution, the immediate community is low-medium income, and the school comprises 90 percent black and minority students. The community needed recreation space, and needed to be involved in the planning process. As we noted in 1972, having people look over an architect's shoulder does not speed up his or her design process. But it does encourage community participation, and Uniplan's Jules Gregory and his staff enrolled the storefront and local paraprofessionals in the effort. To make a long story short, Gregory wouldn't have had it any other way. It took more time, but the school reflects community concerns in a way not possible by the standard design method.

Because the site is not large (4.5 acres), there were two choices: either cover most of it with building or go vertical. Even though the area is ringed by high-rise apartments, the immediate neighborhood is largely made up of low residential buildings, and a vertical scheme would overwhelm them. But filling the site also had drawbacks—no land left for parking or playgrounds. An underground parking garage proved to be beyond the scope of the budget, so it was decided that cars would just have to park on the street or in a nearby athletic stadium parking lot. And play areas would have to make the most of the only open space left, the roof-top surfaces.

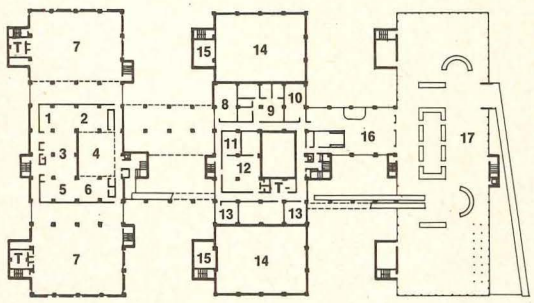
Programmatically, the school logically breaks into sixth,

Hart Middle School



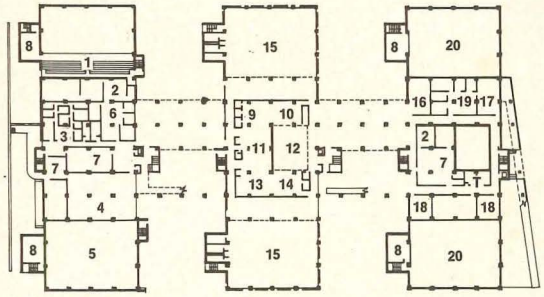
LEVEL 3

1 Language
2 Guidance
3 Typing
4 Conference
5 Work room
6 Reading
7 Teaching loft below
8 Storage
9 Dining area
10 Roof play area
T Toilets



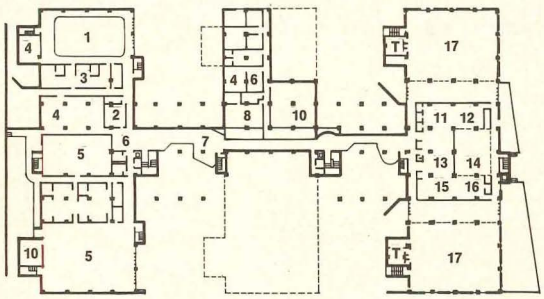
LEVEL 2

1 Fine arts
2 Music
3 Industrial arts
4 Performing arts
5 Homemaking
6 Drama
7 Teaching loft
8 Language
9 Guidance
10 Typing
11 Conference
12 Work room
13 Reading
14 Teaching loft below
15 Storage
16 Dining area
17 Roof play area
T Toilets



LEVEL 1

1 Spectators
2 Conference room
3 Medical suite
4 I.M.C.
5 Upper gymnasium
6 Administration
7 Work room
8 Storage
9 Fine arts
10 Music
11 Industrial arts
12 Performing arts
13 Homemaking
14 Drama
15 Teaching loft
16 Language
17 Typing
18 Reading
19 Guidance
20 Teaching loft below
T Toilet

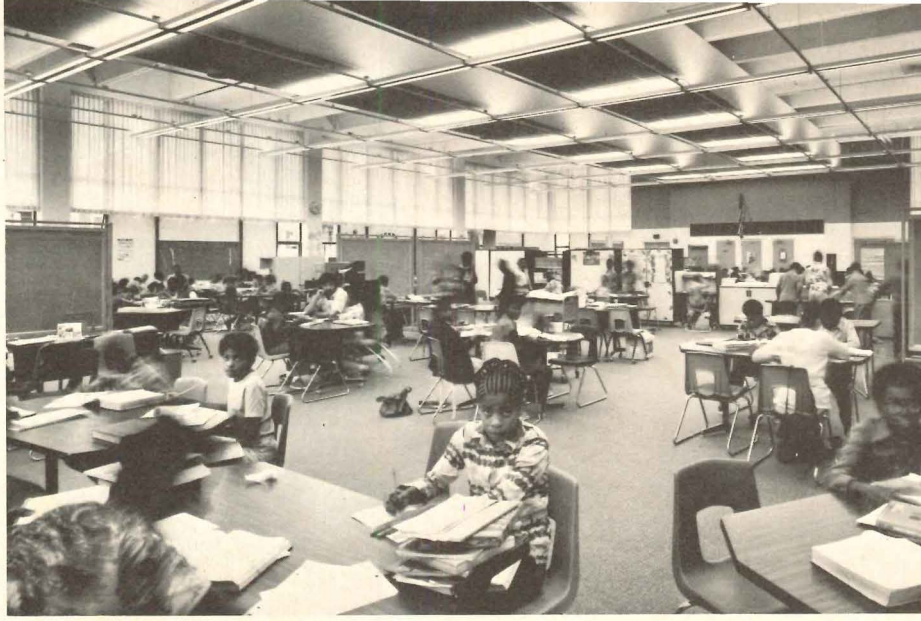


LEVEL 0

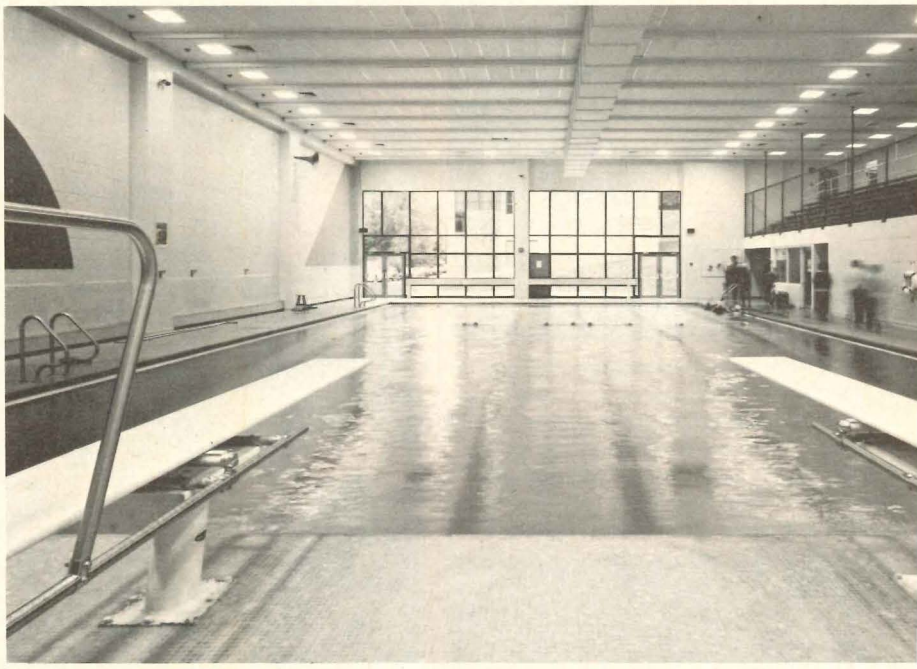
1 Pool
2 Handicapped pool
3 Lockers
4 Mechanical
5 Gymnasiums
6 Control
7 Street
8 Kitchen area
9 Refuse area
10 Storage
11 Fine arts
12 Music
13 Industrial arts
14 Performing arts
15 Homemaking
16 Drama
17 Teaching loft
T Toilets

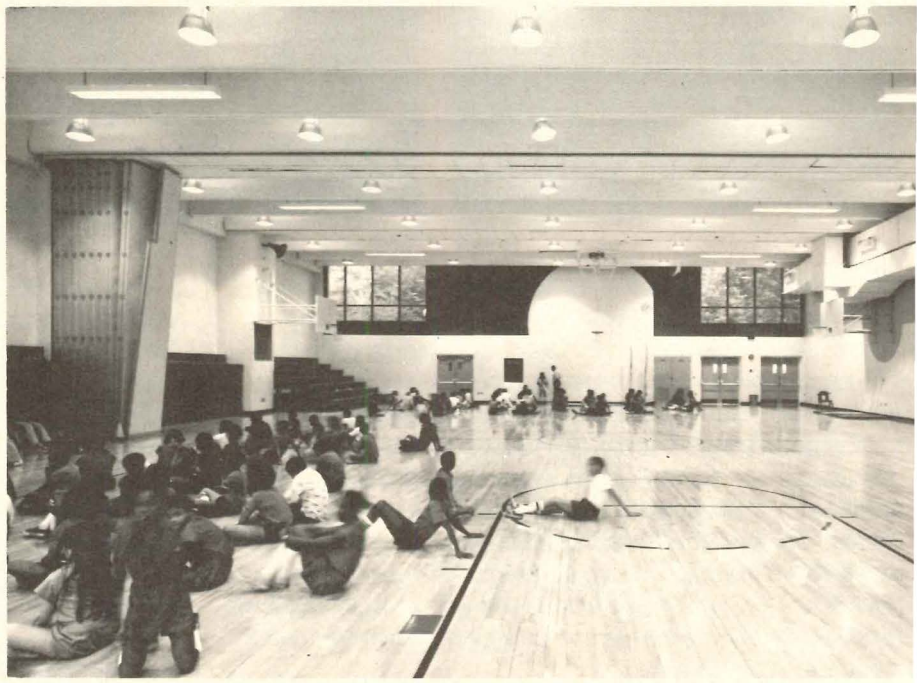
50'

N



Typical teaching loft area (above) is a blend of carpet, movable furnishings, and exposed tees. Pool (below) and gym (bottom) provide spectator seating, and will be used by community as well.





seventh, and eighth grade units. The educational philosophy in East Orange is one that encourages individual growth. Students are given an education plan, and are to complete it at their own rate of speed, within a "family" unit of 300 pupils. The physical manifestation of this philosophy is quite clearly stated in the building. One block per grade level is subdivided into two "families" housed in large, open lofts at each end of the block. The area between the two-story lofts contains such facilities as industrial arts, music, homemaking, and performing arts. Each block has an administrative and special classroom area on its upper, or mezzanine, floor. Also on this level, forming the links between the three blocks, are two dining areas served by a lower level centrally located kitchen. Since the site slopes up to the northwest, each dining area is nearly at roof level with the adjacent block, allowing access to the play areas directly from the dining space.

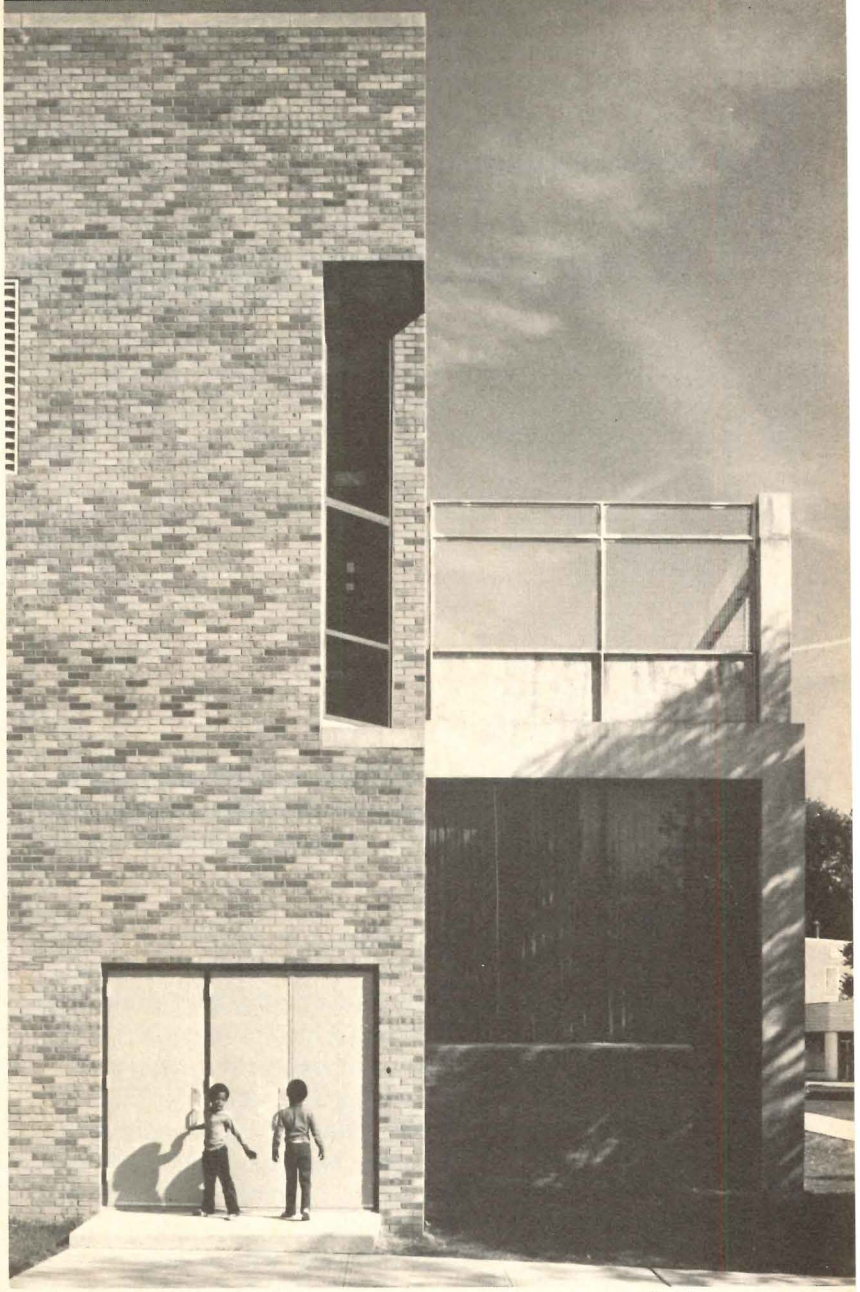
Block A—the farthest up the slope—houses the eighth grade. It is also the only block which is three stories high, because it contains all the major athletic and mechanical functions. Linking these facilities at the lowest level to the other blocks is a broad "street" which has been purposely shaped in plan to create nodes and places for spontaneous activities.

Busy place

Activity, in fact, is one unmistakable characteristic of this school. Its outgoing students and very capable staff under Dr. Roosevelt Weaver make it a delight to visit; every corner of the facility is alive. It seems appropriate, therefore, that the overall expression of the school is exuberant, almost busy. The main building blocks are offset by the playful ramps linking the roof-top play areas to each other, and to the ground. The prominence of the ramps is important, because they express the concept of community use. Both the rooftops and the athletic facilities are meant for public as well as school functions. While extended use means more work for the maintenance staff, it was an integral part of the concept from the beginning. The structures are beautifully maintained and, except for some glass breakage, have worn well through the first year—speaking well of both administration and community.

Access to the school from all directions is very well handled, and no entrance hierarchy exists or was intended. However, the graphics package designed for the project was dropped for budget reasons, and it is missed. While Dr. Weaver and his staff have made strides to correct the lack of orienting signage, a comprehensive and comprehensible system should have accompanied the concept as the architects had intended.

In these days of slack in the school building field, it is encouraging even to see one get built at all. But the combination of community involvement, tough site constraints, and bleak economic times failed to stop East Orange. Not only did the school get built, but it embodies the spirit that began in the main street storefront. Anyone who has ever designed a school around a very specific educational philosophy knows the fear that change of administration will render the design less than effective. As long as Hart Middle School has a dedicated staff headed by the likes of Dr. Weaver, Uniplan can count on "the final design process" to go on. [Jim Murphy]



Uniplan: Matt Sinclair

Data

Project: William S. Hart, Sr. Middle School, East Orange, N.J.
Architect: Uniplan, Princeton, N.J; Jules Gregory, partner in charge; Lawrence Goldblatt, director, East Orange Design Center; John Ruble, project designer; Clifford Marchion, partner in charge of construction.
Program: middle school (grades 6 through 8) for 1800 students. Open plan, with children encouraged to proceed through their individual education plan at their own pace. Athletic, recreational, and other facilities to be used by the community after school hours.
Site: 4.5 acres in urban area, but immediately adjacent to low-rise residential neighborhood.
Structural system: precast concrete tees span all major spaces, resting on reinforced cast-in-place concrete structure on reinforced concrete foundations.
Mechanical system: forced hot air with baseboard radiation at large glass areas; air conditioning in administrative areas; oil-fired burners feeding remote air-handling rooms.
Major materials: interior, painted concrete masonry and movable walls, exposed concrete tees and acoustic tile ceilings, carpet and vinyl asbestos tile floors; exterior, concrete structural frame with brick infill, tinted glass in steel frames, and wire fencing on ramps and roof parapets. (See Building materials, p. 00.)
Consultants: A.E. Bye, landscape; Joe Raymond, Jr. of Raymond & Raymond, kitchen consultant; Dr. Cyril G. Sargent, of Educational Development Associates, educational consultant.
Client: Board of Education, East Orange, N.J.
Contractor: Cerami Construction Co., Inc.
Costs: $9 million for construction only; $40.44/sq ft.
Photography: Robert Zucker, except as noted.

A life in the process of design

From the beginnings of his career in the early 1930s until now, the entire design world of Alexander Girard has encompassed, within its scope, a small universe.

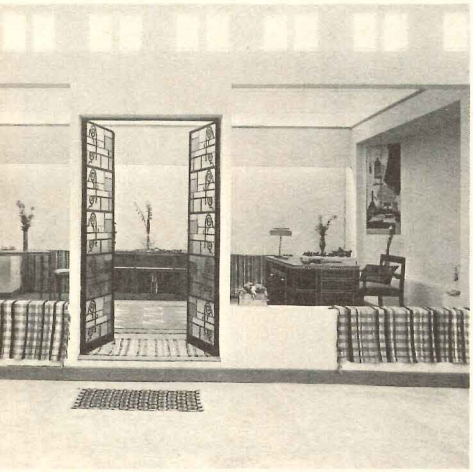
By profession, Alexander Girard is an architect, but architecture has not been the major preoccupation reflected in his creative output. In fact, Girard readily admits that he primarily likes doing all the things which he feels architects are not supposed to think about except in a minor way. And for the last 50 years he has been doing just that; designing exhibitions of modern furniture, exhibitions of indigenous folk arts and textiles, restaurant interiors, showrooms, doing textile collections, painting mainstreets, and designing sacramental vessels for a church in Columbus, Indiana. He lives in a world of colors and textures, of objects and assemblages, of perspectives and vignettes, in a world that is very specific, but embraces a universe. But mostly, it can be said that his life is as much of a process as his craft.

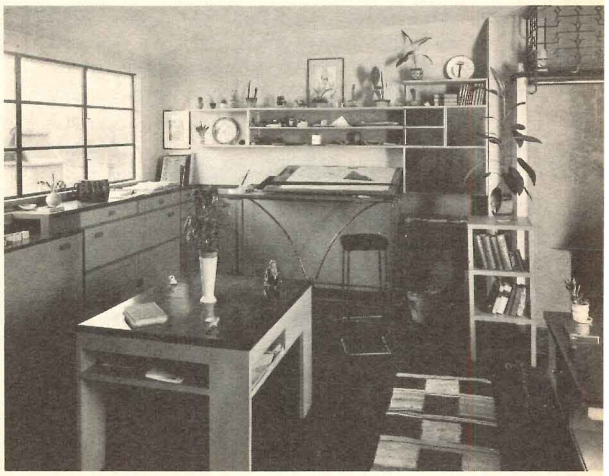
His own house is more than a house. It, too, is both specific and universal, and it embodies within it a dwelling, not only for people, but also for the objects and artifacts of his folk art collection. There is a totality in that place; an attitude that reaches beyond just lifestyle and into the realm of ideas, values, and concepts which form the bases of his work.

There was a time, however, when his work did not necessarily reflect this integration so clearly. As a young man graduated from the Architectural Association in 1929 and freed from the myriad hours of ink-and-wash renderings of neo-classic monuments, his early design efforts were in the modern vernacular. Having been born and brought up in Italy and educated in Europe, it is perhaps natural that he should be aware both of the craft traditions which have existed there for centuries and of the design vogue of the late 1920s and early 1930s, with its fascination and preoccupation with the interior, its objects and furnishings.

After graduation from the A.A. in 1929, his first projects were a room at the Barcelona Pavilion and his own apartment/studio in Florence. Both clearly show the tendency toward combining Bauhaus austerity with touches of handcraft—the wrought iron railings and gates. Even during the next decade, after a move to New York, the fascination for the objects and furnishings of the interior remained. His own New York brownstone apartment, published in the *New York American* in 1935, was termed ". . . a masterpiece of decorator's art" and Girard was seen as ". . . a rising young star in the bright firmament of modern decoration." Looking back on these very real rooms, portrayed in glossy photographs with appropriately sentimental captions, the line between design and decoration may seem quite clear, although the question, even to this day, has never been resolved. But two years later, in undertaking an exhibition for the Hampton Shops, the critics raised this very issue claiming that . . . "the work [Girard's] contradicts every tenet of good design." In reply to his critics, Girard makes his own position clear and, while never really drawing the line clearly, does hit upon one aspect of the modern movement which has recently come back to haunt us. He replied in the May 4, 1936 issue of *Retailing,* ". . . My primary objective and most sincere aim is to give the public not a 'modern,' convulsed by mechanistic obsessions or sterilized into a standard formality, but a reasonable and sane functionalism, tempered by what my critics so aptly describe as 'irrational frivolity'. It is agreed that this frivolity, which I like to call 'aesthetic functionalism' is indespensable, in fact, imperative, in any surrounding where the average individual is to live—not unlike a human machine merely sleeping, eating, drinking, and performing its numerous other animal functions—but also seeing, touching, and remembering familiar associations and all the other intangible activities of the mind and soul; all of which I personally believe are of far greater importance and in far greater need of consideration than are our purely practical functions in life."

Girard's articulation of the difference between pure functionalism and what he terms 'aesthetic functionalism' is never distinct. The supposedly 'pure' aspects can seemingly be rationalized, while the 'aesthetic' ones cannot be subjected to the same reductive analysis and are viewed as being subjective and therefore questionable. While Girard answered his critics firmly, he was not unaware of the point at which style became simply style. Recalling the time when he worked for the Detrola Corporation, he amusingly recounts how they produced 17 different style radio cabi-





The Barcelona Pavilion (left) and Girard's own studio in Florence (right). The living-room of his New York brownstone (below) and shaking hands (above, at right) in front of his model of the Leonardo da Vinci Art School.

A life in the process of design

Phonograph design for Detrola (below) and an early prototype of a plywood chair. Interior of the Lincoln Motor Co. cafeteria (right) and the For Modern Living show (below, right) held at the Detroit Institute of Art.

nets all of which housed the same radio. It was also during this time in the 1940s while designing radio cabinets, that he returned to his office one day to find a note which read . . . "I see you already have all of this [radio cabinets] so you don't need me." It was signed Charles Eames. When Eames and Girard finally did get together a month later to compare notes on radio cabinet design, one of the first things Eames saw, upon entering the Girard home, was a plywood chair in its prototype stages. Without a word, Eames turned around, walked to his car and returned to the house carrying his own first efforts at molded plywood chairs. That was the beginning of a long friendship and of many subsequent collaborations between the two men.

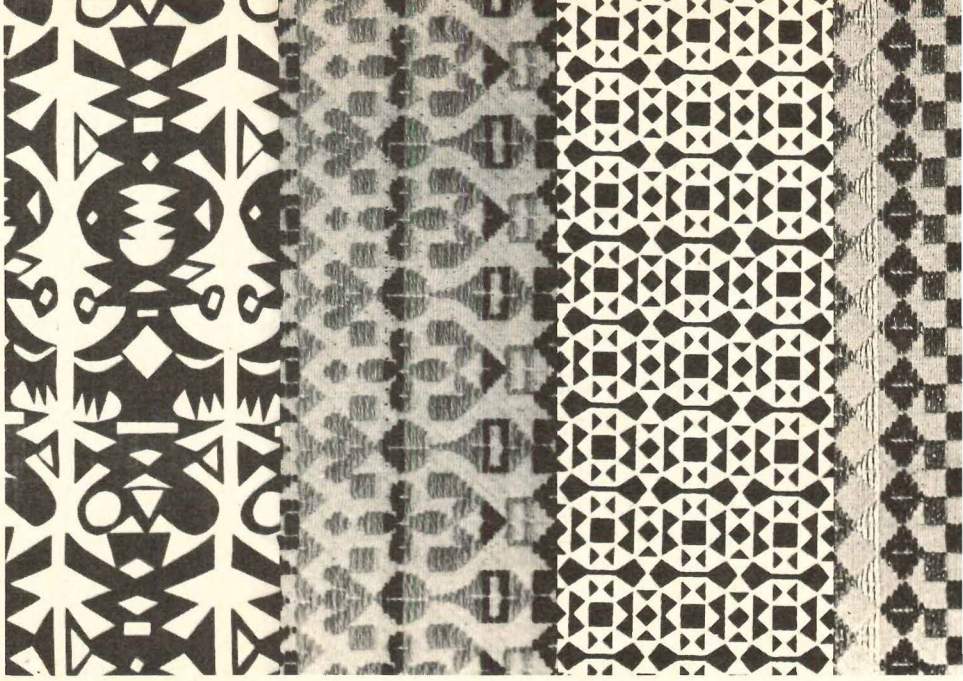
But whether Girard was designing radio cabinets or chairs, he was not interested in pleasing his critics or peers who constituted a rather limited and sophisticated audience. Instead, his concern seems to have been with addressing a public audience, whether in the residential rooms for the Hampton Shops, his product lines for Detrola, or subsequent exhibitions; For Modern Living (supported by the J.L. Hudson Co., a Detroit department store chain) for The Detroit Institute of Arts in 1949, the Design for Modern Use, Made in U.S.A., a traveling exhibition for the Museum of Modern Art in 1950, or Good Design, a home furnishings exhibition for the Merchandise Mart in Chicago in 1954. This effort, not only on Girard's part, but on the part of several others at the same time, was to bring to public attention the products of a burgeoning market and an expanding technology which would begin to profoundly alter the American lifestyle in the post World War II decade. Eames, Nelson, Steinberg, Saarinen, Yamasaki, and other luminaries of early modern design participated in the Modern Living show, one of the first of its kind to both elevate contemporary design to the status of art form through its museum context, as well as make the ideas and objects accessible to the public.

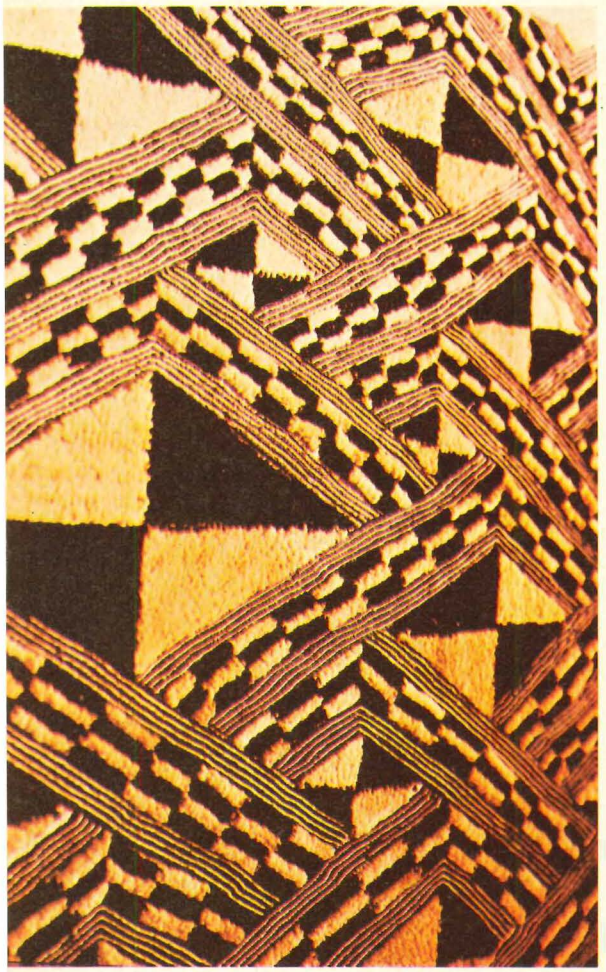
Through Eames, Girard had met Saarinen and George Nelson. The latter was then Design Director for Herman Miller and had already brought Eames into the company. It was only natural that Herman Miller, as a furniture producer, would want to have its own textile line, and so Girard was asked to consult. He produced his first fabric and wallpaper collections for the company in 1952, and has continued his involvement with Miller since then.

Beginning with his collections for Herman Miller, Girard's work through the 1950s and 1960s was to take a very different turn, in some ways, from his pre-war days. While the early work was done within the limited context of the main-

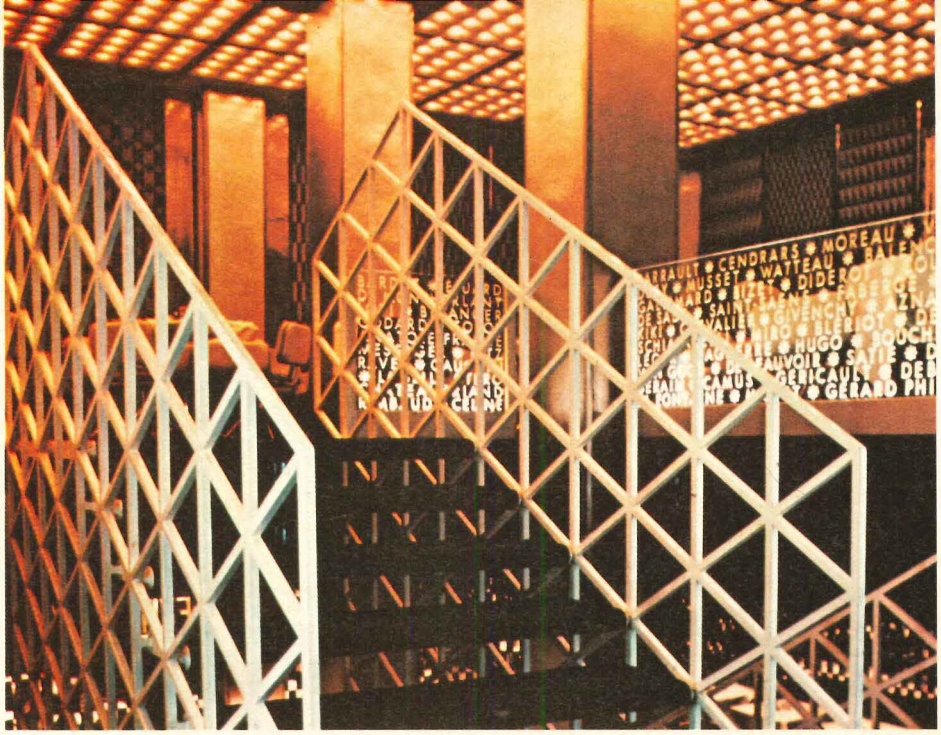
Two exhibitions created by Girard using his collections of folk art were the Nativity for Hallmark Cards, Inc. and A Magic of a People for Hemisfair in San Antonio. Each of the scenarios was designed using dolls, buildings, and other necessary artifacts to create a world in miniature.

A life in the process of design

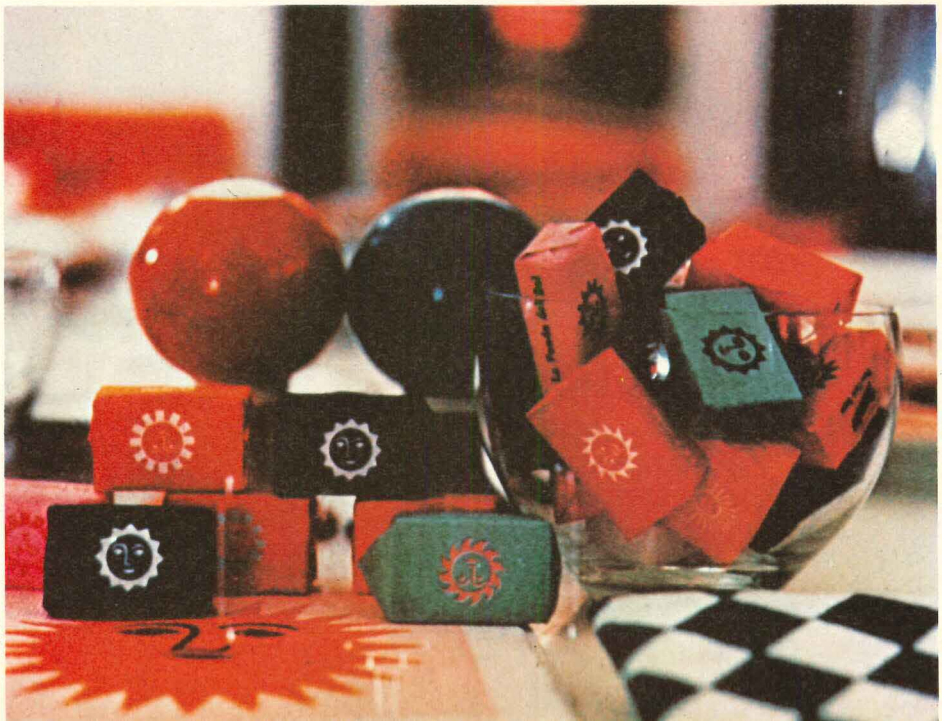




The Textile and Objects Shop (above, left) incorporated many of Girard's textiles as well as folk art objects from around the world and was the first retail shop of its kind. His textiles for Herman Miller (above, right) are woven and printed geometric patterns. The textiles (directly above) are from his collection of African fabrics which were the basis of a show he designed and installed in Santa Fe. Other of his textiles developed for Herman Miller were produced in Mexico and were blends of the soft colors so typical of the palette of that country.

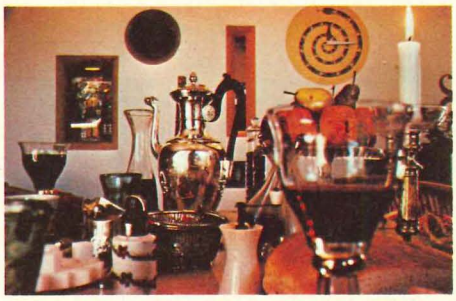


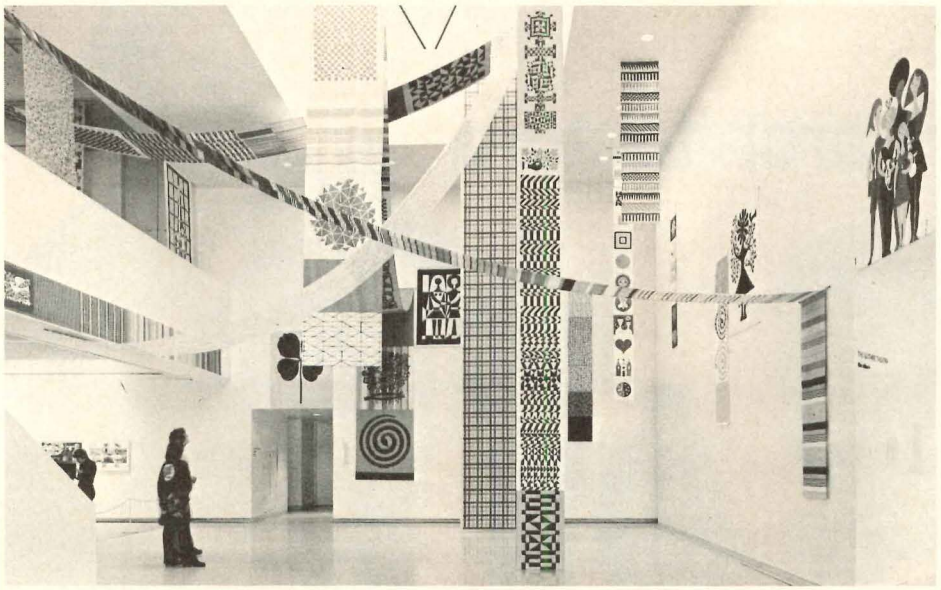
L'Etoile (above) and La Fonda del Sol (below), two restaurants in New York City, were both completely designed by Girard down to the match books, napkins, and menus. Although L'Etoile used no folk art in its design, it still contains the small scale details and textures that give it a visual richness. The festiveness of the colors and textures at La Fonda del Sol capture the character of the Mexican culture as does the stucco wall with its small cut-out niches.



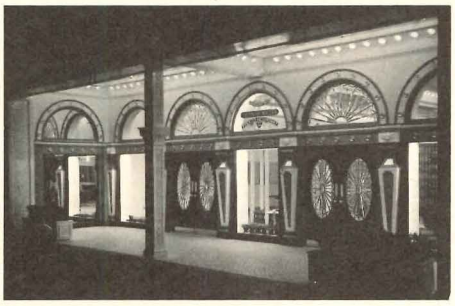
A life in the process of design

Girard's own house in Santa Fe is his own world in miniature. The adobe style architecture is simple and strong forming the backdrop for his continually changing collection of objects. There are both vistas and vignettes, a sense of discovery at both a large and small scale.





At the Walker Art Center's exhibition on Herman Miller, a section was devoted to the work of Girard. The installation (left) of his fabrics, some of which were reprinted from the original screens, was designed by Girard in situ. The San Francisco showroom for Herman Miller (below) also by Girard.



stream of the modern design movement, the later work, based on the same philosophical attitudes, was to draw on a much broader context.

Although he had seen much of Europe during his school years he did not begin to travel extensively until the early 1950s. The first of these trips was to India, for the Museum of Modern Art show, Textiles and Ornamental Arts of India in 1954. Then Egypt, Spain, and Portugal followed by Central and South America, and later Germany, Greece, Morocco, Mexico, Poland, Ethiopia, Nigeria, Senegal Lebanon, Turkey, and Russia—all over the last 20 years. And to many of these countries like Mexico he has returned again and again. "Everything you see has an effect on you," says Girard, and there is little doubt of the truth in that, both in a literal as well as a philosophical way. His more recent and well-publicized works—La Fonda, L'Etoile, the Textile and Objects shops for Herman Miller—are evidence of that. The literal nature of his work lies in the fact that many of his travels were, in part, to gather ideas and objects for clients. But for Girard, because one might collect folk art doesn't mean that one has to *do* folk art or even copy it. Rather he asks himself what he can do with it and the process becomes a synthesis of many things to create a new texture in a new context.

This textural richness and attention to even the smallest details in projects like L'Etoile, La Fonda, T + O or the Herman Miller San Francisco showroom, while stylistically of another genre than the early work, still confirm the underlying attitudes expressed by Girard back in the 1930s. And it is not so much the particulars of the 'aesthetic functionalism,' but rather the underlying attitude that forms the thread of continuity throughout the span of Girard's career. These later projects contain, in all their details, the same experiences which he describes as being the intangible activities of the mind and soul. And it is, in fact, this belief in the utility of such devices that transforms any design solution from a purely pragmatic and functional one into an experiential one. There is no explaining the influences and connections between his love of indigenous artifacts and his own design work. His collection, which consists of over 100,000 pieces, and which he regards primarily as toys, is really a world in miniature. On two occasions, he has used the collection as the basis for exhibitions—the Nativity, sponsored by Hallmark Cards, Inc., and A Magic of a People for the 1968 Hemisfair Exhibition in San Antonio. Both are composed totally of scenes depicting their respective subjects using dolls, buildings, and other artifacts to create the entire ambience.

But these objects are more than things to be looked at or numbered and stored away. And perhaps the best example of the integration of the man's life and his own work is seen in his own house.

When he moved to Santa Fe in the early 1950s, the house was simply an ordinary adobe-style dwelling at the end of one of many similar streets. Outwardly, the street and the house show little change of character except that the house has grown enormously through the various stages of renovation. But inside, little has remained the same, even after all the major alterations were completed. Furniture came and went. A conversation pit, built in the living room, was removed when Girard discovered that only the dog used it with any regularity. But even more than the furnishings, the color, texture, and ambience of the place are in the various objects and artifacts that are carefully and lovingly arranged throughout the house. Nothing, however is regarded are precious or permanent, and so from time to time the scene completely changes as other things are brought out to be lived with, equally loved and cared for.

Some years ago, a second house directly across the narrow street was acquired for studio space as well as storage for the collection. Having now expanded his first house to the limits of the property and perhaps having exhausted the possibilities of the interior, Girard is now in the process of living out his philosophy that a house and everything in it should be able to constantly change. The second house is being completely remodeled both as a dwelling and as a studio.

It has been a long and varied life and he sometimes amusingly ponders its quirks—like La Fonda, which he says all the ethnic types loved, but which couldn't make any money selling enchiladas; or the Textile and Objects shops, where everyone at Herman Miller spent their salaries and were virtually the only customers. And it is reassuring too, that at nearly 70 years of age, Girard has little reservation about how much he likes his folk art toys. There still remains that little bit of child in him. [Sharon Lee Ryder]

Another side of architecture

Arrowstreet

In the following pages, an architectural firm looks into the user involvement movement in design today: a movement that began in piecemeal fashion over a decade ago and is now represented by a wide range of methods, approaches, and end results.

About ten years ago, Arrowstreet was hired by a developer to design Warren Gardens, a complex of low-income housing in Boston's black ghetto. The designers worked with their client and the public agencies overseeing the project to address social neighborhood and lifestyle issues as they understood them. All units were connected to the ground to facilitate socializing and child-rearing. They had individual identity, private yards, and fronted on common landscaped spaces. Construction began. Then late one night the walls came down. Neighborhood residents came to the site, "requisitioned" bulldozers and razed one of the partially completed buildings. These people, the ones most directly affected by the project, had deep-felt concerns about this addition to their environment. And yet the conventional design process had provided them no opportunities to voice their needs and feelings.

The same thing they were saying, is said over and over again one way or another. Though the expression may be more subtle, the result can be just as destructive. A downtown shopping mall is built, and five years later it's a ghost town. An apartment complex is assembled and then can't be leased. Why? Mazelike regulations? Funding mechanisms which place a tangle of "sign-offs" between those who get the benefit and those who pay the bills? In a way, it's a problem of distance. The world of decision-makers and design professionals is often quite distant from the lifestyles of an ethnic neighborhood. Individuals and organizations are disconnected from one another. Inevitably, the result is disparity between people and the places where they live, work, and play.

For Arrowstreet and many other firms, participatory design has become a way to close the gap, to reduce the distance by creating ways for users to take a hand in the design of their own environment, so that people don't have to bulldoze buildings to be heard. In the design of Warren Gardens, participatory design could have helped the client and Arrowstreet to understand the importance of saving an old church, the social meaning of exposed concrete block, or the unfortunate reality that backyard fences for privacy would become a security hazard in that neighborhood.

Though the need for and value of participatory design is easy to understand, making it work is not always simple. Some architects, clients, and communities have been badly burned. But there have been some noteworthy successes with a wide variety of approaches. In Rochester, N.Y. a self-help home-improvement program has changed the face of formerly decaying neighborhoods. Interfaith Inc. in Atlanta, John Sharratt & Associates in Boston, and Brown & Wright in Washington, D.C. have all completed major housing projects which could not have gone forward without extensive and meaningful participation by the local interest groups affected. Sometimes, as in the planning process organized by Larry Susskind for Rockport, Mass., whole communities have been mobilized to enact new environmental policies. Which approach is best depends on the specific situation, but through all of them, people are connecting with one another, with the architect, with the sponsoring client, and with the places where they live or work.

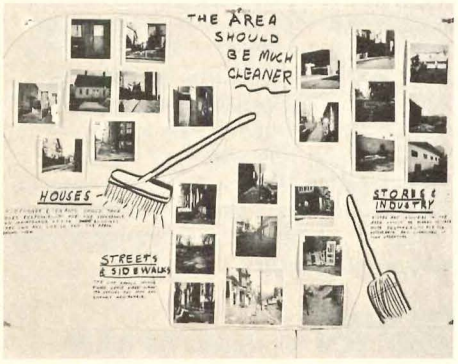
Credits

Project team: the participatory design project was funded by Arrowstreet and the Environmental Design Group to conduct a series of seminars on participatory design for Boston-based architects and planners, reach out to the broader community of involved professionals, and prepare material for national publication. Work was directed by Curt Lamb; research by Reena Racki and Donald Grinberg; editing by Jim Batchelor and Donna Donovan.

Consulting principals: special contributions through written statements and substantive conversations were made by Stephen Carr, Richard Krauss, and John Myer, principals and directors of projects in participatory design at Arrowstreet.

Participants: among those involved in the participatory design project were Julian Beinart, Alan Dolmatch, Linos Dounias, Philip Dowds, Robert Fleischauer, Gary Hack, Philip Herr, Myron Miller, Michael Pittas, Gerald Robinson, Robert Slattery, Stephen Tilly, Mark Waltch, and Wayne Welke.

Stages in the process



Techniques of user involvement: Participant photography (far left), design-it-yourself models for ARC (top, middle); group work on "ideal campus plan during an Environmental Design Group project (bottom, middle). Two "ideal" plans from an Ecologue process (right).

With long-term responsibility for the operation and financial soundness of environments, sponsoring clients are seeing participatory design as an efficient way of understanding what people want, getting their suggestions, and securing community support for their projects.

The participatory process usually requires its own funding, but the costs are small (typically less than .5 percent of project's final costs). The time required for participation is as important to the client as its dollar cost. Participatory programming efforts carried out in advance of design work can take one to three months. When user involvement in programming is combined with initial phases of design (as it often should be), the additional time it takes can be reduced even further.

Techniques

There are now a number of tested techniques to consider in preparation for involving users. Some blend the group dynamics insights of encounter/awareness therapy with contemporary design methodology. Many tap new problem-solving techniques (like Synetics, or the "process consultation" approach to group management). Some build on political foundations laid by government programs committed to citizen participation. Some have been informed by university-based research of the kind reported by the Environmental Design Research Association. Which technique is most appropriate depends on each situation, the needs of the client, and the architect's experience and preference.

Opening up

There are many barriers to open communication on design issues. Most of the environment appears—like water to fish—to be an unchangeable fact of life. So the first challenge of participatory design is to open up possibilities for the way things might be. A second problem is to get through to people's deeper needs. Account must be taken of Freud's familiar division of experience onto two levels: an unconscious, primary level, which finds expression in wishes, dreams, and emotional life; and a rational, secondary level, operative in purposive thought and action. People often *talk* about their environment only on the secondary level, but they are supported or denied by it on a primary level as well.

A useful technique for getting people to open up is the sharing of "image maps." Each participant is asked to make a picture which somehow describes the qualities of a place. Words are allowed, but everyone is urged to use some form of graphic expression—sketches (however tentative), line maps, collages of photographs—to encourage people to conceptualize their ideas in images that are useful in design. Structured observation (e.q., "typical trip" maps) provides another means of opening up. In the "scored walks" of Lawrence Halprin's Workshops, the technique has been developed to a sophisticated level.

Arrowstreet has often used photography in opening-up exercises. Participants can be given simple-to-use, inexpensive cameras to create personalized images of things liked and disliked about a particular environment, and qualities of other places that might be emulated.

As Gary Hack, in his forthcoming volume on participation techniques points out, research instruments such as questionnaires or activity observations can begin the process of involvement, but are rarely intensive or projective enough on their own. Surveys can be useful to get broad-brush opinions or profiles of community sentiment; but are most effective if used in combination with continuous and direct interaction over design issues.

Design phase

Experience indicates that when users are carefully prepared for the task, they are capable of projecting beginning designs, based on their own understandings of their needs and aspirations. Experience also indicates that when users do this, the professional designer's role is extended, not reduced. It is he who must then turn tentative impulses into full-blown solutions, mediate contradictory interpretations of environmental purposes, and integrate all design inputs into a single cohesive proposal for change.

One approach to involving users in the design phase of a project is to take them through the same steps that professionals use in generating a solution. the *Planning and Design Workbook,* developed at Princeton in 1969 under Bernard Spring for use in Model Cities Planning, is perhaps the most ambitious attempt to translate professional practice into work for the layman.

For the design of the Buffalo General Hospital Mental Health Center, Kaplan & McLaughlin developed a series of presentations and experiences to acquaint users with contemporary architectural design issues. In a series of "marathon" sessions (patterned after earlier work with the Synanon Foundation) over 20 schemes were analyzed in rough model form by administrators, clinic staff, and patients before selection of a single option.

Patterns—evocative sketches of user needs and spatial solutions first promulgated by Christopher Alexander and his Center for Environmental Structure—have been found useful by many in helping users deal with design issues. Planning Outdoor Play (POP), a participatory approach to playground design, developed by David Testor and Bodil Vlaupel, relies on user choice among patterns. School planning activities using patterns have been developed by Michael Pyatok at Penn State and Henry Sanoff and George Barbour at North Carolina State.

Ongoing user-involvement

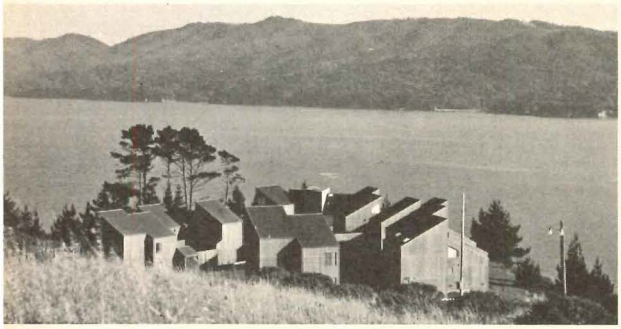
There is not space here to discuss the increasing variety of ways that users, both in the developing and modern world, are involving themselves in the actual construction of the built environment.

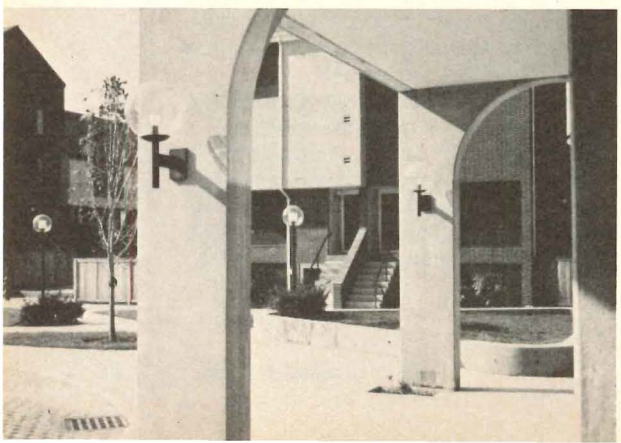
Users involvement in the ongoing operation of a facility is a logical extension of participation in design. A major part of David Lewis' participatory work in designing a community school for Pontiac, Mich. focused on empowering a city-wide coalition to direct the diverse programs to be

housed in the new building. In another effort, the Building Systems Design Group found that few clients had used the full potential of a flexible building system in a number of California university buildings. To help with the problem, they solicited a grant to explore potentials of the system with directors of installations already in place. Then in America Park in Lynn, Mass., tenants designed new instruments of management that would extend their influence beyond construction to on-going control of the use and appearance of their new neighborhood.

End results

What of the environments that result? There are clear instances in which participants' ideas have totally reshaped a design. In many other cases there is no way to trace precisely where ideas originate. Even where it is apparent that participants' ideas have had an important effect, it is not yet clear whether a new form language in architecture is emerging or even should emerge. One theory is that in participatory design, the single-purpose statement is less likely to result. Important antecedents can be seen in the ad hoc qualities of medieval towns, farmscapes, and folk art. On the other hand, it's not impossible for the participation of users to lead to monumental images. For most designers, the value of user participation is not to learn a new design language, but to learn to speak their own personal language more to the point, with deeper understanding. The environment is a medium for communication about values and needs. Novel, attention-getting forms, like striking images in speech, have their place, but to communicate, they must exist in a setting composed of relatively familiar elements, in which users find reflections of themselves.





Projects with strong user input: Synanon, Calif. by Kaplan & McLaughlin (above); Boston housing by John Sharret & Assoc. (below).

A movement with different approaches

Is there a participatory design movement? If so, how widespread is it? At one end of the spectrum, the Boston Center for Vocational Change reports a large number of hands-on, design/build entities whose work and governing structure is strongly participatory. Community Design Centers—obituaries notwithstanding—are far from moribund. Those familiar with them say some 30 of these are alive and well, with perhaps ten boasting staffs of 20 or more (mostly ACTION workers).

An interesting new breed of small firm shows commitment to participation that has led to a special mix of commissions—part architecture, part curriculum development, part planning, and part process consultation. Washington's Attic & Cellar Studio is cast in this mold, as are Criteria, Inc. in Minneapolis, RWA Associates in Chicago, and People Space Designers in Seattle. Though a year's review of the state of the art suggests that the vast majority of architectural firms have not, for whatever reasons, taken steps to increase user input in their work, five or six established firms across the country are actively doing participatory work, and another dozen have strong individuals who incorporate user input into their projects.

The status of participation in the design schools is an important indicator of its future influence on the profession. A brief review of university curricula suggests that design students, although not as immersed in participation as recent graduates were, still get substantial exposure to the issues it raises. The community Development Group at North Carolina State is continuing its earlier work in the field and has been joined by the Psychological Laboratories at the University of Michigan, the Department of Environmental Analysis at Cornell, the Housing Research and Development project at the University of Illinois and the Organizational Psychology Group at the University of Tennessee. Many architectural students have the option of working on real-world projects with heavy user involvement as a part of their regular coursework. Jan Wampler at MIT, Keith Gray at Cornell, and Gordon Geebert at CCNY are among those committed to this approach.

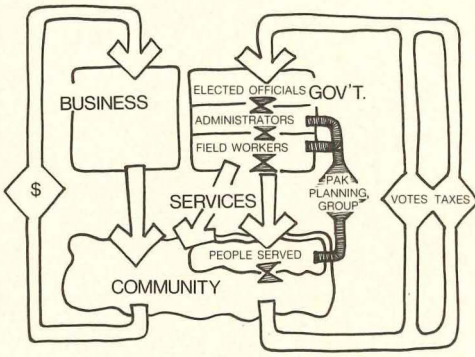
The result of this activity is not yet a coherent movement, but there are a series of centers, each operating in its own style to advance the art of participatory environmental design. Several following examples illustrate different approaches firms may take in this new kind of milieu.

Urban Design Associates

Two years ago, backers of Gananda, a new town of 80,000 people proposed for upstate New York, asked David Lewis's Urban Design Associates (UDA) to help them design a school/community center.

Drawing on earlier work in Pontiac and Pittsburgh, UDA asked more than 200 persons to participate in three sets of "games," each requiring about a day to complete. An inventory of existing community space began the sessions, followed by an analysis of activities and spaces required to meet the needs participants felt were important. The games, believes Lewis, were instrumental in creating a climate of openness and understanding among all local interests, and in laying the conceptual foundation upon which building plans could be based. The entire process through designs took nine months.

PAK (Planning Aid Kit)



PAK was created by people at the National Bureau of Standards, BOSTI, and the Environmental Design Group to help citizen groups participate effectively in the design of community mental health centers. It has since been used in a number of ways: for example, to help students design their dormitories on a Massachusetts campus, and to help state officials in Iowa work with parents and vendors in developing a system of community services for the mentally retarded.

Designed to overcome the confusion and conflicts that often render diverse groups ineffective, PAK proceeds through a set of six to ten meetings that give participants a chance to state their own problems and develop their own solutions. The Kit includes instructions on organizing the group, agendas and visual aids (e.g., sets of posters for public note-taking), and it is designed to enable the group to continue after the initial PAK process.

The first meetings are structured to help people share their concerns about a proposed project or set of services. These concerns are developed into clearly defined problems. The second set of meetings is for discovering programs to solve the problems. In the third set of meetings, the group assigns priorities to the problems and develops strategies for realizing their proposed solutions. The meetings are structured by group process techniques; they give each member an understanding of the generic set of issues used in systematic cost-benefit decision-making.

Lawrence Halprin

The wealth of understanding and practical experience that Lawrence Halprin has accumulated in years of what he calls the RSVP approach to collective creativity, is a valuable resource for those contemplating similar projects today. Among the pertinent lessons of the Halprin experience: how to use tools like "scored walks" to give participants a shared experience of environmental encounter; how to use special skills in process facilitation, and participatory media; how to integrate ad hoc environmental policy groups with conventional political activities.

One of the broadest applications of the Take Part process (still underway) took place in Ohio, where the Cleveland Foundation asked Halprin to help coordinate efforts of the many groups planning for different parts of that city.

Phil Herr & Associates

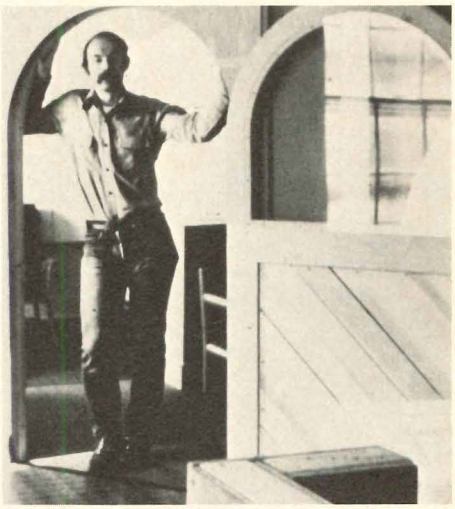
Bourne, Edgartown, Franklin, and Sunderland are all small New England towns threatened by big New England problems—commercial sprawl, declining town centers, second home recreation developments, a massive influx of multi-family subdivisions and retirement villages. The planning firm of Phil Herr & Associates makes a business of helping such towns solve their problems.

Herr & Associates has always offered the traditional array of professional planning services, including land use and economic studies, reports on fiscal and ecological consequences of growth and the like. Over the years, however, Herr's firm has developed a conviction based on experience that has transformed its practice: to get towns moving on issues, proposals for change have to come from residents themselves.

Now when Herr & Associates is hired as a consultant, it tries to set up a network of neighborhood-based planning groups. Each group is asked to create a series of posters to fill out, exploring community assets and liabilities, ideal town futures, and short-term proposals for change. Later, groups work jointly to develop concrete proposals to be put before the town.

Although some clients are hesitant about such an "unprofessional" approach, Herr's enthusiasm and history of success with the technique wins most over. The planning groups of farmers, businessmen, and homeowners that Herr & Associates formed in Sunderland, Mass. agreed on the goal of protecting agricultural land without depriving farmers of their development-based equity. The firm was then able to design an innovative development rights transfer scheme, since adopted by town meeting.

ARC



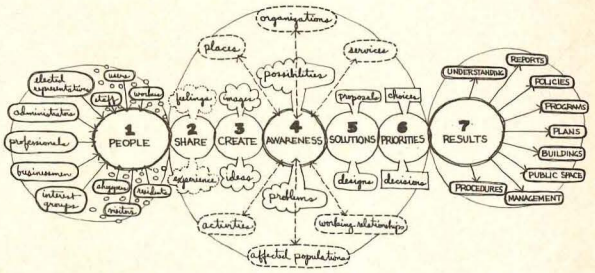
In a last ditch effort to improve conditions in one of its aging mental health facilities, the Ohio Department of Mental Health financed a design-build project by ARC (Architecture/Research/Construction)—a 22-person organization of architects, service planners, and carpenters.

As a result of this project and others, the ARC team has put together a work book of information and advice summarizing their extensive experience in hands-on institutional renovation with user involvement. (To be published in book form this spring by Dowden Hutchinson & Ross.) Included are two dozen pamphlets on process: "Observing and Evaluating," "User Decision Making," "Working Approach," etc. and a variety of design patterns "Personal Area," "Sound Beam," "Leaning Wall," "Television Place," "Canopies," etc.

Karl Linn

In Louisville, Karl Linn and Nanine Clay conduct workshops in environmental self-help. Contemporary "barnraising"—a process of building community through environment—is carried out through creative dialogue among interdependent people and organizations. Block groups, women's organizations, students, social service agencies, and others initiate discussions to identify environmental problems and propose solutions based upon local decision-making and action. An inventory of resource groups and materials is made, and a "common ground" of volunteers—theater people, artists, architects, ceremonialists, choreographers, etc.—is formed to focus energy.

Ecologue



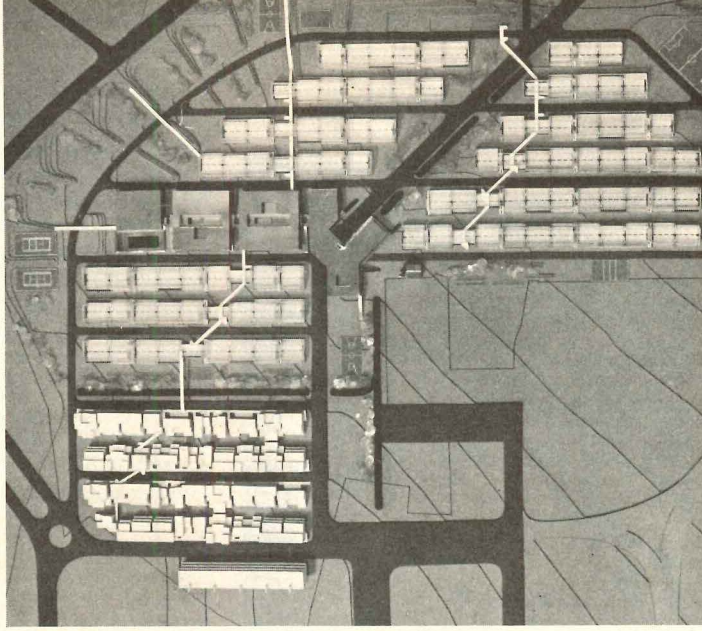
Ecologue is a process for grounding the design of environment in shared understanding among architects, sponsoring clients, and the people who inhabit and use the place. Small groups drawn from clients, organized interests, and a cross-section of the affected population work collaboratively with professionals. Using Ecologue's participatory methods, these groups can examine their experience, define values and needs, work out realistic design proposals, and determine priorities for action.

The Ecologue process was developed by Stephen Carr, Philip Herr, Philip Dowds, and Bill Cavellini in the MIT Dept. of Urban Studies and Planning and first applied under a federal grant in Cambridge, Mass., in an ethnically diverse working-class neighborhood called Cambridgeport. Faculty and students from MIT undertook a four-year project to enhance residents' understanding of the social and physical structure of their neighborhood in order to improve their ability to act effectively for change. Since then, Arrowstreet, Phil Herr, and others have applied the process to a number of projects—among them building program workshops, campus master planning, subway station design, and downtown planning (see p. 71).

Underlying the particular methods, there is a set of general principles for participatory design: **inclusion**—the full range of decision-makers and interested parties are involved in appropriate ways to prevent polarization; **affinity**—work is started with small groups of similar people who can easily share experiences and feelings and work effectively together to achieve in-depth participation; **dialogue**—in-depth understanding is reached through guided discussions among participants and survivors; **sequence**—a step-by-step structure for collective creation that gradually builds and documents a shared understanding of needs and directions for action.

Housing Development Matteoti of Giancarlo DeCarlo

Naomi Miller



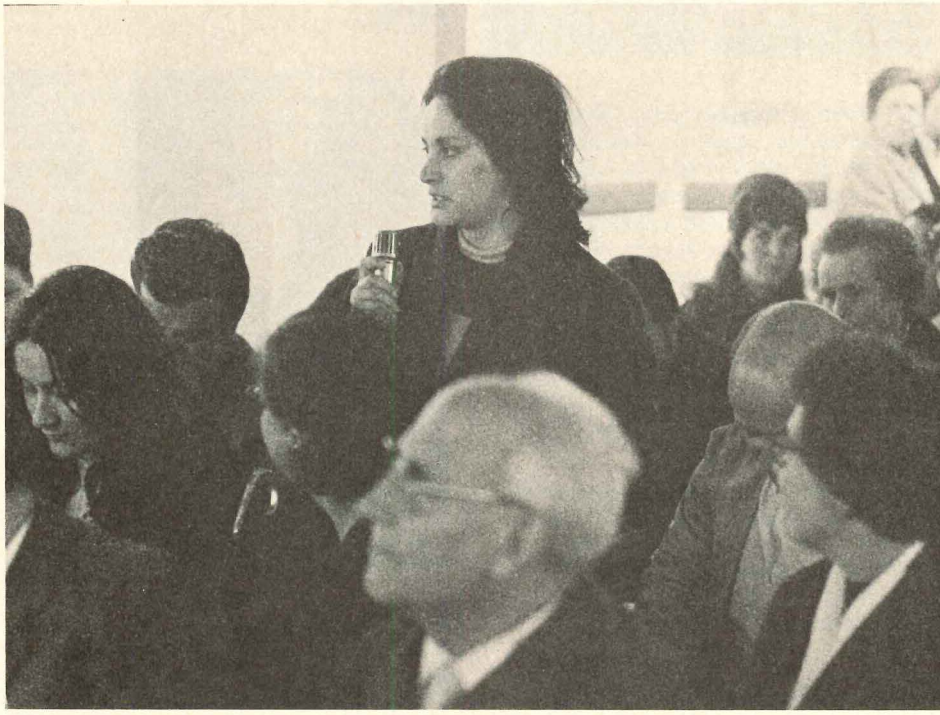
Model of entire project, with first phase (completed) in lower left.

Today as austerity grips the one-time Cinderella of the European Common Market, the Italian economic miracle of the post-war decades seems eons away. Crisis succeeds crisis where but a decade ago the populace faced the expectation of continuous, increasing consumption. Growth and prosperity were rampant, and even the building industry was receptive to new ideas. It was at such a moment in 1969 that the managers of the Societa Terni, the largest and oldest ironworks factory in this major industrial town, 108 km northeast of Rome, invited Giancarlo De Carlo to design a housing development for 250 workers' families. Precedents for such housing are numerous and include the architect's own houses for workers at Sesto S. Giovanni (1951) and Matera (1954), as well as numerous post-World War II schemes throughout Italy. Above all, housing falls under the shadow of the modern movement including the much publicized projects submitted for the 1927 Stuttgart exhibit. These were especially significant for the design of individual dwelling-types and their possible adaptation via modern means (such as standardization of structural components) to low-cost housing.

Terni gave De Carlo the opportunity to put into play his theories regarding architectural practice in the 1970s—an architecture of participation—an architecture in which the users' requirements are explicitly articulated so as to become the basis for the design. As architect in charge, De Carlo posed the crucial questions: "Why should houses range from luxury on down in every sense? Why should have-nots make do with minimal housing and the element of segregation implied here?

Since the users were to participate in every stage of the decision-making process, De Carlo began planning with them at the outset. Discussions in search of parameters did not have an easy start,

Author: Naomi Miller, associate professor at Boston University is currently a fellow in landscape architecture at Dumbarton Oaks.



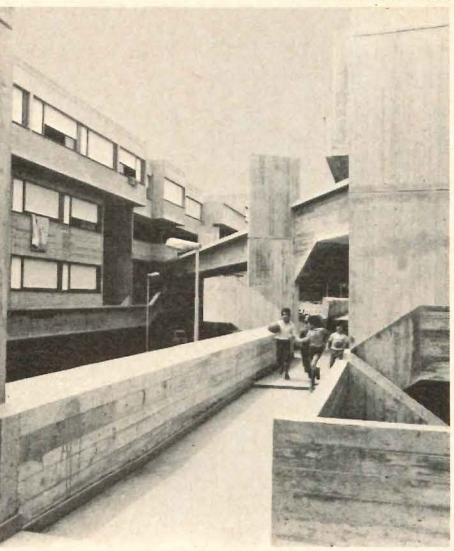
Terni workers' and families discuss design (above) and review proposals (below).

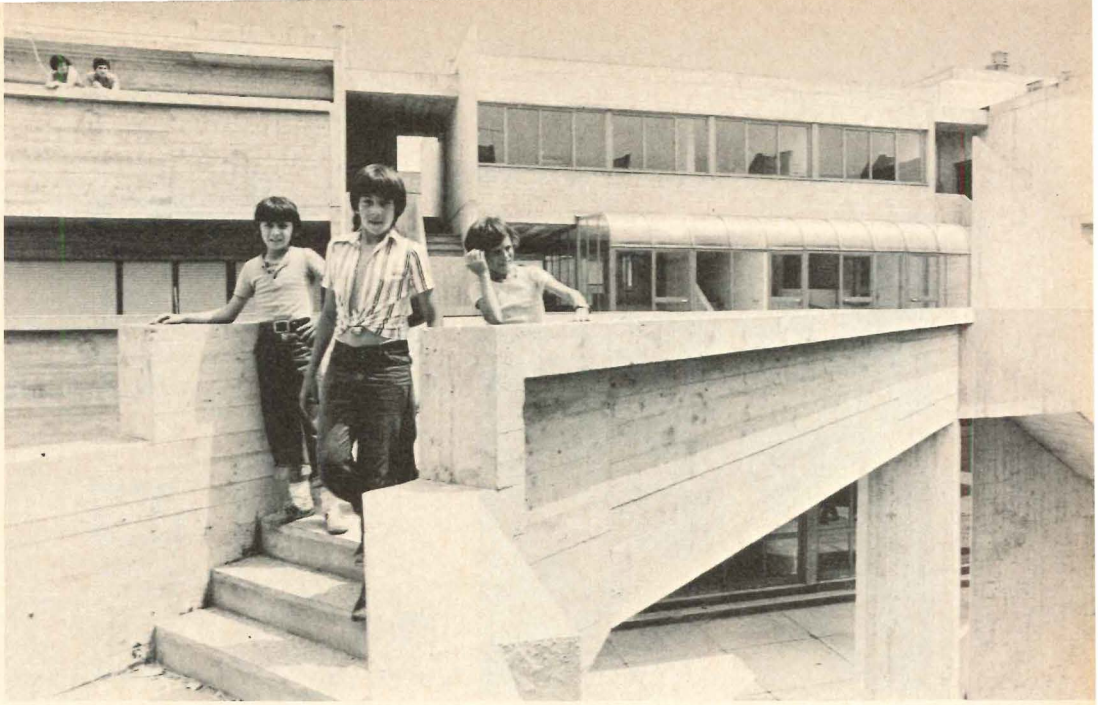
though the management was specifically excluded. The architect did not know the needs of the user, his general behavior, his aspirations, thought patterns, way of life, commercial concerns, views of nature. And similarly, the user had only a vague notion of the architect's work, nor could he clearly express his own interests.

Proceedings at the meetings were taped. The recordings were then presented to the Societa Terni, precipitating a clash between De Carlo and the official client. It soon became apparent that the architect's services were at the disposal of the real clients—the users—rather than the patrons footing the bill.

De Carlo presented the users with a wide range of possibilities. To help these prospective clients visualize different types of housing, an exhibition was organized by architecture students at the University of Rome who were residents of Terni. Comprising new architectural models from

Photos: Mimmo Jodice





In first phase, outdoor bridges, ramps, and stairwells link banks of apartments.

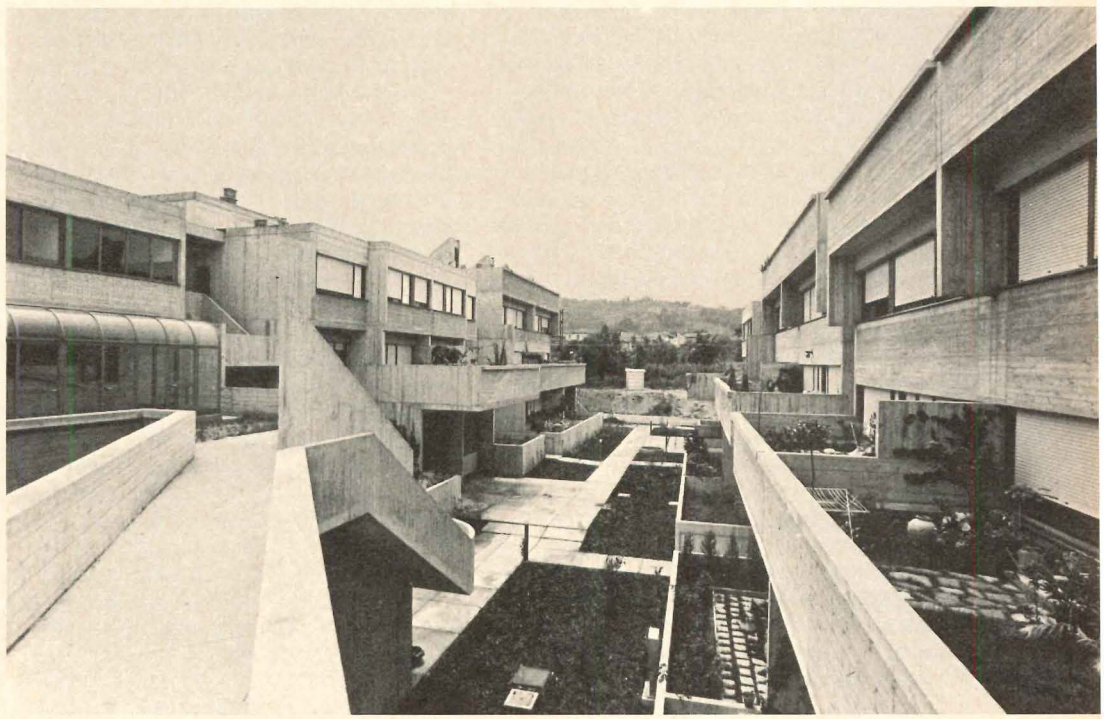
other countries, the exhibit proved to be a revelation to people who could formerly envision only two typologies—i.e., the one-family house and a form of condominium. The alternatives considerably enlarged the workers' conceptual powers. Drawings evolved at meetings, generating an air of excitement and finally active participation—at least verbalization. Sessions soon grew stormy. Eventually came increasing mutual acceptance. Certain requirements emerged from the workers.

Whereas the planners had greater decision power in the sector of the total environment, the people had considerable freedom of choice in the private domain. The problem in the latter was that of the wide range of needs, and the disparities between those of youth and age, and changing family requisites.

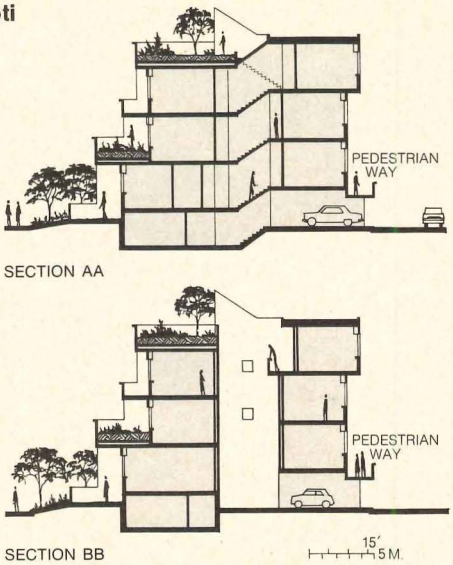
The solution

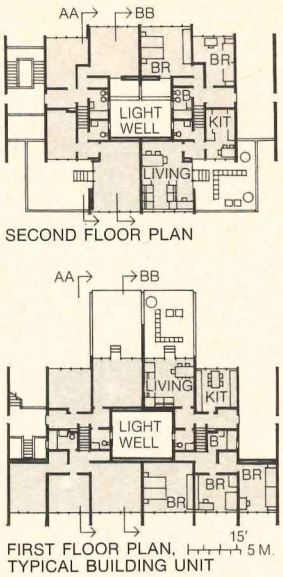
Situated in the fertile valley of the Roman Nar at the confluence of two rivers, Terni, with its population ca. 100,000, is in many ways typical of the outgrowth of post-World War II industrial suburbs on the more distant periphery of Rome. Blocks of new, modern, poorly built high-rises dominate. Few monuments and churches of the ancient city remain, while the Terni ironworks are located outside the city. A generally humid climate prevails, with hot summers and rain in the winter months. The site of the housing, adjacent to that where many of the metallurgic workers now live, is flat, with a view towards the distant limestone chain of the Umbrian Apennines.

In accord with the requirements articulated by the users, a series of five rows of houses for 250 families—about 800 population—was formulated. The overall site plan reveals a development about four times the size of the present area, 20 hectares, with a projected population of about 1000 families. All the housing blocks are oriented in an east-west direction. Major arteries and subsidiary passageways link the four clusters distributed in three quadrants: a fourth is open for recreational purposes. Further communication is made



Private open spaces have roof gardens (above); public streets link to garages (below).





possible by the existence of a central spine harboring communal facilities and outdoor playing fields. Landscaping, a peripheral road, and open country set the whole apart as a separate community. Divided by a broad road from the principal cluster, a single slab of stepped-back apartments was designed for occupants without families. The fabric thus indicates a different function, but its actual siting does not disturb the 'cohesiveness' of the physical entity.

Streets laid out between the rows vary in width: balconies face inwards towards narrower ways while garages and covered shelters exist at ground level on the wider roads. Flat terraces are a continuation of the cantilevered roofs. Exterior walkways furnish direct entry to dwellings eliminating a transitional space between outdoors and indoors. Vertical circulation is provided by outside staircases, enhancing the dynamics as well as the aesthetics of exposed areas. Provision for ground-level parking under the structure removes the specter of the suburban "welcome to the garage" syndrome. Covered diagonal walkways connect public spaces in the parallel rows while subsidiary diagonals mark the outer stair passages. Powerful at close range, they appear attenuated and strangely spindly on the scale model. Vertical windows and doors break the dominant horizontals of corridors. Note particularly the strong horizontal which spans the entire series of houses at a lower level and also serves as a connecting link among varying segments. Interruptions occur on upper stories whereas rugged sculptural components form open stairways at the extremities. The play of masses is complex and the modular system employed here is indeed elusive: a strong asymmetrical rhythm is established within each of the groupings and the free spaces in between. Rational elements predominate but the clearly defined framework admits adaptability and expansion. The whole bespeaks of the disorder, complexity, and vitality that De Carlo has been seeking in his recent works.

Completely poured on the site, the concrete is massive, gray, heavy, and strong. Some have questioned the lack of prefabricated parts. An engineer in charge, currently engaged on another concrete job for an industrial project in the district, noted that by using pre-cast units, 100 men were employed as compared to 250 on the Terni site. The architect's choice was governed by a number of factors, including the availability of relatively cheap labor, the quality of craftmanship, and local building codes.

Neo-brutalist imagery emerges from the stepped profile—the long perspective views of retreating slabs, their occasional recessions and projections, the assertive angles, the diagonal wedges of stairways and pedestrian walks combined with the broad horizontal system of fenestration that proliferated in the 1920s. Little effort has been made to take into account the undistinguished local vernacular or to incorporate natural indigenous regional factors or historical reminiscences. In contrast to the relative intricacy of the ensemble, the order of the master plan—specifically, the type of serial linearity imposed on the terrain—is striking. Contemplation of the neatly stacked trays reveals a certain rigidity in the overall layout coexisting with the lively "disorder." Perhaps the enormous freedom within the design supplies the most plausible rationale for the plan's severity. The latter will undoubtedly be softened with the addition of landscape elements.

The question

How much of the Terni housing reflects the demands and needs of the workers and how much the conception of the architect? How much of participatory architecture is pedagogical or paternal? Considering the elaborate process of participation, we may question why the resulting architecture bears the strong signature of Giancarlo De Carlo. For the design and spatial composition are akin to the architect's workers' housing schemes and to the general rhetoric so brilliantly employed in his student dormitories at Urbino. Apparently, this process is closely bound to the inspiration of the architect, and largely dependent on his vision. It seems as if De Carlo were indeed capable of educating the people in the tenets of an ideology that could be adapted to their needs. Thus the users had the illusion that they were an essential part of the decision-making process, when in fact, the formal aspects of the whole derive from the understanding and expertise of the architect. Such reliance on an outside "consultant" can be frought with adversities.

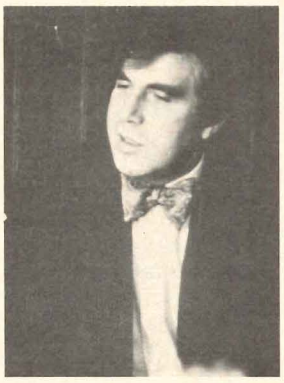
In this case, however, removed from the economics of typical industrialized housing, De Carlo clearly aligned himself on the side of the user-clients to effect the desired program. Rather than the formation of a new aesthetic or a new norm in housing, he is seeking a new social consciousness. His goal extends to the capacity of the plan to enrich the entire domain of the inhabitants—psychologically as well as physically. And further, the plan should foster the nurturing of a concerned community, and ultimately contribute towards the humanization of an increasingly alienated society.

Terni reaches far beyond its intent as a prototype for a new standard of workers' housing. By manifesting a true regard for public spaces as well as private ones, the prospective tenants in Terni have laid the ground work for an amalgam of village and town. A concern for a total built environment emerged. It is, however, in the infrastructure that the experimental nature of the process is most evident, i.e., the apartment layouts, and the integration of different functions with the building program and the circulation network.

The success of the Terni housing can only be measured in time. The partnership between the architect and the users must continue in the dialogue between the buildings and the people. If collaboration is truly a continuous process and the buildings remain an open-ended system, subject to constant revision, then an architecture of participation has taken place, quite naturally dependent for its form on the guiding architect. The people remain long after the architect has departed from the site. □

Streets for people

Stephen Tilly and Stephen Carr
of Arrowstreet



Participants in the user outreach process for the Washington project.

Photos: Imago

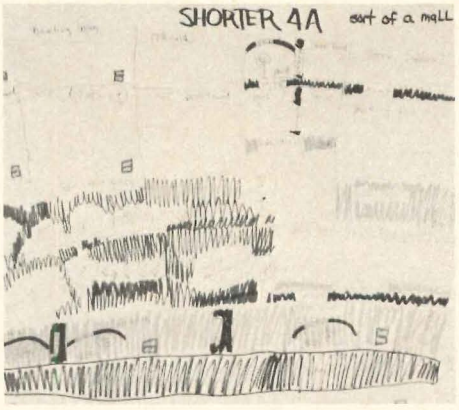
On-the-street interviews of over 725 persons helped select the 100 persons involved in the Ecologue sessions (above); participants comment on a design model (left, below); user "ideal" map downtown (right, below).

In the spring of 1968, Martin Luther King, Jr. was assassinated. Washington exploded. Blacks from all parts of the District poured into the streets to express their grief and anger. Groups of enraged people turned on white-owned businesses in their neighborhoods, burning many of them to the ground and "liberating" the goods. Some moved on into the downtown. This singularly violent event in the otherwise peaceful decline of downtown Washington (as it gradually lost ground to suburban shopping centers) precipitated a sharp drop in sales and a marked shift in the racial composition of customers. There was a growing sense of crisis about the economic future of downtown.

Now, eight years later, after much talk and planning, the first action phase of downtown revitalization is underway. As the visible symbol of renewal, six blocks have been "pedestrianized"—three of them fully converted from streets for cars to streets for people. Downtown users—businessmen, shoppers, office workers—were involved in planning for their changes. But more than an exercise in participatory design, these new public spaces, with their program of cultural and promotional activities, represent the emergence of a new identity for downtown Washington. It is an identity born of the social and lifestyle changes of the 1960s and nurtured by the unique political realities of the District of Columbia, its venerable national institutions and its young and changing population (75 percent black). It is a heady mix of commerce and culture, sequestered institutions and street life, and all kinds of people rubbing elbows and enjoying the scene.

Government involvement

The gradual decline of downtown Washington in the 1960s had not gone unnoticed by the businessmen and planners. For a number of years, Downtown Progress, a private downtown planning and advocacy group, under the direction of Knox Banner, had been developing and promoting plans and actions for downtown improvement. Finally, in 1969, the District, through the D.C. Redevelopment Land Agency (now the Department of Housing and Community Development), declared downtown an Urban Renewal Area and began the planning process. A first general plan was prepared with the assistance of Rai Okamoto & Associates. It established the idea of substantial pedestrian improvements, linked to private redevelopment of several key blocks near the new Washington Metro stations. Then in August of 1972, Arrowstreet Inc., a Cambridge-based architecture and planning firm, was commissioned to further develop this general plan, preparing designs for pedestrian improvements to F and G Streets and carrying as much as possible into implementation.



The result is Downtown Washington Streets for People, perhaps the most ambitious program of downtown improvements to be undertaken by any American city. When the program is carried through to completion, some 60 blocks will receive improvements ranging from modest tree planting, sidewalk repaving, lighting and signing, to a proposed multi-million dollar galleria above the central station of the Metro subway system and fronted by the major private redevelopment sites.

Steps in implementing the program have been taken; the finishing touches are being put on the first six blocks.

People involvement

During the first nine months of detailed planning and schematic design, Arrowstreet and its sub-consultants had conversations with more than 1500 people about the future of the F and G Street area. They talked to 300 businessmen—some of them four or five times—and met with representatives of more than 60 civic and community groups at three stages of the project. A Program Resource Group made up of key people from the business and cultural worlds was convened to work on the initiation of street activity and management programs, and numerous public officials from the involved District agencies contacted.

But more intensive than these efforts was the Arrowstreet "user consultation" process, a three-month program of intensive work with a cross-section of 100 downtown shoppers (or potential shoppers) and office workers.

In August 1972, more than 725 persons were interviewed in and outside Washington's retail core. Interviewers asked people if they would be interested in talking further with the architects planning improvements for the core area. This kind of self-selection provided a bridge to the in-depth user process. The architects were aware of the need to strike a balance between the present user population and the probable and desirable future one. Their search went to the heart of District socio-political issues.

While there were many black employees in downtown stores, there were only a handful of black-owned businesses. Many businessmen told of the "decline" of their trade since the riots, meaning in many cases that they were now selling different kinds of goods to a mostly black clientele. These businessmen formed a politically potent constituency that wanted to make the downtown attractive to suburbanites.

On the other hand, there was a vocal political constituency that dismissed the

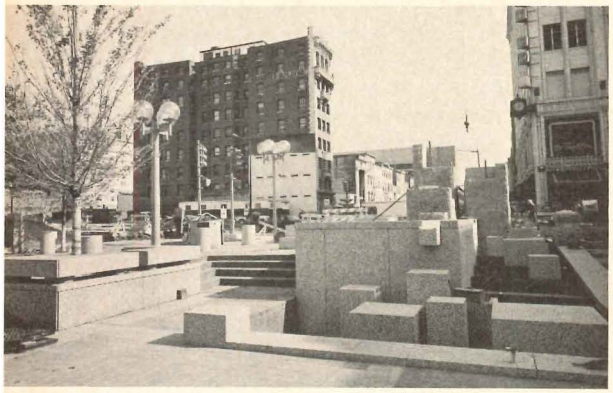
Participatory design

importance of suburbanites and emphasized the need for minority business opportunities and cultural attractions for Washington's vast tourist trade. Many blacks felt that the District should try to attract all the money it could from visitors in order to become more viable economically, especially if there were more black-owned businesses.

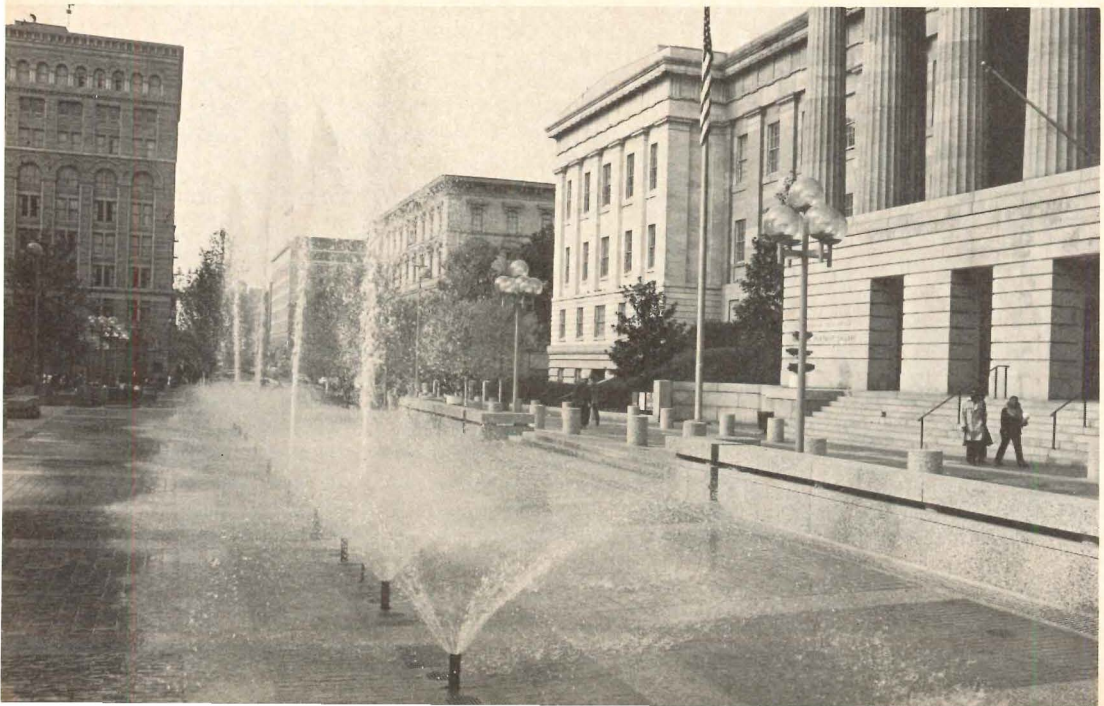
Weighing these considerations with the survey results, Arrowstreet and the RLA established criteria for recruiting a representative cross section of user-consultants. This was not primarily a question of racial percentages, important as these were. A set of "phenotypes"—people with typical use patterns—seemed to appear in the survey data. For example, young black women who worked downtown constituted a significant group, as did older black and white women shoppers who used the retail core during specific time slots.

Photos: Ben Livson

Gallery Place: View south.



A fountain near 7th Street (above); view west past the National Portrait Gallery (below).



Particular methods

In working with these groups, Arrowstreet applied the Ecologue process. It involves a structured sequence of small-group meetings in which the participants work both independently and with the designers to develop an understanding of the environment and of their priorities. In Washington, the process involved ten weekly meetings with each of 15 affinity groups. In the course of those meetings, the participants photographed and analyzed the things they liked and disliked about the Washington downtown area; shared slide sequences of their own typical trips through the area; looked at and evaluated slides of possible pedestrian improvements; developed their own ideal plans for downtown; reacted to Arrowstreet design proposals; and prepared group position papers on specific subjects.

The bulk of the work with users was done not by architects but by a field staff with experience in different aspects of planning. They spent full time preparing for sessions struggling with logistics, working with groups, sorting out the results of the work, and formulating its conclusions. The field staff became advocates for their groups' points of view in staff meetings.

The main contribution of user consultation was to Arrowstreet's conception of the social-spatial dynamics of downtown. Here, the perceptions of downtown businessmen were also important. Seen through the eyes of its businessmen, shoppers, and workers, downtown took on an identity which was not simply "featureless downtown USA" in a predominantly black city (a tourist's first impression). Instead, it was an area filled with socially and physically different subdistricts, each with a unique (or potentially unique) identity, contributing to the whole. The designers realized that by reinforcing these differences they might avoid the uniformity from which many other pedestrian malls suffer.

These districts were associated with different income strata and racial groups and their users were intensely concerned about what was done where and what groups were being favored by various alternatives. Achieving the right balance of improvements in the right sequence, in order not to alienate any of the user or business interests, became the central preoccupation of the project directors.

Input influences

The main features of the final design are two new activity centers: one, a large covered galleria space at a major intersection and Metro stop; the other, a "public arcade" featuring a bazaar of small shops, and entertainment and care for children, adjacent to a major department store. There is also a six-block pedestrian mall, with one transit lane, along the main shopping street (F Street). An activity and management program to inaugurate and maintain the new spaces is now being worked out by Downtown Progress.

One specific example of user influence on the design is seen in the proposed Metro-Center Galleria. Arrowstreet inherited the galleria idea from previous downtown planners, an idea that interested the agency as well as the designers. As with other key features of the plan, Arrowstreet developed several alternative schemes for discussion, ranging from shopping malls to large scale space like the Galleria in Milan. Since it seemed that the cost of this element alone would range from a fifth to a third of the total project cost, the question of its attractiveness to the users was highly significant.

In their initial presentations to the users, the architects encountered lukewarm to violently negative responses. The most telling critique came from groups of District residents who felt that it was something for upper-middle class white suburbanites (several such users were strong supporters). "They want to build a Galleria . . . costs $10 million. What's that going to do for the people of this city?" is how one young black put it.

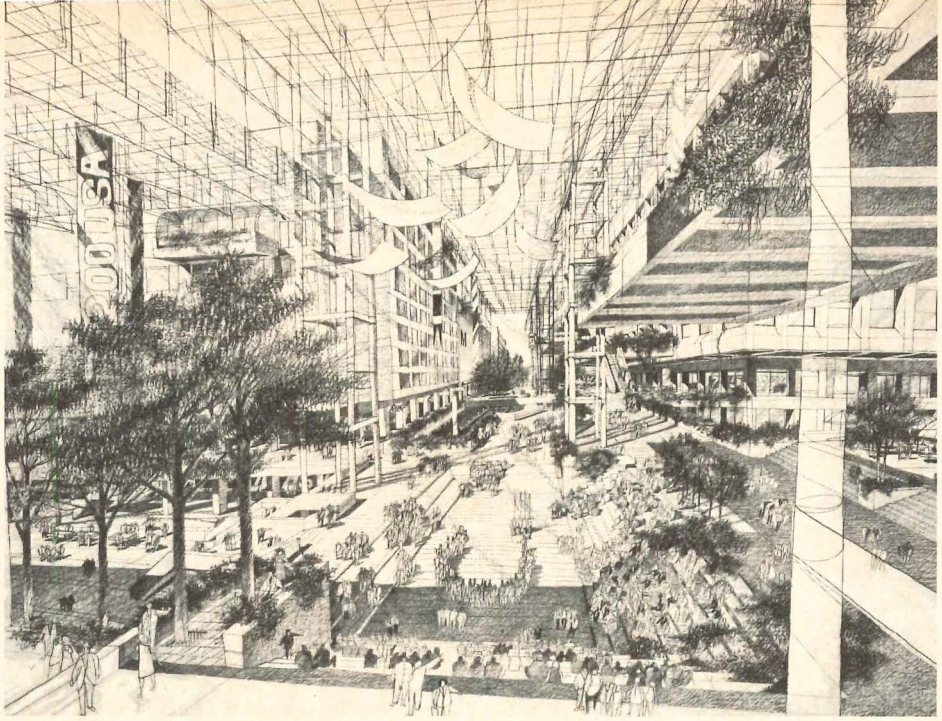
The architects began to rethink their proposals. The design evolved into a series of platforms to accommodate new uses. The users' desire for a downtown meeting place and a more active night life generated a "cityroom-theater" concept capable of accommodating a range of scheduled performances of District theater and musical groups. The Galleria became an exhibition space dedicated to the history and culture of the District population. It also became a hanging garden where shoppers could rest their feet. In the end, after debating the form and content of the final recommendations, almost every user group included the Galleria, now called Metro-Center, in their proposals. Financial trade-offs aside, downtown users saw it as an element which would serve District residents—in part economically—by attracting suburbanites and tourists.

The first phase of "Streets for People," now partially completed, is intended as a kind of "Washington Commons"—the first

significant public space in D.C. to really belong to the people of the city. With their settings for fairs, festivals, performing and visual arts, these open spaces will become the center of the public cultural life of the city, bringing that dimension into the downtown for the first time. These 11 blocks are anchored by important cultural institutions: the National Portrait Gallery, National Collection of Fine Arts, and the D.C. Public Library.

In response to user inputs, Gallery Place is designed as the principal locale for promotional, cultural, and recreational gatherings in downtown Washington. It is designed to accommodate city celebrations and festivals. The large central pool, with its changing and illuminated fountain displays, can be drained to make space for performances or public gatherings. The bosques of red maples on each side of the pool not only provide shaded resting places, but also allow for canvas canopies to be hung among the trees (from the light poles), over outdoor displays or fair booths. The elm-lined 8th Street promenade (not yet built) will be an outdoor vending market. At the eastern end of Gallery Place, a splashing fountain of falls and cascades is an inviting element and screens traffic noise from 7th Street.

Adjacent to the central pool/fountain is space for an outdoor cafe to be provided by a private vendor. Nearby under the trees are raised planters with attached wooden benches where people can sit away from main circulation paths. At the western end will be a computer-controlled information center (not yet installed) with a variety of audiovisual displays for tourists and residents. The information center is a response to a need expressed by almost all user groups. In its overall form, Gallery Place attempts to respond to the neo-classic symmetry of the Old Patent Office while creating a lively experience sequence to fill the missing link in F Street shopping.



Galleria proposed for Metro Center, 12th and G Streets.

Controversy over stairs

A key turning point in the design which the users influenced (though theirs was not the only important opinion involved) was the decision *not* to restore a steep and broad flight of steps that once ascended to the second floor portico of the National Portrait Gallery.

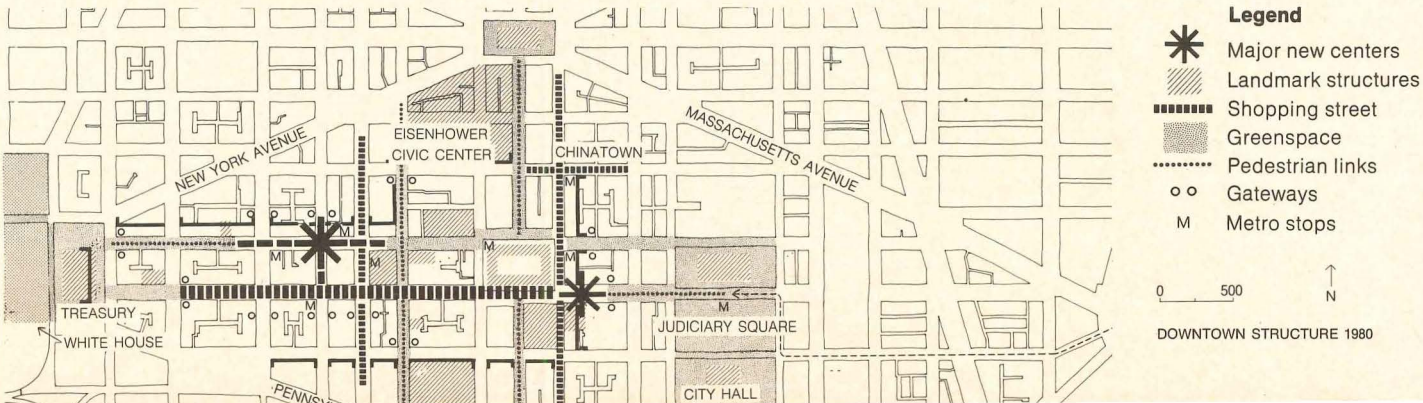
This issue came up during design development of the space in front of the Gallery, after termination of the user consultation process. Arrowstreet's design for the space did not include the restoration of steps, though an earlier scheme had shown some new terraces up to the portico. The Portrait Gallery director and staff had decided that if any steps were built they should be the original ones. Arrowstreet designers argued that devoting so large a portion of the available street space and budget to this restoration would be inappropriate and inconsistent with user wishes for the space. The RLA suggested that the users be reconvened to give their opinion.

A subset of users met and heard both arguments. Arrowstreet's staff developed equal graphics for alternatives with and without steps so as not to favor either in the presentation. A walking tour was held, in the course of which a postal clerk and a Library of Congress employee argued with the Director of the Portrait Gallery about the best setting for the Old Patent Office, now his Gallery. The users eventually decided against the steps (though not unanimously so) and their opinion was the beginning of the end of that idea. As a result of dialogue with the Portrait Gallery Director, Martin Sadik, the design of the plaza became gradually more formal, to better reflect the neo-classic presence of the Old Patent Office.

The final Streets for People plan, reflects a set of decisions taken by the operating agency—the D.C. Department of Housing and Community Development—based on the advice of its design consultants. Arrowstreet. Arrowstreet, in turn, views the plan as the collective creation of all those with whom they (the designers) interacted in the course of its germination and development. The user consultants were especially important in determining the overall balance of the plan as well as the particulars. In their designs for Gallery Place and King Place, Arrowstreet architects sought a poetics of form that would communicate the values, needs, and aspirations of the people who would use these spaces. They were guided in their understanding as much by personal dialogue as by specific proposals of users. Whether the architects gained enough understanding through their participatory work, in the demanding context of downtown Washington, remains to be learned. The test will be in the reactions of the people of Washington to their new public spaces, which were officially opened a month ago.

Credits

Principal design staff: Arrowstreet; Stephen Carr, project co-director and senior designer; John R. Myer, project co-director and senior designer; Robert Fleischauer, director for working drawings and construction; Alan Melting, project manager; Ronald Margolis, design development manager; James Sandell, designer; Stephen Tilly, designer and user consultant staff.
Field staff: Arrowstreet; Gerald Robinson, field manager; William Karg, Clifford Brooks, user consultant staff; Peggy Cooper, activity program manager; Elizabeth Martin, activity programmer.
Client: D.C. Department of Housing and Community Development Staff: Lawrence Press, chief of planning and design; Stanley Sherman, chief of design; Jo-Ann Neuhaus, project manager.
Landscape consultants: Moriece & Gary.



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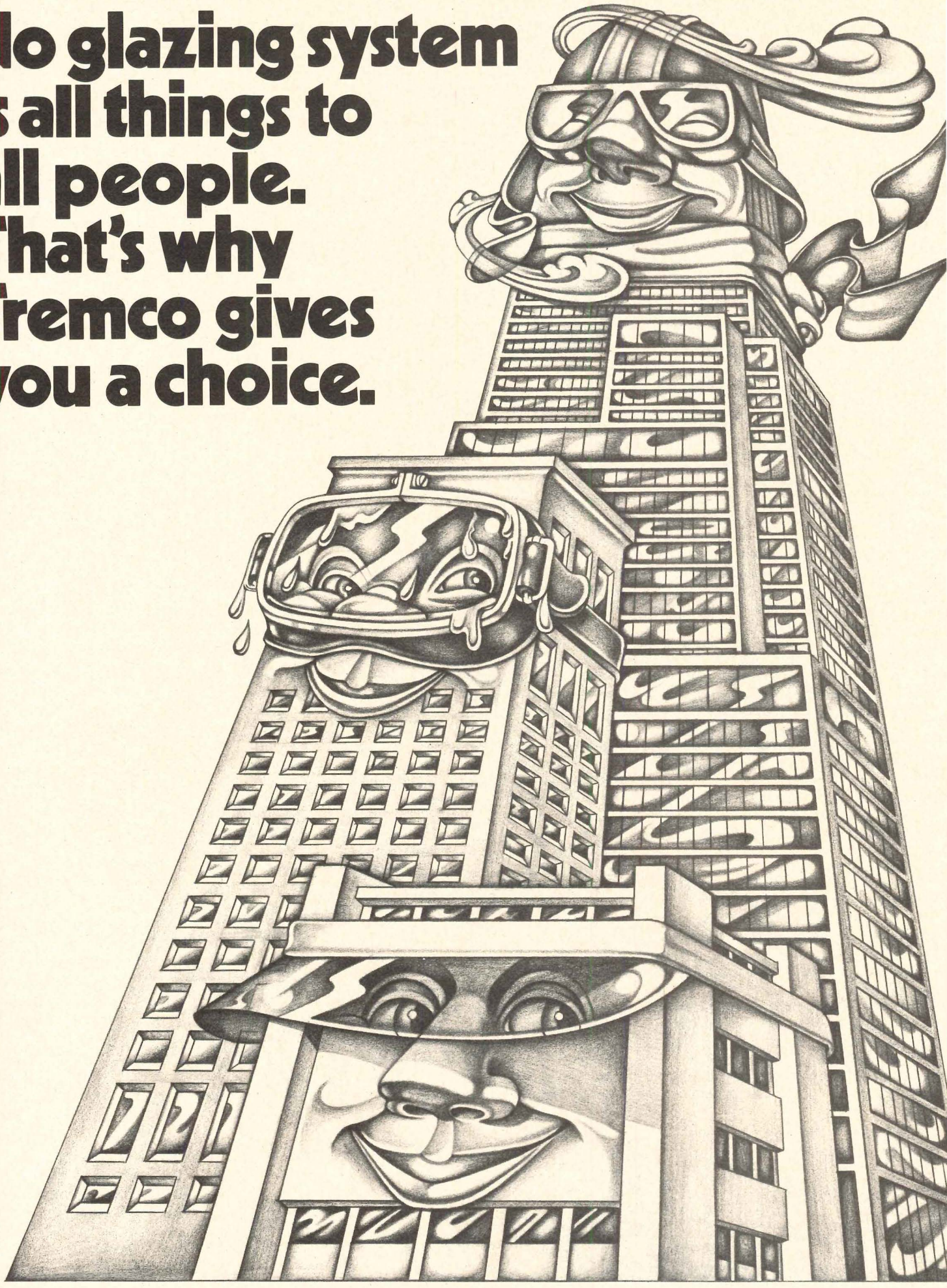

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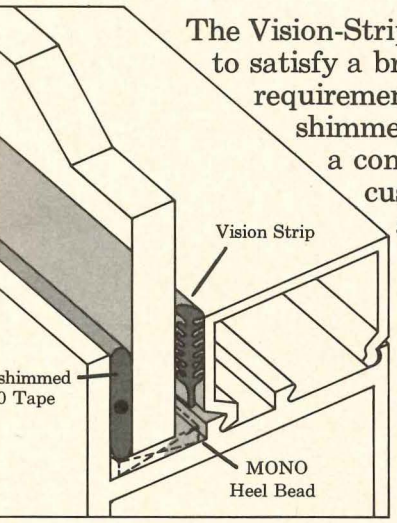

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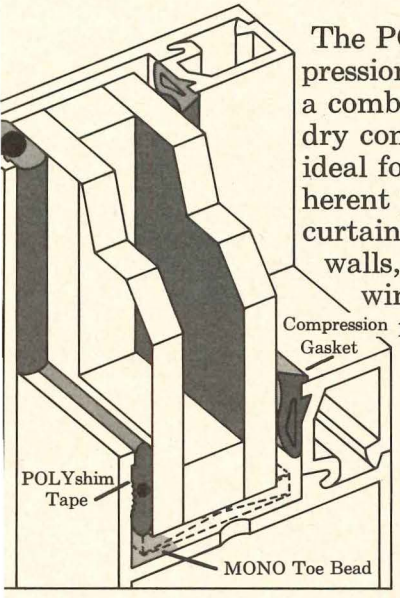

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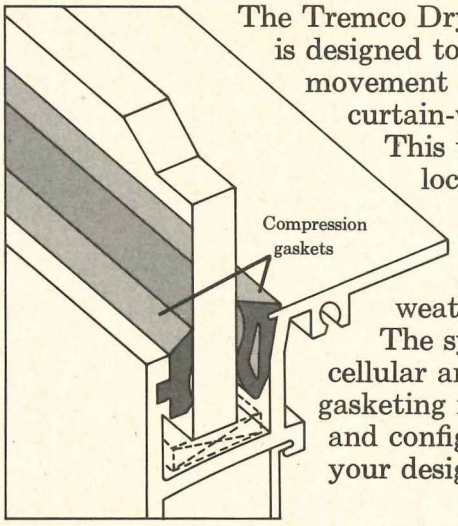

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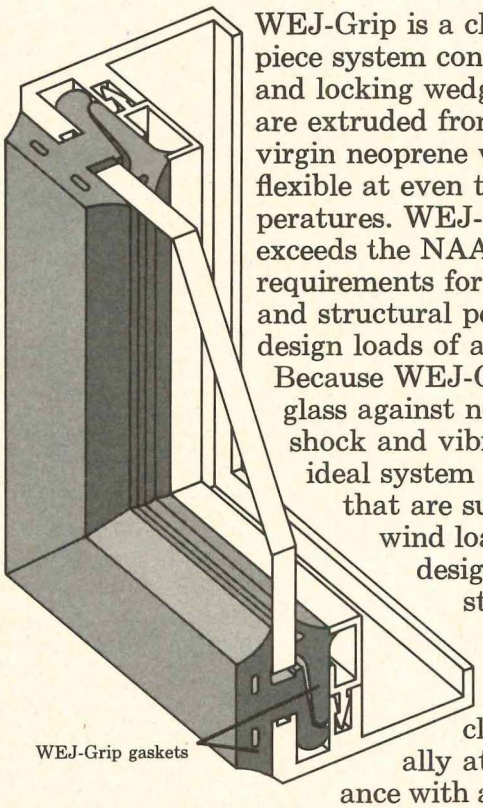

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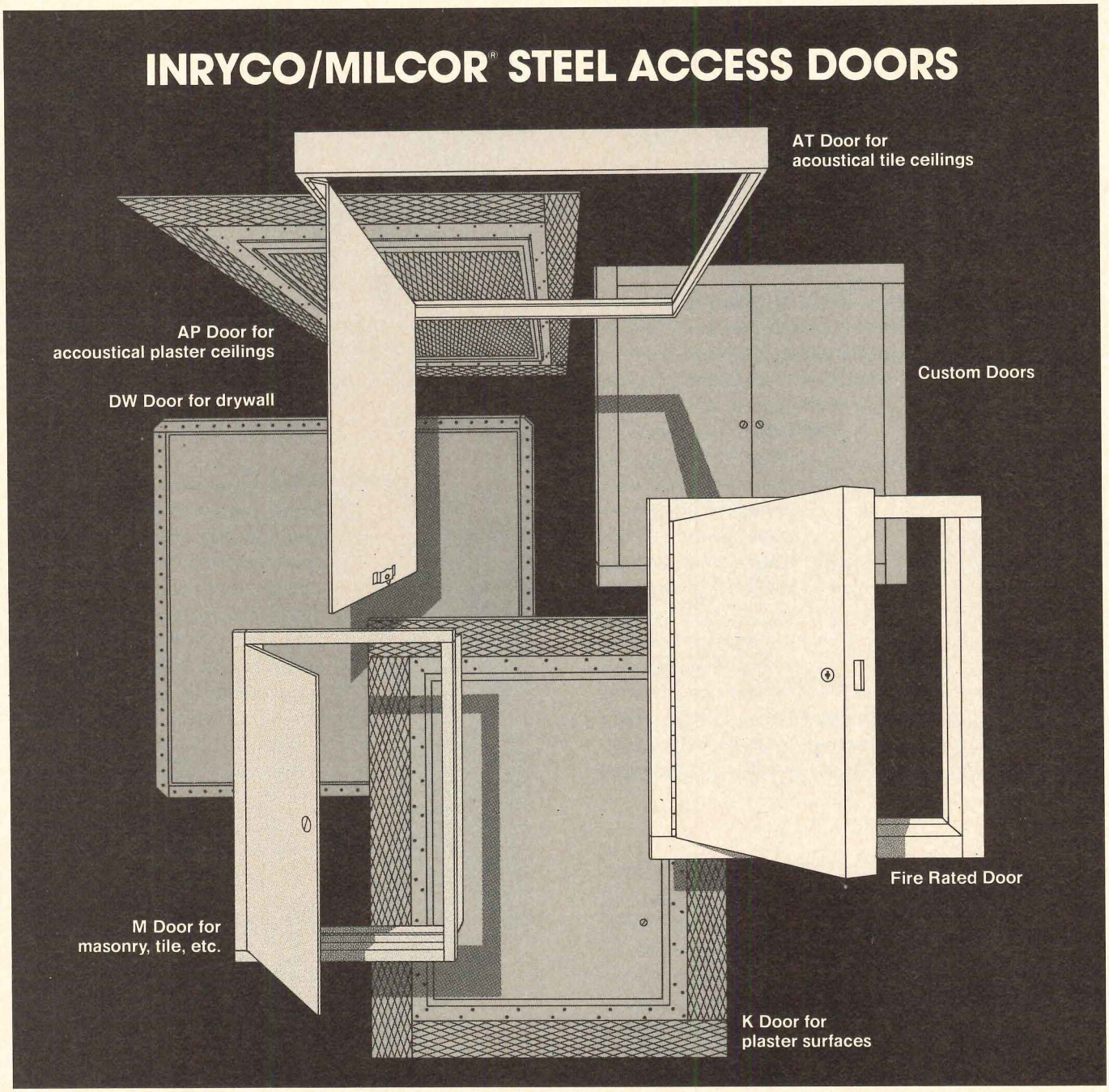

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The compleat specifications department

William T. Lohmann

The specifications department of a large architect-engineer firm seems a far cry from the needs of a small office. But behind the extensive library, printing equipment, and sophisticated processing techniques lie the necessary functions common to all practices.

Reliable information sources are essential to the design process and the specifier becomes the logical coordinator for them. Specifiers are resource-oriented. Thus the library at C. F. Murphy Associates, under the Specifications Department, is the central clearinghouse for product literature, codes, periodicals, telephone directories, maps, abstracts, specifications, and other technical reference materials. Computerized cross-indexes provide easy access to the library resources via title, author, publisher, and as many as six keywords. Distributed throughout the office, the indexes also list active computer programs, master spec titles, and manufacturers' literature. Physical samples of basic materials are maintained for reference. The telephone offers immediate contact with outside sources. (For other aspects of an in-house library see P/A's Specifications clinic in the January and July 1976 issues.)

To provide access to the firm's experience, the Specifications Department stores selected data on past projects. Parameter searches of the material are based on project title, number, location, client, building type (correlated with GSA designations), construction cost, and completion date. A beginning microfilm archive will be controlled through the project history program.

The primary function of a specifications department, however, is to produce project specifications for bidding and construction at controlled quality and cost levels. At CFMA the process also includes evaluation of materials, development of outline specifications, and preparation of addenda and bulletins.

Input for material evaluation and selection is continuous during the early phases of a project. Designers draw upon product literature and samples, past projects, and the experience of other firms; job captains look for detail information; engineers are interested in test reports and estimators in cost data. The sifting process is near the heart of architecture.

Outline specifications are written in sufficient detail to provide a clear understanding of the project, incorporating design decisions. Site conditions, codes, materials, finishes, equipment, and performance requirements are indicated. Because most outline specs are unique but still subject to review and subsequent revision, they are stored on an automatic typewriter for ease of editing and final typing.

The repetitive nature of project specifications leads further into automated techniques of processing. Approximately 3000 pages of master spec text are stored on CFMA's in-house computer data bank. The master sections, including drawing coordination guidelines and instructional notes, are maintained and updated by the Specifications Department. After editing, the selected sections are batch processed on the APEC (Automated Procedures for Engineering Consultants, Inc.) "SPECS" program using punched cards.

The time for preparing each section is reduced through use of automated features. Notes are deleted before final printout. Paragraphs, articles, and pages are arranged and numbered in the selected format. Some master sections now incorporate a relational structure which allows pre-editing and assembly of pertinent text by selection of keywords. Proofreading is minimized.

Particularly suitable for volume processing, the "SPECS" program is easily justified in a large office. Costs vary between $1-$2 per page, depending upon the amount of editing required. For a comparison with the costs of other means of processing, see Specifications clinic, Nov. 1975.

Effective support for such a program requires flexible, capable backup for processing and printing. Consequently the CFMA "typing pool" is a part of the Specifications Department, offering typing, proofreading, and keypunch services. Standard electric typewriters, an automatic magnetic tape typewriter, and the computer line printer use the same typeface, although special fonts are available for presentation materials.

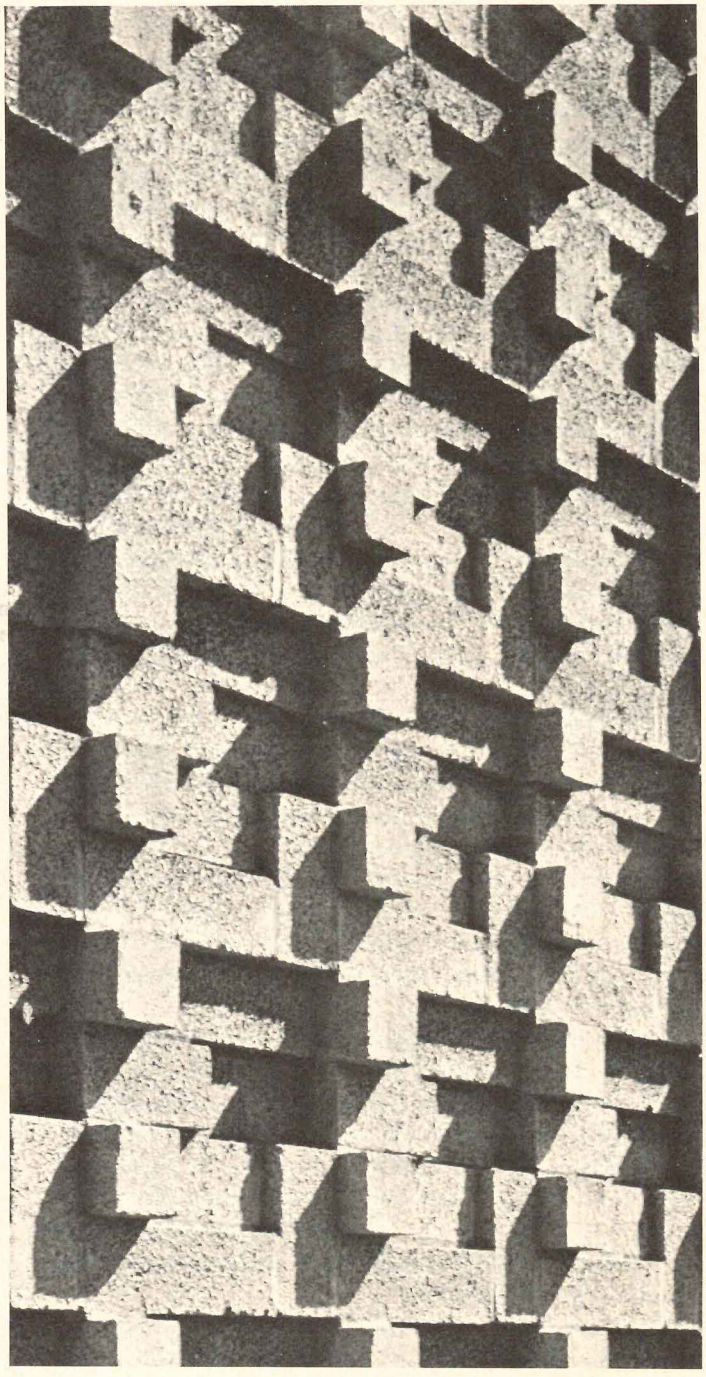
Printing is done in the offset printing shop with its two presses, polyester and paper plate equipment, power collator, and paper cutter. Specs are reduced from 11" x 14" computer printout sheets and printed on two sides of prepunched paper. Detail drawings, 8½" x 11" in size, are reproduced in the same manner. Binding with flexible post fasteners allows later insertion of revised pages. The print shop also handles multi-color work, presentation brochures, reports, office forms, and photostats. Outside job printing helps pay the cost.

The rest of the office? Despite traditional hangups, it is aware of the interdependence of its parts—design, graphics, interiors, engineering, construction management. The job captain may do initial editing of master spec copy for his job. The specifier watches for inconsistencies and errors in the drawings. Each department looks to the others for input at the proper time and often turns to the Specifications Department for materials research, trouble shooting, and document coordination.

An immodest sign in the CFMA Specifications Department reads "Ask the men who know." And the do. □

Author: William T. Lohmann, AIA, FCSI is Chief Specifier for C.F. Murphy Associates, Chicago, Illinois.

What's new on the old block



We've come a long way from the drab old "cement block." Today concrete masonry block comes in many different shapes, forms, textures, and colors. Tomorrow we may see it supporting, not merely sheathing, soaring towers.

Masonry construction is about as old as the hills, or the Pyramids anyway. Early builders, after all, had little to work with except wood, stone, or sun-dried brick. Piling stone upon stone, architects created most of the most imposing structures of history.

More recently, architects such as Frank Lloyd Wright, Paul Rudolph, Edward Durell Stone, and many others have used masonry—this time made of concrete—to express their visions. But concrete masonry, along with masonry in general, has had to play the role of a limited, although attractive, actor since the curtain went up on the drama of the Skyscraper Age. Now, recent developments make it likely it will move back into a starring role.

The culprit was steel and, later, reinforced concrete. Lighter, stronger, and faster to erect, they knocked masonry out as a load-bearing material for tall buildings. With the new materials, buildings could rise higher and higher, almost without limit. For masonry to carry the same structural loads, foundations would have to be so massive as to be unthinkable.

The Monadnock Building, erected in Chicago in 1891, was a 16-story skyscraper with a masonry bearing wall structure. In order to withstand vertical and lateral loads, the thickness of the wall at ground level was 6 ft, gradually reducing to 12 in. at the top. It has been calculated that if the Monadnock were 50 stories high—the height of a recently proposed design for a reinforced concrete masonry structure incorporating the latest materials and engineering technology—the wall would have had to cover the entire first floor. So, masonry survived in recent years mostly as a decorative or protective facing hung on the supporting steel or concrete skeletons.

Improving on nature

Concrete masonry—another of man's attempts to improve on nature—is only a little more than 150 years old. Seldom having been considered as a load-bearing material for

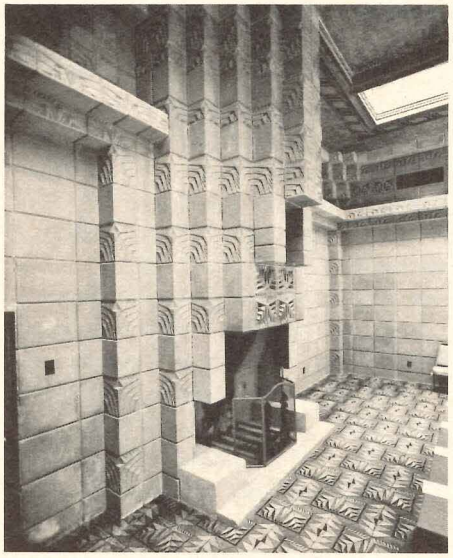
buildings more than two or three stories high, it didn't have as far to fall as load-bearing masonry in general. But its story too is a record of ups and downs.

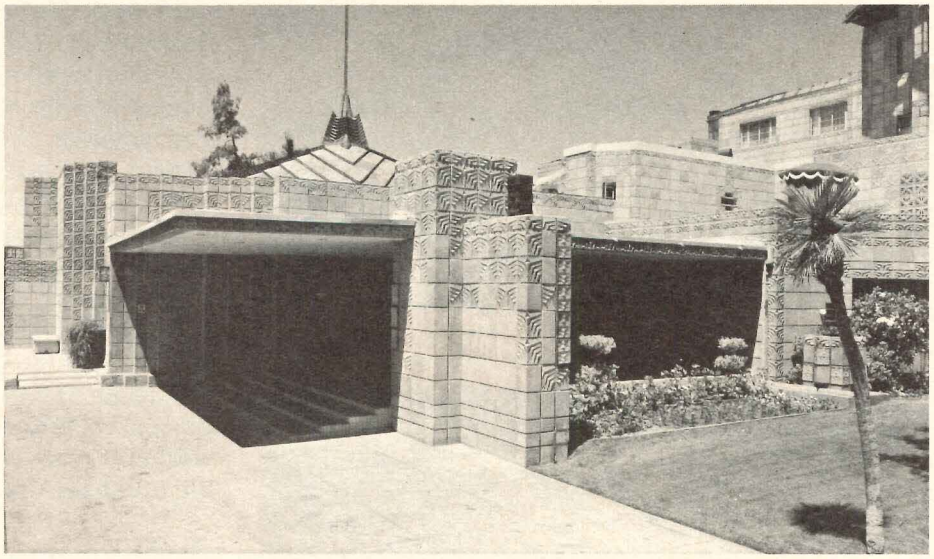
Around the start of the 19th Century, American and English tinkerers started trying to develop an inexpensive substitute for stone and brick by cementing sand, crushed stone, and the like into block (using quicklime instead of today's portland cement). Experiments continued for the next hundred years, with various sizes, compositions, and manufacturing techniques. Some of the block was quite good, but production methods were clumsy and slow.

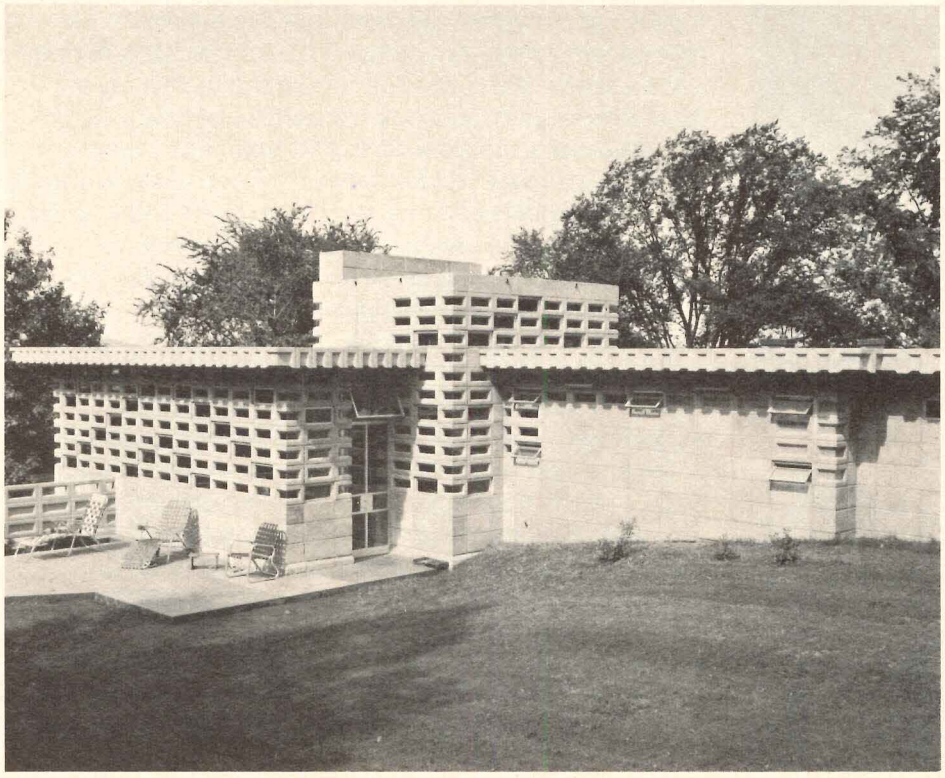
The first successful commercial development in the U.S. came with Harmon S. Palmer's invention, patented in 1900, of a machine with adjustable sides and removable cores for the production of hollow concrete block. Palmer block had already been used in 1897. The block had a number of advanced features, including tongue-and-groove interlocking joints and recesses for doors and window sash. It was made at the job site. Block size was 8" x 10" x 30". It was so heavy it took a hand-cranked derrick to set it in the wall.

In 1905, the U.S. government adopted concrete block for hospitals, warehouses, and barracks in the Panama Canal Zone and the Philippines. In 1906, the San Francisco earthquake destroyed two-thirds of the city, but two sizeable concrete buildings—a church and a factory—came through virtually unharmed. In 1909, the borough of the Bronx, N. Y., approved cinder block for construction. By 1912, it was approved for the entire city. In 1913, Francis J. Staub started making cinder block of steam boiler coal cinders; an 8"x8"x16" block weighed 20 lb less than comparable block made of sand and stone or gravel. In 1918, Stephen Hayde received a patent for lightweight Haydite block, made of expanded and crushed clay and shale.

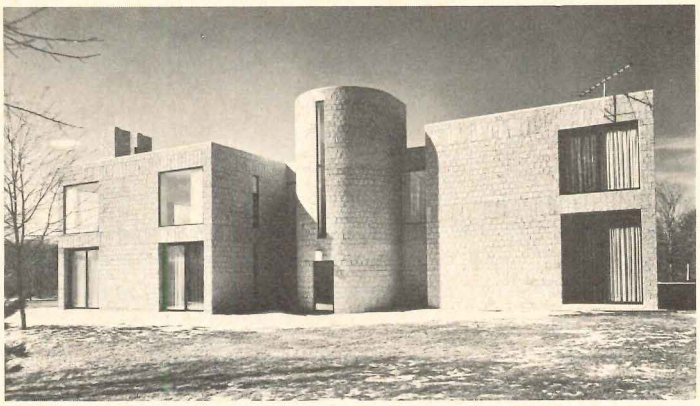
But the road ahead was not altogether smooth for con-





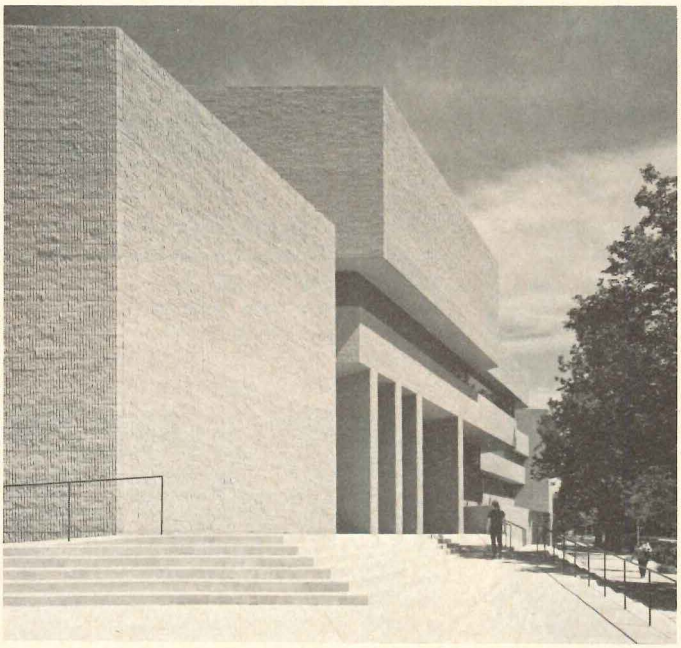


Among Frank Lloyd Wright's pioneering uses of customized block: above, interior and exterior walls of Arizona Biltmore Hotel & Cottages, now nearly 50 years old; below left, pierced block in Toufic H. Khalil residence; right, David Wright residence.

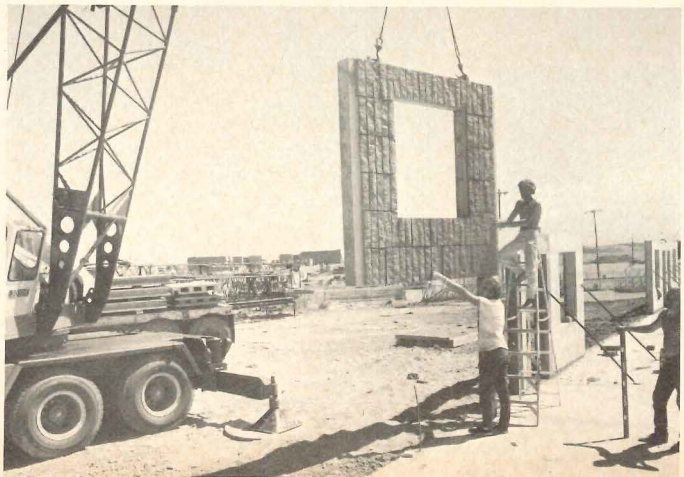


Marble-chip aggregate block brings out strong character of this Harrison, N.Y., home, above, designed by Terry Twitchell and Nancy Miao, Architects Design Group. Semi-cylindrical fluted pattern is repeated inside and out by Architect Bernard A. Marson in Babylon, N.Y., Medical and Administration Bldg. (left, two upper photos).

Beige-color split-rib concrete masonry units soften bulk of Orr-de Cossy-Winder's New Haven police HQ (below).



Prefabricated concrete block panel speeds field erection.



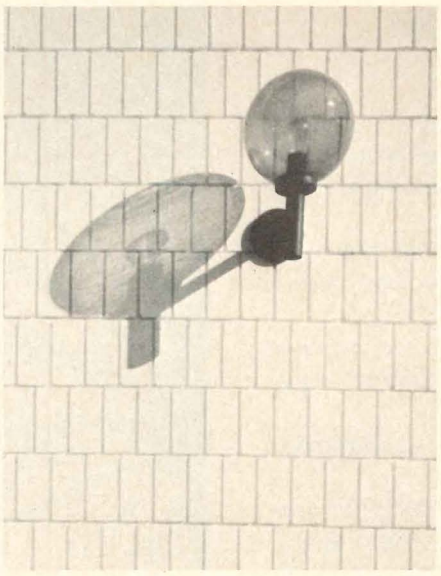
crete block buildings. During these years the market was flooded with block-making machines, many of them designed for individuals contemplating building their own homes. The machines were so cheap—some under $100—that hundreds of "backyard" and "woodshed" producers rushed into the block-making business. They hand-mixed the concrete in batches, often used dirty sand, did not always understand the need for age-curing the block and, as often as not, turned out weak and crumbly block.

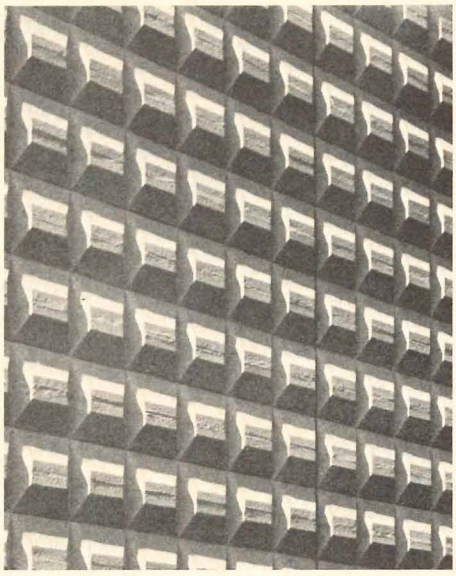
The situation was eased after the leading blockmakers got together in setting quality and performance standards and adopting the 8"x8"x12" size as standard. It was further eased by the move toward lightweight block. Today 75 percent of the aggregate in U.S. concrete block is lightweight (pumice, cinders, scoria, tuff, expanded shales, clays and slates, perlite, vermiculite, even sawdust).

The Wright way

Frank Lloyd Wright opened a whole new vista by pioneering the use of customized block, with three-dimensional face patterns of his own design. The Arizona Biltmore Hotel and Cottages, built in the late 1920s (and unofficially attributed to Wright), provide an excellent example of his imaginative use of the block for both exterior and interior surfaces. In private-residence projects spanning a period of 30 years, he continued to use both customized and regular concrete masonry units in a highly individual way.

Paul Rudolph is another pioneer. He pointed the way toward mass production of customized block with his design of the Fine Arts Building at Colgate University, built in 1963. Rudolph's vision was a building with a surface texture akin to that of Yale University's Art and Architecture Building, which would fit comfortably with the rough stone of the existing Colgate buildings. At Yale the walls had been made by pouring concrete into corrugated forms *in situ*—the first time this had been done—and then hammering the surface to roughen it. Rudolph's invention, which he developed with Arnold Caputo of Plasticrete, produced a similar surface at much less expense. The concrete was poured into molds around a line of hexagonal dowels. Then each block was split horizontally, producing two blocks with rough, corrugated face requiring no further treatment. The result is a surface that weathers, catches the





light in interesting ways, doesn't show dirt, and is easy to maintain. Split block is now a popular standard item.

Edward Durell Stone introduced the use of pierced, screen block at the Brussels World's Fair. It has since been widely adopted by other architects.

The shape of things

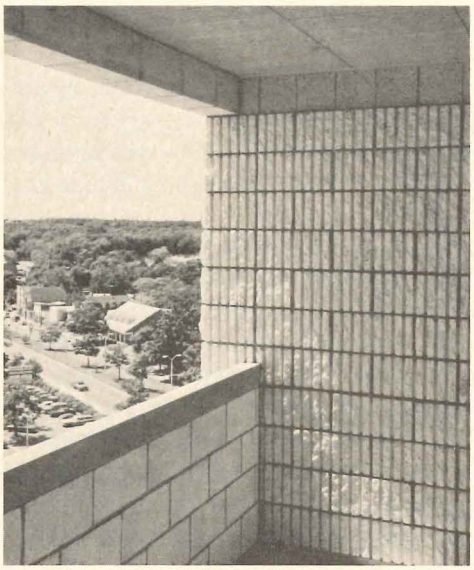
Concrete masonry units, the formal name for block, are sized in accordance with the ANSI modular standard, introduced in 1946. The standard module is 4 in. nominal. Actual units are ⅜ in. smaller in each dimension to allow for the mortar joint, except for face-ground units designed for epoxy (organic mortar) bonding; these are manufactured very close to the nominal size, as the epoxy bond is thin.

The typical block-manufacturing plant makes more than 100 different sizes and shapes of CMU, in sizes from 1 in.-thick and 24 in. long, solid or hollow, with dense aggregates (over 140 lb/cu ft solid) or lightweight aggregates (70 lb/cu ft). Two commercial oversized units, which can cut the cost of labor and mortar, measure 12″x8″x16″ and 8″x8″x24″; each is 50 percent larger than the standard block, but being made of lightweight aggregate, weighs only about 33 lb. An extra-light, non-load bearing CMU, developed by architect Benjamin Gray for a West Point project, weighs only 7 lb 6 oz for a 4″x8″x16″ hollow, three-celled block. It is made with perlite aggregate.

Standard concrete masonry shapes cover most functional architectural and structural needs. They include stretcher, header, lintel, sill, jamb, sash, corner, corner return, L-corner, soffit, partition, pilaster, pier, column, coping, chimney, flue-lining, and screen units. The versions in which they come include solid, solid top, hollow, plain end, offset face, recessed face, single or double bullnose, split, fluted, serpentine, striated, sculptured, jumbo, ceramic-face, and brickface, among others.

Exhilarating potential

With the huge variety of sizes, shapes, textures, and colors available, the National Concrete Masonry Association says, not quite modestly, that concrete masonry is "an exciting medium with exhilarating potential for attainment of the most lofty design aspirations." The architect has almost unlimited choice in face patterns, which can be arranged in



Some patterns and textures available with concrete block, top left to right: slump block has adobe look; scored block has brick look; split block shown here has repeating pattern within each unit.

Architect Peter Kosinski used several block types in load-bearing Edgewater Tower project, as indicated in view of an apartment terrace.

Grass can grow through concrete paving block with open pattern (above); interlocking block resists heavy loads.

many different combinations of layout; many units may be inverted or projected or recessed to vary the design further. Other patterns may be achieved by incorporating CMU's of half-course height.

The pattern of fluted, ribbed, or striated units in a finished wall appears as soaring, continuous straight lines. Many of the units are designed so that the verticals line up unerringly, even when the block is laid up in running bond, where the joints of one course are over the centers of the units beneath it.

Some notes of interest about particular customized and specialized CMU's:

Slump block looks like handmade adobe brick. It is made with a wetter than normal concrete mix, then distorted by the block-making machine while still plastic to produce a bloated, coarse face. Like other block, it can be made solid or hollow, and in various colors, including white, tan, beige and red.

Scored block, also called brick-faced block, has integral scoring in the face which makes the finished block look like a small panel of assembled brick. The "joints" are painted to look like mortar. The block is available in all of the colors of clay brick but not all of the textures.

A multi-purpose CMU developed by NCMA and soon to be available for nationwide production has a shape and recesses that will permit the easy installation of reinforcing steel and grouting, will simplify the installation of electrical cables and outlet boxes without the need to coordinate masonry and electrical trades, will provide space for vertical plumbing pipes up to 4½ in. O.D., and for the installation of low-cost fiber glass batts to meet current energy requirements, and will be highly resistant to wind-driven rain.

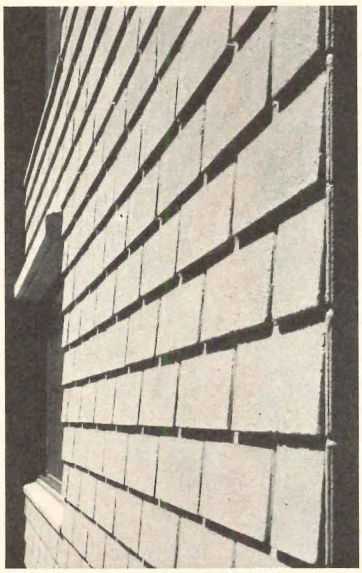
Split block may be used to achieve massive walls at an attractive price, allowing it to compete with poured concrete formwork. The block is split and the halves are laid in two wythes (rows), separated by an air gap but joined by tie-rods. Concrete filling is poured between the wythes.

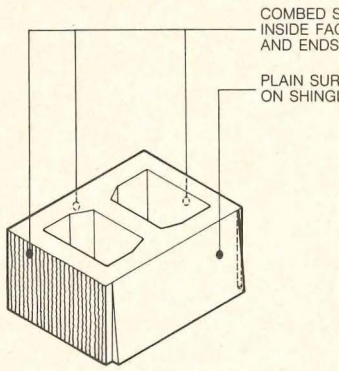
Reaching for a new high

A 50-story building with load-bearing walls made of reinforced concrete block? This is entirely feasible, says Dr. Fazlur Khan, partner and chief structural engineer in Skidmore, Owings & Merrill's Chicago office. Khan's words are not to be taken idly, since he is the designer of three of the world's tallest buildings—the 110-story Sears Tower and the 100-story John Hancock Center in Chicago and the 777-ft One Shell Plaza in Houston. His opinion is backed up by the findings of a recent research project, developed jointly by NCMA, the Portland Cement Ass'n. and SOM.

PCA labs tested the mechanical properties of the block, grout, and reinforcement that could be used in such a system. The test data were then used in a design project headed by Dr. Khan at Illinois Institute of Technology, where he is a visiting professor. The design team was composed of architectural graduate students Tom Wagner and Fred Shoai, with Professor John Heinrich of the IIT architecture faculty as architectural advisor and Dr. Michael Hogan of SOM as structural advisor.

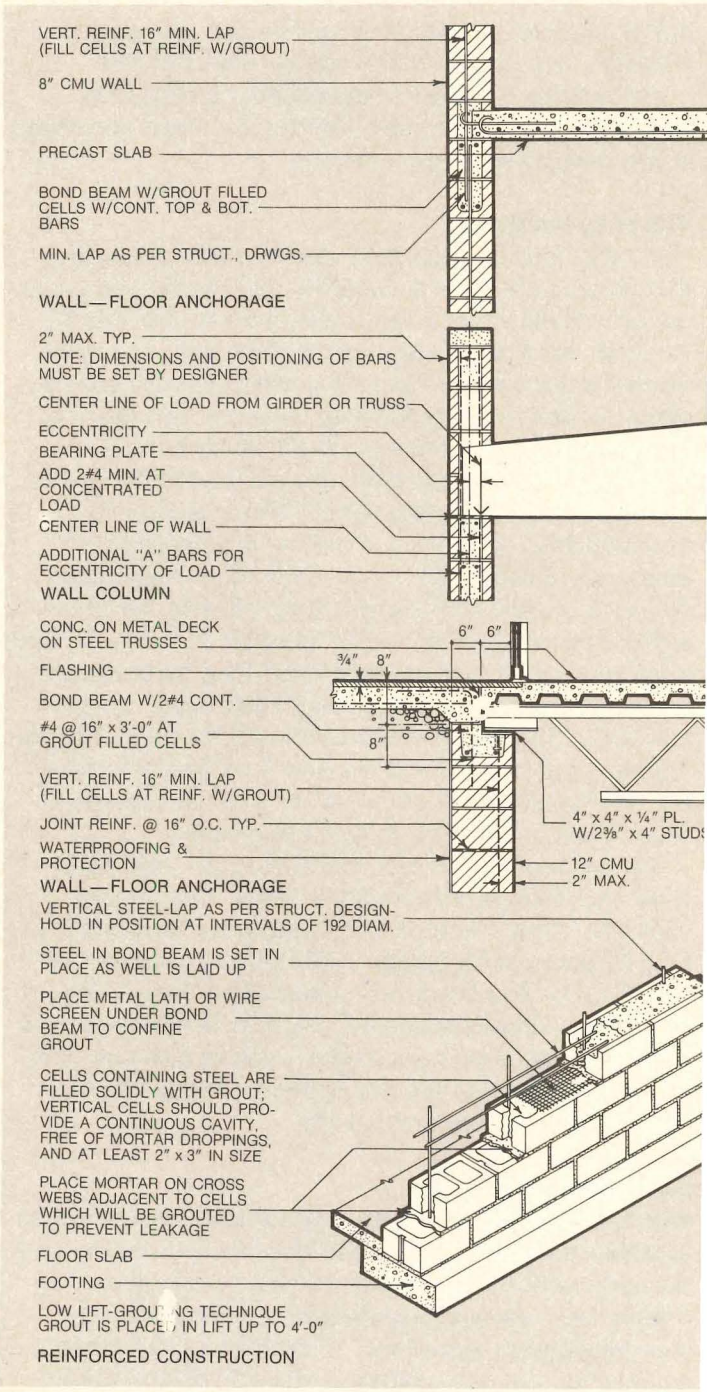
The conclusion was that, with very-high-strength CMU's,

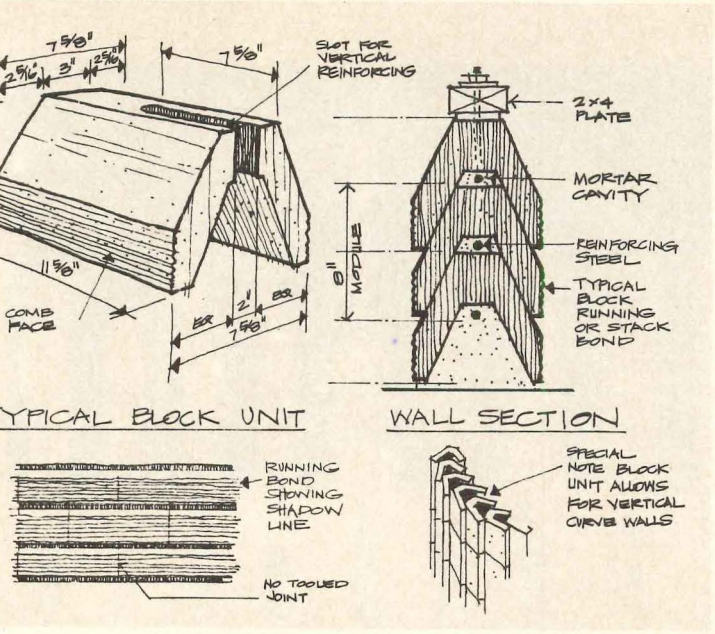




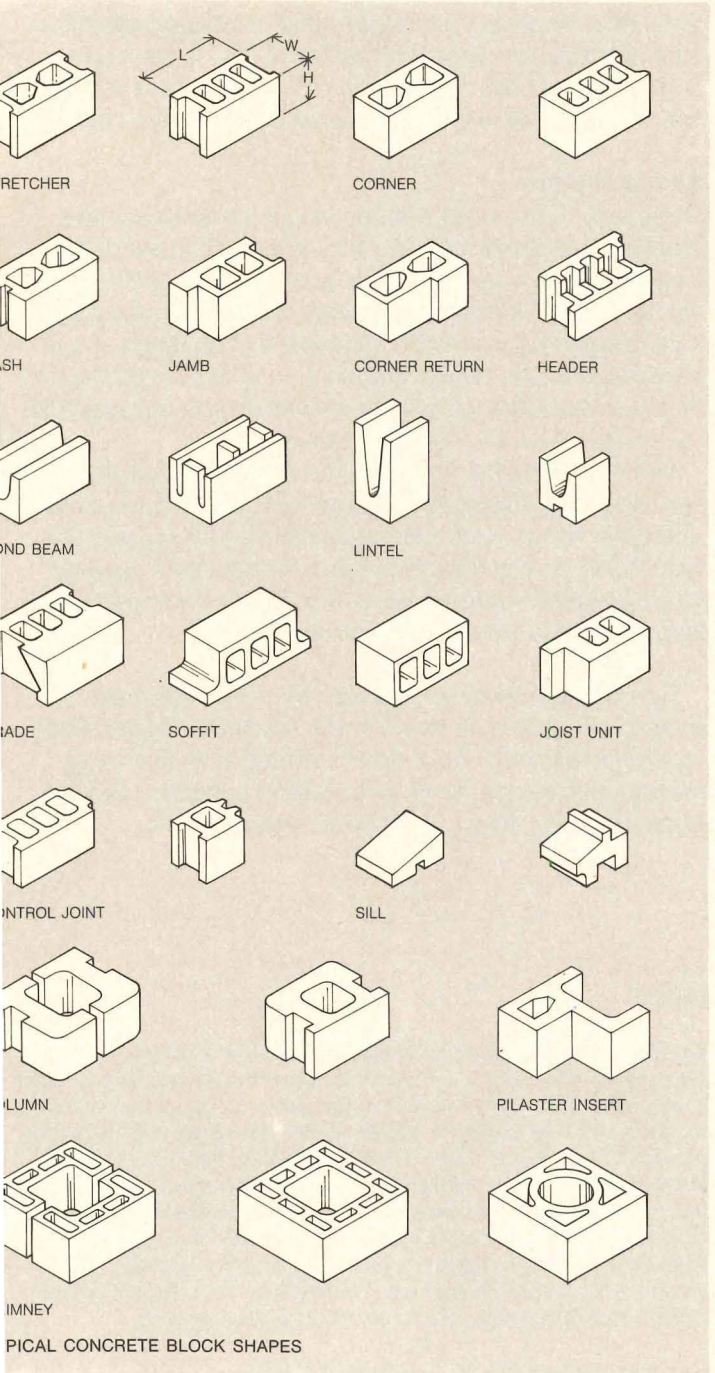
TYPICAL WALL UNIT

Customized shingle block was designed for Gateview residential towers in California; project has load-bearing masonry structure.





Edward Hardin's custom block design won in NCMA contest.



PICAL CONCRETE BLOCK SHAPES

high-strength grout, high-strength steel reinforcement—all of them presently available—and the use of "engineered masonry design," thin-wall load-bearing concrete masonry towers 50 stories high were acceptable. The IIT design encompassed three structures of that height—a hotel/convention building, an apartment building, and an office building. The walls would be only 16 in. thick at the base and 8 in. at the top floors. The block would have a compressive strength of about 7000 psi, easily attainable on any block machine, according to NCMA president Paul Lenchuk. He says the towers would cost 10 to 20 percent less to build with reinforced concrete masonry than with steel or reinforced concrete.

The general acceptance of engineered masonry design by code bodies represents a victory by NCMA and other industry groups over the conventional empirical design, which for years had discouraged masonry block's use as a load-bearing material in high-rises. Under the latter procedure, codes and standards prescribe allowable load limits for CMU construction.

Engineered design develops allowable loads by actual testing of the units and taking into account the calculated load-sharing contributed by the diaphragm action of floors, the load-bearing interior walls, and the steel reinforcement, assuming proper connections to transfer the loads. The three IIT designs are all structures with repetitive floor plans, permitting load-bearing interior walls. The 50-story towers would require 16-in. foundation walls in the IIT design but would require 36 in. walls in empirical design.

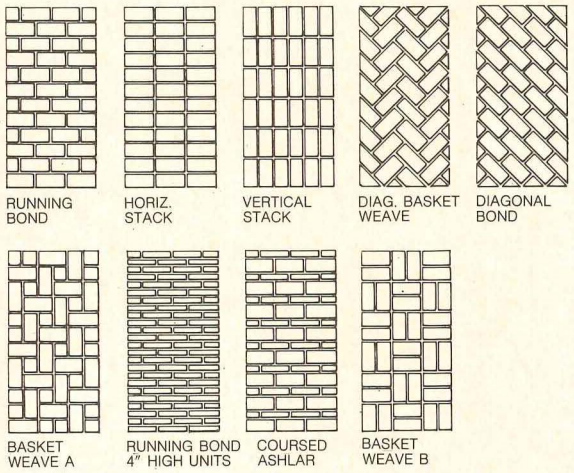
Out of many, one

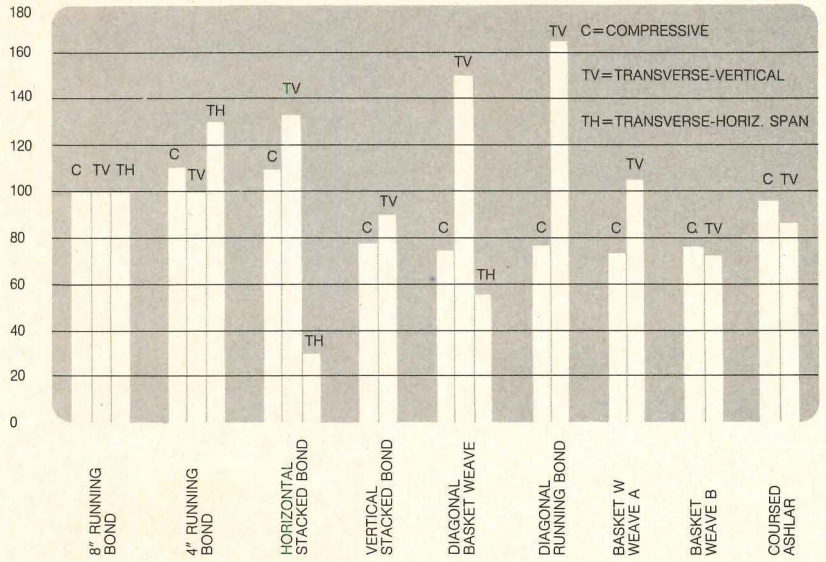
Another valuable recent development in concrete masonry construction is prefabricated surface-bonded panels, which speed building construction. The CMU units are laid on a horizontal surface without mortar in the joints. The dry panel—an entire wall, if desired—is then plastered on both sides with a surface-bonding mortar consisting basically of portland cement with glass fibers added for increased tensile strength. The panels may be troweled or stuccoed for surface effects. Steel reinforcement and grout are added as needed. Tongue-and-groove block may be used for interlocking and easier alignment. The units may be assembled and plastered at the job site or in a factory; a factory wall-assembly machine is claimed to be as fast as a field crew of 16. Surface-bonded walls are as strong in bending flexure as conventional walls with mortar joints, but are slightly weaker in compressive strength unless made with edge-ground units; this is because the mortar used in conventional construction fills in the imperfections and irregularities in the standard block's surface and enables the vertical load to be distributed uniformly.

At the job, lifting devices swing the panels into position and the walls are set and braced.

A 1972 University of Texas study commissioned by HUD found that productivity of surface-bonded panel construction was 70 percent greater than that of conventional mortar construction. The project designer of the 11-story surface-bonded Monacacy Manor apartments in Bethlehem, Pa., reported that the system cost more to put up than job-laid masonry, but the extra cost was more than compensated for by the opportunity to enclose and finish the building earlier.

Technics: Concrete masonry construction





How type of bond affects strength of block construction.

Running hot and cold

The masonry industry has been incensed by claims of other wall-material groups about the thermal insulating properties of their products, particularly since the energy crisis. Masonry people claim that comparisons of the U-factor values of the respective materials are misleading, in that they often compare bare or lightly insulated masonry with insulation-reinforced constructions of their own products.

But there is another battle, one that masonry is well on the way to winning, and this is on the value of using U-factors in the conventional steady-state analysis of heating and cooling requirements. Steady-state calculations are based on the flow of heat through surfaces (indicated by the material's U factor) at specific design outdoor temperatures for summer and winter. From this they arrive at anticipated peak loads, which in turn dictate the size of heating and cooling equipment.

All wrong, says NCMA along with other members of the Masonry Industry Committee. Steady-state analysis, they say, ignores the effect of a wall's or ceiling's mass, a property which gives the structure thermal inertia. Massive construction has a high heat capacity, which retards the transmission of heat. By ignoring this, static analysis indicates estimated peak demands which are substantially too high.

A different way of looking at heating and cooling demands, dynamic analysis, determines the requirements on the basis of the response of the building, including its wall and ceiling mass, to hourly changes in weather conditions. It's the contention of dynamic analysis proponents that the thermal inertia of mass will pull peak demand down below that indicated by static analysis. Tests have confirmed this and they agree closely with figures for peak demand produced by the National Bureau of Standards' dynamic analysis computer program. In a typical computer run, the peak cooling load for an insulated frame house with a U value of 0.10 was 40,500 BTU/hr, while for a concrete masonry house with a U value of 0.35 the peak load was 39,800 BTU/hr. The roughly equivalent performance of the two types of construction despite the wide disparity in U values is ascribed to the thermal inertia of the masonry's mass.

Simple solid or hollow concrete masonry block, although a fairly good insulator, cannot come close to meeting new tough U value requirements, such as those promulgated in California. However, with a combination of adequate thickness in the block, the use of insulating filler in the cores, and insulating batts or gypsum board on the surface, the U factor of CMU walls can be lowered to the required level.

Sound and fire

Noise may consist of unwanted sound transmitted into a room or sound reverberating off surface within a room. Concrete block is fairly good at both blocking and absorbing sound. The former may be improved substantially by inserting rigid foamed plastic in the cores. The latter, in one proprietary block, is improved by cutting slots in the face of the block to permit entry of the unwanted soundwaves into the cores, where the energy is dissipated.

With regard to fire-resistivity, the non-combustibility of concrete is an obvious advantage, but the block must also retard the flow of heat from the fire to the other side of the wall. Here too, block's performance is excellent, but may be improved by filling the cores with various non-combustible materials such as perlite or vermiculite.

For concrete masonry, the last few years have been important. Objections to its suitability for various applications have been answered and its own virtues have been augmented. For architects, always seeking better ways to realize their visions, this is good news. [Henry Lefer]

Credits

We acknowledge with thanks assistance received from the following individuals and organizations: The Bonsal Co.; Burns & Russell, Spectra-Glaze; Cumberland Corp.; Duro-O-wal Co.; Formbloc, Inc.; Grace Construction Products Div.; Gray & Karolyi, Architects, Benjamin Gray; Grefco Building Products Div., Arthur H. Schneider; Hohmann & Barnard; International Masonry Institute, Neil English; Korfil, Inc.; Masonry Advisory Council; Master Builders; Medusa Cement Co.; National Concrete Masonry Assn., Richard M. Branham, Thomas B. Redmond; Owens-Corning Fiberglas Reinforced Cement Products Div.; Perlite Institute; Proudfoot Co., Don A. Proudfoot; Paul Rudolph, Architect; Warren Sales Corp. All photographs and illustrations courtesy of National Concrete Masonry Assn.

[For product information, see Products and literature, p. 94.]

City charter zoning provision upheld

Bernard Tomson and Norman Coplan

The U.S. Supreme Court's decision which approved submitting zoning questions to the general electorate has aroused significant interest and controversy.

The United States Supreme Court has ruled on a court challenge to a municipal charter provision requiring ratification by popular vote of a change in zoning. The Court held that the provision was valid and does not offend due process. (*City of Eastlake* vs. *Forest City Enterprises, Inc.*, 44 U.S.L.W. 4919). The power to zone or modify zoning has generally been considered a legislative function, and the exercise of such power, because it infringes upon the individual's use of private property, has been carefully hedged with procedural and substantive safeguards. Consequently, the Supreme Court's decision approving the submission of zoning questions to the general electorate has aroused significant interest and controversy.

The case originated in Ohio under a provision of a municipal charter which provided "that no ordinance changing land use shall become effective until ratified by 55 percent of the voters in a city-wide election." A land owner who sought a zoning change in connection with property he owned challenged the constitutionality of such charter provision on the ground that to subject such an issue to popular referendum was to deprive him of his property rights without due process. The Supreme Court of Ohio agreed with his contention holding that due process of law requires that procedures for the exercise of municipal power be structured so that fundamental choices among competing municipal policies are resolved by a responsible organ of government, rather than by the arbitrary exercise of municipal power by the electorate which is not subject to any standards.

Upon appeal to the United States Supreme Court, the determination of the Ohio Supreme Court was reversed. A majority of the Court concluded that although the power to zone is legislative in nature, such legislative power resides with the people and is delegated to representative bodies. Consequently, the people may reserve the power and exercise it directly without contravening the Constitution. The majority opinion stated:

"The conclusion that Eastlake's procedure violates federal constitutional guarantees rests upon the proposition that a zoning referendum cannot, however, be characterized as a delegation of power. Under our constitutional assumptions, all power derives from the people, who can delegate it to representative instruments which they create. See, e.g., *Federalist Papers, No. 39. In establishing legislative bodies, the people can reserve to themselves power to deal directly with matters which might otherwise be assigned to the legislature. . . .*

"The reservation of such power is the basis for the town meeting, . . . which continues . . . in some states as both a practical and symbolic part of our democratic processes. The referendum, similarly, is a means for direct political participation, allowing the people the final decision, amounting to a veto power, over enactments of representative bodies. The practice is designed to 'give citizens a voice on questions of public policy.' "

The majority of the Court also rejected the argument that because the voters where given no standards to guide their decisions and there was no assurance that the voters would act rationally in passing upon a zoning change, the potential for arbitrariness in such a process violated due process. Although, stated the majority opinion, courts have frequently held that the legislative delegation of power to a regulatory entity must be accompanied by discernable standards so that it can be determined whether the action of such entity is arbitrary, such doctrine is inapplicable where there is not a delegation of power, but rather the exercise of power by the people which has been reserved by the people to themselves.

In a dissenting opinion, a minority of the Supreme Court concluded that the charter provisions requiring ratification or disapproval of a zoning change by referendum of the people was a violation of the due process clause of the Fourteenth Amendment of the United States Constitution. The dissenting Justices stated:

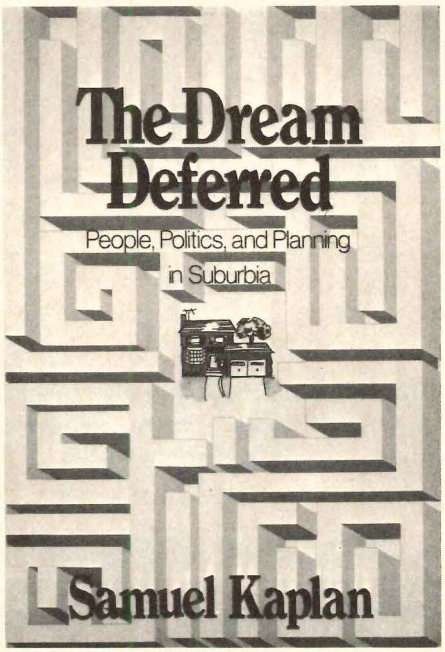
"As the Justices of the Ohio Supreme Court recognized, we are concerned with the fairness of a provision for determining the right to make a particular use of a particular parcel of land. In such cases, the state courts have frequently described the capricious character of a decision supported by majority sentiment rather than reference to articulable standards. Moreover, they have limited statutory referendum procedures to apply only to approvals of comprehensive zoning ordinances as opposed to amendments affecting specific parcels. This conclusion has been supported by characterizing particular amendments as 'administrative' and revision of an entire plan as 'legislative.'

"In this case the Ohio Supreme Court characterized the Council's approval of respondent's proposal as 'legislative.' I think many state courts would have characterized it as 'administrative.' The courts thus may well differ in their selection of the label to apply to this action but I find substantial agreement among state tribunals on the proposition that requiring a city-wide referendum for approval of a particular proposal like this is manifestly unreasonable."

It would appear that the charter provisions which were adopted by the municipality in Ohio were designed to make a change of zone very difficult to achieve. The decision of the U.S. Supreme Court which upholds the validity of such provision will undoubtedly open the door to emulation by many municipalities throughout the United States. □

Books

Ah suburbia!



The Dream Deferred: People, Politics and Planning in Suburbia *by Samuel Kaplan. New York, 1976, The Seabury Press, 242 pp., $9.75.*

Reviewed by Norval C. White, Chairman, school of architecture, The City College, City Univ. of N.Y.

Architects have long belittled suburbia as a state of limbo: an ill-defined place, neither country nor city, where the virtues of each are subordinated to a gelded compromise (the city is *man,* with urbane and intellectual delights, with social and spatial artifice; while country is nature, where a man-made place, from Monticello to Mies, is but a dot in the natural sea). Nevertheless, the bulk population of this (and, increasingly, other lands) finds the detached house, on a postage stamp prairie, to be an emotional necessity, a success symbol and vehicle for life fulfillment that can't be equaled. (A *pox* on the Palazzo Medici-Riccardi, *and/or how close is detached*!) A discrete piece of turf, a free-standing object controlling all fronts, is something equally yearned for by the poor, the middle class, the black, the white, the chino, the Puertoriqueno: the dream is there, and burgeoning! But, as Sam Kaplan states in his very title, it is the *Dream Deferred.*

This book concerns itself with suburbia 1976 style, where the fulfillment of the suburban dream confronts the reality of problems of the real world that follows it: racial movements and prejudice, the problems of poverty, the stuff of under-rugs. And all in the context of Balkanization: where the precincts of water service, police protection, fire protection, school districting, and whatnot not only do not coincide, but stress and confuse the life of citizenry. And to

[continued on page 92]

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GRACE

Books continued from page 90

live in Kaplan's Port Washington is a myth (there is no such city or village: it is a place name for a general area without political or post-office status). The vested interests of the "Balkan" sub-power structures flex their muscles, and make the rational process of citizen concern, response, and participation a near mythic fantasy. You can barely find who is in charge of what, and by that time the political deed is done.

Port Washington, for Kaplan, becomes the case study for a larger look at the development of post-World War II Long Island, but, for the grand perspective, one must read both (and simultaneously) Kaplan and Robert Caro's devastating biography of Robert Moses: *The Power Broker*. (P/A, Dec. 1974, p. 110). The pair in concert articulate the causes for this intensity of suburbanization, and its idealization (discount style) by and for the returning veteran of World War II. They tell of highway construction in the name of freedom (of both movement as a sport and enterprise of development). Moses' highways made possible access to the lands of Long Island Suburbia. The Veterans' Administration encouraged that freestanding suburbanization by favoring mortgages on the detached single family dwelling (away, I suppose, from the Sins of the City; a kind of moralistic perversion of the Utopian and/or Garden City ideas and ideals). If transit, instead of traffic, had come to Long Island, it might well have developed in a totally different fashion; perhaps in clusters of a more highly organized and urbanized nature—true satellite urban (possibly urbane?) centers surrounded by their own local, more natural freestanding suburbia, which would be, in turn, embraced by the true country (greenbelts, farms, forests, whathaveyou) for which we all yearn, but which has been obliterated by the inexorable even coverage of the postage-stamp freestanding house.

The book is too long for its purpose, exciting where it is personal and muckraking, dry where it is historical, and distant from the grand adventures of Sam and his family in confronting the political tigers. But it is a venture into uncharted waters without competition or peer. That suburbia is an escape from blacks, Puerto Ricans, poverty and crime; and that it is an ethnic (mostly white and middle class) stakeout within an invisible palisade of money; these are not well known, but still *somewhat* known. But that the very place of escape is beset by the very diseases from which it hoped to become divorced, is news. That the Dream is Deferred is Kaplan's punch line of optimism; not dispelled, not even mythic in his mind, but deferred till some more sensible time when the process of Balkanization is erased and reorganized into rational political ways; till the problems of race, poverty, crime, and drugs are confronted, accepted and solved; till multiple dwellings for both common and uncommon folk have their place in the suburbs; till, till, till.

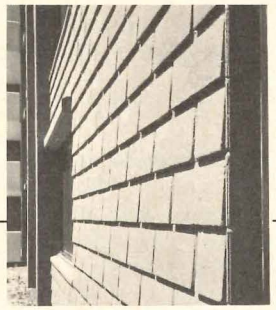
If cities are in social and economic chaos, so is suburbia. And if we face that, we understand that the problem is pervasive, or that it is a problem everywhere that can only be solved jointly by the inhabitants of both areas, together, in what we might term a new Social Contract. Read Kaplan and join the fray. □

Gateview at Albany Hill, Albany, California, a $16,000,000 condominium complex overlooking San Francisco Bay.

The architects studied several structural systems confirming loadbearing concrete masonry provided the best answer.

Architects: Hallenbeck, Chamorro & Lin Owner: Interstate General Corporation

Phase I of Gateview at Albany Hill is a "vertical village" of 482 condominium apartments. 2000 more units are to come. Versatile concrete masonry was employed throughout the entire project: as a loadbearing structural system for the seven towers; as an interior finishing unit for foyers and corridors; as a surfacing for the recreational plaza; and as a facing unit for the towers, which is a customized unit designed by the architects especially for this project. Small wonder that concrete masonry in the U.S. is the world's largest masonry industry.



This is the special customized concrete masonry "shingle block" used for tower exterior surfaces.

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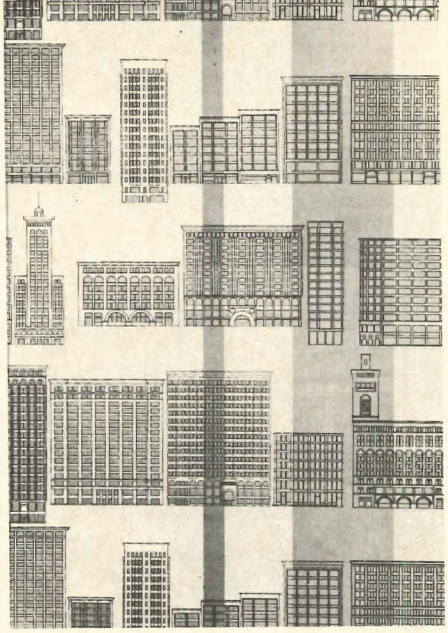

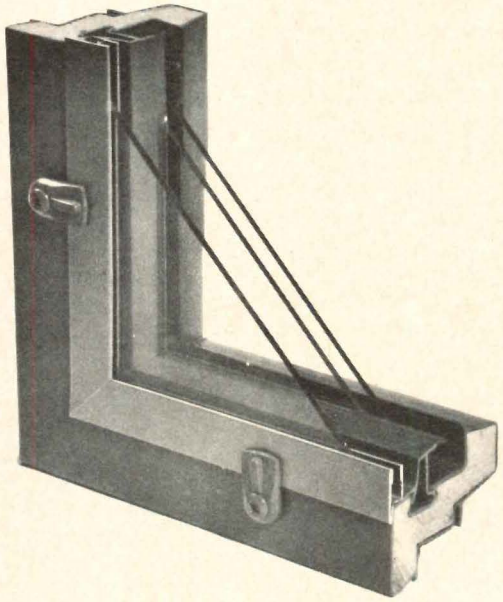

Triple glaze in casement, awning, and double-hung windows and some primed wood units is now available. The removal storm panels are installed over double-pane insulating glass. Windows are suitable for use in multi-housing, such as high-rise, townhouses, and garden apartments as well as for remodeling projects. Andersen Corp.
Circle 100 on reader service card

Textured plywood. Ruff-Cut 44 which comes in three natural wood faces—Western Red Cedar, Douglas Fir, and Redwood—may be used as paneling, siding, or for ceilings. It is said to look like tongue-and-groove 1″x4″ lumber boards, but the edge-glued strips are formed into 4′x8′x9′, or 10′ panels, which also come in a choice of thicknesses. Pope & Talbot.
Circle 101 on reader service card

Corrosion-proof cement. Vixtrex II is a silicate-based cement formulated to be water-resistant as well as resistant to oxidizing and mineral acids. Maker states that product has a thermal resistance range of up to 1500 F which allows it to be used with acid-proof brick in the construction of masonry sheathing for the protection of chimneys, incinerators, and other high temperature equipment. It may also be used for floor construction. ESB Incorporated.
Circle 102 on reader service card

Wallpaper. Designs of world famous Chicago architects have been reproduced as an exclusive series of wallpapers for the Illinois Arts Council's Bicentennial program "Illinois Architecture: A revolution on the Prairie." Five patterns will be issued in limited runs of 400 bolts each. Two patterns have been derived from stencils created by Louis Sullivan to ornament the 1887 Auditorium Theatre. Frank Lloyd Wright's work is the basis of two additional patterns. A fifth pattern, entitled "Cityscape," is a composite of scale drawings depicting the greatest landmarks of the Chicago School of Architecture. The wallpaper is vinyl-coated and prepasted. ArchiCenter.
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Concrete roof tiles have a nominal overall size of 16½″x13″ with an interlocking sidelap of 1¼ in. Tiles are completely incombustible. Each tile weighs approximately 10 lbs each; installed weight per 100 sq ft varies from 840 lbs (84 tiles) with 2 in. headlap to 990 lbs (99 tiles) with 4 in. headlap. Wide choice of colors are available. Monier-Raymond Company.
Circle 104 on reader service card

Concrete stain. A chemical solution said to penetrate the pores and form its color through a reaction with the cement particles is not a paint, or dye. It becomes a permanent part of the concrete surface. Stain will react on all calcium base materials, such as any type of concrete surface, marble, limestone, and concrete building blocks. It comes in a variety of colors that may be used by themselves, or together with a colored wax. Kemiko Col-r-tone is for application on tennis courts, pool decks, driveways, patios. Available in eight colors and tinting white. Kemiko, Inc.
Circle 105 on reader service card

Auto storage. The Space-Maker SM-3 raises a car six feet and locks it into place in 15 seconds, enabling a second car to be parked underneath. The action is accomplished by a hydraulic system. A one-piece steel platform supports the elevated car. The unit is portable and easily assembled. It is engineered to raise and hold the heaviest automobile with a four-time safety factor and can be installed on any level surface, states maker. Space-Maker Industries, Inc.
Circle 106 on reader service card

Upholstered stacking chair. The frame is constructed of 1-in., 18-ga. square steel tubing in either enamel or chrome finish. The seat consists of 2-in.-thick polyfoam over a 9/16 in. panel; the back is made of 1-in.-thick polyfoam over a ⅝ in. panel. Upholstery materials may be chosen from standard lines of fabric, vinyl, or COM. Griggs Equipment, Inc.
Circle 107 on reader service card

'Solid-Faced' galvanized planks are said to provide an interlocked storage platform or mezzanine floor without bolting, welding, special tools, or skills. The units have integral, interlocking, male/female legs the entire length. Rolled, galvanized steel planks are either 6 or 9 in. widths in 14 ga. and 18 ga. with lengths available to 40 ft. United McGill Corp.
Circle 108 on reader service card

Waterproofers. A transparent coating called Damp-Out is a colorless silicon-based liquid which seals and waterproofs. It is ready-mixed for spray application to protect masonry. A color coating for concrete, masonry, wood, or metal surfaces called Nu-Sensation is a texturizing coating which also waterproofs and seals. It can be applied with a brush, roller, or spray. Available in 15 standard colors plus custom colors. Republic Powdered Metals, Inc.
Circle 109 on reader service card

Pre-weathered architectural sheet metal Microzinc 70 has non-rusting, non-staining gray patina finish. According to manufacturer, its non-fading carbonate film, when scratched, will heal itself to match its preexisting color; it will not peel, crack, blister, or fade. It is supplied in sheet form, and preformed component parts are available. Ball Metal & Chemical Division.
Circle 110 on reader service card

Fire door core of gypsum that is kiln dried, cured, and sanded is one-hour fire rated. Specific edging and face veneers have been tested and approved for use with the core. Fire door manufacturers use the cores for doors in high-rise buildings, hospitals, schools, and other places where mineral fire door cores are used. Georgia-Pacific Corp.
Circle 111 on reader service card
[continued on page 96]

Ceilings Unlimited from Johns-Manville. New noise reducing panels increase your flexibility in open-plan design.

Now you have more open-plan design freedom than ever before. Because Johns-Manville has the ceiling panels that solve the noise problems inherent in open-plan landscaping.

These lightweight vinyl-faced fiber glass panels have an exceptionally high Noise Reduction Coefficient of .85-.95. And their 1-1/2" thickness gives them a thermal insulation factor of R-6.

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Open-Plan™ SpanAcoustic® panels are available in all sizes up to 5'x5', and may be custom ordered up to 5'x10'. That makes them ideal for replacement and remodeling as well as new construction.

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Johns-Manville

Circle **No. 355**, on Reader Service Card

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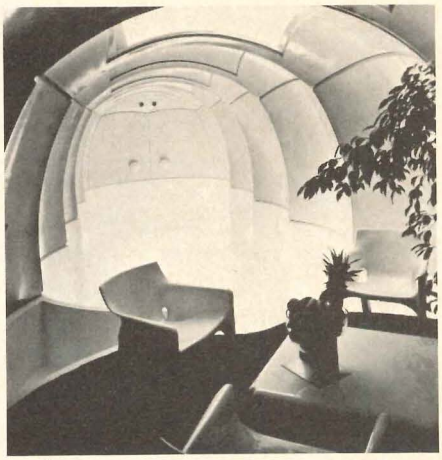
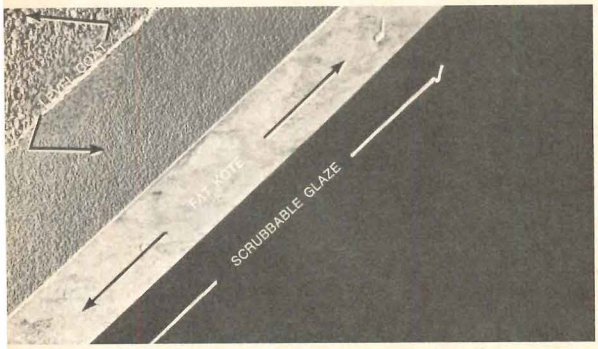


Underground swimming pool

Underground swimming pool. Built underneath a yard or garden with only two or three unbreakable skylights visible on the surface, the pools are generally installed so access may be gained through the basement and are strong enough to support a driveway overhead. Made from prefabricated reinforced fiberglass, they are constructed in modular units which permit installation of any size. The most common dimensions are 39′x13′ which includes a lounge, shower, and whirlpool bath. Maderna American Corp.
Circle 112 on reader service card

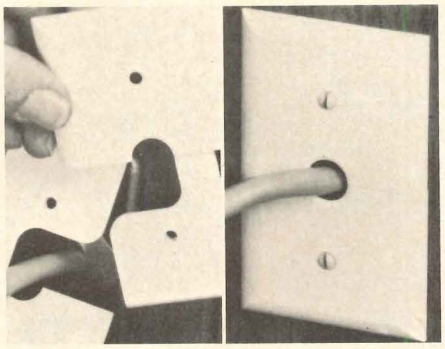


Wall surfacing

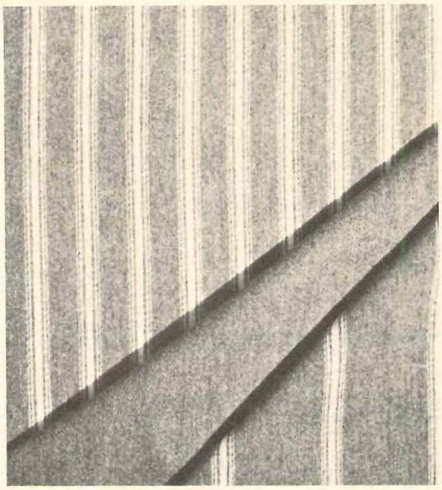
Roofing and waterproofing membrane, called KMM, is designed for application on horizontal and vertical surfaces in new and maintenance roofing, foundations, plazas, and other areas requiring waterproofing. The material is available in standard, a five-layer laminate composed of a thick, flexible plastic core protected on each surface by a layer of modified bitumen and an outer film of polyethylene and aluminum, a five-layer laminate similar to standard except for a top surface of heavy embossed aluminum foil. Both types come in a ready-to-use roll. Koppers Co.
Circle 113 on reader service card

Pendant light. Fixture is all steel coated with a fused epoxy finish. It uses a 25 percent perforation in the spun shade to allow diffuse light to illuminate the upper regions of a room or space. 75 percent of the light is then reflected down. The black trim pieces are neoprene extrusions or grommets. A solid steel shade is also available. Either a 60 or 100 w lamp may be used. Ron Rezek/Lighting.
Circle 114 on reader service card

Washfountain

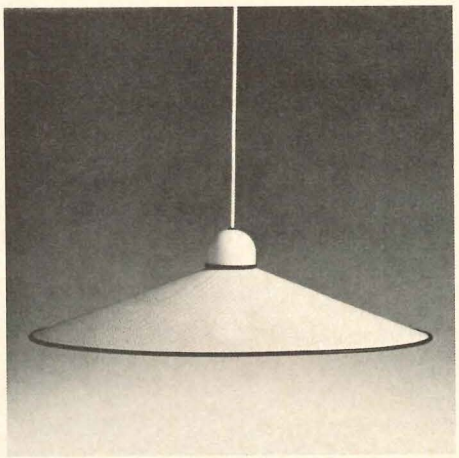


Snap-plate split receptacle cover



Upholstery fabric of 80 percent wool and 20 percent cotton is available in a coordinated series of stripes and solids. The dense matte woven fabric comes in natural white, a muted shade of brown, and a black combination with white. Fabric is 55 in. wide. Stripes in 2- or 4 in. horizontal repeat are offered in white on dark, or dark on white. Richard W. Muller & Assoc.
Circle 115 on reader service card

Snap-plate split receptacle cover. Two-piece cover for out-of-sight installation of cable is available. It features two identical sections that snap together around cable. Made from high-impact, fire-retardant plastic, it is standard outlet size and is available in white and brown. Communications Technology Corporation.
Circle 116 on reader service card



Pendant light

Washfountain for handicapped users. Features include a pre-cast terrazzo bowl with a lower rim than the conventional washfountain; a recessed pedestal that permits easy access by those in wheelchairs; and an integral backsplash. Two wall-mounted slow-closing valves and a sprayhead modified to provide either right- or left-hand operations, or full when both sides are in use. The unit is available in both 54-in.- and 36.-in. dia. models. Bradley Corporation.
Circle 117 on reader service card

Wall surfacing. Mono-Glaze is an acrylic polymer finish that is designed to be applied to either poured-in-place or precast concrete or to block masonry. System includes a scratch and brown level coat of quick-cure modified portland cement, an intermediate finish of Fat Kote (a smooth trowelled portland cement), and a final spray-applied finish of matte acrylic polymer glaze. The glaze is available in a variety of standard and custom colors. Finestone Corporation.
Circle 118 on reader service card

Laminated plastic. An addition to the company's Design Group I is Lime Cambay, a mixture of citrus shades of green and yellow. The pattern is available in various sheet sizes and thicknesses for both general purpose and post-forming use, and two or three finishes depending on type. Wilson Art.
Circle 119 on reader service card

Form liners. Trapezoidal liners are extruded from Cycolac brand ABS engineering thermoplastic, grade GS1, which, maker states, has better resistance than styrene to impact and to chemical in release agents and concrete, doesn't separate from forms as temperatures vary, and will not warp, absorb moisture, or discolor concrete. Greenstreak Plastic Products.
Circle 120 on reader service card

Tuffak-Twinwal™ is a double-walled, hollow-channeled, polycarbonate sheet whose construction is said to provide thermal insulating capabilities as window glazing for industrial and commercial buildings. It comes in sheet sizes of 48″x96″ and is approximately .220 in. thick and colorless. Rohm and Haas Company.
Circle 121 on reader service card
[continued on page 98]

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Products continued from page 96

Utility brick. An 8-in. thru-the-wall utility brick features a ceramic glazed interior face and a textured exterior face. The interior face of the unit is clear glaze ceramic finish and the exterior is a buff color rolled-on texture. The Du-Wall brick comes with square corners only. Two large cells in each brick allow for insertion of insulation. The brick conforms to ASTM specifications for clay tile and needs no steel framing. Stark Ceramics, Inc.
Circle 122 on reader service card

Interlocking modules. Pre-cast concrete modules incorporate a floor slab, ceiling slab, and two supporting columns to provide an open-sided box which can be factory-made and transported to the site to function as a building's load-bearing frame. On-site, the modules are lifted into position by crane and fastened together with an interlocking, mechanical shear connection. Modules can be locked together horizontally to form one-story open-plan buildings of unlimited size. Alternatively the modules can be stacked vertically to provide high-rise buildings. The company has designed a mobile machine for casting the modules in a factory or on-site, which can be used also to transport finished modules to the construction site. Exterior walls and interior partitions can be designed in any building material, since they are not required to be load-bearing. Modules can be factory finished to include built-in furniture and other equipment. The floor and roof slabs of the modules incorporate channels to carry service ducting. In Australia, the company is producing basic modules, 10′x10′x27′, cast in reinforced concrete, and weighing about 17 tons. Eight of these modules are said to provide a family house with a floor area of 2000 sq. ft. U.S. franchise and agency inquiries are invited. Space-Cell Systems (Australia) Pty. Ltd.
Circle 123 on reader service card

Literature

NCMA catalog contains list of management publications, special market research studies, sales and technical aids, computer feasibility study, design and construction literature, audio-visual presentations, and films that may be ordered. National Concrete Masonry Association.
Circle 200 on reader service card

Spectra-Glaze II. Satin finish glazed masonry units are lightweight concrete blocks glazed on one or more faces with a permanent surface in a wide color range. Blocks have plane, sculptured, and scored faces and come in a range of sizes, thicknesses, and shapes. Construction details and design ideas are given in brochure. The Burns & Russell Co.
Circle 201 on reader service card

Masonry wall reinforcement. Lox-All is a prefabricated reinforcement designed for embedding in the horizontal mortar joints of masonry. It is manufactured in 10-ft lengths from wire conforming to ASTM A82 and is available in various weights, finishes, sizes, and special shapes. All wires in both truss and ladder design are butt welded in the same plane. Brochure gives technical data. Cumberland Corporation.
Circle 202 on reader service card

Loose fill insulation. Silicone treated Perlite is an inert volcanic glass expanded by a heat process and treated with a nonflammable silicone. The lightweight product that results is a white granular material. Leaflet gives properties, technical data. Perlite Institute, Inc.
Circle 203 on reader service card

Stak-N-Bond™ block wall building, finishing, and dampproofing system is a blend of dry ingredients: portland cement, aggregate for texturing and workability; alkali-resistant glass fibers for strength; and a chemical agent to improve moisture resistance. Ingredients come in 50-lb bags ready for mixing with water at the job site. Brochure gives structural and physical properties, specifications. W. R. Grace & Co.
Circle 204 on reader service card

'BlocBond Construction Techniques' brochure shows step-by-step process for erecting a masonry unit wall designed for the proper application of BlocBond, the methods for correctly applying it, and construction considerations. Owens-Corning Fiberglas Corp.
Circle 205 on reader service card
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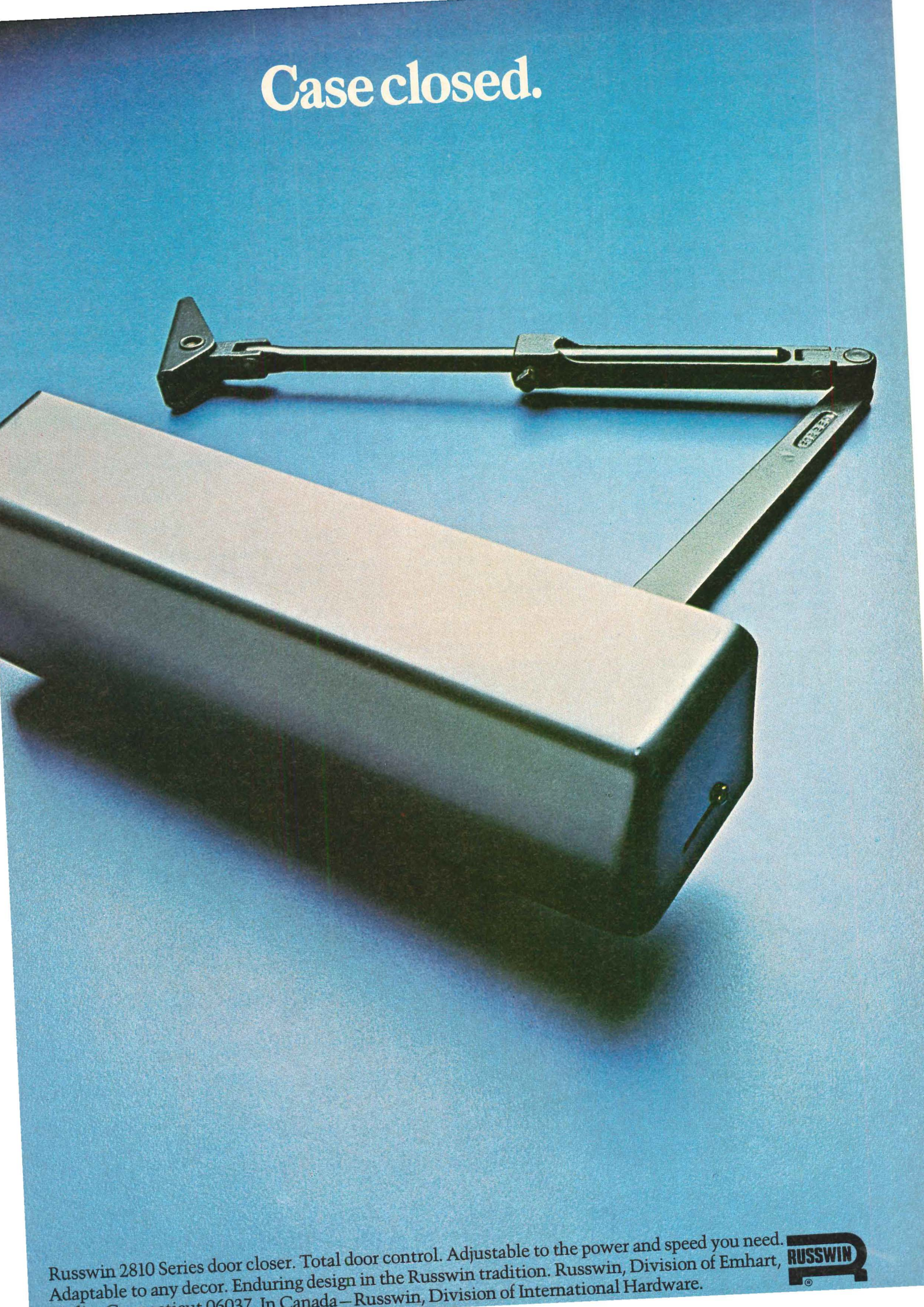
Case closed.



Russwin 2810 Series door closer. Total door control. Adjustable to the power and speed you need. Adaptable to any decor. Enduring design in the Russwin tradition. Russwin, Division of Emhart, [illegible] Connecticut 06037. In Canada – Russwin, Division of International Hardware.

RUSSWIN®

Literature continued from page 98

Soundblox with its cavity-slot resonator construction, may be used as load-bearing structural units and as finished surfaces. Brochure illustrates usage, gives details of each product with sizes, shapes, acoustical data, etc. The Proudfoot Company, Inc.
Circle 206 on reader service card

Sound control blocs. Concrete masonry units incorporate face designs as selected by the architect, and integral acoustical inserts to provide acoustical performance. Face designs are molded, sawn, drilled, or scored. Technical data is given in brochure. Warren Sales Corporation.
Circle 207 on reader service card

Masonry wall reinforcement. A comprehensive data file which contains all the major recommendations on masonry wall reinforcing proposed, or adopted by agencies of the Federal Government, private research organizations, and the Dur-O-Wal Company.
Circle 208 on reader service card

Block insulation. Korfil™ is a molded expanded polystyrene which is available to any block manufacturer for insertion into the cement blocks. Thus the blocks arrive at the job site insulated and ready to use. Brochure gives properties, coefficient of transmission through masonry walls, test results. Korfil Incorporated.
Circle 209 on reader service card

Building and construction specialties. Catalog contains information on stone support systems and accessories, masonry wall reinforcing anchors and ties, and other building specialties. Hohmann & Barnard, Inc.
Circle 210 on reader service card

Formbloc-Insert wall system combines a concrete unit with an insulating and spacing insert and wall reinforcement laid in conventional mortar joints. Brochure gives technical data. Formbloc, Inc.
Circle 211 on reader service card

Masonry cement. Color brochure illustrates and describes the masonry cements that produce N, S, and M type mortars. Medusa Cement Co.
Circle 212 on reader service card

'Products for improving concrete' is a four-page, color-coded brochure which lists admixtures, floor treatments, and non-shrink grouts and mortars by product name, application, and benefit. A handy reference for architects. Condensed File, Form SF-76 is available from Master Builders.
Circle 213 on reader service card

Pre-engineered metal buildings. A 24-page, four-color brochure shows the full range of systems for industrial, commercial, institutional, recreational, and agricultural use. Eight basic structural systems can be varied to produce more than 7100 standard building designs. Framing systems can be either multi-span or clear span, which offers column-free widths up to 250 ft. Wall systems are available in eight finishes in a number of different design patterns. Star Manufacturing Co.
Circle 214 on reader service card

Roofing specialties. Brochure contains detailed drawings and specifications on fascia systems, gravel stops and copings, battens and panels and more. MM Systems Corporation.
Circle 215 on reader service card

Polymer concrete brochure describes the technology of the product and discusses its history, chemistry, uses, and performance characteristics. Architectural Research Corp.
Circle 216 on reader service card

Non-shrink grouts and mortars. A 15-page catalog describes family of grouts, contains checklist and illustrations. Master Builders.
Circle 217 on reader service card

Engineered Loadbearing walls. Brochure contains technical data and design criteria for masonry loadbearing walls. International Masonry Institute.
Circle 218 on reader service card

Acoustical ceiling grid suspension systems. A 20-page product brochure for 1977 contains full-color photographs and detailed specifications for the company's complete product line. Roper Eastern Building Systems.
Circle 219 on reader service card

PermaGrain acrylic/wood is a uniquely desirable flooring surface. It's the warm natural beauty of fine hardwoods enhanced by the reflective lustre of acrylic plastic.

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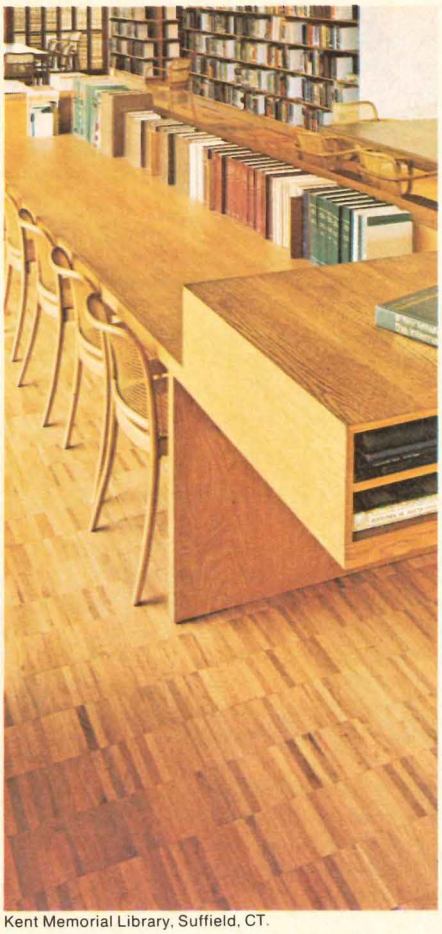

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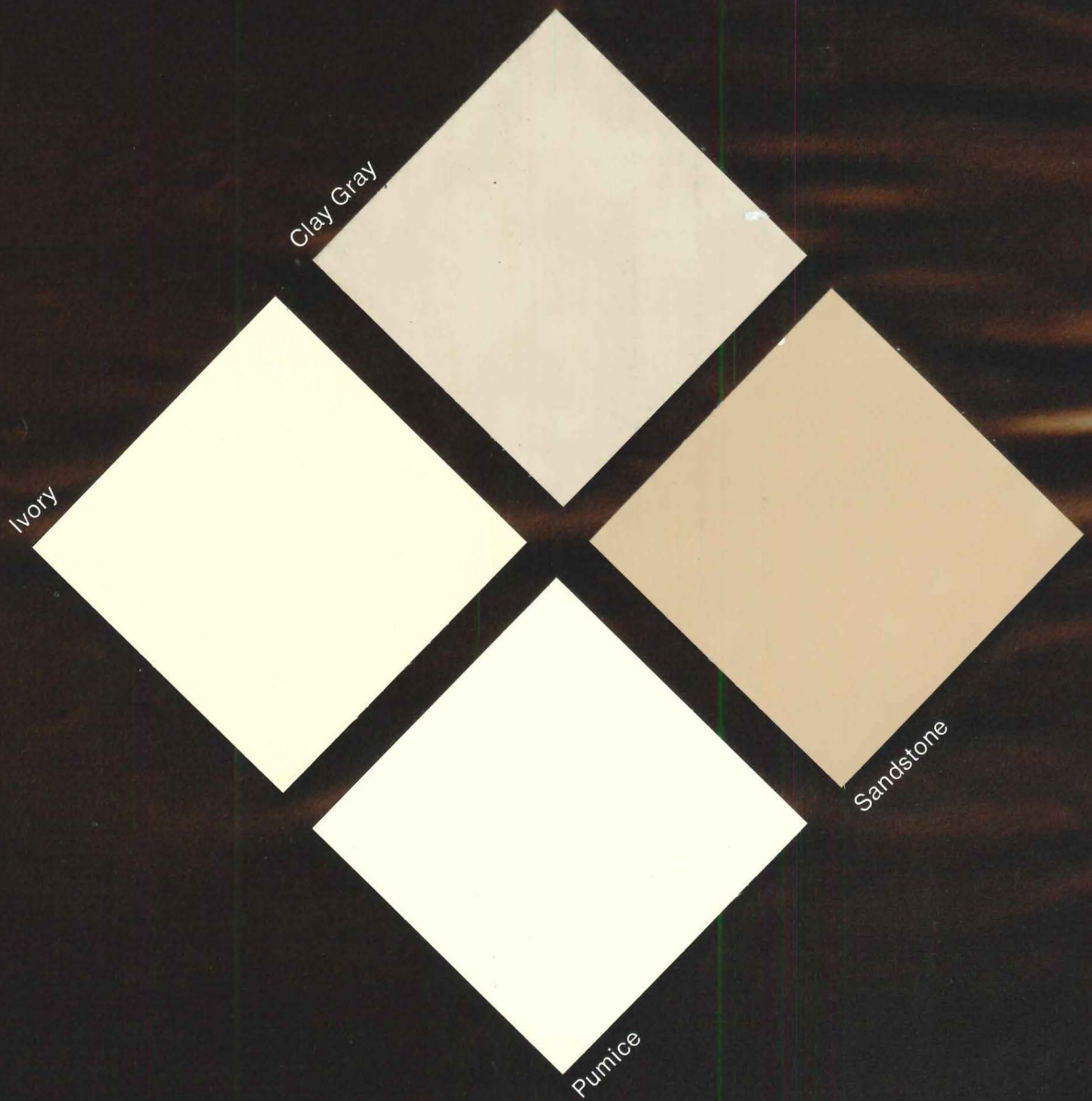

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BUILDING AMERICA

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Skidmore, Owings, & Merrill: Making it on Tobacco Road: Philip Morris Cigarette Manufacturing Plant, Richmond, Va. (June), pp. 78–83; Making it on Hartcliffe Way: Wills Tobacco office and factory, Bristol, England (June), pp. 84–87.

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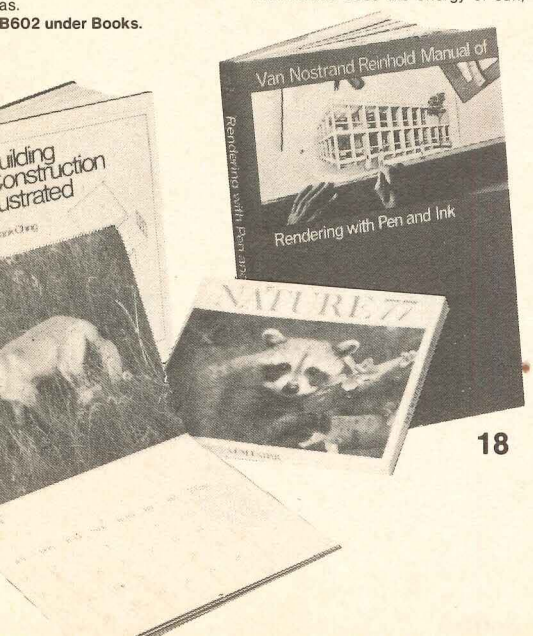

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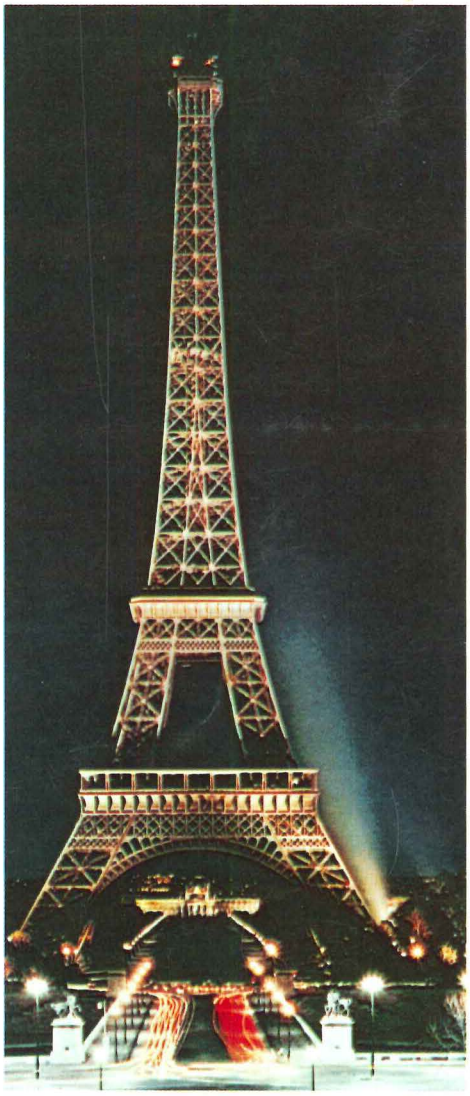

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