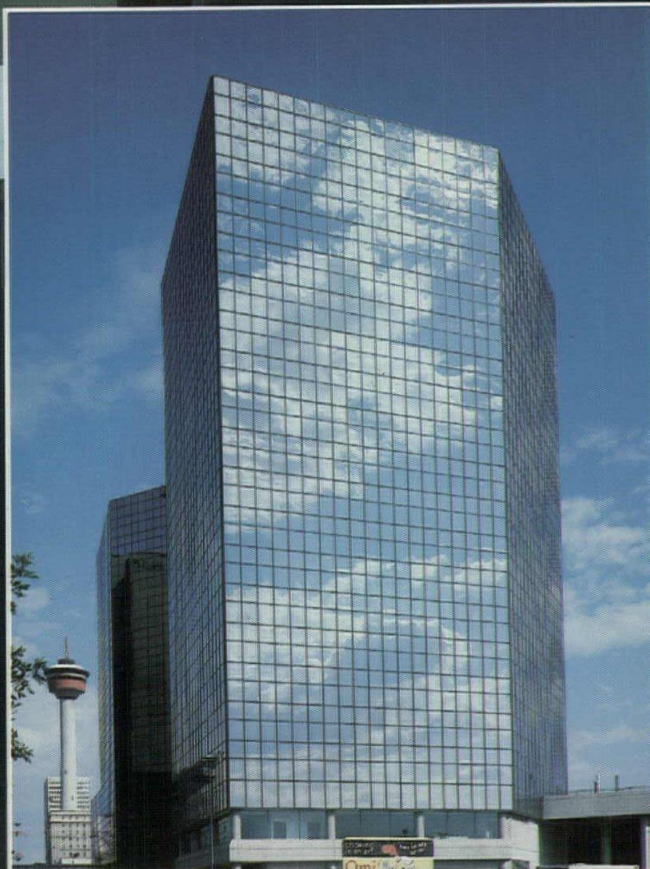
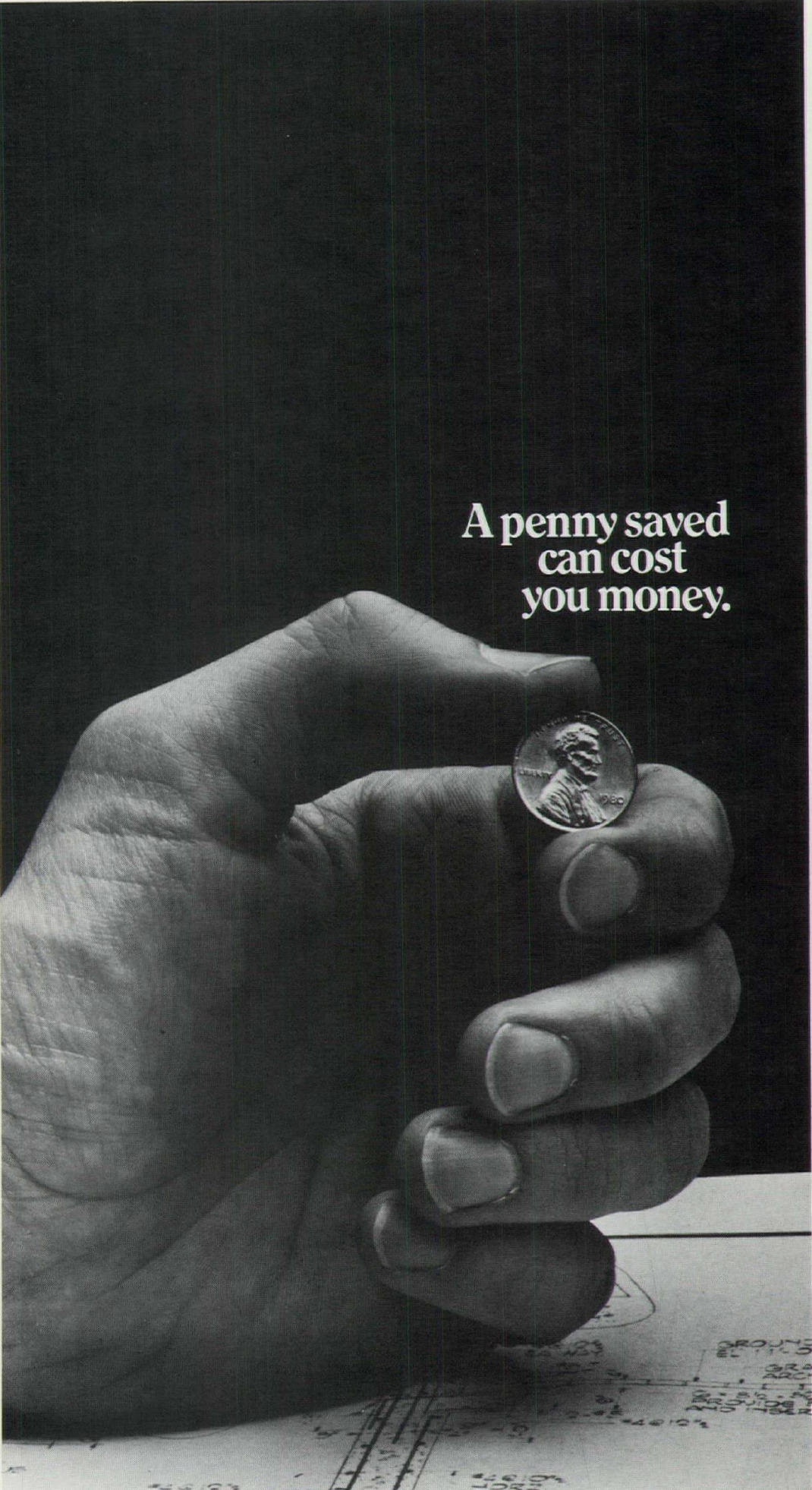




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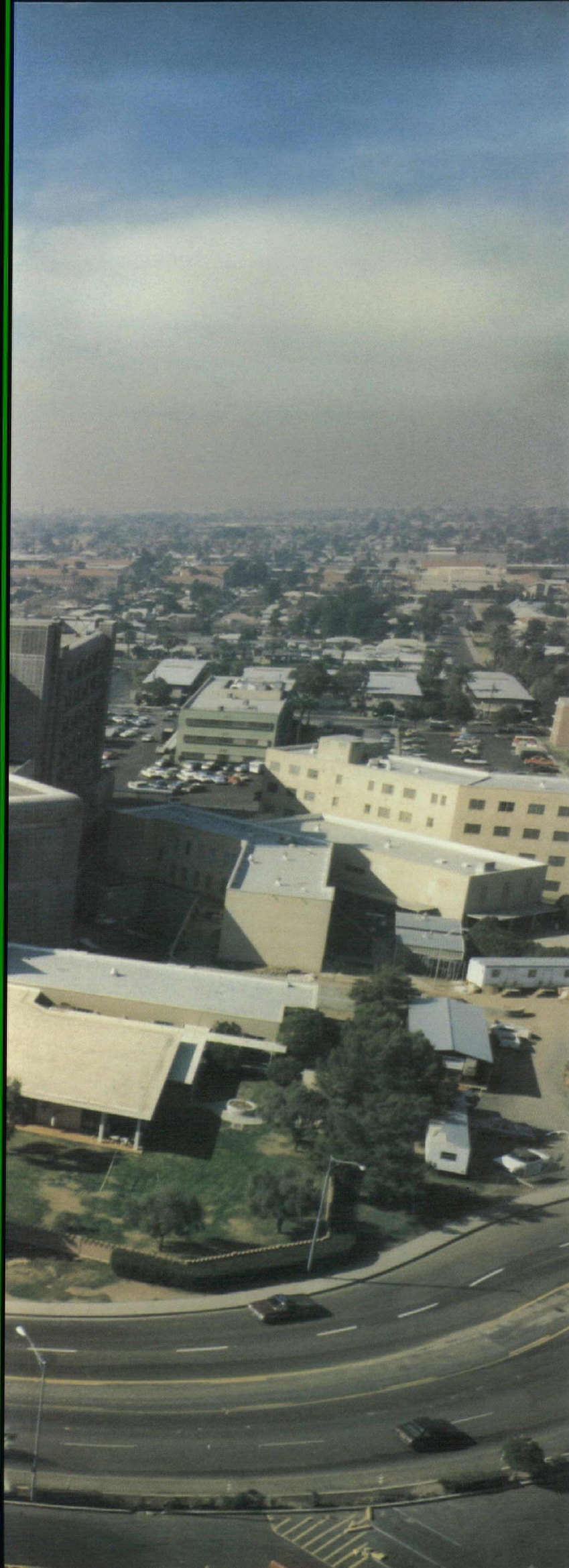
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Structural steel: the right prescription for additions to Phoenix Hospital.





For two basic reasons, modifications and additions to hospital/health care structures present complex planning problems. First, every day and night, normal hospital functions must continue without interruption. Second, most hospitals are situated in high-density urban areas where available construction sites are restricted.

The \$60.6 million addition to St. Joseph's Hospital & Medical Center in Phoenix, Arizona, was a typical situation—with the location problem compounded by a major traffic artery which intersected the site.

An innovative solution—only possible with steel—proved to be the staging of the structural steel at the plant of the fabricator/erector, nearly 600 miles away. This involved 250 trailer loads of steel, and the most exacting coordination. The steel was set in place directly from the vehicles to meet the tight "fast-track" erection schedule.

The additions represent one of the nation's largest hospital projects currently underway, with completion due in the fall of 1981. The main program includes a five-story ancillary building, an eight-story Nursing Tower with 202 beds, and new outpatient and admitting facilities.

Another challenge was the erection of a three-story, completely enclosed, climate-controlled bridge spanning a major thoroughfare between sections of the medical center.

Interstitial Space Design

The new ancillary (treatment) building is fully integrated with the existing structure and is designed to accommodate future vertical and horizontal expansion. It is an example of the structural framing system known as Interstitial Space Design—often used for hospital structures. It allows a maximum of clear, open floor space, with a minimum of servicing interference with normal hospital functions. It is also a highly flexible system, allowing for future functional changes.

We'd like to tell you much more about this project. For a copy of the St. Joseph's Hospital and Medical Center Structural Report (ADUSS 27-7875-01) or for any other information concerning Interstitial Design or steel for construction, contact a USS Construction Representative through your nearest U.S. Steel Sales Office, or write to United States Steel, P.O. Box 86, (C 1517), Pittsburgh, PA 15230.



United States Steel

Owner: St. Joseph's Hospital & Medical Center, Phoenix, Arizona
Architect: Varney, Sexton, Lunsford, Aye, Associates-Architects, Inc., Phoenix, Arizona
Structural Engineer: Robin E. Parke Associates, Inc., Phoenix, Arizona
Construction Manager: McCarthy Brothers Construction Co., St. Louis, Missouri
Steel Fabricator and Erector: McNally Mountain States Steel Co., Lindon, Utah

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EVENTS

Aug. 1: Deadline for entries, 1981 Prestressed Concrete Institute awards program. Contact: PCI, 201 N. Wells St., Chicago, Ill. 60606.

Aug. 3-7: Course on Improving Professional Effectiveness in Design and Planning Firms, MIT School of Architecture and Planning and Harvard Graduate School of Design summer program, Cambridge, Mass. Contact: Office of Special Programs, Harvard Graduate School of Design, Gund Hall, Cambridge, Mass. 02138.

Aug. 3-28: Summer Institute on Multiprotection Design, Emmitsburg, Md. Contact: Chuck House, FEMA/DOE/USGS Program Administrator, Shelter-Rad Technology, 2000 Century Plaza, 10632 Little Patuxent Parkway, Columbia, Md. 21044.

Aug. 7-9: Seminar on The Old House Revival, Montevallo, Ala. Contact: Michael R. Ramage, Live-in-A-Landmark Council, Alabama Historical Commission, 725 Monroe St., Montgomery, Ala. 36130.

Aug. 8: Seminar on Alternative Fuels: Alcohol, Methane & Wood, Jordan College, Cedar Springs, Mich.

Aug. 9-13: Illuminating Engineering Society of North America annual technical conference, Toronto, Canada. Contact: IES, 345 E. 47th St., New York, N.Y. 10017.

Aug. 13-16: Alabama Council/AIA convention, Biloxi (Miss.) Hilton Hotel.

Aug. 14-21: Course on Solar Energy and Conservation for Commercial Buildings, sponsored by the Solar Energy Research Institute, Radison Plaza, St. Paul. (Repeat courses Sept. 14-18, Bahia Hotel, San Diego, and fall, Denver.) Contact: Conferences Group, SERI, 1617 Cole Boulevard, Golden, Colo. 80401.

Aug. 17-19: Window Energy Show, Sahara Hotel, Las Vegas, sponsored by Industrial Fabrics Association International. Contact: Bob Smith, IFAI, 350 Endicott Building, St. Paul, Minn. 55101.

Aug. 21-23: Northwest Regional AIA Conference, White Pass Ski Resort, White Pass, Wash. Contact: Ed Weber, AIA, Central Washington Chapter, 633 Miller Building, Yakima, Wash. 98901.

Aug. 24-25: Seminar on Construction Cost Estimating and Bidding, College Park, Md. Contact: Center for Management Development, College of Business and Management, University of Maryland, College Park, Md. 20742.

Aug. 27-28: Seminar on Designing with Plastics, Boston. Contact: Plastic Seminars Institute, University of Lowell Continuing Education, One University Ave., Lowell, Mass. 01854.

Aug. 28: Deadline for entries, 1981 Owens-Corning energy conservation

awards. Contact: Mary G. Reinbolt, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

Aug. 28-29: Energy in Design: Techniques Workshop, AIA Chicago Chapter, Chicago. (Repeat workshops Sept. 10-11, Romulus, Mich.; Sept. 18-19, Peoria, Ill.; Sept. 24-25, Topeka, Kan., and Sept. 25-26, Argonne, Ill.) Contact: Brenda Henderson at AIA headquarters.

Aug. 28-30: Energy conference, Monterey, Calif. Contact: Betty Travis, Professional Development Coordinator, California Council/AIA, 1414 K St., Suite 320, Sacramento, Calif. 95814.

Sept. 8-12: Sixth National Passive Solar Conference, Portland, Ore. Sponsored by the American Section of the International Solar Energy Society, Pacific Northwest Solar Energy Association and Western Solar Utilization Network. Contact: Western SUN, 715 Southwest Morrison, Suite 800, Portland, Ore. 97205.

Sept. 9-11: Course on Energy Auditing for Light Commercial Buildings, University of Wisconsin, Madison.

Sept. 20-27: Tour of the Art and Architecture of Italy. (Second optional tour Sept. 27-Oct. 3.) Contact: The Landmark Center, 75 W. Fifth St., St. Paul, Minn. 55102.

Oct. 11-26: Architect's Tour of Italy, sponsored by the Westchester/Mid-Hudson Chapter/AIA. Contact: Mario P. Perillo or Margaret Toupin, Perillo Tours, 30 N. William St., Pearl River, N.Y. 10965 or Ray Matz, AIA, Westchester/Mid-Hudson Chapter/AIA, 180 S. Broadway, White Plains, N.Y. 10605.

Oct. 22-26: International Conference on Energy Management, International Congress Center, Berlin, West Germany. Contact: Marcia Untracht, ICEUM III, P.O. Box 64369, Los Angeles, Calif. 90064.

LETTERS

The Metropolitan: I have long been an admirer of Kevin Roche, John Dinkeloo & Associates, so of course I found great pleasure in reading William Marlin's article "The Metropolitan Museum as Amended" (May, p. 28). I had read Mr. Marlin's March 1974 article on the firm in *Architectural Forum*. In the same issue, Paul Goldberger found the Roche-Dinkeloo redesign "an obvious improvement," and I do agree with him. I am glad Mr. Marlin thought the same.

The article in the JOURNAL was well written and the pictures were of excellent quality. *Peter John Russo, student
New York Institute of Technology*

The Mid-May Issue: I received the copy of the JOURNAL today and have gone through it cover to cover. It is the finest presentation, in my opinion, that AIA has

ever published. It is most sophisticated, with excellent photography, and I particularly liked the integration of advertising with the numerous buildings. You are to be congratulated on a "first," so keep up the good work.

*William H. Merriam
Delray Beach, Fla.*

You really should verify all spelling if your articles continue to assume a sesquipedalian nature. "Cacophonous" (p. 156) is actually spelled "cacophonous."

*Robert L. Goza, AIA
Little Rock, Ark.*

The Future Direction of Architecture:

Western	(comparative)	Eastern
Logic		Instinct
Conscious		Subconscious
Science		Mind
Analytical		Synthetical
Fixed		Active
Yan		Yin
Square		Circle
Earth		Air
Material		Spiritual
Cube		Plan
Concrete		Abstract
Man		Woman
Colors		Black & White
Variety		Unity

Combination is the only way we can go. This is the unpreventable principle of the universe.

The existing architecture is too logical, too scientific, too hardline. (Though they appear as three, they are but one.) The future architecture will go to the field of subconsciousness too. The future architecture will take advantage of and learn more from Eastern culture. (Right now it is more from Japan, but the real and abundant treasure is from ancient Chinese art and culture.)

Still, we need a philosophy because science brings the happiness in enjoyment of materials, but unfortunately science has already destroyed the value of the human spirit, and as a result, we don't know what life is. *Shang-chih Wang
Milwaukee*

Corrections: The architect of the 1941 National Gallery of Art building was incorrectly identified in the May issue (p. 48). John Russell Pope was the designer. And, in a caption accompanying the article on the Smithsonian Institution's Museum of History and Technology (May, p. 53), the sculpture in front of the museum attributed to Diego Rivera was in fact the work of José de Rivera.

Also in the May issue (p. 25), Geddes Brecher Qualls Cunningham and that firm's restoration consultant, John Milner Associates, were uncredited as designers of the concept and of design guidelines for the Corning, N.Y., Market Street restoration.

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Winner, 1980 national AIA Honor Award plus two regional AIA Merit Awards in 1978, Equitable Life's regional headquarters in Charlotte, North Carolina, was designed by Wolf Associates, Charlotte.

Winner, 1978 AIA Component Award, Minnesota Society of Architects, Gelco Corporation's headquarters in Eden Prairie was designed by Parker-Klein Associates, Minneapolis.

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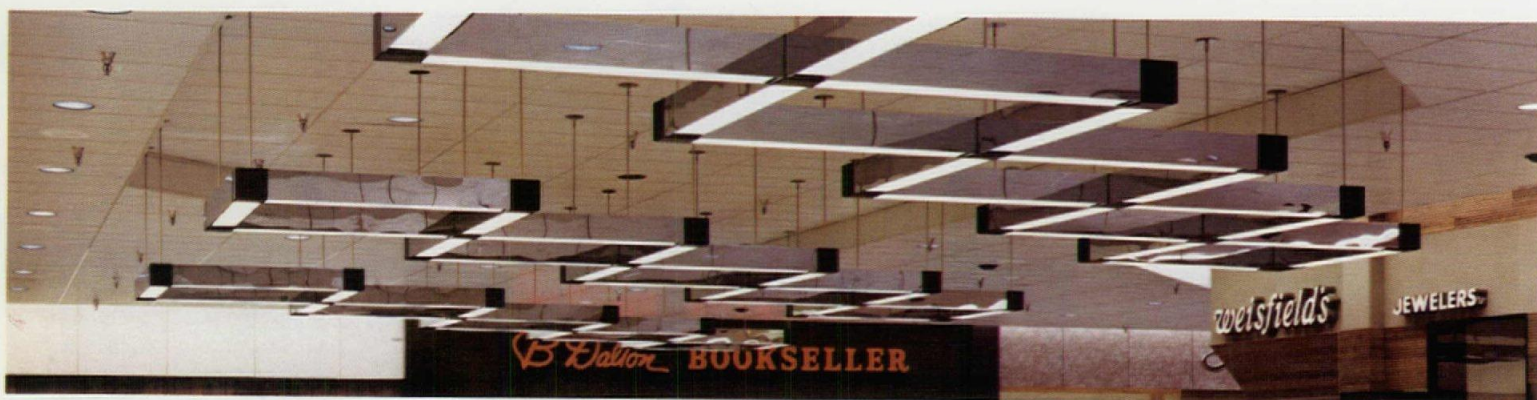
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Bell of Indiana's Columbus Switching Station
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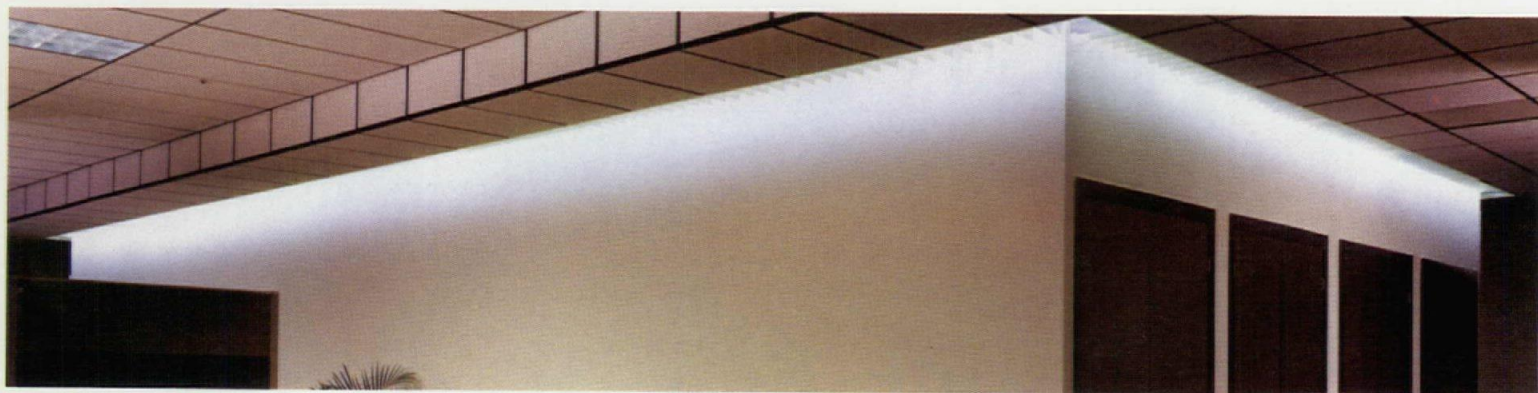
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Government

New GSA Chief Assesses Job, Sees No 'Big Building Program'

"I don't expect to see a lot of new programs, if any," says Gerald Carmen, New Hampshire businessman confirmed in May as President Reagan's administrator of general services. In an interview last month, Carmen elaborated: "We know we are not going to be able to go ahead with any big building program or an expanding bureaucracy. Our task is going to be to make the bureaucracy run more efficiently, to be more responsive. If we can accomplish that, we'll be able to function more effectively with a smaller budget."

During his Senate confirmation hearing, Carmen said he wants to reduce the cost of government through "honesty, hard work and a re-emphasis of traditional values."

In the interview, held his second full week as head of GSA, the former wholesaler and Republican activist in Manchester declined to discuss issues in detail, saying he was still doing his homework and becoming acquainted with his staff. (Albert R. "Mike" Marschall, appointed commissioner of the public buildings service two years ago, will remain in his post. David Dibner, FAIA, continues as assistant commissioner for construction management.) But Carmen did offer some tentative opinions.

On build versus lease: "We will be carrying out the Administration's policy and I'll be developing my own thoughts

on where I want to lead the agency. Because of the costs involved, there are things we might want to accomplish in the public buildings program that we might not be able to do at this time."

On A/E selection: "I think we have to find a way so that young architects are worked into the system along with the older, more established ones."

On adaptive use and preservation: "Coming from New England, I have developed a fondness for trying to keep as much of the history of our area as we can and in preserving buildings that have tradition. Preservation is one of my priorities."

On mixed use in buildings: "Seems like a reasonable approach."

On corruption within GSA: "Our major focus in the waste, fraud and abuse area will be making sure we do something about the things we find out are wrong. There seems to be a time lag (between uncovering wrongdoing and correcting it). That is the area I will try to deal with as forcefully as I know how."

On budget priorities: "We should reduce our overall and personnel budget loads. We intend to turn over to the private sector what the private sector can do best and more cheaply."

On life cycle costing: "I am studying it. It is the kind of consideration you take into all your decision making in the private sector, and it should be part of our considerations."

On art in architecture: "I favor the idea that a building should add something to its community. But no community should have some piece of art that is generally unacceptable locally or that clashes with the local culture. Within those kinds of parameters, I think it is a healthy idea."

Carmen founded and served as president and treasurer of a wholesale service he formed in 1959 and sold in 1979. During his five years on the Manchester Housing and Urban Renewal Authority, he was commissioner, vice chairman and chairman, and he was first chairman of the New Hampshire Housing Authority.



Gerald Carmen

He was active in the Reagan-Bush campaign and earlier was senior Northeast adviser for the Reagan primary election campaign.

Participants Give View on Federal Design Competition

Questioned by AIA, three of the six participants in GSA's design competition for a \$70 million Social Security Administration building in Jamaica, N.Y., said they would enter similar competitions in the future. This, despite the fact that those same three participants estimated their costs as ranging between \$40,000 and \$75,000, and GSA's compensation to each was only \$10,000. Of the remaining three finalists, two indicated that the costs were prohibitive, and the sixth had not responded by late June.

Design competitions are likely to be an important aspect of the new public buildings charter now making its way through Congress. The Senate has cleared a version, S.533, cosponsored by Daniel Moynihan (D.-N.Y.) and Robert Stafford (R.-Vt.), which requires A/E competitions for "a substantial portion of the building construction and renovation projects each year." S.533 still must be reconciled with a House version.

Each of the six finalists for the Jamaica project (see May, p. 20) was invited by AIA to fill out and return anonymously an eight-page questionnaire relating to the competition. The survey covered the process from the first announcement in the *Commerce Business Daily* last November, through program requirements, submission procedures, jurying and financial considerations.

The competition had a five-week deadline from the time the program was given

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Government

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to the six finalists. Presentations were limited to six 30x40-inch boards and a narrative text. No oral presentations were allowed, and extreme precautions were taken to ensure anonymity, even to the point of requiring entry delivery to GSA by commercial courier. Also, the identities of the jurors—all government professionals—remained undisclosed.

High costs to competitors is a frequent argument against design competitions, and AIA's survey responses indicate that the \$10,000 given each participant compensated from only 13 to 19 percent of the actual costs to the firms. Wrote one respondent: "While we knew the amount was insufficient, at least it was something. Since we felt very well qualified for the project, we were willing to compete for it, although we much prefer the traditional selection process." This same competitor suggested on the survey that compensation be raised and the number of participants reduced.

Asked about this, David Dibner, FAIA, of GSA, who structured the competition, said that \$10,000 was in the range of two recent comparable private sector competitions, for the Citicorp and Federated Department Stores headquarters buildings. His other reasons: keeping first costs down in order to have more to spend on the final design of the building, and wanting the profession to realize that "they don't need an expensive response, but rather a more disciplined response."

Dibner rejects the idea of extending the amount of time for participants—as suggested by two survey respondents—for the same reason: "Each additional week gives them another week of spending."

On the issue of anonymity, Dibner says it precludes charges of favoritism by the jury; it reduces the costs because no oral presentation need be prepared, and it focuses the competition on the graphic and written presentation while eliminating the factor of "awe that some famous architects might use to influence our people."

Two survey respondents said it was inappropriate that jurors were unidentified. One wrote: "... knowing the jurors' backgrounds in architectural competence levels would have assisted in choosing an appropriate approach... since the goal of this competition is to win." Dibner's response: "I'd rather they design for the Government of the United States and the program for which it stands."

Three of the five respondents answered yes to the question: "Would you have preferred jurors from the private sector?" One commented that this would provide "a different (and useful) perspective," and suggested using one architect and one mechanical or electrical engineer, each in private practice locally.

Use of jurors outside of government is



a provision of the Senate's bill, which would exempt private sector jurors from making financial disclosure statements to preclude conflicts of interest. Under current regulations, such statements are required of all design competition jurors. Dibner considers such requirements unfair to outsiders, and says juries are none the worse for the lack of outsiders.

This jury was charged with evaluating entries against five criteria, each weighed a percentage of the overall evaluation. These were: building design, including structural concept, 40; mechanical/electrical systems considering energy usage, 20; site planning, 15; interior space utilization and accessibility, 15, and cost, 10. Survey respondents were invited to comment on the relative values, and there was general agreement with them, except in the area of cost. Wrote one: "I wouldn't weigh this at all. Estimates with this degree of document development are only approximations plus or minus 10 percent. GSA should simply state budget (which it did) and say that the design will be generally evaluated [for compliance]. If design is obviously extravagant in materials and systems, that would be considered in overall judgment."

One bit of cost data proved particularly difficult for the design teams: estimation of cost escalation from the present until the construction contract award is made in June 1983. "It should not be up to the architect to have to predict...," said one survey respondent. Another suggested that GSA make assumptions as part of the program that could be taken as constant givens. Dibner admits it was an error and plans to provide a firm basis for cost in future competitions.

Three of the five survey respondents checked "yes" to a statement describing this competition as "fair," "reasonable" and "viable." One agreed that it was fair but downrated it otherwise as too expensive. Another suggested the need for "a clear definition as to criteria for selection,"

oral presentations and strict adherence to detail requirements.

Winner of the competition was the joint venture of Gruzen & Partners/The Ehrenkrantz Group/Syska & Hennessy (rendering at left). The five other finalists were The Eggers Group; Kohn, Pederson & Fox Associates/Cannon Design; Perkins & Will/Urbahn Associates; Swanke, Hayden, Connell & Partners; and John Carl Warnecke & Associates.

One of the strongest proponents for design competitions on Capitol Hill is Robert Peck, assistant minority counsel for the Senate committee on environment and public works, who believes the Jamaica competition was a success and a portent of things to come. Although AIA and others disagree, Peck sees competitions as "the only way government can institutionalize a concern for good design."

Asked what one does about the high costs to designers, Peck says, "You make them cheap. It is a fair criticism of competitions that if you are a rich firm, given a month, you can go out and hire people to beef up your design."

He suggests limiting the time factor and presentation requirements to perhaps four weeks and five boards with no full color renderings.

Dibner and Peck agree on one point—a design competition should be a search for a designer, not a design. Says Dibner: "In previous Level 3 competitions, we felt obliged to stick with the design even though circumstances change during development of a project. I don't want that to happen on the Jamaica job."

Representatives of AIA have spoken to the point of simplified design competitions in recent testimony before Congress. R. Randall Vosbeck, FAIA, in responding to a series of questions from Senator Moynihan, said, "Reducing the time and money spent on the competition process conversely increases the difficulty of determining a 'winner' because far less information is submitted." And Robert Burley, FAIA, told the Senate committee on the environment and public works this March: "... a cheap or hurried competition may very well result in a cheap or hurried type of building..."

Bill Would Fund \$6.5 Billion In Prison Facility Construction

Legislation providing federal financial assistance to state and local governments for the construction of prisons and other justice facilities has been introduced by Sen. Robert Dole (R.-Kan.). The bill calls for appropriation of \$6.5 billion over the next seven years, as well as additional funding from revenue bonds.

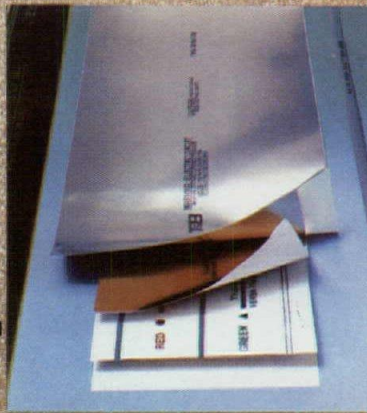
And in recent testimony before the
continued on page 17



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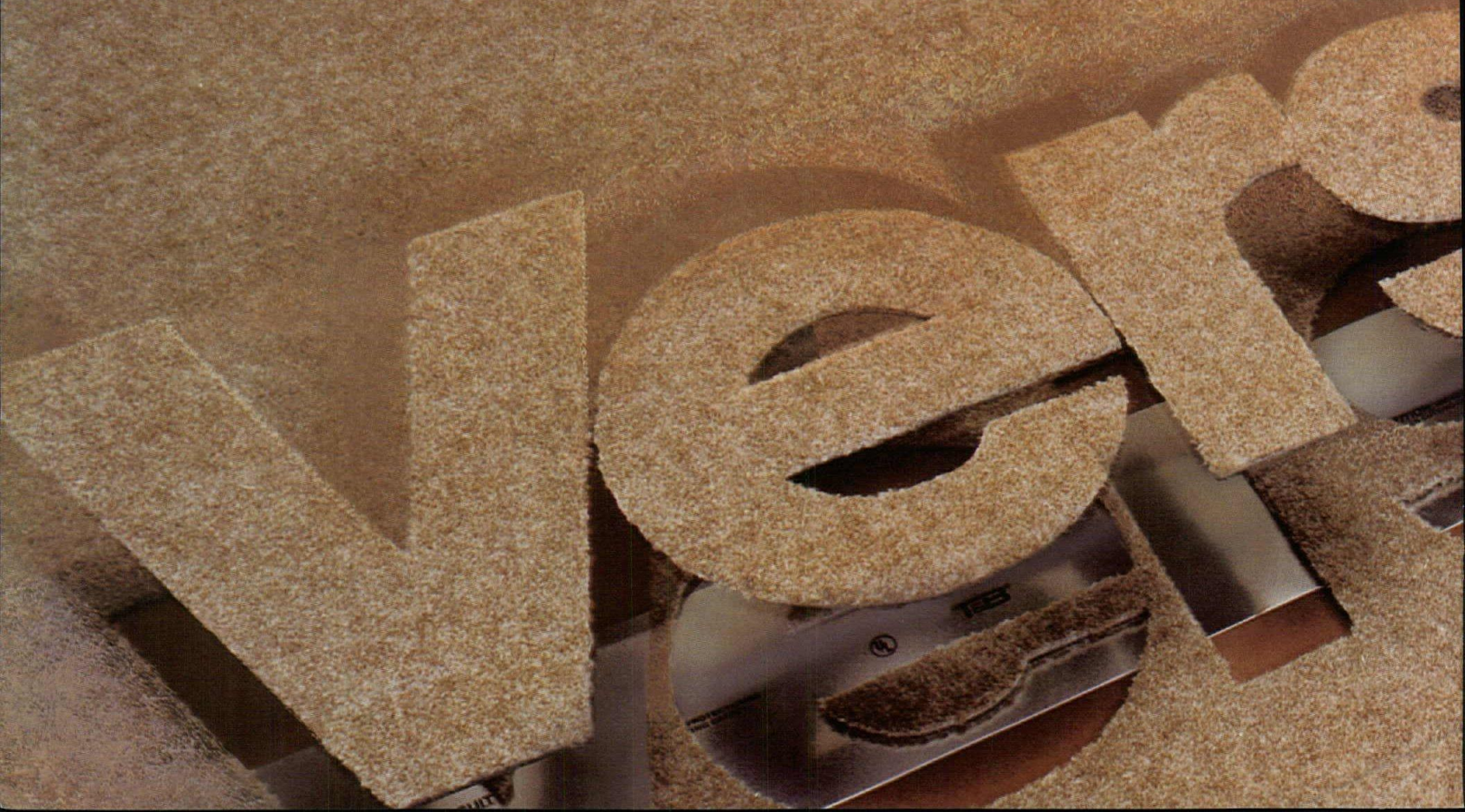
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Government from page 12

Senate subcommittee on criminal law, Richard G. Conklin, AIA, said that the Institute "generally supports the provisions" of the bill. "We applaud the objectives and timeliness of the senator's proposal," he said, "and fully understand the urgent legislative need that the bill addresses."

The Criminal Justice Construction Reform Act, S. 186, is intended to help alleviate the overcrowded condition of U.S. prisons. In the past decade the nation's prison population has risen from 195,000 to 320,000, an increase that has far outstripped prison construction. A justice department study found that nearly two-thirds of all state prisoners and over three-fifths of federal inmates live in facilities that are considered over-crowded (less than 60 square feet of floor space per prisoner).

S. 186 calls for the establishment of a criminal justice facilities administration within the Department of Justice that would make grants to state and local governments for the construction and modernization of criminal justice facilities (including jails and prisons, rural courthouses, detention centers, halfway houses, police facilities, reformatories, work farms and community-based facilities). In order to receive a grant, a state would be required to submit a seven-year plan, which is to include "innovations and advanced techniques in the design of such facilities."

The renovation and remodeling of facilities that have historic significance would be encouraged. And the legislation calls for facilities to be designed for possible other criminal justice purposes if they are no longer used for the specific purpose for which they were built.

Also included in the bill is a provision for demonstration grants to states to test the applicability of advanced practices to the design, construction and modernization of criminal justice facilities.

In introducing the bill, Dole commented, "American prisons are generally underfunded, overstaffed and filled far beyond capacity. In some prisons two or more inmates are housed in single-man cells, bunks are lined up side-by-side in the dormitories and some men sleep on the floor because of crowded conditions." Dole suggested that this overcrowding can lead to inmate riots, raises the chances of ex-convicts committing new crimes and deters the inmates from having any respect for the justice system.

In his testimony, Conklin said, "The growth in federal, state, county and city inmate populations since the mid-'70s has far outdistanced facility capacity and construction and has resulted in overcrowded conditions too often characterized by a lack of security, prisoner safety and control. It's not uncommon to find correc-

tional and detention facilities housing two to four times their design capacity, in any part of our nation. . . . The majority of justice facilities in use today across the nation were constructed in the late 19th and early 20th centuries. These relics are generally inflexible and unsuitable to accommodate contemporary penal philosophy and functions."

Conklin also noted that court facilities are overtaxed and inefficient. "We are therefore pleased that the bill is comprehensive and not limited to funding of detention facilities alone," he said.

Conklin also testified:

- The Institute supports the provision calling for renovation and remodeling of historic structures.

- AIA supports the requirement that the states produce comprehensive plans for the development of their facilities over a seven-year period. "This process should promote continuity, public involvement, interagency and intergovernmental cooperation, improved quality in service delivery systems and cost-effectiveness," Conklin said.

- AIA applauds the demonstration grants programs. "Only by seeking continued improvements in all aspects of the construction of criminal justice facilities," Conklin said, "can continually changing system demands be safely and adequately satisfied."

The Institute

Stronger Control Process Urged On Long-Span Building Projects

To safeguard against the collapse of a long-span building, a stronger control process is needed for the design, construction and postoccupancy phases, the AIA long-span building panel concluded.

The panel's report, which was approved by the AIA board of directors in March and released by the executive committee at its convention meeting, explores the control process, why long-span buildings are unique and what special problems can arise. The report, "Toward Safer Long-Span Buildings," also makes recommendations for the development of procedures that "will reduce the risk of a long-span building ever collapsing again."

The panel did not technically investigate the specific collapses that brought about its creation by AIA in 1979, but aimed to make the study pertinent to all long-span buildings. Its recommendations are to guide design professionals, the construction industry and building owners,

- AIA opposes the establishment of another federal agency to "impose more standards and regulations as a condition for construction funds being made available."

- AIA believes that the final bill should address a method of achieving uniform building design standards for justice system facilities, should reflect the state-of-the-art thinking of what jails, prisons and courthouses should be like and how they should work.

Conklin also acknowledges that AIA agrees with Senator Dole's expressed recognition when introducing the bill that current budgetary concerns might mitigate realizing the legislation's financial targets.

Passage of the bill may also meet resistance in light of the recent Supreme Court ruling that prison overcrowding is not unconstitutional and that "harsh" prison conditions are the price of crime.

The ruling involved double-celling of inmates in 63-square-foot rooms in a maximum security prison built in Ohio in the early '70s. That sort of overcrowding is clearly not unconstitutional, when other conditions are in order, the court ruled. However, federal standards call for a prison capacity of 60 square feet per inmate. At this writing, it is uncertain how this ruling will affect 22 other states that are under court order to reform their prisons because of overcrowded conditions.

not to establish mandatory procedures or standards of practice, nor are they meant to apply to every situation.

For the design, construction and occupancy of long-span buildings, the panel suggested that one type of building team organization—traditional or nontraditional—is not superior to another so long as safeguards exist. However, the panel did suggest that the design professionals on the team be lead by a "generalist, someone who has an overview of the project, a sense of the links between its various parts and is aware of the context in which the project is to be built."

The panel suggested that "controls aimed at securing a safe long-span structure should begin as soon as the owner sets the parameters for his project." The panel also stressed that the project team is the best one to do the checking of safeguards of the design and that the architect and engineer should consider the field

continued on page 18

The Institute from page 17
consequences of their design with special care.

For the construction stage, the panel called for more involvement by A/Es than is required for a short-span building. The panel suggested that the following be considered for control in the construction phase:

- The design professional should set some guidelines for site erection procedures if it "would clarify the design intent or any unusual aspects of the structure's design."
- Alternative project delivery systems (use of construction managers, phased construction scheduling, design/build and prepackaged building systems) were em-

ployed on several of the structures that collapsed during the past few years. Therefore, the panel concluded, it is especially important for the owner to understand fully his role and responsibilities when using such systems and to develop a good "feel" for the risks and rewards of each.

- The architect and engineer should play a major role in providing the necessary construction phase support services and in establishing the requirements for field inspectors.
- In repetitive types of structures, collapse of any member tends not to create a catastrophe. In long-span structures, where the integrity of some members or connections is crucial, the panel felt that

inspection of every part of some structures may be appropriate.

- A comprehensive quality control program should be established to include visual and nondestructive field testing.

In the occupancy phase, "controls to avoid long-span collapse should not cease when the owner or operator takes possession of the building," the report says. "Alignment, deflection and deterioration should be checked."

Long-span structures are unique, the panel suggested, in that they have relatively fewer major structural elements than short-span buildings and fewer paths of load resistance. Therefore, the structures are more vulnerable to collapse in cases of accidental overload or member weakness. "The consequences of failure should be evaluated separately, by using an increased factor of safety and/or resorting to increased quality assurance during construction," the report states. The panel also suggested that the stiffness of diaphragms, bracing and supports and the flexibility of the connections, should be considered in the design.

The effects of secondary stresses should be given more importance in the design process, the report says, such as the effects of snow drifts, partial snow loads, wind pressures, earthquakes and vibration effects.

And, too, the choice of materials is important. "As building spans increase and undergo changes in relation to the forces with which they contend, the report states, "a given material may no longer be appropriate, since stresses may grow faster than merely in direct proportion to size. Thus, a change in size of the building may intensify stresses at a connection in a way that calls for different types of materials, not merely a larger connector."

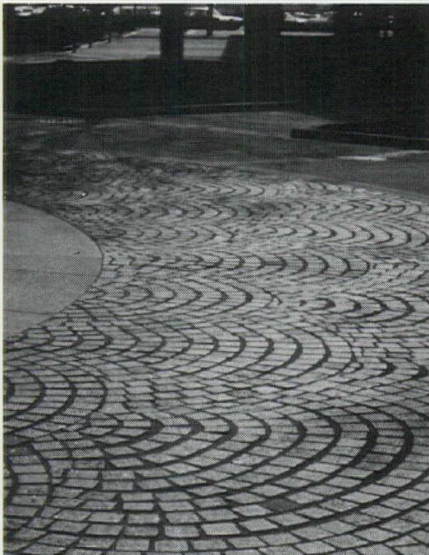
The panel concluded that AIA should seek a research grant to develop a series of guideline documents and practice aids to assist design practitioners in "fulfilling the special requirements of long-span design and construction." The grant would also be used to develop a project delivery management manual for design and construction for all members of the building team. Supplementary or separate grants should be sought, the panel said, to develop new or improved knowledge and tools of practice. The panel also concluded that AIA should adopt a research policy statement in support of uncovering new knowledge and practice tools.

Panel members were William Marshall Jr., FAIA (chairman), Jerome M. Cooper, FAIA, Leo A. Daly, FAIA, Ezra D. Ehrenkrantz, FAIA, engineers Albert J. Gouwens and Leslie E. Robertson and engineer/general contractor Rolland M. Wilkening.

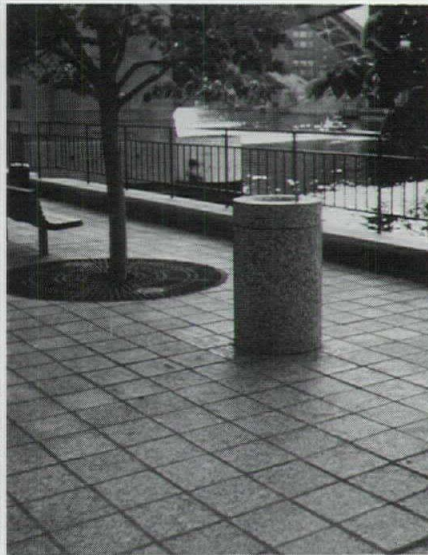
News continued on page 23

Granite.

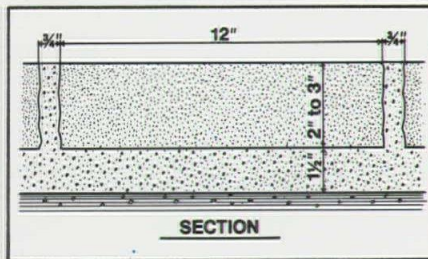
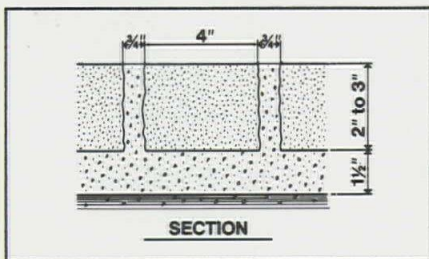
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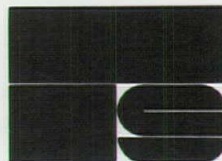


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A Prediction for Year 2000: Most Work in Retrofitting

The year 2000 and beyond will be the "age of telecommunications" when the energy crisis is "solved" and a "major percentage" of architects' work will be retrofitting structures built in the last half of the 20th century. These are predictions of AIA's 1981 Long-Range Planning Report, the first of the series to deal with the far future.

Each year, an AIA committee considers issues relevant to the Institute and the profession and presents its findings to the board. This year's report relies in part on guest contributors—an economist, a futurist, an expert on government relations, practicing architects—for perspectives and predictions. Ten "scenarios," sketches of life in 2000, are presented, and Institute responses are suggested.

Scenario titles include "The Communications Explosion Revolutionizes Our Lives," "Reshaping the Way We Work and Live" and "America Solves Its Energy Crisis." This last prediction suggests that new technology, new energy sources and conservation will provide "more energy available than ever before." A suggested response for AIA: "Actively pro-

mote conservation and awareness of innovative design solutions which remain valid through energy abundance and scarcity."

The committee also made recommendations for implementation by AIA within the next five years. Among them:

- "Encourage and facilitate the extension of the field of architecture and the diversity of career roles of architects. . . ."
- "Employ a considerable amount of Institute resources for public education and information about the field of architecture and the role of architects and their capabilities."
- "Expand Institute effectiveness in the total building industry through establishment of discussion groups with professional associations representing owners and managers, realtors and lenders."
- "Encourage the educational institutions to prepare their students for the diversity of roles they will be expected to fulfill in the field of architecture."
- "Provide and promote . . . research and study in the building sciences, technology of construction and other areas related to the creation of the built environment."
- "Continue to emphasize the importance of communication with individual members and components. Look for communication methods which are cost-effective substitutes for travel."

150 Students Share \$131,100 From Institute, AIA Foundation

Each year, AIA and the AIA Foundation give financial assistance to promising students in accredited U.S. and Canadian schools of architecture. Sharing \$131,100 this year in academic scholarships ranging from \$200 to \$2,000 are 150 undergraduates and graduate students from 58 schools. In addition, three architects shared \$4,200 in professional scholarships.

Recipients are selected by a special committee which evaluates applicants' academic records and financial needs, and considers recommendations by deans or department heads. The committee this year was chaired by Don King, AIA. Other members were Cynthia Strawn Browne, AIA associate member; Richard Dozier, AIA; Robert Mooney, AIA, and Margie Miller, vice president of the Association of Student Chapters/AIA.

The scholarship program is supported by endowments and annual donations. Several scholarships are funded by annual gifts from corporations and associations, including the Johns-Manville Fund, the National Association of Brick Distributors, Knoll International and Blumcraft of Pittsburgh. *News continued on page 24*

Saving Water With Style

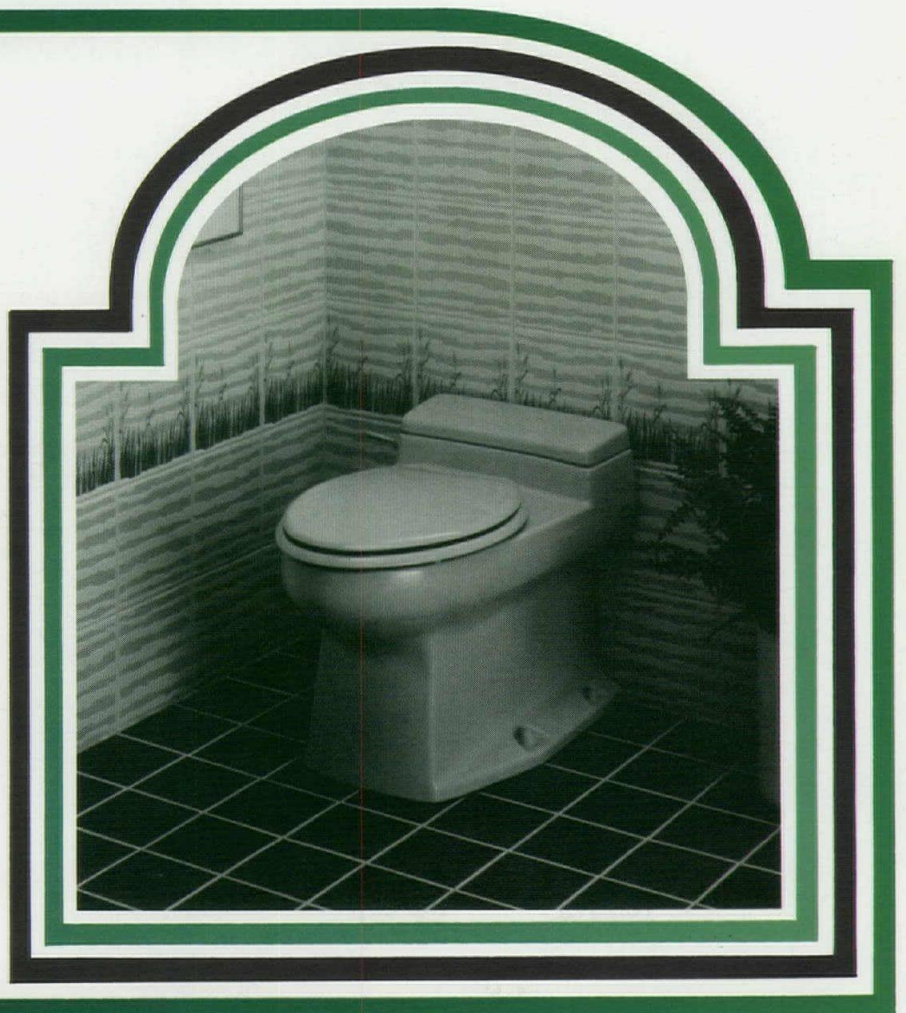
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Origins of the Current 'Crisis' Traced to the Post-WWII Period

Most Americans now think of 1973—with the Arab oil embargo, OPEC price increases and gas lines—as the beginning of the nation's unresolved energy "crisis," says a study recently published by the Brookings Institution. But in reality the long-term question of U.S. energy supplies and the much-debated remedies of the '70s surfaced repeatedly in Washington after World War II. From Truman to Carter, Presidents and Congresses failed

to devise a coherent national energy policy, the study concludes.

Written by Craufurd Goodwin with William J. Barber, James L. Cochrane, Neil de Marchi and Joseph A. Yager, the study, *Energy Policy in Perspective: Today's Problems, Yesterday's Solutions*, traces in 728 pages the complex story of the relationship between energy resources and government regulation.

Says Goodwin: "The inventory of en-

ergy policies adopted by Washington before and after the Arab embargo in 1973-74 is long and intricate. Stripped of embellishments, however, two themes stand out: the unwillingness, despite all of their rhetoric, of energy producers, consumers and the federal government to allow a genuinely free market in energy to develop; and the inability to create a system of central planning—the obvious alternative—to take the place of the marketplace. . . .

"Successive Presidents worried about fuel prices and shortages, about imports, about competition among coal, oil and natural gas. But a truly broad, painful White House attack on the problem, it seemed, was always deferred as wars, recessions or political conflicts intervened."

The following is a brief survey, excerpted and paraphrased from the study, of energy-related events since the end of World War II.

In 1947, the U.S., an exporter of oil since 1870, became a net importer, as the "center of gravity" of world oil production was shifting rapidly from the Western Hemisphere to the Middle East. Thus, Harry Truman became the "nation's first chief executive to face energy matters in a 'modern' context.

"He did not," according to the authors, "consciously set out to forge an 'energy policy,' as recent American Presidents have done, and he had not the luck to do so accidentally. Rather, he confronted (or avoided) energy issues as they arose, one at a time, fuel by fuel."

The Truman Administration inherited a complicated system of quotas governing the amount of petroleum each producing state could sell, a policy that was passed by Congress in 1935. An oil tariff to discourage imports was adopted in 1932. Yet, during the Truman era oil imports went from zero to 13 percent of the national consumption. Apparently, Truman was on the verge of curbing imports drastically when the Korean War broke out on June 25, 1950.

A policy on natural gas had also been established by the time Truman became President, although gas emerged as a potential major fuel only during WWII. Under the 1938 Natural Gas Act, the Federal Power Commission had the authority to regulate the prices that the few existing interstate pipeline companies could charge local utilities and industry. Truman did turn over the government's two large-diameter steel pipelines, built during the war to bring oil from Texas to the Atlantic seaboard, to gas people.

"This promoted gas from the status of a petroleum byproduct to that of an important fuel with a new national market," the authors state. Truman vetoed a bill,

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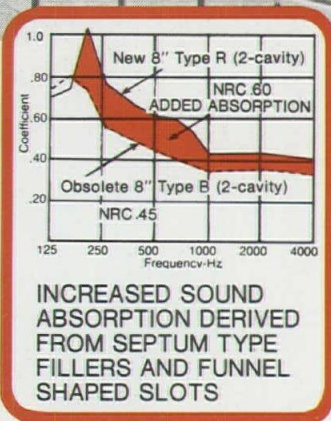
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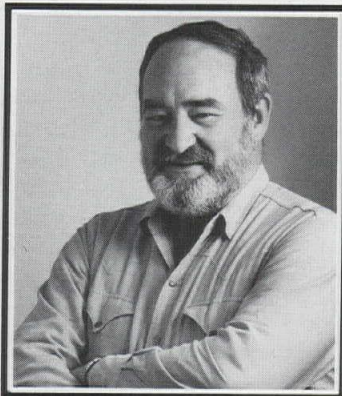
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Energy from page 24

passed by Congress in 1950, to exempt natural gas from wellhead regulation.

"For all the passion aroused by the debate over wellhead regulation, few voices warned that excessive demand and excessive dependence might result from selling gas at prices far lower than what the market would bear. The realities became clearer three decades later," the authors conclude.

Coal, the only truly laissez-faire industry left in the energy section, was the most financially troubled. Coal operators could not afford to pay higher wages to miners unless they also raised the price of coal; yet higher prices would encourage coal's remaining customers to switch to oil.

The one main White House energy initiative came at the end of the Truman era—the creation of the Paley Commission in 1951 to take stock of America's future needs for all types of nonrenewable natural resources. "In the commission's final report the authors insisted that 'the hydra heads of energy policy must be reined together.' They recommended a wide range of federal programs, including research into solar and atomic energy and creation of an underground petroleum reserve. They challenged Detroit to come up with a fuel-efficient car and challenged Americans generally to start preparing for the energy demands of the '70s." Four months after publication of the report Eisenhower was elected President.

Eisenhower was a supporter of free markets, private enterprise and regulation by states and localities, not by the federal government. "Energy policy per se did not rank high on the Eisenhower agenda," say the authors.

Then the 1954 recession came and to combat this a new public power project—the construction of a 41,000-mile interstate highway system—was begun. "In the end, the highway program helped to create a sizable new demand for imported oil," conclude the authors.

The Eisenhower Administration worried most about oil, notably the rising volume of imports, which rose from 13 percent to almost 19 percent of the national energy consumption. By 1955, Eisenhower established a system to voluntarily control imports in an attempt to hold them to the 1954 level. In 1959, Eisenhower replaced the voluntary system, which did not work, with mandatory oil import controls. Imports were to be allocated among domestic refiners.

Two other events of the Eisenhower era were significant: In 1954 the Supreme Court ruled that the Federal Power Commission must regulate the wellhead price of natural gas. This was to last for almost three decades. "Responsive to consumer pressure," the FPC kept the prices low, say the authors, "overlooking the long-

term effects of its actions of future U.S. energy supply and demand."

The other event was that in 1960 Venezuela, Iran, Iraq, Kuwait and Saudi Arabia formed the Organization of Petroleum Exporting Countries.

In John F. Kennedy's 1960 campaign specific energy issues cropped up, such as public power projects and a revival of coal. Although he campaigned for a national fuels policy, by the time of his assassination in November 1963 no such policy had been written. Natural gas had become the fifth largest industry in the nation, and Kennedy had favored continued federal regulation to keep prices low.

Foreign oil imports grew to 20 percent of U.S. oil consumption in 1963.

By the time of the Johnson Administration, "much of the nation was now 'hooked' on artificially cheap natural gas, to the detriment of coal," say the authors. A high-level interagency staff report concluded in 1966 that there was nothing to worry about. Their report said, "The nation's total energy resources seem adequate to satisfy expected requirements through the remainder of the century, at costs near present levels."

In 1964, Johnson hailed an "economic breakthrough" in nuclear power as utilities suddenly discovered that atomic energy could be commercially successful. Twenty-one reactor contracts were awarded in 1966 and 30 in 1967.

In 1966, with the future course of the war in Vietnam uncertain and the consumer price index edging upward, LBJ moved to keep down crude oil prices by increasing the production "allowables" on domestic oil. "In effect, Johnson lifted what remained of the restrictions on imported residual fuel oil, continually rising quota ceilings so that supply always conformed to demand.

"The Johnson Administration," say the authors, "in the main, was notable for its senior officials' blindness to the problems of impending scarcities, price rises and growing OPEC strength. LBJ unabashedly subordinated energy issues to transient political and economic pressures.

"Vietnam, inflation, detente, China and Vietnam again: these were Richard M. Nixon's overriding concerns during his beleaguered first term in office, facing a hostile Democratic Congress. Energy problems were treated by the White House in piecemeal fashion and received only intermittent attention at the highest levels."

In 1970 Nixon backed the Clean Air Act and the creation of the Environmental Protection Agency. "Power plant executives began converting even faster from 'dirty' coal to 'clean' oil and gas. Refinery construction slumped. Licensing of

continued on page 28

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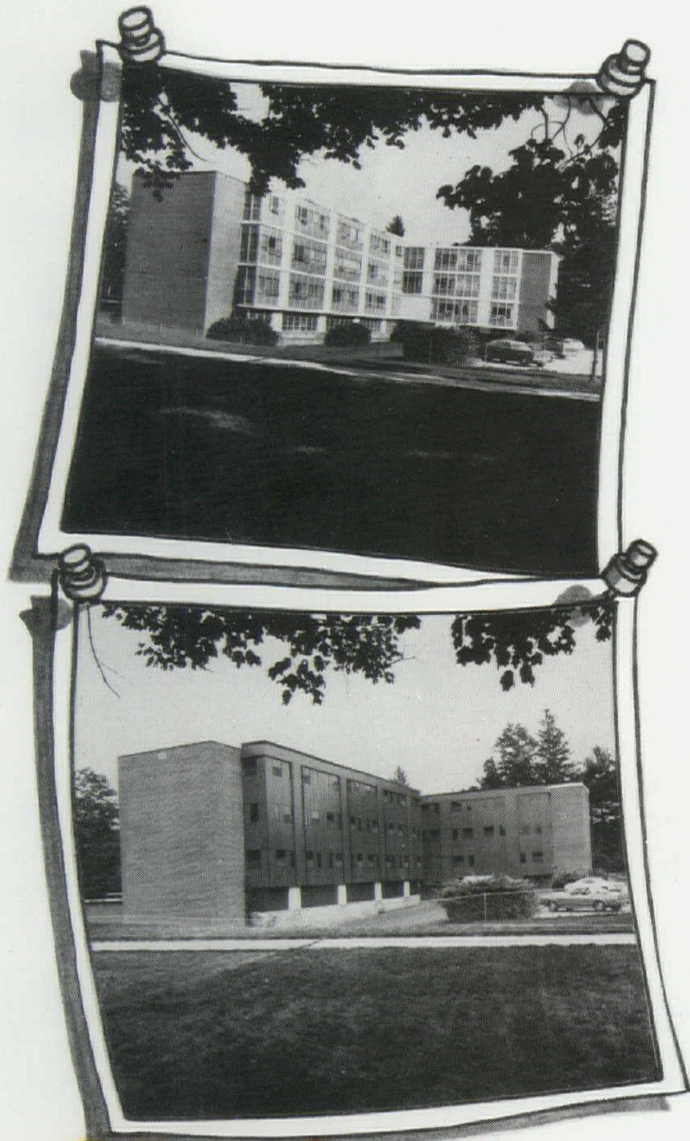
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Energy from page 26

new nuclear power plants became a nightmare of red tape. Offshore drilling for oil and gas was placed under a federal moratorium. Strip mining encountered new roadblocks. Natural gas and heating oil ran short in the winter of 1969-70."

Also in 1970 Libya cut back oil production. There were summer brownouts and shortages into the next winter.

In June 1971, Nixon did send a comprehensive energy message to Congress that placed emphasis on long-term needs. It was "ignored by Congress."

Also in 1971 the President announced Phase I of his four-phase program of wage and price controls. The controls would continue until April 1974, but those on petroleum products remained in place much longer. "Price controls would play an important role in undermining Nixon's later energy policies as foreign oil prices began to rise," say the authors.

As 1973 began domestic crude production, which had peaked in 1970 at 9.6 million barrels a day, had declined to 9.4; imports of crude had grown from 22.7 percent of U.S. needs in 1970 to 35.9 percent. Consumption of regulated, low-priced natural gas was running at twice the rate of new discoveries. Oil from Alaska's promising north slope had not yet begun to flow. U.S. consumption of coal had shrunk from 23 percent in 1960 to 18 percent. Nuclear power accounted for only 5 percent of electricity generated.

The year 1973 brought gasoline shortages, the Arab embargo and OPEC price increases. Nixon responded by announcing a voluntary allocation plan and when that didn't work, a mandatory plan.

In November 1973, Nixon announced "project independence," a plan to conserve energy, relax environmental standards and establish an energy research and development agency. The "project" never got off the ground.

Both Ford and Carter initiated broad energy policy packages, although neither was approved in full by Congress.

During Ford's Administration, Congress approved the Energy Policy and Conservation Act of 1975, which called for a strategic petroleum reserve, the authority to ration petroleum at a time of severe shortages and coal conversion measures. The price controls and the complex allocation program on oil and natural gas would remain in effect for three more years.

In November '77, Congress passed another energy package, although half of Carter's proposals were gone, including the crude oil equalization tax, the centerpiece of the program. Decontrol of natural gas prices was accepted but would be phased in gradually through 1985.

Many of the tax credits were approved.

News continued on page 31



Photography by Martin Bot

The inside story.

Contractors Alpine Drywall & Decorating were only midway through the inside plastering job at the Gulf Canada Square Building

in Calgary, Alberta, when they found out their supplier had run out of the veneer plaster they'd been using.

With no options left, all they could do was find a substitute plaster. Fast.

That's when Fabrikem Construction Supply, Ltd., told them about Thoro Veneer Plaster, a new product in town. Alpine bought one hundred bags and hoped for the best.

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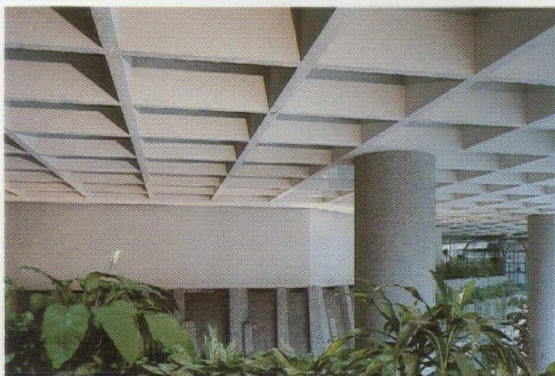
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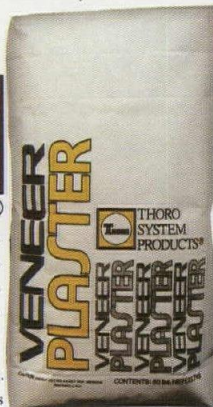
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Five Architects Among Recipients Of 1981 National Trust Honors

The National Trust for Historic Preservation has made 20 awards to groups and individuals—including a bank, a hotel, two cities, two public officials and five architects—in its 1981 honors program.

The highest recognition, the Louise Du Pont Crowninshield award, went to Gordon Gray, who was chairman of the National Trust board from 1962 through 1973 and leader in the passage of the National Historic Preservation Act of 1966.

Honor awards were made to the following:

- Alaska Pacific Bank, Anchorage, for work in restoring the old city hall for reuse as a banking facility and cultural center in partnership with local government.
- Mrs. Lavonia Jenkins Barnes, Waco, Tex., for work with the Historic Waco Foundation.
- Belknap Mill Society, Laconia, N.H., for a successful grass roots effort to save the Busiel and Belknap mills.
- Biltmore Hotel, Los Angeles; its owner, Ridgeway, Ltd., and renovation architects Phyllis Lambert and Gene R. Summers, FAIA, for a "meticulous" rehabilitation and restoration (also an AIA honor award winner, see Mid-May '80, p. 236).
- Mary L. Bishop and the Ohio Theatre, Columbus, Ohio, for restoration under her leadership of the 1928 movie-vaudeville theater as a performing arts facility.
- John K. Bullard and the Waterfront Historic Area League, New Bedford, Mass., for waterfront revitalization through public and private cooperation.
- Michael E. Carberry, Anchorage, Alaska, for *Patterns of the Past: An Inventory of Anchorage's Heritage Resources*, which generated local preservation interest.
- Consolidated Government of Columbus, Ga., for rehabilitating the Columbus Iron Works as the Columbus Iron Works Convention and Trade Center.
- Songy Elementary School and Tulane's school of architecture, Luling, La., for an art and architectural history study focused on Louisiana River Road plantations for fourth through sixth graders.
- Carl Feiss, FAIA, Gainesville, Fla., for promoting preservation since the '50s; for his 1966 book, *With Heritage So Rich*, and for his teaching career, most recently at the University of Florida.
- Fifth Avenue Theatre Association, renovation architect Richard W. McCann and UNICO Properties, for restoring Seattle's 1926 Chinese-inspired movie palace into a 2,130-seat performing arts center.
- Mary Ellen Kramer, Paterson, N.J., for

her efforts to preserve the industrial past of her city.

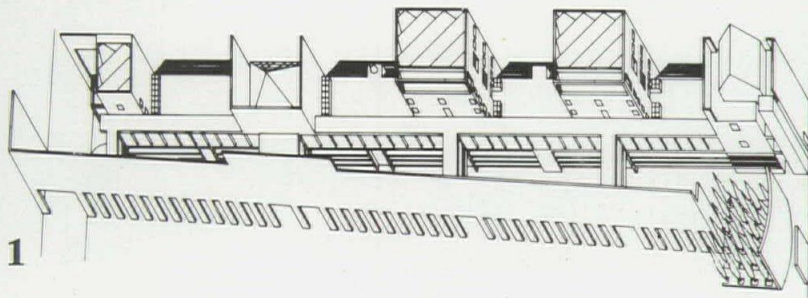
- Paramount Theatre of the Arts, Inc., Oakland, Calif., for restoration of the 1931 movie house, now the home of the Oakland Symphony Orchestra.
- Pasadena, Calif., and the University of Southern California at Los Angeles for restoration of Greene & Greene's 1908 Gamble house and its landscaping, and for the stimulation of other preservation efforts in Pasadena.
- Allen Schroeder, Vermillion, S.D., for the development of an educational project on the city's architectural history.
- Waterford Foundation, Inc., Waterford, Va., for its efforts since 1943 in preserving the 19th century village.
- William A. Whiteside, Washington, D.C., for developing and expanding the Neighborhood Housing Services Program of Pittsburgh.

Two National Trust certificates of

commendation were given to two public officials: architect and planner John F. Wilson IV, mayor of Manteo, N.C., for his work in conserving the North Carolina Outer Banks in their natural state and in restoring and revitalizing the fishing village of Manteo; and Alabama state legislator Mary Zoghby, for her leadership in the passage of the Alabama Historical Preservation Authorities Act of 1979. This legislation authorizes local public authorities to issue bonds for financing restoration work.

Jurors for this year's awards were Herbert McLaughlin, AIA, of San Francisco, Frederick Gutheim, Hon. AIA, of Washington, Janice Persons Biggers of Columbus, Ga., Truett Latimer of Austin, Tex., William J. Murtagh and Margot Wellington of New York City, Carl Westmoreland of Cincinnati and Frederick C. Williamson Sr. of Providence, R.I.

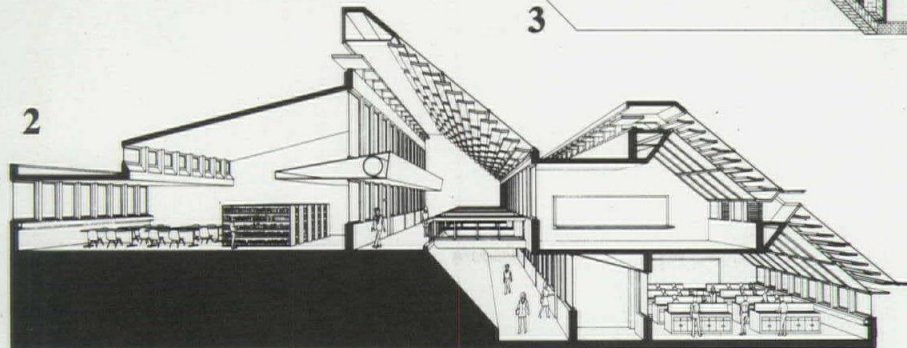
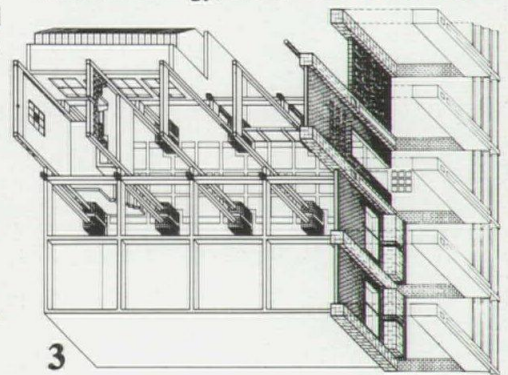
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Tulane Student Wins First Prize In ACSA's Design Competition

Daylighting as a major design determinant was the focus of this year's Design + Energy student competition, sponsored by the Association of Collegiate Schools of Architecture. Winner of this year's only first prize, \$2,000, was Nancy Barrett of Tulane University. Her entry for a college center for the visual arts (1), was designed with simple repetitive forms and elements related to daylighting and energy—sunshades, skylights and solar chimneys. There were two second place awards, \$1,200 each, in a second, open submissions, category: Kim Kwang-Woo of the University of Michigan, a middle school for Saline, Mich. (2); and Joyce Rosner of the University of Houston, a Texas town(3). A record number of students—

more than 2,700—registered to compete this year. Prescreening at the university level yielded 300 submissions for jury consideration. Jurors were James Ingo Freed, FAIA; Arthur Cotton Moore, FAIA; lighting consultant William Lam; Richard Rush of *Progressive Architecture*, and architect Susana Torre. The competition was cosponsored by DOE, AIA, RAIC and the Canadian Department of Energy, Mines and Resources.



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AIA JOURNAL

For some time I have been trying to summon courage to write about a difficult and sensitive subject, namely the lamentably spreading practice of "tie-ins" between advertising and editorial content in the architectural press.

I finally chose this issue in which to do so because it is primarily concerned with interiors and the tie-in phenomenon is most evident in coverage of interiors. It is blatant in coverage of some large trade shows and showroom open houses, where advertising and so-called editorial content are traded almost page-for-page. (The use of the term "so-called" is because most of the content consists of tiny pictures of the items being shown in the advertising and in the shows themselves, often keyed to reader service cards for ease of ordering.)

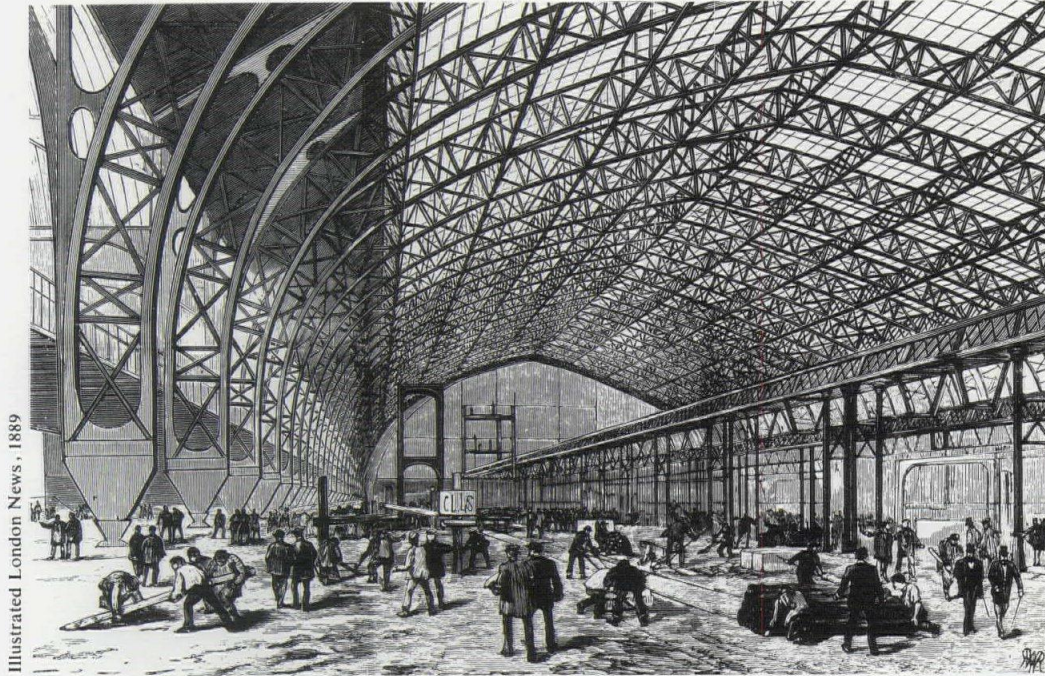
This sort of thing is not restricted to the interiors field, of course. There are also the "demonstration" buildings put up by materials associations, whose publication is accompanied by generous advertising by association members.

I am not writing this to cast stones, even though the JOURNAL is virtually without sin in regard to such tie-ins. I am writing in the hope that my colleagues in the architectural press will join in stopping the spread of this sort of thing. It can poison the field, as it has others, dragging editorial quality and credibility down to a level that serves neither readers nor advertisers well. *D.C.*



Ken Kirkwood

Foster Associates' Sainsbury Center for the Visual Arts, above, in Norwich, England, completed in 1977. From 1889 is Cotamin's Galerie des Machines in Paris, across page.



Illustrated London News, 1889

Tribute to the Permissive Shell

'Inside' is what it is really all about. By George Nelson

It is a truism in our enlightened time that the most diverse kinds of happenings turn out to be interconnected. It is John Donne's "no man is an island" on the big screen. There is even a coffee table book entitled *Connections* that presents science and technology as a cosmic switchboard where geniuses plug into unlisted numbers and come up with great discoveries.

Architecture, as a noble and once durable art, is also used to illustrate the point: the colonial meeting house connects with European tradition, New England winters, Puritanism, cranberry sauce, primeval forests and a handicraft glass industry. Modern building looks technological because that is the stuff we have a lot of. And so on.

Times change, affecting social perceptions, esthetic sensibilities, morality, the length of hemlines and the width of lapels. Now modern architecture is in the dock, with angry witnesses testifying to its rigidity, lack of diversity and inhumanity. A sad thing for a style that began with such high ideals and bright hopes of changing the world, but sooner or later it happens to all of us.

It would be rash indeed to challenge a belief at once so respectable and so popular, that the universe is a network of energy, where everything, from macro to micro, like the Bible story of God and the fallen sparrow, connects and interacts. But interaction is a two-way street, and one wonders, if modern architecture is as reprehensible and decadent as the criticism asserts, the same might not be true of the social environment that fostered it.

This is a question, mind you, not a manifesto, and I bring it up only because it is what got me on to the subject of shells.

If modern is indeed dead, or moribund, what are its chances

Mr. Nelson is an industrial designer, furniture designer, editor and writer in New York City. His most recent book is *George Nelson on Design*, published by the Whitney Library of Design.

of a decent burial? Is there going to be anything for posterity to remember it by? Just one memento to prove that its life was not entirely misspent? Other times and their artifacts are held in certain affection and respect, after all; for instance, the Parthenon, despite its deplorable maintenance. Nobody goes around trying to put down Chartres or Katsura.

My guess is that ours is going to be the shell.

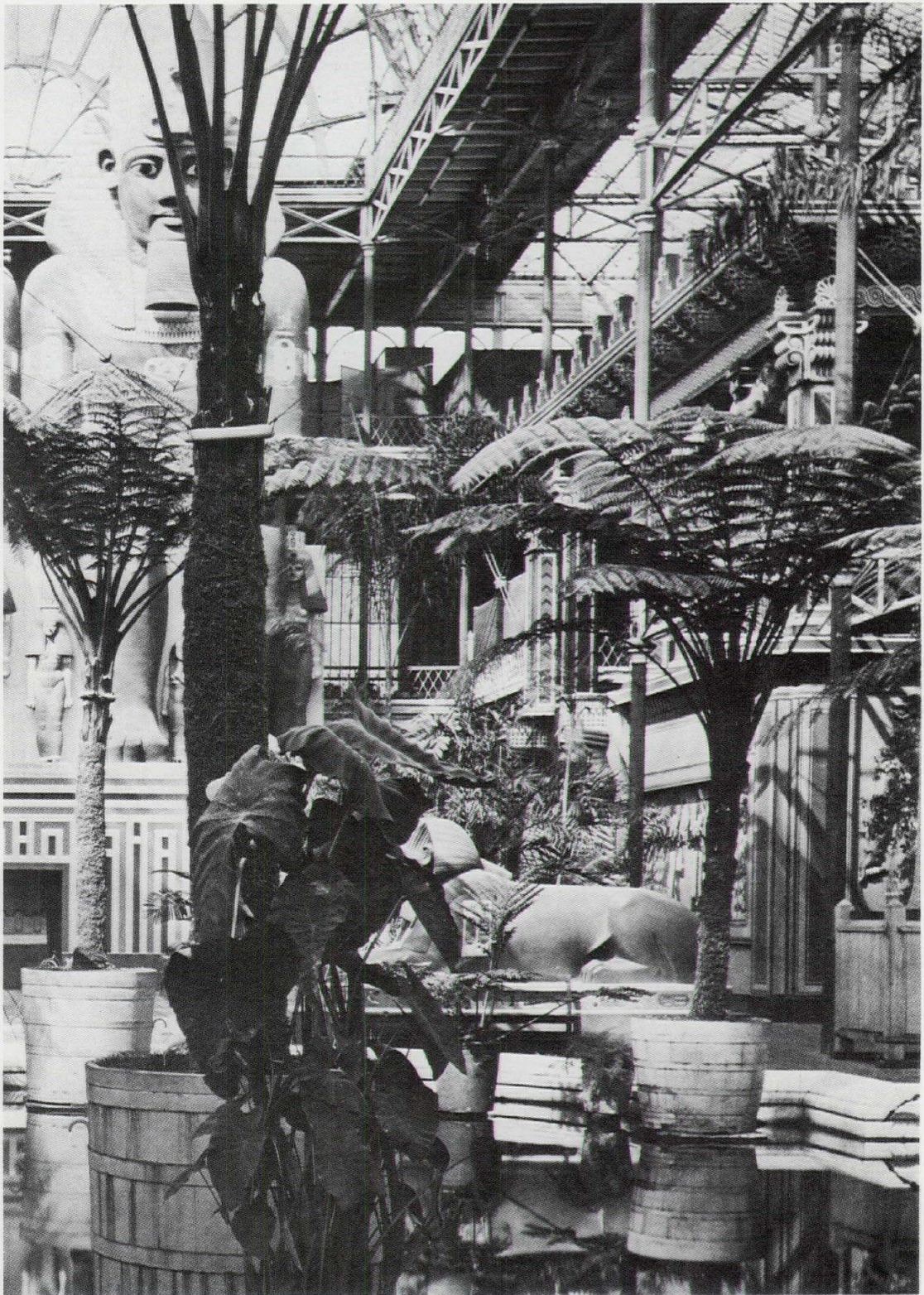
The concept of the shell, a large high space enclosure, usually without intermediate supports, is not modern, of course. It has appeared whenever and wherever there was a possible technical response to a social need, and such needs in the past usually had to do with religious beliefs and institutions. Hagia Sophia in Istanbul is one of the great surviving examples.

The Gothic cathedrals came later and went further; considered in terms of existing knowledge they are still the most daring and elegant shells ever conceived.

In the early 19th century another leap took place with coverings for railroad train sheds with clear spans up to 300 feet and spectacular greenhouses for the English aristocracy. The great statement came with Paxton's Crystal Palace for the Exposition of 1851. This vast (18 acres), transparent, weightless, prefabricated structure catapulted architecture into the modern era. Designed in nine days, manufactured as a system of standard components, built in six months, it carried all the stigmata of the high-tech building almost a century before it happened.

Once the technical problems were under control, the shells proliferated; industry was perhaps the biggest user, with mill buildings first and then modern factories; a mechanized agriculture fostered the emergence of silos and grain elevators; huge warehouses were built on river and lake ports, as well as railroad sidings.

One quality of shells from the beginning was the diversity of designs: Wood, steel, concrete and glass made up part of the vocabulary, and there were plenty of wall-bearing masonry



A continuing affection for the old.

structures. Esthetic considerations played no part in the agreeable parade of variations, and in a way this was the saving grace; the shell did not have to *prove* anything, just to *do* something with economy and all reasonable speed. No ideologies sprang up, no schools were brought into being, no posturing on anyone's part was indicated. Shells are made for customers and sold, if possible, at a profit. Since the secular use of shells expanded enormously with the progress of industry, we now have a gratifying supply of outmoded structures. Interest in preserving such antiques has increased in recent years, in part because many cities have run out of land where building sites are needed, also because retrofitting becomes more desirable as the cost of new building continues to escalate, and finally because of the

spreading awareness that in destroying old buildings we are also destroying our history.

Along with this there is an uneasy suspicion that despite all modern improvements, many of the old buildings make better and more humane dwellings and work places than the new ones. Thus we find categories of shells like old barns that for a long time have been used for a wide variety of non-farm purposes.

The appeal of the barn includes nostalgia, of course, but it goes way beyond this. Its greatest attraction lies in the sheer quality of space, something many city dwellers, cramped for years into tiny "luxury" apartments, can easily develop a hunger for. Furthermore, a large portion of the supply of barns is made of weathered wood, held together with hand-hewn frameworks that are not only admirable as engineering but full of irregularities that to our modern eyes, surfeited with bland surfaces and

straight lines, are a tremendous relief from the visual pressures created by a generally monotonous urban environment.

Finally, the barn is an anonymous and unassertive design: It was made simply to enclose space; the few windows and doors it needs can be put anywhere without impairing its integrity, and its overall form, despite the fact that it is normally composed of flat planes, is invariably soft, warm and inviting. It even smells good. It is hard to imagine a dwelling or a studio made out of a barn that would not be a constant delight to its occupants.

If this begins to sound like one more superfluous celebration of the obvious, I suppose it is, but this is not necessarily a bad thing to do when so many are looking for ways out of the ideological binds in which we appear to be stuck. The remarkable virtues of the shell have by no means been completely explored or assimilated.

People have been remodeling places for a long time. There are medieval houses in Germany with plaques on the outer wall announcing that this dwelling, put up by so and so in 1461, was redone in 1762 and now again by the present owner. However, there is a significant difference between doing over a house and a barn.

The house, if it is a good one, discourages tampering of any kind with the exterior: Its geometry has been carefully calculated, its scale is consistent from cornice to window muntin, and any changes beyond respectful restoration stick out like sore thumbs. Imagine what happens to such a house equipped with small 24-light windows if these are replaced by large single panes. It would be kinder to burn it down. Inside, modernization is permitted up to a point, but not in the main rooms if there is good paneling with suitable plaster moldings on the ceiling. The house, in other words, is in no sense adaptable or permissive except where changes are invisible, as in the case of wiring, heating and plumbing. It is a restoration job and, if the owners are so minded, a very satisfying thing to do.

With a barn almost anything is possible; and since there is only a shell to start with, the role of the renovator *has* to be creative. Oddly enough, the young architects who might turn their backs on a house restoration seem to take on old shells with the greatest enthusiasm; and in countries like France and Italy, which are well supplied with castles and monasteries that have fallen into disuse, the same attitude prevails. Again, I think, it is the magic of the shell, originally a highly appropriate expression of purpose and now equally adapted to cope again with whatever is demanded of it.

None of what is being said has the slightest likelihood of changing the current enthusiasm for old houses, for nostalgia is always a widely shared emotion in times when people find life worrisome. The whole idea of restoring an old house is especially attractive to the well-heeled and more conservative parts of the population, for what such people need badly is a way to get off the planet, so to speak, an escape hatch into the illusion of social stability provided by a well-detailed stage set. There is no need to turn up one's nose at this kind of behavior, for more and more people are sharing the feelings that produce it. Even, perhaps, the postmodernists.

Those who habitually scan the Sunday real estate sections, especially in the Northeast, may have noticed that old mill buildings are suddenly being snapped up and converted into apartments and offices. The attractions include clean space, large windows, high ceilings and often a stream or mill pond. In this category, just as in the barn on a smaller scale, the mill building offers the spatial freedom no longer available in new buildings, plus the appeal of nostalgia: old brick, wood structures, sometimes antique iron, wide plank floors and old-style double-hung windows.

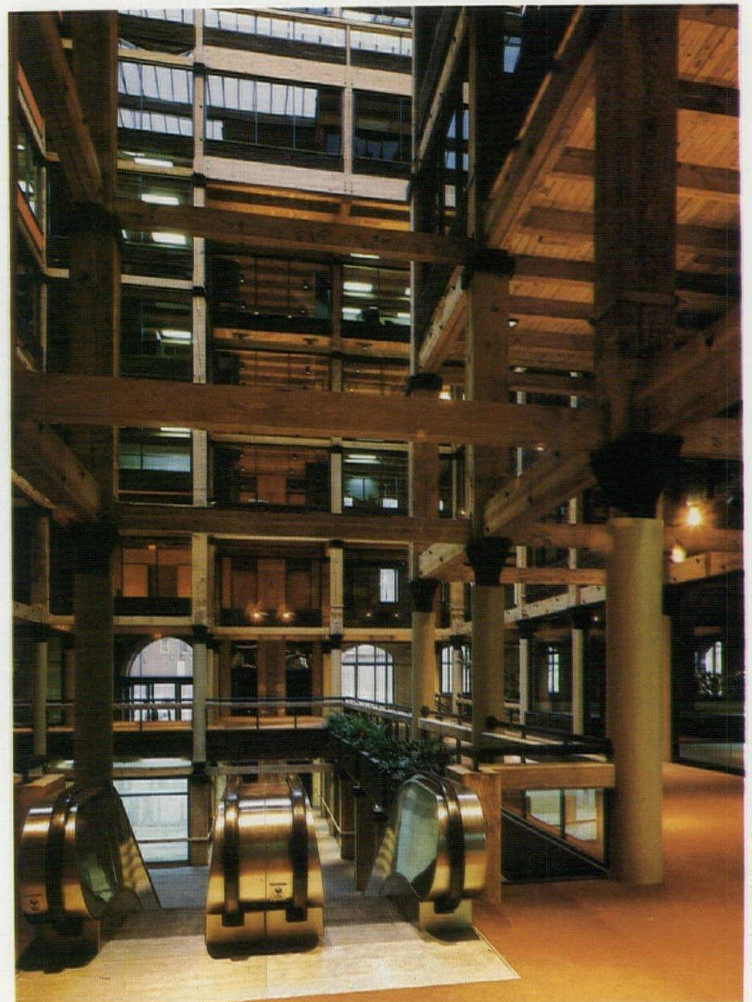
Left, interior of Paxton's famous Crystal Palace, built to house Britain's Great Exhibition of 1851. Right, Minneapolis' Butler Square as remodeled by Miller Hanson Westerbeck Bell.

I had one brief encounter with this category of building some years ago, when a manufacturer in Bavaria, finding himself overstocked with a number of mill buildings now obsolete for manufacturing purposes, decided to install his top management—five executives and their staffs, perhaps two dozen people in all—in the attic of one of them. The idea of housing so small a group in this huge skylighted space took a bit of getting used to.

Now the factories and warehouses of the early 20th century are moving into the class of antiques ready for rehabilitation and here we find the largest of the old industrial shells, multi-story factories and warehouses that punctuate the skylines of cities like Buffalo and Omaha. There is a handsome old building on Copenhagen's waterfront, a huge block that has been converted into one of Europe's better-looking hotels. Butler Square in Minneapolis, another monster with an extraordinary internal cage of giant timbers and massive cast iron connectors, is probably alone in its class, a landmark of superlative quality if there ever was one.

Virtually all the buildings in this category—mills, early factories and warehouses—are solidly built and very decently designed in an unambiguous way. But by 1915 or thereabouts this vein of unselfconscious decency ran out, and the later multistory factories somehow fail to please the eye as much as their predecessors. It is as if some misbegotten designer had gotten in there with a series of attempts to add an "artistic" component to the facades. It was decades before factories were again treated with proper understanding and respect. Even so, these early concrete cages make very nice spaces inside. Many New York City lofts date from the World War I period and most of them have been taken over for nonmanufacturing purposes.

After the 1940s a new generation of shells appears. Farms are no longer fitted out with wood barns, but with metal boxes with corrugated sides and bow roofs. The combination of strong forms and weathered materials that everyone found so agreeable in the barns is now supplanted by lightweight shells of in-



Phillip MacMillan James



Above, an interior of the notorious Texas School Book Depository as converted into the Dallas County Administration Building by Burson Hendricks & Walls. Below and far right, Italian architect Angelo Mangiarotti's 1978 multipurpose building at Majano del Friuli, Udine.

The sophistication of industrial shells.

decisive form and bland texture that may require the passage of 50 or 80 years before they take on the look of desirable antiques. It is possible that these industrialized shells may never make the grade, for ordinary economics suggests that there is no need for containers that will be serviceable for that long a time. Perhaps we will run out of shells for reuse if only because nothing will last that long. In that case one can safely predict that some enterprising character will bring out a line of old wood barns faithfully molded in polyurethane foam, so perfectly antiqued that they will fool everyone except the termites.

Contemporary factories consist of high one-story shells arranged in blocks, often with an office building located in the front of them. The shells are generally streamlined affairs, with long sleek walls of corrugated metal, sometimes brick.

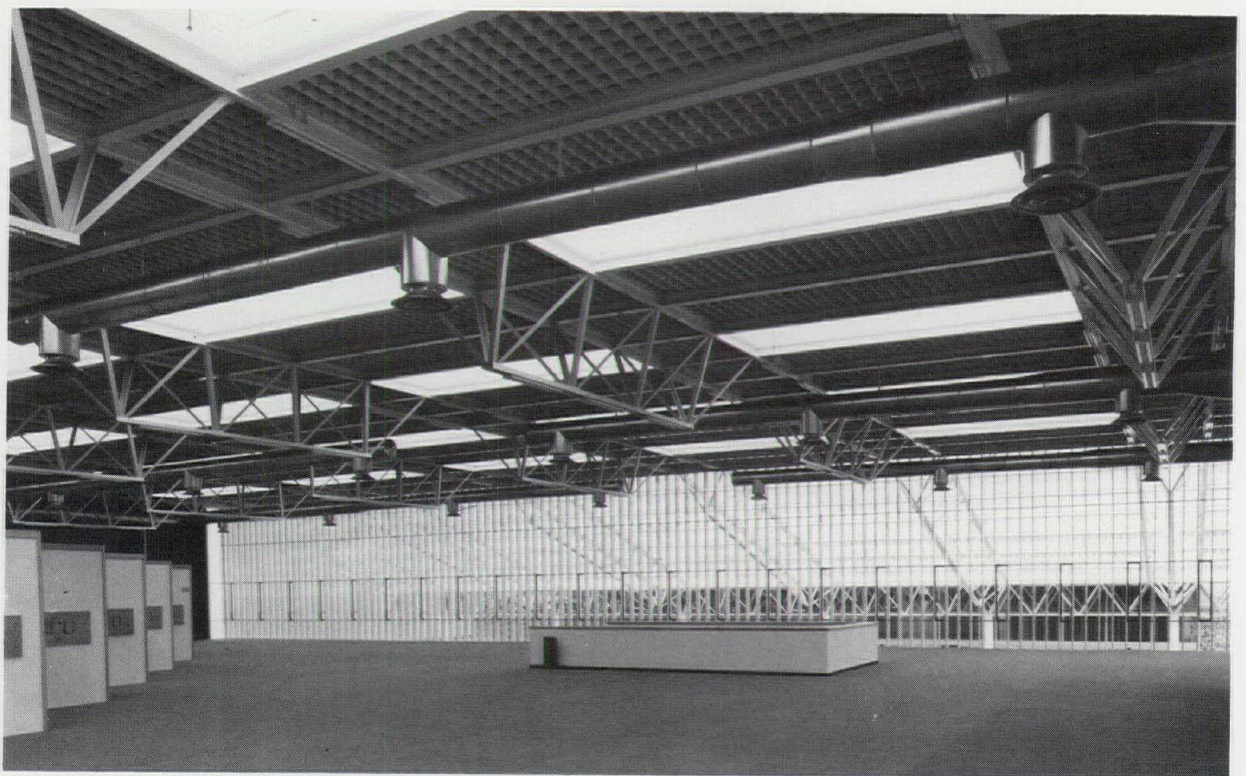
The traditional office building on factory sites, typically one or two stories but sometimes going as high as six, were generally given a kind of "architectural treatment" to make it clear that the people who worked here didn't get their hands dirty except when changing a typewriter ribbon.

These "treatments" were as a rule godawful—shameful little exercises in social pretension—and, by comparison with the factory shells behind them, they suggested hillbillies wearing their first store clothes.

All this nonsense seems to be going by the board these days, as blue collar salaries rise to match or exceed those in the offices, but a stronger reason is that with open office planning, the differences between office and factory environments are fading away. Herman Miller, in western Michigan, has not built an office building for years, preferring to use straight factory space wherever it needs it. Since the ceilings are rarely less than 20 feet high, the offices enjoy a superabundance of light and air and are extraordinarily pleasant for just this reason.

Another example, also a Herman Miller plant, is the facility in Bath, England, a one-story shell whose exterior walls are interchangeable glass and solid panels.

In this stage the shell loses more weight and becomes a thin-skinned framework. The good old solid barn and mill buildings have now evolved into modular systems approaching weightlessness and insubstantiality. If technical sophistication includes the meaning that more is done better with less, these commercial and industrial shells are getting very sophisticated indeed.



Staying with the factory a bit longer, there are other expressions in the work of Mangiarotti in Italy and Norman Foster in England, to pick only two names off a list that could be greatly extended without loss of design quality. Mangiarotti's factories express their dynamic existence in an exuberant fashion one tends to think of as Italian, showing a dramatic flair that somehow imbues utilitarian buildings and their working interiors with the qualities of abstract art.

Norman Foster's industrial projects are carried through with such refinement of detailing that they are more suggestive of oversized jewelry boxes than enclosures within which biscuits or pharmaceuticals are mass produced. The kind of high-tech elegance that was the trademark of Mies van de Rohe for so long a time has been carried, in Foster's hands, to an entirely new level.

With shells like these, the question of exterior modifications as part of a conversion process does not seem to apply at all. There is almost nothing to convert. The new owner might have the walls washed and the interior paint freshened up, and that would be that. As far as the shell is concerned, it is now so delicate, so finely scaled and so transparent that one is hard put to think of what else to do to it.

What seems to be evolving, if the signs are being correctly deciphered, is an infinitely permissive shell, sophisticated in its detailing, opaque or transparent when and where desired, lightweight and generally insubstantial in appearance. There is little here to grab on to, let alone modify. While the discontent with the sterility and inhumanity of so much modern architecture is justified and timely, these latest ultrarefined containers seem to be immune to attack, mostly, I suspect, because they are beginning to take on the inevitable, ageless look of any design carried close to the limit of its potential. There is nothing to add beyond some identifying marks and color, and certainly nothing left to take away. It begins to appear that the shell, because its functions can now be as sharply defined as those of a sporting rifle, is reaching the point where it can be identified as a classic expression of a near-perfect container for people and their activities, so universal within the range of its applications that it needs nothing more than the final act of occupancy. Like the barn, another perfect container in its way, it is stable, permissive and intelligent.

As we look at the shells over a long span of time, a truly remarkable evolution is apparent: They not only change over the centuries through the infusion of new technical knowledge, they

actually, in many instances, get better and more beautiful. There is no other category of building today about which this can be said.

The significance of the shell lies in its admirable qualities, one of the chief of which is permissiveness, for this is precisely what is needed in humane habitations, whether for group work or family occupation. It is the only structure we have that could allow for individual expression within a mass society. The clearest example of this is, as one might expect, the individual dwelling or studio. The occupants, no longer confined within the traditional assortment of closed rooms, quickly discover that the rules of "interior decorating" can be forgotten, that old furniture, new furniture and nonfurniture coexist almost absentmindedly and that a racing shell hung from the rafters or a big loom on the floor are no longer disturbing intrusions but merely interesting evidence of a personal life style.

Even when the rough-textured old barn is replaced by a shiny new container, assembled from industrial parts, the essence of the shell, its permissive space, remains.

My one in-depth exposure to such a dwelling was the Eames house in Pacific Palisades, Calif. I stayed in it at intervals over the years, watched it fill up with plants, paintings, toys and the ravishing bric-a-brac the Eameses were always collecting. At each stage it was just fine. It lacked the patina of an old barn, but then so does a Ferrari.

The key to all this is space, especially overhead space. However, the amenities encouraged by the shell are not created by it. The shell is permissive, but it is also neutral. The Eames house is an industrial gem only because Charles and Ray designed it, lived in it and enriched it with things they liked. In less sensitive hands it would have turned out differently.

The modern office is full of such examples, although I am stretching matters when implying that its space is always a true shell. The preferred corporate enclosure is a horizontal slice of a highrise building, often with a very large floor area but rarely over nine feet to the finished ceiling. To see the difference one has only to compare it with, say, Wright's Johnson Wax Co. headquarters, where the work stations sit in a hall of delicately tapered concrete columns that mushroom at the top to become an integral part of a skylighted ceiling.

The most common problem of the office, seen as an interior design, is that it is not a design: A maze of cubicles is crowded in under the low ceiling, with screen panels as high as seven





Three architects' offices within older shells: above, Hellmuth, Obata & Kassabaum's own offices in a former San Francisco warehouse; below, the Jerde Partnership's conversion of a 1908 Pacific Electric Railway building in Los Angeles; far right, in a San Francisco pier, offices of MLTW/Turnbull Associates.



'The shell exists only to create interior

feet to create an oppressive space lacking in air. This happens because bureaucracies are incapable of people as living organisms, so that white noise, noise, and pots of grape ivy and other easily installed by the mile to "humanize" the already spaces. Confronting such insensitive expressions beautiful exceptions, not only Wright's building Wax and Herman Miller's unmodified factory shell of corporate headquarters: Weyerhaeuser on the Johns-Manville in Denver, John Deere in Illinois, Wicks in Connecticut and many others. Across the there is Herman Hertzberger's Centraal Beheer in Holland, possibly the most interesting of all, for it is to create open offices in spaces of great visual surprising complexity.

Since great interior spaces are in short supply in many which are uniformly niggardly in their provision of spaces for their inhabitants, there is good reason to believe industry-based solutions will continue to offer new of quality and economy in shell form. The quantity and that can be seen today is already large, and more are on SOM's huge air terminal in Saudi Arabia, an elegant blend steel and fabric, is an exciting sample. Air-supported domes already a familiar sight, and the means for covering areas size of cities are already in hand, needing only customers can think of reasons for building them.

It is interesting to speculate on what such vast enclosures might do to "architecture," since they eliminate a major function of all building, which is to cope with the elements. The shell this almost totally dematerialized form, could take us to in on an unprecedented scale, to "soft" cities in the Arctic periphery with subtropical climates inside.

"Inside" is what the shell is all about, recalling the words Lao-Tse, a very long time ago, stating that the reality of a vessel was not in the form or material of the container, but in the space within.

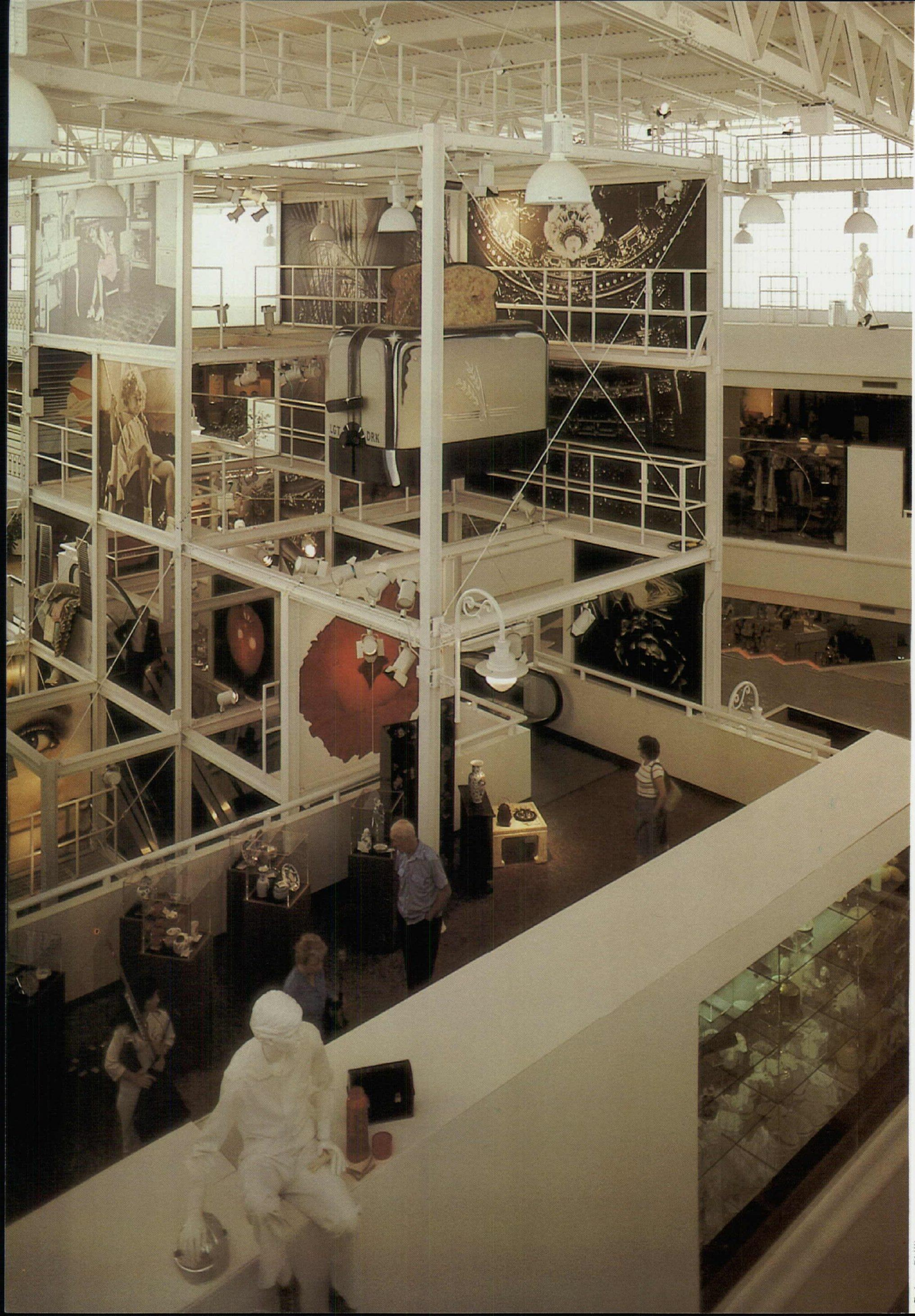
It is odd indeed that this almost mystical message should again be transmitted by a class of objects with so grimy an ancestry: the black cities of the English Midlands and the Ruhr Valley, the soaring, sooty railroad sheds and the smoke-belching factories of the Victorian world. It is even odder that this should be going on at a time when architecture, with its noble monuments and a velvet-collar ancestry, should be mired in doubt.

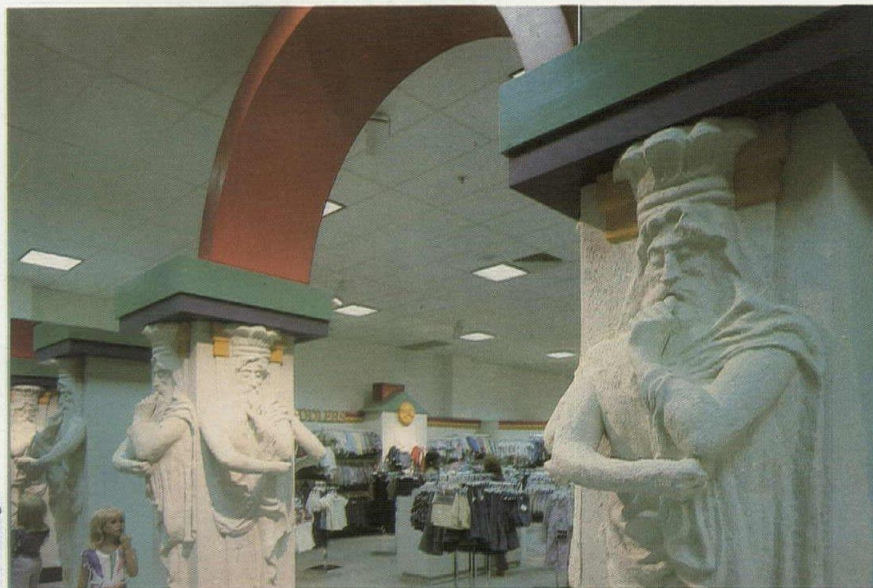
But for the time being that seems to be the way it is; we are lacking two of the three traditional sources of great architecture: something to celebrate, something to fear and a common faith in divine guidance. The modern shells are favored by a bottom-line mass society because they deliver the goods with no nonsense about esthetics. Even Philip Johnson's Crystal Cathedral is a brilliant corporate identity job for a successful mass-communications business that happens to be listed with the Internal Revenue Service as a church. It could just as well be used as the last and greatest of the discos.

The ancient imperative that man's creations reflect the technical level and spiritual values of their time is not another Volstead Act to be repealed on popular demand. The shell, thanks to its protean qualities, can be anything it has to be. That is why it is so remarkably durable. Hagia Sophia is a shell; so is the glass church; so is the Houston Astrodome—and the Eames house. No genie out of a bottle ever had the power to assume so great a variety of forms, for the shell is nothing if not permissive.

People have been known to enjoy the outer forms and facades of buildings, but when the chips are down, *what they have to have are interiors*. The shell exists only to create interior space. The shell is our signature for posterity. It may not be "architecture," but I do not think we will be







Gil Amiaga

In Florida They Call It 'Superstore'

Variations on a theme of a modular grid in an atrium shell. By Stanley Abercrombie, AIA

"Superstore" is the name used around Ken Walker's office for the design projected for Florida's growing chain of Burdine's department stores, and the name is not just hyperbole. The design is indeed "super" in the slang meaning of being very good and also in the connotation—as in "Superman"—of being rather unnatural in a futuristic sort of way. The story of the design and of how it is being tested, bit by bit, in actual construction is a story of the imaginative use of the "permissive shells" George Nelson praises; it is also the story of a remarkably enlightened and trusting client-architect relationship. It should also be added, since the bottom line is never out of sight in any evaluation of retail design, that it is a success story.

Walker/Group's first work for Burdine's was in 1974, beginning with a relatively modest remodeling of the chain's Dadeland, Fla., store, a more complete design for a store in Clearwater and further work in Sarasota and Tampa. If the results of this earliest association were unconventional (in the Clearwater store, for example, floor, walls, ceilings and most fixtures were clad in a uniform charcoal gray, a radical treatment that made colorful merchandise the sparkling center of attention), the working relationship was still on a quite conventional one-job-at-a-time basis. But then, assured by the performance of Walker/Group (and of associated architects Reynolds, Smith & Hills of Tampa) and facing a continuing program of expansion, Burdine's was ready for a more adventuresome undertaking: In 1977 it commissioned Walker/Group to design the store of the future.

A delightful commission, certainly, but not the absolute lark that it may have seemed at first, for Walker realized that such a design could have hopes for realization only if it were comparable in cost to conventional design. It would have to provide an air of excitement that would in turn provoke customer curiosity and motivation, but it would have to do so with modest means. This suggested an interior extravaganza within an exterior shell that was as simple and inexpensive as possible, a kind of circus in a tent or a World's Fair in a hangar. (Tents, aircraft hangars and inflated structures are actually being studied as possible enclosures for the Burdine's stores, but, so far, more

conventional structures have proved more practicable.)

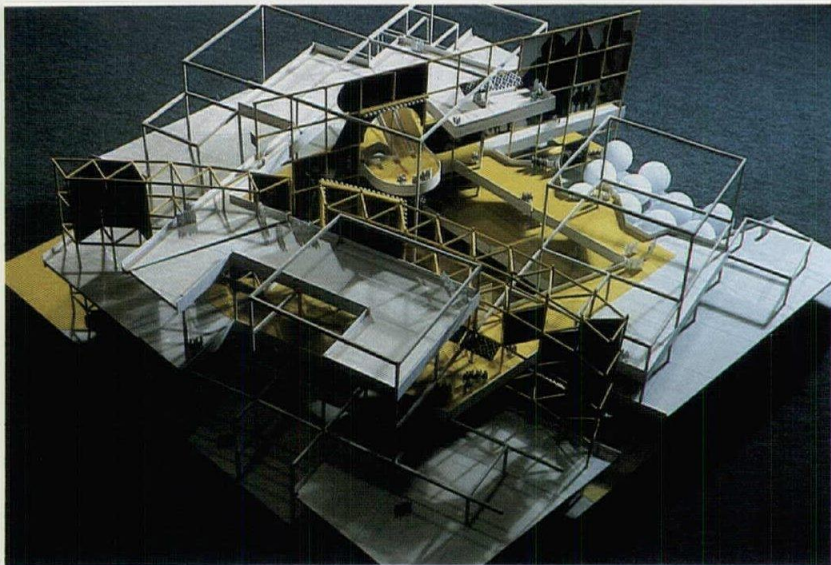
What was to happen inside the shell was influenced by some successful steps already taken—from the Sarasota store, some "symbolic imagery," large three-dimensional artifacts meant to be amusing as well as informative and a skylight that had been added over the center of the selling space; from the Clearwater store's young men's department (called "Depot"), the use of an industrial esthetic. To these, new elements were added, many ideas tried and many discarded. In 1978, a number of study models later, it had all come together: Superstore!

The heart of this prototype was an atrium, a big skylit space bringing natural light into the center of the store and providing an immediately recognizable focus as an aid in customer orientation. And a needed aid it was, for the atrium was not to be aligned with the building's structural grid but angled to it, deliberately creating indirect circulation routes and overlapping geometries that would, according to Walker, "allow for a variety of discoveries." But the proposed atrium was to be no mere open space. Heart of hearts, within the atrium, would be something called the "matrix."

Also called an "information grid," the matrix was envisioned as a modular steel frame structure capable of holding a variety of two- and three-dimensional materials—giant inflated replicas of goods for sale, photomurals, awnings and street furniture, video monitors displaying fashion shows and cooking lessons, all of it temporary and changeable, all of it lively. Most lively of all, the store's vertical circulation elements, escalators, stairs and sometimes elevators, were to be intimately involved in the matrix, ascending through it and providing changing views of all its wonders.

Augmented by sound and light equipment, surrounded by departments that repeated angles of the atrium's location and that were enclosed only by partitions stopping short of the ceiling, and enriched by a number of department-oriented "props" that might have overflowed from the matrix (later, in actual practice, these turned out to include a flock of artificial sheep among a display of Irish woolens and, for a junior sportswear department, a white Edsel convertible), this was Superstore. It was great fun, but questions remained: Could it be built? Could it be built on a reasonable budget? If and when it was built, could the store

The Boca Raton store, left, was the first to test the 'Superstore' concepts; the Fort Lauderdale store, detail above, most recent.



The grid has now been put to use in six stores.

operate it properly? And, finally, would it sell merchandise?

The best way to answer the questions was to build it and see. In effect, Burdine's has done that: It has just completed a building program that has involved six stores, three years of work and an expenditure somewhere in the neighborhood of \$50 million. Not one of the six construction projects built Superstore whole, but cumulatively the six built it in several variations, for each incorporated some aspect of the total concept, testing different atrium sizes and shapes, two-dimensional versus three-dimensional matrices, different colors and adaptability to different contexts.

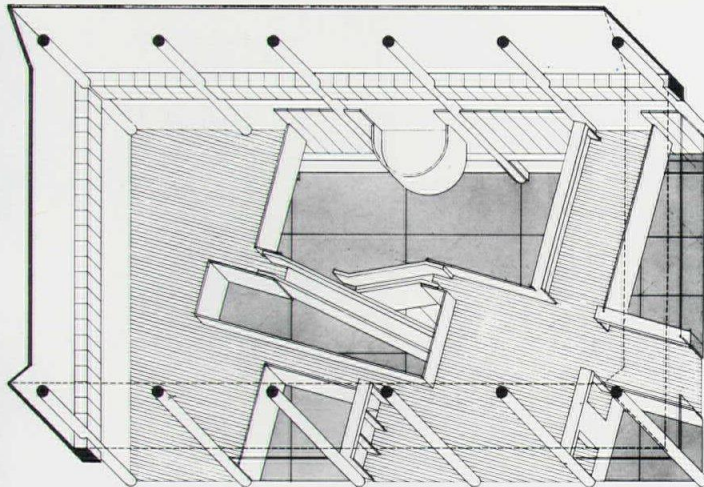
The first of these experiments were a two-level 170,000-square-foot store for Boca Raton, opened in June 1979, and an almost identical twin opened in Fort Myers two months later, the duplication being an expedient way of meeting a tight schedule but also providing a means of studying the same design with variables of location and personnel. In each store, a large central atrium, surrounded by a translucent Kalwall clerestory, is placed at a 45 degree angle to the building shell, and a three-dimensional matrix within it is at a 30 degree angle to the shell; escalators are housed within the matrix.

A slightly larger store in West Palm Beach, opened in November of the same year, has a central atrium aligned with the building's structural grid, but escalators and selling platforms within the atrium are on a 15 degree angle. The matrix in this case is reduced to a two-dimensional plane, with a semicircular viewing platform projecting through it.

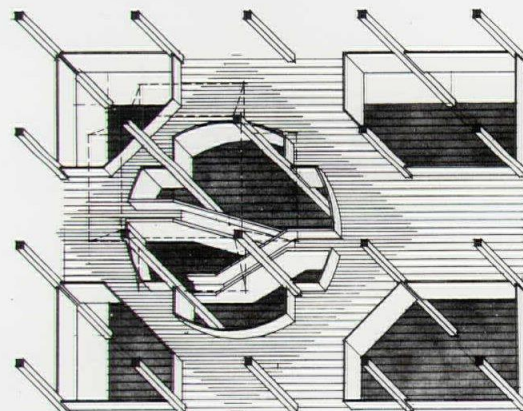
Opening in March 1980 was a remodeling of Burdine's main store in Miami. An existing opening between the first and second floors was given a new midheight selling platform (a Fiorucci boutique) placed at 45 degrees to the store's structure. Vertical circulation in this case is not by escalator but by stairs and by elevator. Several triangular balcony elements overlooking the open space have been added to the second floor.

The fifth variation, for St. Petersburg, opened last August, and the sixth, for Fort Lauderdale, last October. For these two designs, the atrium and matrix were more foursquare and sedate, symmetrical in themselves and placed parallel to the buildings' structural grid. Rather than being experiments with angularity, these two designs are experiments with color, the St. Petersburg store having a refined palette of copper and grays, the Fort Lauderdale store a range of "Florida pastels"—light pink on the corrugated metal ceiling, pale blue on the steel matrix elements, celadon green on the escalators. In both, daylight is introduced above the atrium.

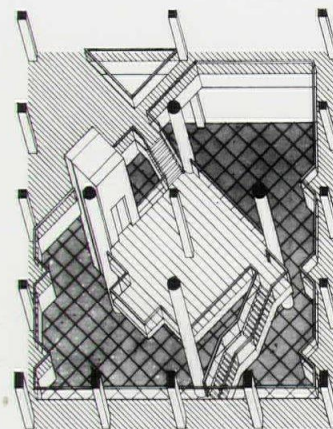
Six stores, innumerable variables: Their evaluation is not a simple matter, but it has begun. A report has been compiled by Walker/Group based on random samplings of customer opinion



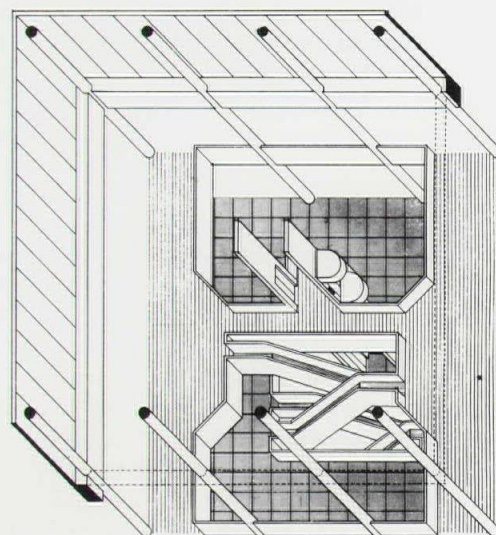
West Palm Beach



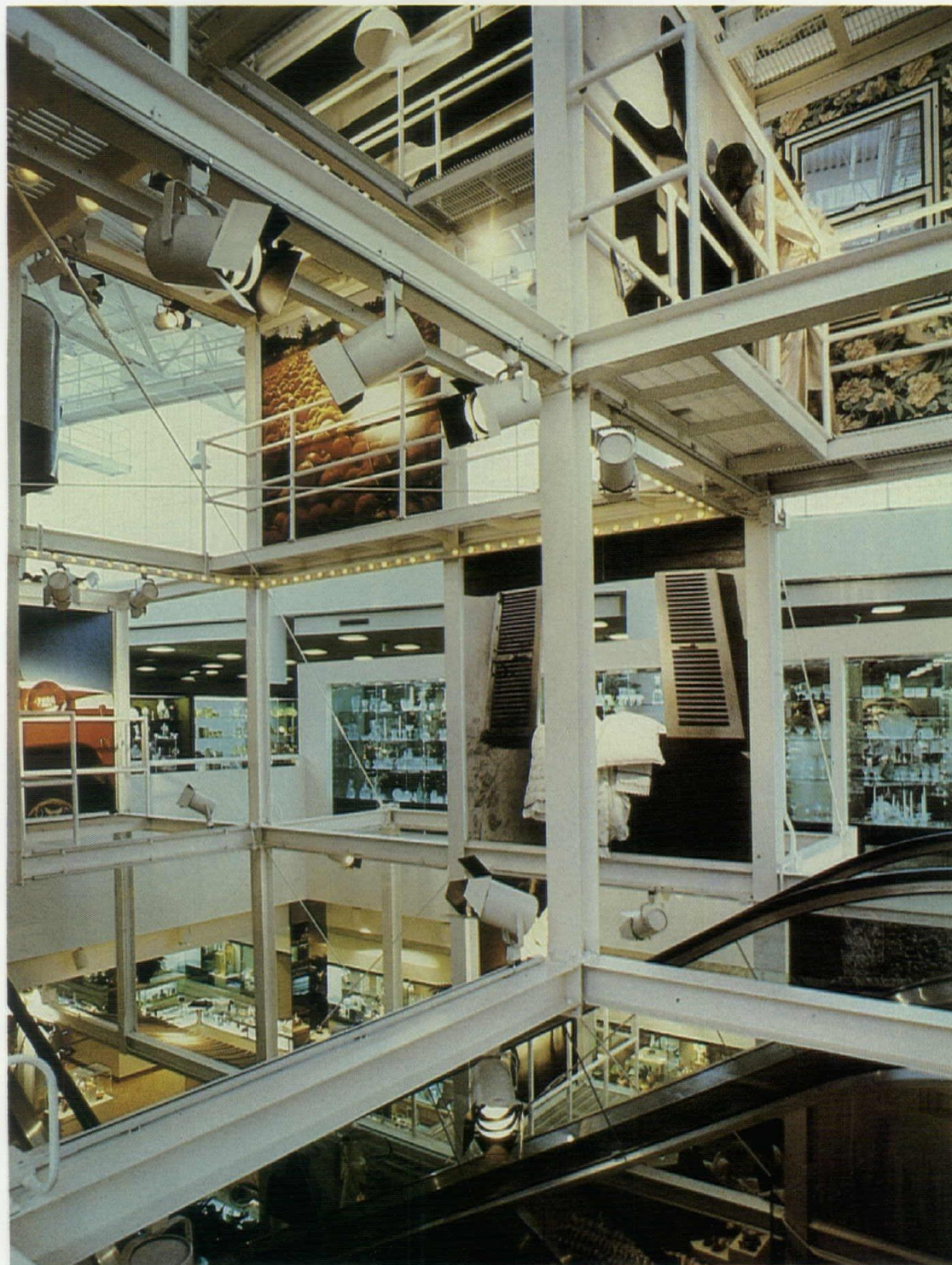
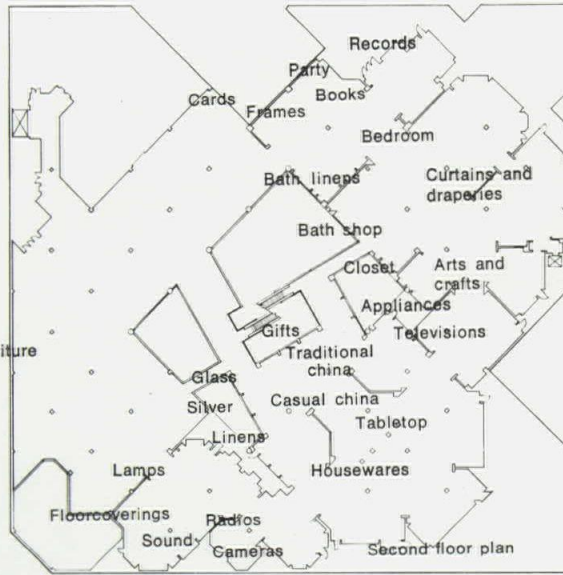
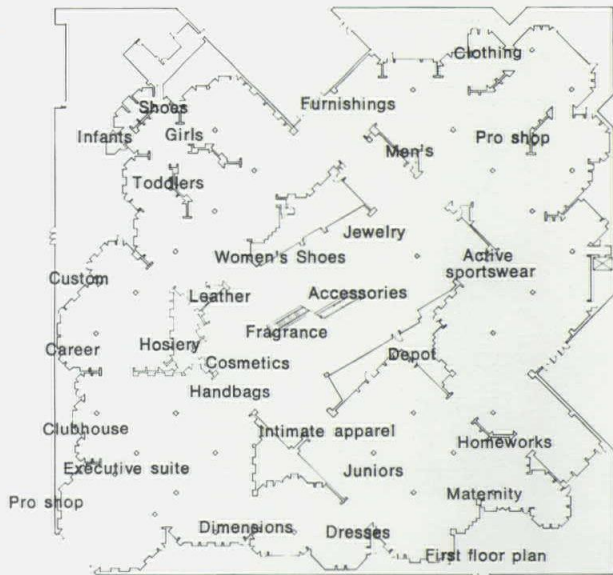
St. Petersburg



Miami



Fort Lauderdale



At far left, the conceptual model that preceded the six test stores and axonometrics of matrix designs for four of the stores. Above, plans and departmental allocations for the Boca Raton store; the Fort Myers store is similar. Left, a detail of Boca Raton's central matrix.



Gil Amiaga

Mixed results but general satisfaction.

and on specific interviews with about 30 people with first-hand knowledge of the buildings, including Burdine's executives and Walker/Group principals and project staff. This was obviously a group hoping for positive results, but also one interested in realistic evaluation. Their composite opinion fills an enormous notebook, but the consensus is enthusiastic about the concept, a little doubtful about some details of its execution.

West Palm Beach's two-dimensional matrix wall was thought to be inferior to the more fully recognized three-dimensional matrices of the other stores, the experience of riding up through the matrix by escalator being quite exciting. The Miami store's mid-height platform was considered a successful selling location, and the stairs leading to it were found to be much more heavily used than the adjacent elevator. There were different opinions about the St. Petersburg atrium, some feeling that its relative lack of open space made it seem cramped, others that it was close to ideal. All were pleased with the result at Fort Lauderdale, where the atrium was extended to a small lower level accessible from a parking area; this version's increased dynamism and spatial complexity seemed to imply Superstore's validity for even larger stores.

In the application of color, most doubts were voiced about the West Palm Beach store, where a rust-colored ceiling over the atrium seemed to diminish the feeling of spaciousness. St. Petersburg's gray and copper scheme was admired for creating a rather formal ambiance. But it was the pastels of the Fort Lauderdale store that got the raves; though some thought the colors might have been deepened slightly, there was unanimous opinion that the pastels were successful.

Use was another matter. The emphasis of the Superstore, particularly of its matrix, is on vitality and change; to the extent the matrix remains static, it fails in its mission of exhilarating the customer. Except for some display panels with local-interest images (polo players in Boca Raton; Thomas Edison—because he once lived there—in Fort Myers), the modular panels, either 4x8 feet or 8x8, are meant to be interchangeable and rotated from store to store. In practice, West Palm Beach has used panels sent along from Boca Raton, but there has been less sharing than hoped for. Every store has made a number of changes in its matrix display, but, at the time of the evaluation, not even stores

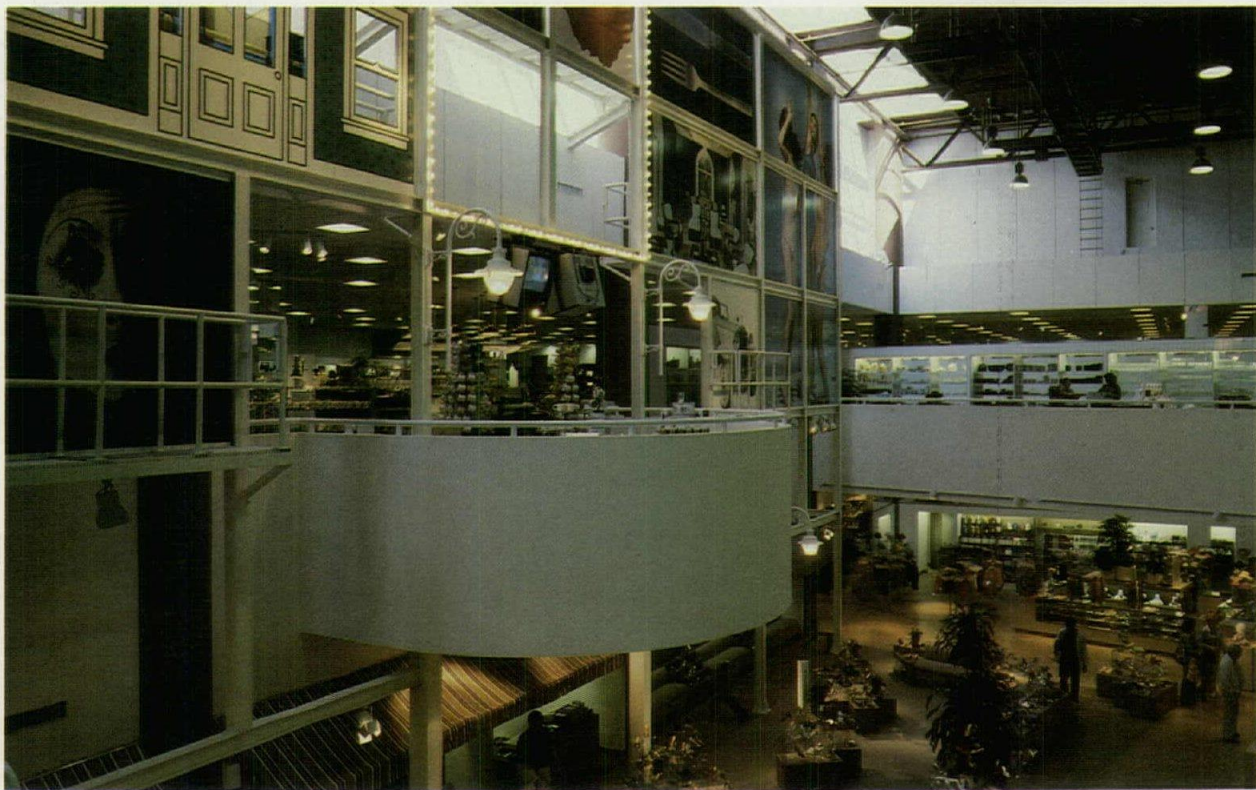
Above and above right, the central well of the Miami store before and after remodeling. Right, a side view of the Boca Raton matrix; its awnings and some of its light fixtures are intended to recall typical street furniture and traditional shopping environments. Far right, moving through the Boca Raton matrix.



Ken Walker







Ken Walker

Competitive costs and increasing sales.

open for a whole year had changed all their displays. Some design details, it was felt, might make such changes easier for the staff. (In all the new branches, matrix maintenance is the responsibility of a display staff consisting of a manager and two artists, the same size staff assigned to matrix-less branches.) One such detail was that catwalks for access to upper matrix panels might be made more continuous; another was that ladders should be added to reduce dependence on hydraulic hoists. (Fort Lauderdale has three \$6,000 hoists, the other stores two each.) Video monitors, tested in three of the six stores, were a controversial feature, some thinking them "terrific," others calling them a "gimmick." Perhaps the only resounding failure, tried in the first two stores, was a device called a scanning message board (its printed words on tape being illuminated on rotating spindles). The Boca Raton message board broke before the evaluation was made; the one at Fort Myers apparently never worked. But these are faulty details in a total concept that its users greatly admired, and just the sort of details that the incremental building experiment allows to be easily ironed out.

All this was built at prices comparable with those for stores that are not so super. Costs of building shells ranged from \$20 per square foot at Miami (where a major entrance was moved and other changes made) to \$52 for Fort Lauderdale; interior construction costs ranged from a low of around \$24 per square foot for the Fort Myers store to around \$34 for the Miami renovation. Skylights and clerestories, considered great esthetic assets, also served to allow atrium lighting (except on elements of the matrix) to be turned off during the day. Total energy consumption (also affected by whether or not the branches have energy-greedy restaurant and beauty salon facilities) ranges from four watts per square foot for Fort Myers (neither facility) to almost six for Fort Lauderdale (both facilities). In the five new stores, energy costs per open store hour varied from \$34 at Fort Myers to \$64 at Fort Lauderdale.

What, then, of that inescapable "bottom line?" The executives of Burdine's are cagey about actual sales figures, but Walter McQuade, writing in *Fortune*, reported a projected first year sales of more than \$100 per square foot for the Boca Raton store, a quite respectable figure, and Burdine's President John Burden says that all the new stores "have run ahead" of their projected

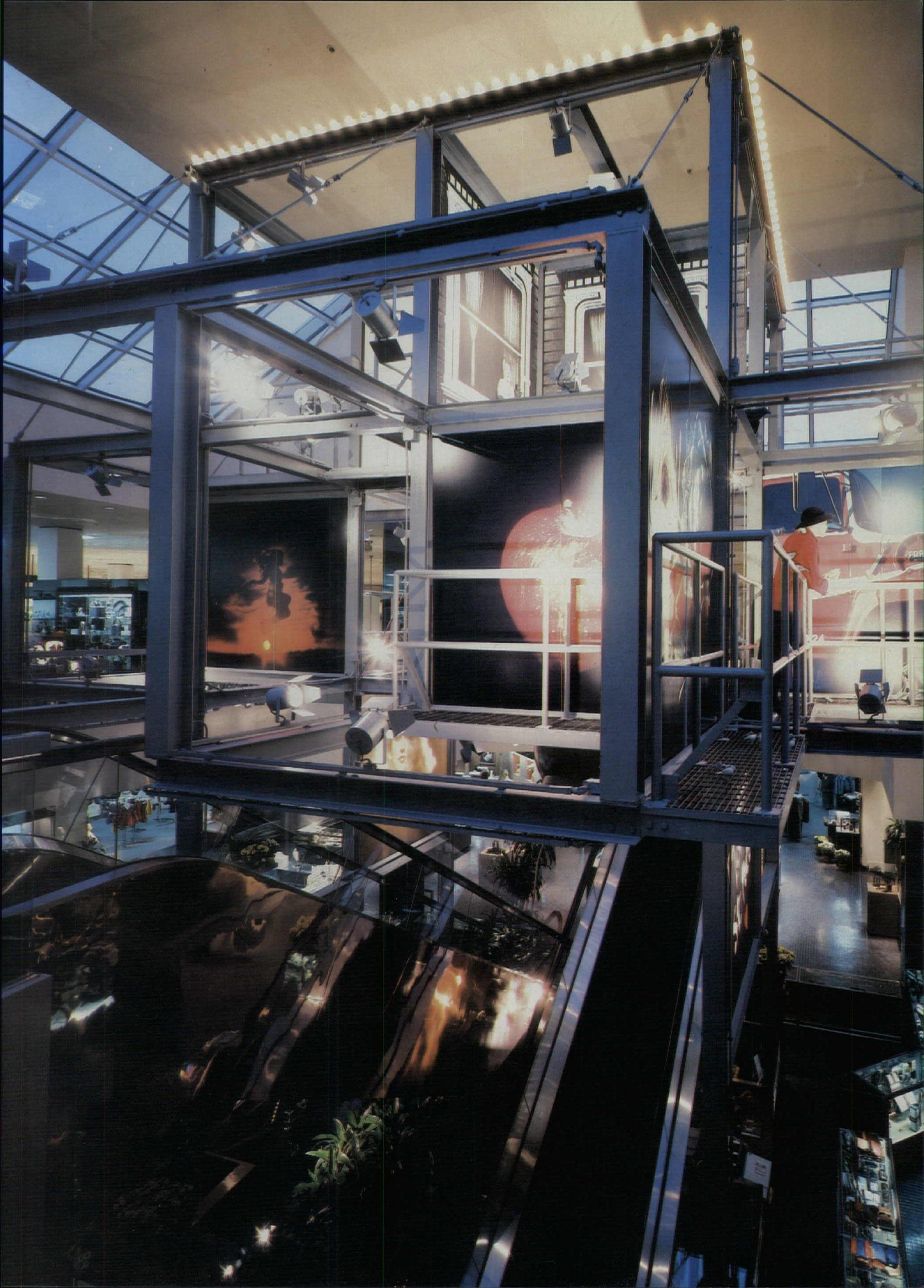


Gil Amiaga

For the West Palm Beach store, top, the matrix was simply a single plane of changing images. Gargoyles, above, enliven the Fort Lauderdale children's department. The St. Petersburg variation, right, experiments with less angularity, deeper colors.

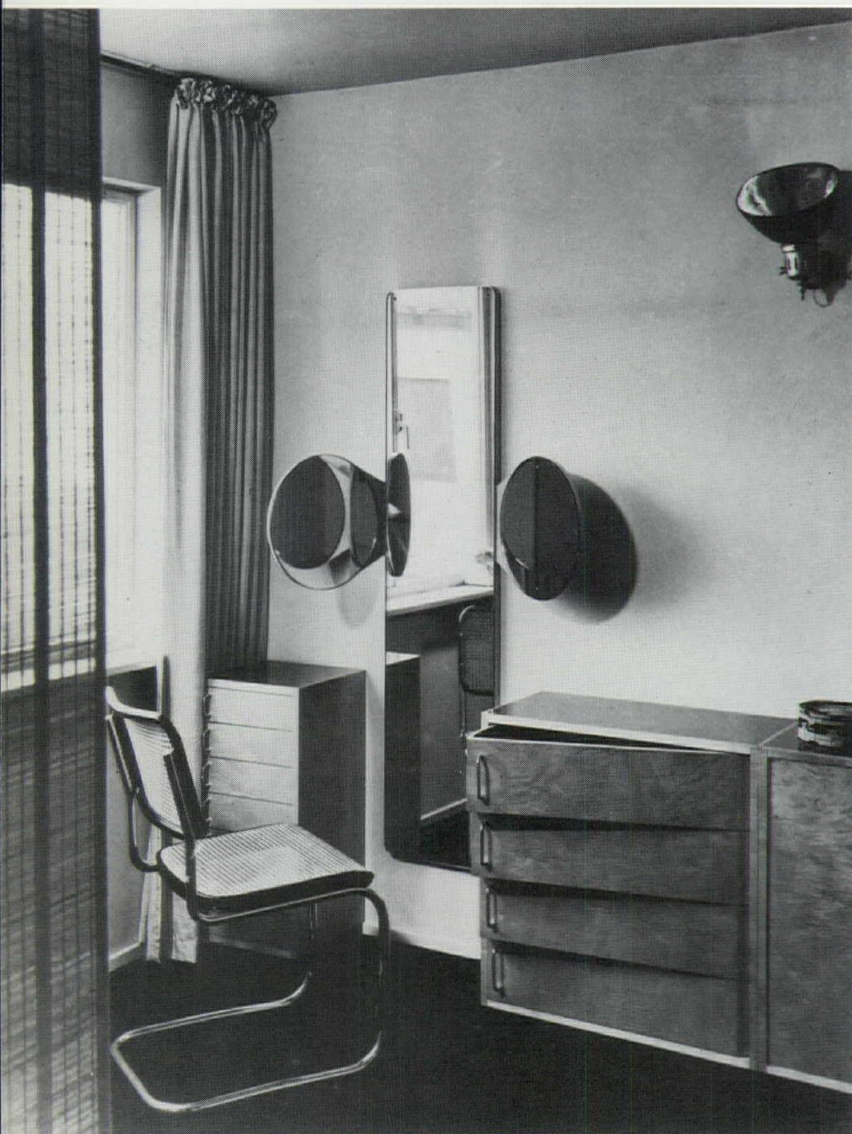
"sales plans." The one clearest indicator of merchandising success, it would seem, is the renovated Miami store, where old design can be clearly compared with new. In Miami, Burden says, "sales have increased very nicely." And the whole Burdine's chain, according to a report in *Women's Wear Daily*, increased its total sales by 22.6 percent during 1980, just the year in which the new designs were beginning to be a factor.

Does this mean a future of proliferating Superstores? Not immediately. Burden considers the concept "very successful" and says that parts of it will certainly continue to be applied, but the chain's current plans are for expansion into smaller, outlying markets for which much more modest stores will be appropriate. The one big masterpiece, incorporating all the best elements of the six experiments, is not yet on Ken Walker's drawing board, although perhaps it soon . . . *But stop! Out in the shopping center! What is that dazzling object? Is it a bird? Is it a plane? NO, IT'S. . .* □



Marcel Breuer as Interior Designer

A half century's work is reflected in a retrospective. By S.A.



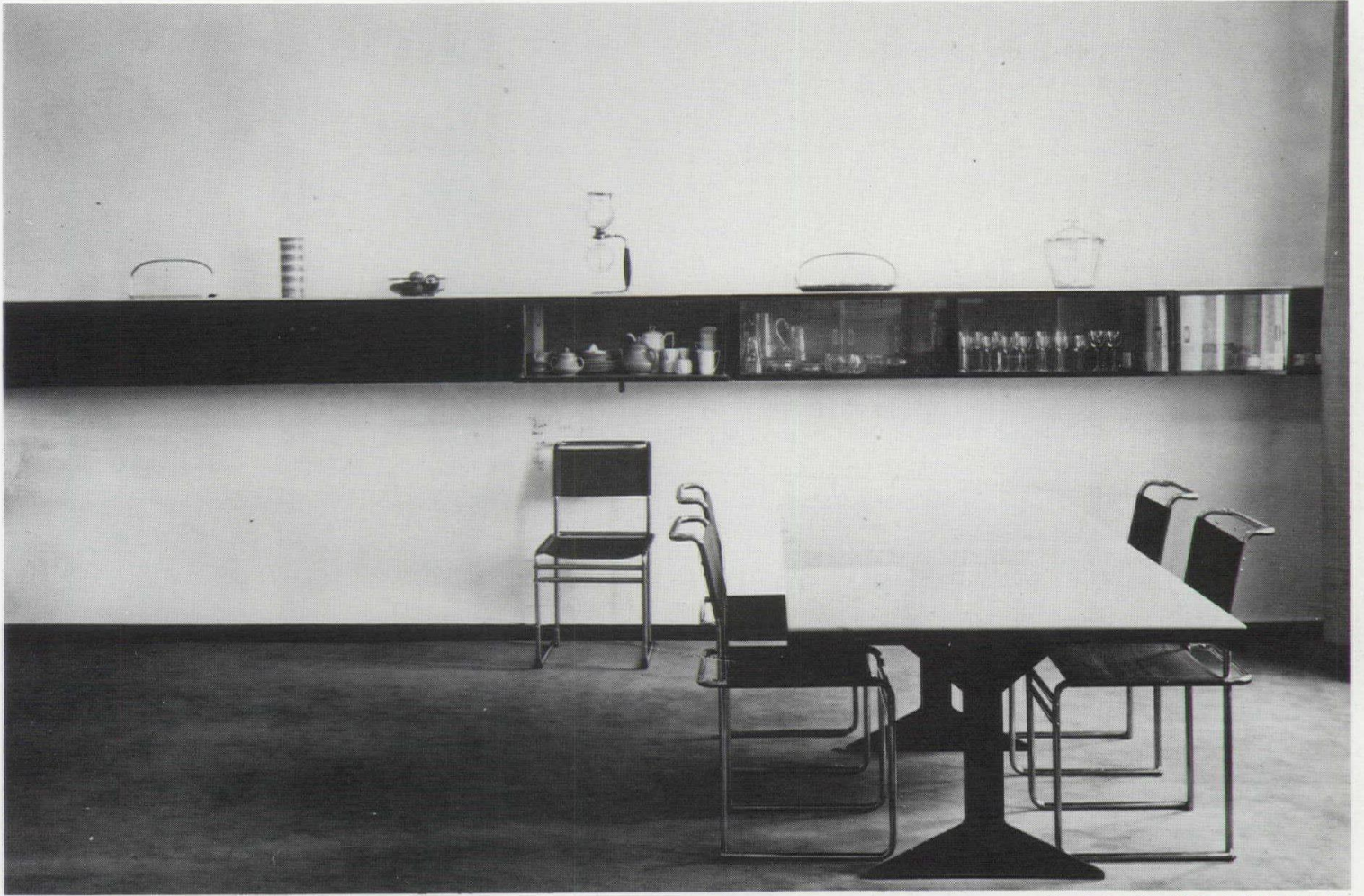
Courtesy of The Museum of Modern Art, Marcel Breuer Associates Collection

Marcel Breuer, who died as we went to press, was an architect of legendary stature. He was also a dominant figure in the field of furniture design (his "Cesca" chair, seen above in his 1936 Ventris apartment, London, being by far the most ubiquitous and copied of all modern furniture designs). Now he is being honored for accomplishment in two other fields: recently by the AIA and the ACSA for his work in architectural education (see March, p. 12), and, beginning July 25, by New York's Museum of Modern Art in a retrospective exhibition of his interior design work.

We show here, from half a century of that interior design, a small sampling. At right, an example of Breuer's fascination with stair design, a handrail and tread support structure from his 1938 Hagerty house, Cohasset, Mass. Opposite, above: a side chair, dining table, and a severe strip of cabinetwork replacing the traditional buffet in the dining room of the Piscator house, Berlin, 1926. Opposite, below: more mellow effects, more natural materials and richer textures in the Robinson house, Williamstown, Mass., 1947.



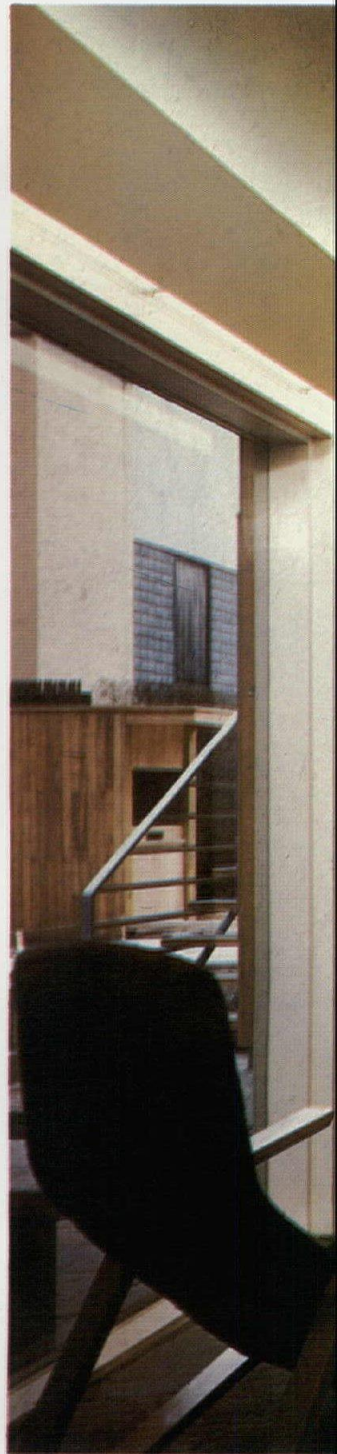
Paul Davis



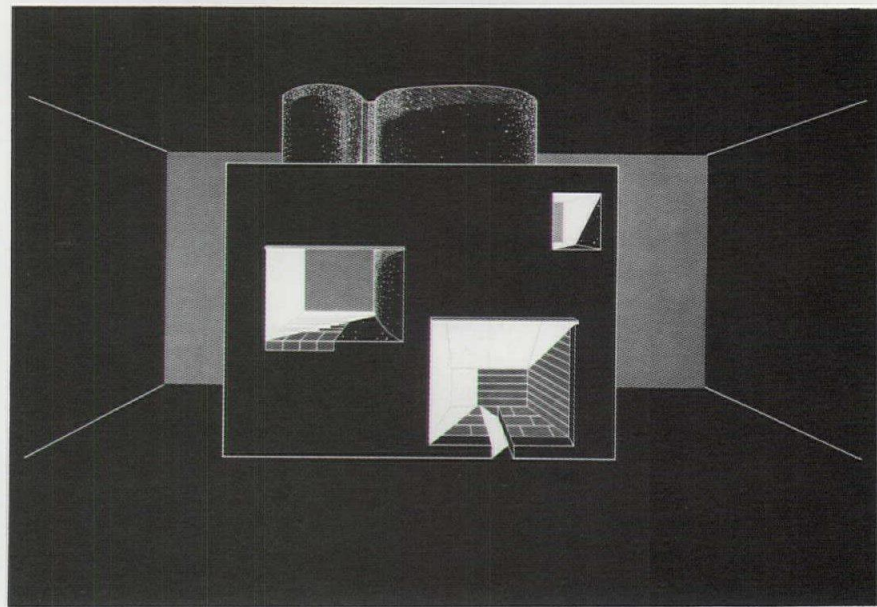
Courtesy of The Museum of Modern Art



Courtesy of Marcel Breuer Associates



Ezra Stoller © ESTO

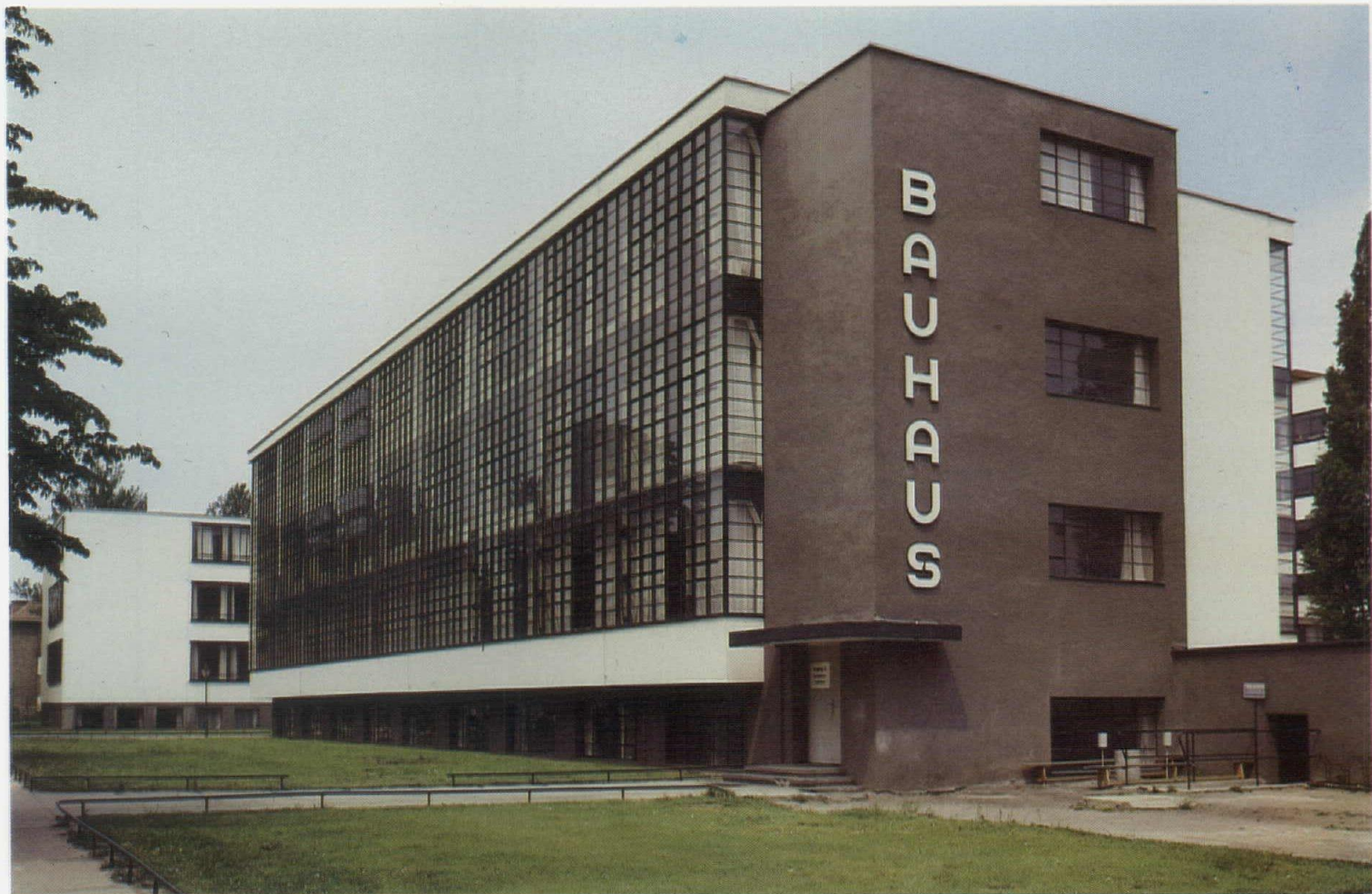




Courtesy of Marcel Breuer Associates

When Walter Gropius and Breuer went to Harvard University in 1937, they launched jointly not only a new era of American architectural education but also a practice with the new aim of reconciling Bauhaus abstraction with New England building materials and methods. One early product, top left, was Breuer's 1939 house for himself in Lincoln, Mass. Beyond the wood bookcase, a stair ascends to an upstairs bedroom suite or descends to a lower level dining room. A similar manipulation of levels enlivened the model middle-income house, above, built as a prototype in 1949 in the garden of the Museum of Modern Art. Its two-story section beyond the fireplace, designed so that it could be added at a later stage, contained an upper level bedroom above a garage. The handrail of rope held by tension cables is a typical touch of Breuer whimsy; the juxtaposition of stone with a plane of primary color a Breuer hallmark. Also recurring is the sculptural modeling of masonry fireplace elements, such as that of the Starkey house, Duluth, Minn., 1954, left. Breuer's interior design has long been—and, after his retirement, continued to be, in the hands of Marcel Breuer Associates—an important complement to his other achievements. □





The Bauhaus as You've Never Seen It

Text and photographs by John Allen Burns, AIA, and Deborah Stephens Burns

Alfred H. Barr Jr., director of the Museum of Modern Art, said in his introduction to the museum's 1938 Bauhaus book, "It is only eight years since the 1920s came to an end yet I think we can now say without exaggeration that the Bauhaus building at Dessau was architecturally the most important structure of its decade."

We have all read much about the Bauhaus teachings, associates, products and especially its influence, but the building itself seems to get less attention. The published photographs of the Bauhaus are mostly from the '20s and repeatedly show the same views, primarily because the building has undergone drastic changes.

But now, as the photographs on these pages show, the building is being restored to its original appearance. Its glass curtain wall and bold sign proclaiming the Bauhaus are already back in place.

Established in Weimar in 1919, the Bauhaus school moved to Dessau in 1925-26 to occupy the complex designed by its founder, Walter Gropius. Gropius' plan produced five functionally separate sections to fit the curriculum of the school.

The technical school was in the north wing, connected by a two-story bridge over the street to the workshops in the south wing. A large vestibule in the workshop wing opened to the

Mr. and Mrs. Burns are both with the Historic American Buildings Survey. He is an architect; she is an architectural historian.



Across page, stairwell in the technical school wing looking toward the bridge; lighting fixture designed by Marianne Brandt in 1925. Top, the restored curtain wall and Bauhaus sign of the workshop wing with the technical school in the background. Above, restored canvas and tubular steel auditorium seating designed by Marcel Breuer.

An architectural and cultural landmark.

school's auditorium wing, which also contained the dining hall. Connected to the one-story auditorium wing was the studio wing that housed scholarship students.

The flat-roofed building was constructed of reinforced concrete columns and beams with hollow tile floors. Walls were brick masonry with stucco on the exterior. The sash and curtain wall were steel. Instructors and students of the Bauhaus designed and executed the interior finishes. The tubular steel furniture of the auditorium, dining hall and dormitory rooms was designed by Marcel Breuer.

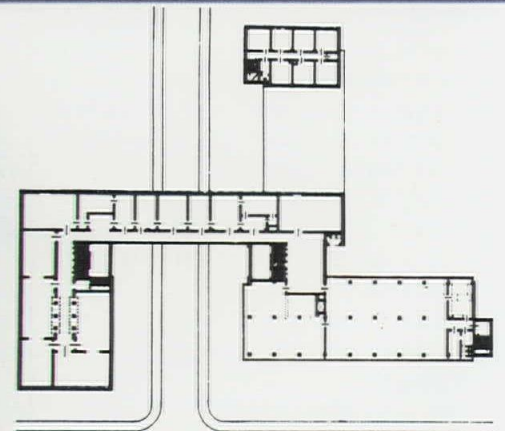
When the Bauhaus was dissolved on Oct. 1, 1932, the National Socialist Party majority in the Dessau city legislature planned to demolish the building. Fortunately, they never carried out their plans. The flat roofs, which had a history of leaks, were instead replaced in part by gable roofs. Ironically, the party later used part of the building for a leadership school.

During World War II most of the steel and glass curtain wall of the workshop wing was destroyed. In 1948 brick walls with small square windows were installed on the edge of the floor slabs, making the roof appear to have a projecting cornice since the new walls sat behind the plane of the original curtain wall. But the basic shell of the building remained intact, and it continued to be used as a school. In 1964 and 1965 the small square windows were changed to horizontal band windows with wide spandrels, similar to the windows in the technical school wing, but still far different from the original curtain wall.

The restoration of the Bauhaus was underway during European Architectural Heritage Year (1975) and was continuing when we visited Dessau in 1979. The East Germans respect the building and appear to be doing a technically competent and historically accurate job.

In fact, the June 1976 issue of *Form und Zweck*, an East German architectural journal, was devoted solely to the 50th anniversary of the Bauhaus. In that issue, Adalbert Behr wrote as a conclusion to his article: "The Bauhaus, a valuable part of the national cultural heritage in our socialist German Democratic Republic, is, as an architectural masterpiece and as the site for the school for design in the years 1926-32, an architecturally and culturally historical monument."

From the exterior the structure looks now just as it did in the '20s, although the surrounding area is more developed. The



Left, entrance to the workshop wing and auditorium; the concrete structural system is visible behind the curtain wall. Top, bridge connecting the technical school on the left to the workshop wing; the architecture department was located on the top floor of the bridge with administrative offices below. Right, studio wing with 28 rooms, each with its own balcony.





Carefully replicated interior details.

reinforced concrete structural system can once again be seen behind the glass curtain wall of the workshop wing. The steel window sash has been replicated with anodized aluminum extrusions of the same profile. The original fenestration patterns have been faithfully reproduced, including the chain pulley system for opening the windows.

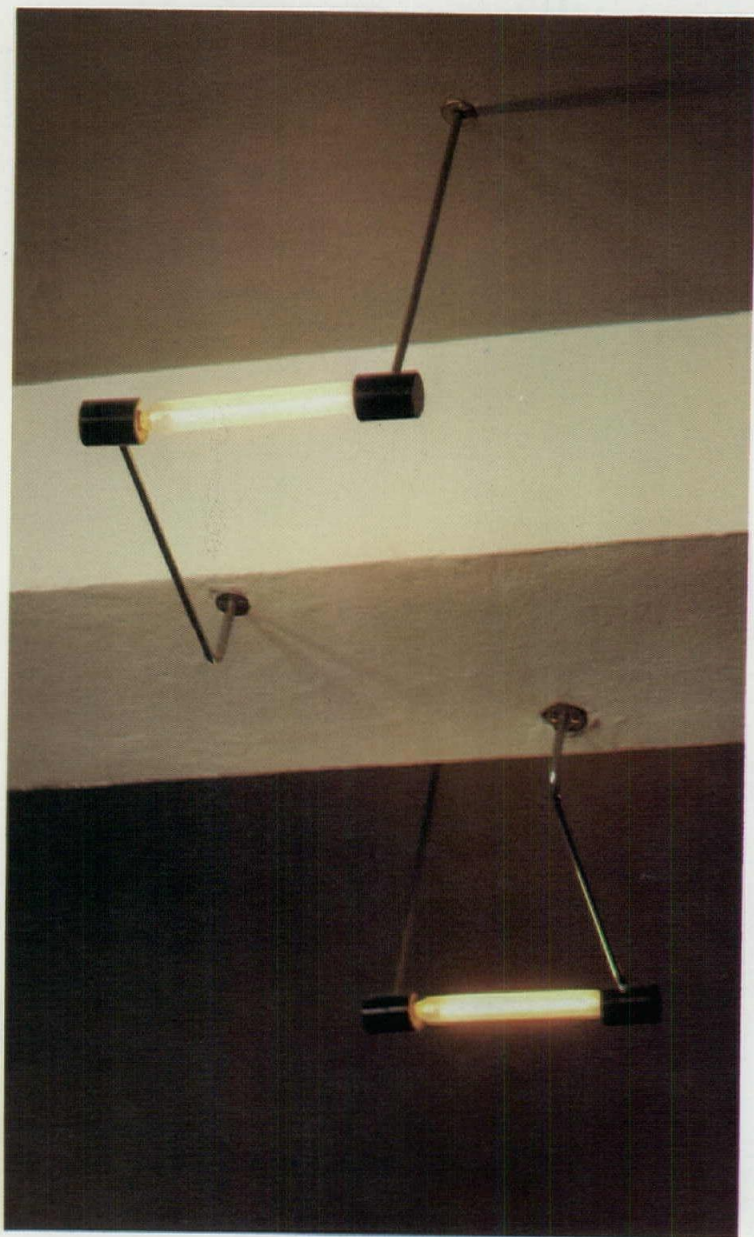
Work on the interior is proceeding, but not complete. The auditorium and its adjacent vestibule have been carefully restored and are used by the community. Both the Breuer designed seating and tubular tungsten lighting are reproductions. On the opposite side of the vestibule from the auditorium, the original display room and part of what was once the cabinet-making workshop are now used for exhibits.

Even though guidebooks as late as the 1970s said the Bauhaus was substantially altered, we still wanted to see it. Traveling by car from Leipzig to East Berlin, we stopped at Dessau, which is not far from the highway. A map in the Dessau train station marked the Bauhaus as an historical monument and the adjacent square had been named Bauhausplatz.

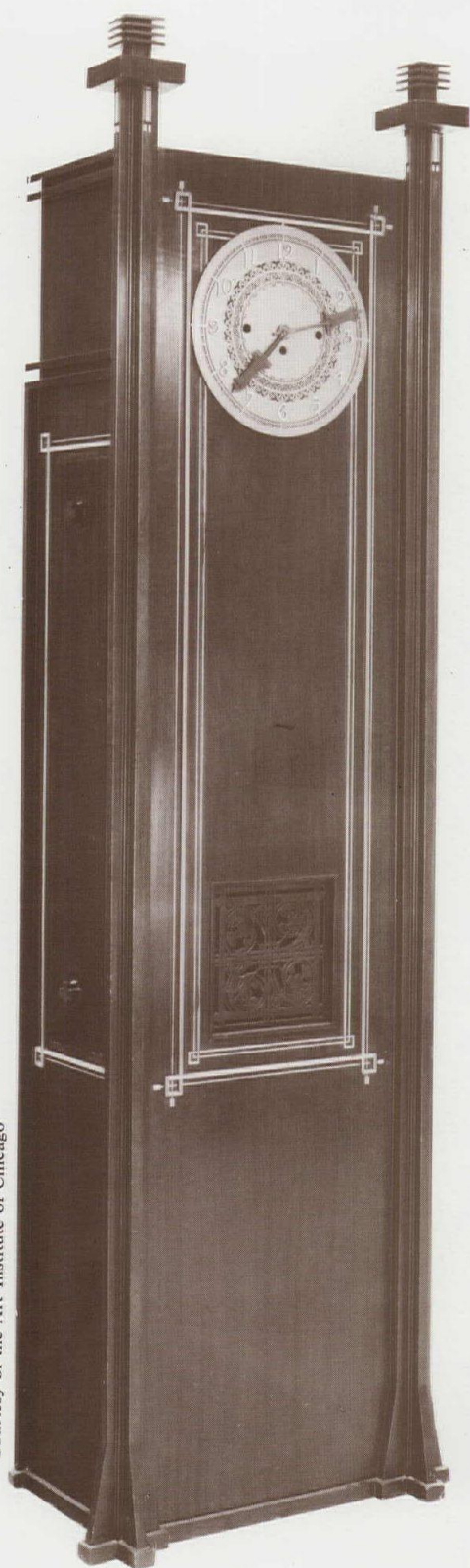
Not knowing what to expect, we proceeded to Bauhausplatz. There it was, to our surprise, just as we had seen it in all of those 1920s photographs, restored and spectacular. As we approached the building we noticed the doors were open. Luckily, there was a concert being held in the auditorium and we were allowed inside, even though it was a Sunday.

We were allowed to wander about the interior freely, although many of the classroom doors were locked and we were unable to visit the student housing wing. We were allowed to photograph both the interior and exterior without restrictions, except that we were warned to stay away from the Russian military camp that adjoins the Bauhaus at the northeast corner and not to aim our cameras in that direction. □

Left, restored tungsten lighting in the auditorium, originally designed and executed by the metal workshop headed by Laszlo Maholy-Nagy. Above left, windows with chain pulley and worm gear mechanism in the display room. Above right, door handle designed by Walter Gropius in 1922. Facing page, lighting fixture under bridge, looking toward workshop wing.







Courtesy of the Art Institute of Chicago

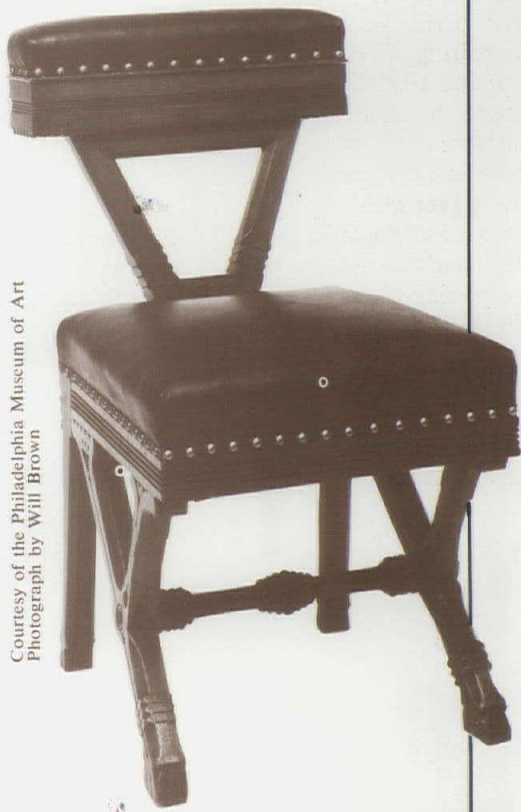
Furniture by Architects

It is common knowledge that much of the best modern furniture is the work of the best modern architects, but it is easy to forget that architects of earlier periods were also often adept at furniture design. The pairing of interests is natural, for not only do architects of any period need furniture sympathetic to their architectural innovations, but also the design of a chair or chest—with all its requirements of function and structure as well as appearance—can serve as a convenient laboratory for the testing of ideas that may have larger scale application. The selection shown here is taken from *Furniture Designed by Architects*, written by Marian Page and recently published by the Whitney Library of Design. Beginning with the 18th century work of the English designers William Kent and Robert Adam and of the American Samuel McIntyre, Page's book covers the work of 26 architects, ending with that of Eero Saarinen and Charles Eames. As we hope this small selection shows, the furniture is interesting in itself and also in what it implies about the inclinations that underlie its designers' larger works.



Courtesy of Cathedra Gaudi, Barcelona

Courtesy of the Philadelphia Museum of Art
Photograph by Will Brown



Courtesy of Smithsonian Furnishings Collection



Courtesy of the Philadelphia Museum of Art
Photograph by Will Brown

Far left, a mahogany clock with brass inlay designed by George Grant Elmslie for his 1912 addition to Louis Sullivan's 1907 Babson house in Riverdale, Ill. Left, two chairs of carved oak designed by Antoni Gaudi for his 1904 Battlo house and 1901 Casa Calvet of-fices, both in Barcelona. Top right, a heavy walnut chair designed by James Renwick for the regents' room of his Smithsonian Institution building, 1847-1855. Above and right, a mahogany chair and black walnut desk designed by Frank Furness around 1875 for the Philadelphia house of his brother Horace.

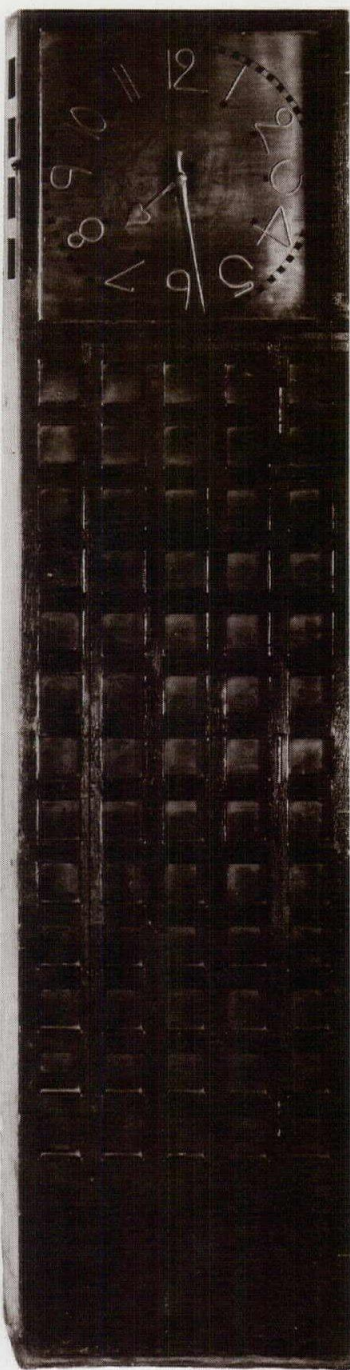
Courtesy of Museum of Fine Arts, Boston



Courtesy of Museum of Fine Arts, Boston



Courtesy of Glasgow School of Art



Courtesy of Glasgow School of Art



H. H. Richardson, who offered to design "anything a man wants, from a cathedral to a chicken coop," did many furniture designs. Two of them, above, are an oak armchair and bench with leather seats, both for the Winn Memorial Library, Woburn, Mass., 1878. Left, two designs by Charles Rennie Mackintosh, a tall oak clock of 1904 and a delicate oak table of 1906. Right, seen in the 1838 master bedroom at Lyndhurst for which it was designed is a massive oak bed in Gothic revival style; both house and bed were designed by Alexander Jackson Davis. □





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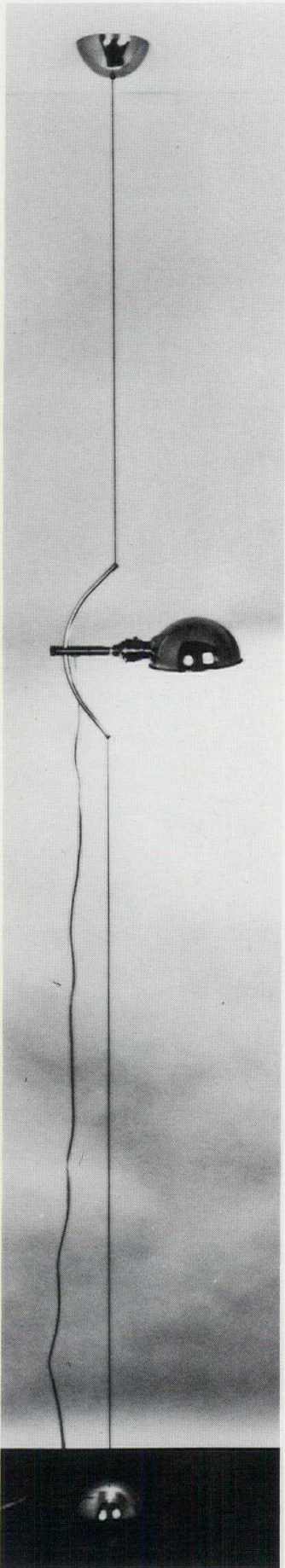
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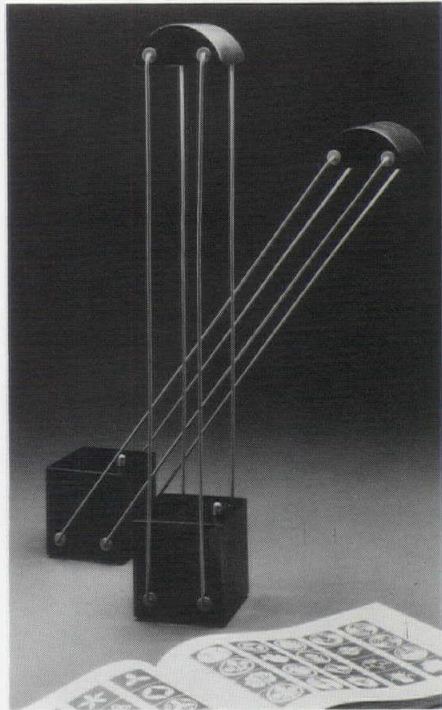
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Furnishings

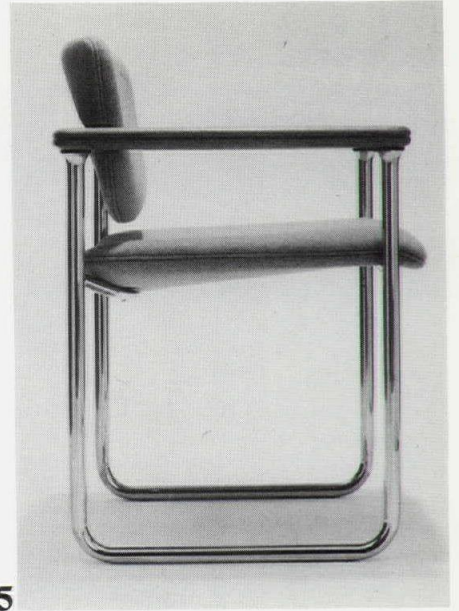
As resources for design and objects of design. By S.A.



3



4



5

The String Lamp (1) from Koch & Lowy is suspended from the ceiling, its cord kept taut by a weighted base; the swiveling fixture, in brass or chrome, can be moved to any height along the cord. Not yet in production but something to look forward to is this free-standing storage unit (2) designed by Italian architect Aldo Rossi for Ditta Molteni of Milan. In production for a year by Stilnovo of Milan and imported here by Thunder 'n' Light, Inc., New York City, is the Tokio lamp (3), designed by Asahara Sigheaki; it holds a 100-watt halogen bulb. Its reflector and transformer base are of black plastic, its swiveling supports of red lacquered metal.

From Knoll is a new steel pull-up chair designed by Richard Schultz (4). It is available with or without arms and in a variety of fabrics and finishes, including—for the frame of three-fourths-inch steel tubing—several metallic colors. Another new light-weight chair is the Stanyan (5) by Brian Kane for Metropolitan. Its back and seat are upholstered; arms can be upholstered as well, or of solid oak or walnut. From the recent "The Art Fabric: Mainstream" show, organized by the American Federation of Arts, is "Fugue" by Kris Dey (6). It is of local dyed mill cotton strips and is in the collection of Mr. and Mrs. E. Berliner.



6



1



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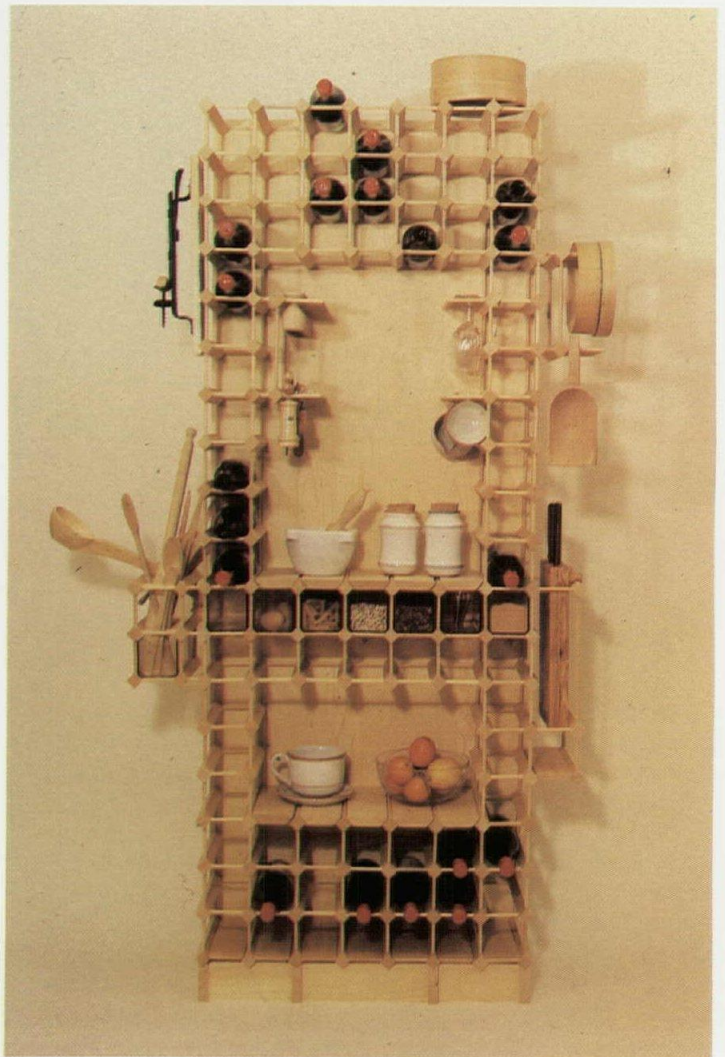


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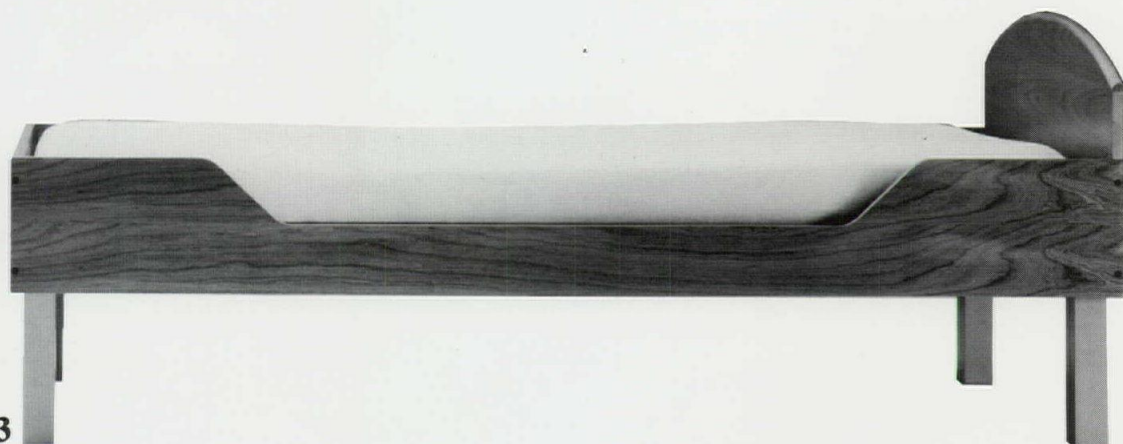


6

The Trestle Group of outdoor furniture from Landscape Forms includes the pieces shown here (1) and also benches, kiosks and trash receptacles. The Barobier family has been associated with Venetian glassmaking since the 14th century, but the first glass artists of the Toso family didn't come along until the 17th century. From the present-day Venetian firm of Barobier & Toso come glass lamps (2) and floor, table, pendant and wall-hung variations. Simple wood chairs (3) from Mazzei of Milan have rush or upholstered seats, frames in a choice of colors and finishes. The wall-mounted lamp with a shade of stove-enameled aluminum (4) is from Décembre of Helsinki; hanging versions are also available. Among the great proliferation of open plan systems, one of the most attractive is the Italian Marcatré system (5) imported here by a.i. (Atelier International). A fan-shaped sofa of rattan (6) has been designed by architect Vico Magistretti for the Italian manufacturer Gervasoni.



The Alter serving trolley (1) designed by Pamio & Toso for Stilwood of Modena, Italy, is in natural beech with two surfaces of black plastic laminate; the beech wheels are removable. The Enolinea firm of Genova produces a wide-ranging line of modular wood units that can be combined to form storage walls (such as 2), free-standing racks and storage units, and even lighting fixtures and bases for seating units. Maisa of Milan also offers attractive wood furniture: From the extensive Appunto collection designed by Vittorio Prato is this single bed (3).





4

Architects Charles Gwathmey and Robert Siegel have initiated a collection for Knoll with a simple, disciplined desk and credenza group (4); its absence of hardware and its use of mahogany (although laminate finishes are also available) give it a look that is not identifiable as either modern or traditional. The Saymon cantilevered armchair (5) from Dander of Milan has a plywood shell that can be exposed or upholstered in fabric or leather. □



5



BOOKS

Furniture Maker Stickley, Modern Design 'Pioneer'

Furniture of the American Arts and Crafts Movement: Stickley and Roycroft Mission Oak. David M. Cathers. (New American Library, \$19.95.)

For approximately half a century, beginning with the exhortations of Ruskin and William Morris, the arts and crafts movement here and in Europe fought a temporizing but ultimately doomed battle against industrialization, reviving for a while plain design and quality handcraftsmanship in furniture and household objects. In this country the style flourished most in the hands of Gustav Stickley, whose furniture company was founded in 1900, and Elbert Hubbard's Roycroft Shops, which made its first furniture (along with salt-and-pepper shakers, oatmeal cookies and anthologies of homilies bound in limp leather) in 1898. But Hubbard went down on the *Lusitania* in 1915, Stickley's overextended business collapsed in 1916, and there followed another half century during which "mission oak" (perhaps so-called because of its "mission of usefulness") was the object of general contempt. Not until a book about Stickley was published in 1966 and a Metropolitan Museum show in 1970 included some of his furniture, David Cathers tells us, was there any renewed recognition of the work, and not until a 1972 exhibition at Princeton was there a "true rediscovery." According to Cathers, "Pieces which sold for hundreds of dollars in the early 1970s fetch thousands of dollars today."

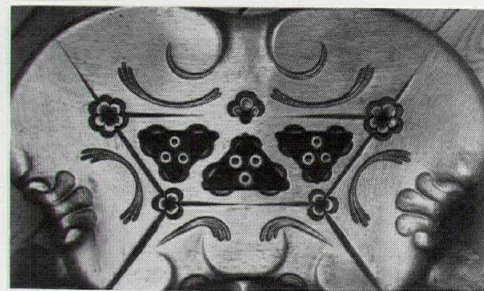
The introduction to Cathers' book says that it "is aimed primarily at the collector," and certainly there is much information in it that a collector would value—shopmarks, labels, the dating of joinery details, drawer pulls and nailhead shapes—but there is also much that others will find interesting. More than 250 pieces of furniture are shown in black and white photographs by Peter Curran, and there is an opening section that relates the work to other parts of the arts and crafts movement and discusses the influence on Stickley and Hubbard of such figures as Eastlake, Mackmurdo, Voysey, Baillie Scott, Josef Hoffman and Frank Lloyd Wright.

Although the careful craftsmanship that characterized the furniture was a deliberate anachronism in an age of increas-

ing mechanization, Stickley's "two principles of simplicity and adaptability to purpose" were close to the heart of the modern movement that was to come. "His belief in functionalism and pure form," Cathers says, "makes him a pioneer . . . of what this century has come to consider modern design." At the very least, the furniture with a mission constitutes an interesting chapter in American design, and Cathers' book covers it with authority and grace. *Stanley Abercrombie, AIA*

Thonet: 150 Years of Furniture. Christopher Wilk. (Barron's, \$18.95.) **Thonet Bentwood and Other Furniture: The 1904 Illustrated Catalog.** Introduction by Christopher Wilk. (Dover, \$8.95.)

In 1830 German cabinetmaker Michael Thonet began trying some curious things with layers of wood veneer—boiling them in glue and, when they became pliable, bending them into wooden forms. His experiments, as we all know, were successful, with great effects on both furniture design and the economics of furniture production. Gebrüder Thonet, the firm established in 1853 by Thonet and his five sons, became the largest furniture manufacturer in the world. The firm's 150th birthday has begun to be celebrated with two publications, one an apparently thorough history of the company, the other a reprint of one of the firm's early catalogs, reproduced from the company's only surviving copy. The catalog's 1,700 illustrated items include familiar bentwood classics, of course, and also an innovative folding chair, a "rocking sofa" (below) and the first "tip-up" theater seating. The Thonet story and both these books that tell it are fascinating.



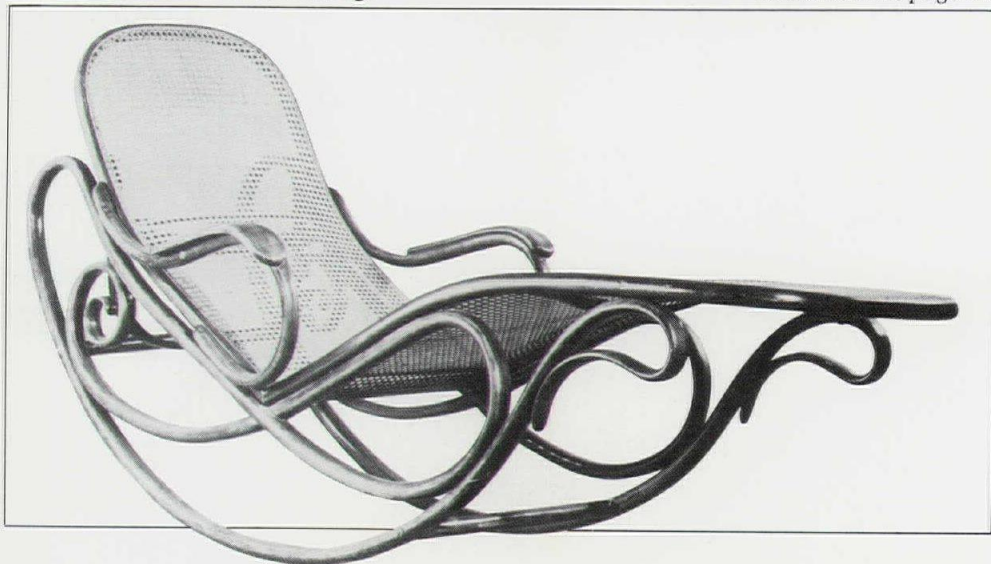
Gaudi: Furniture and Objects. Richard Dalisi, translated by Murtha Baca. (Barron's, \$16.95.)

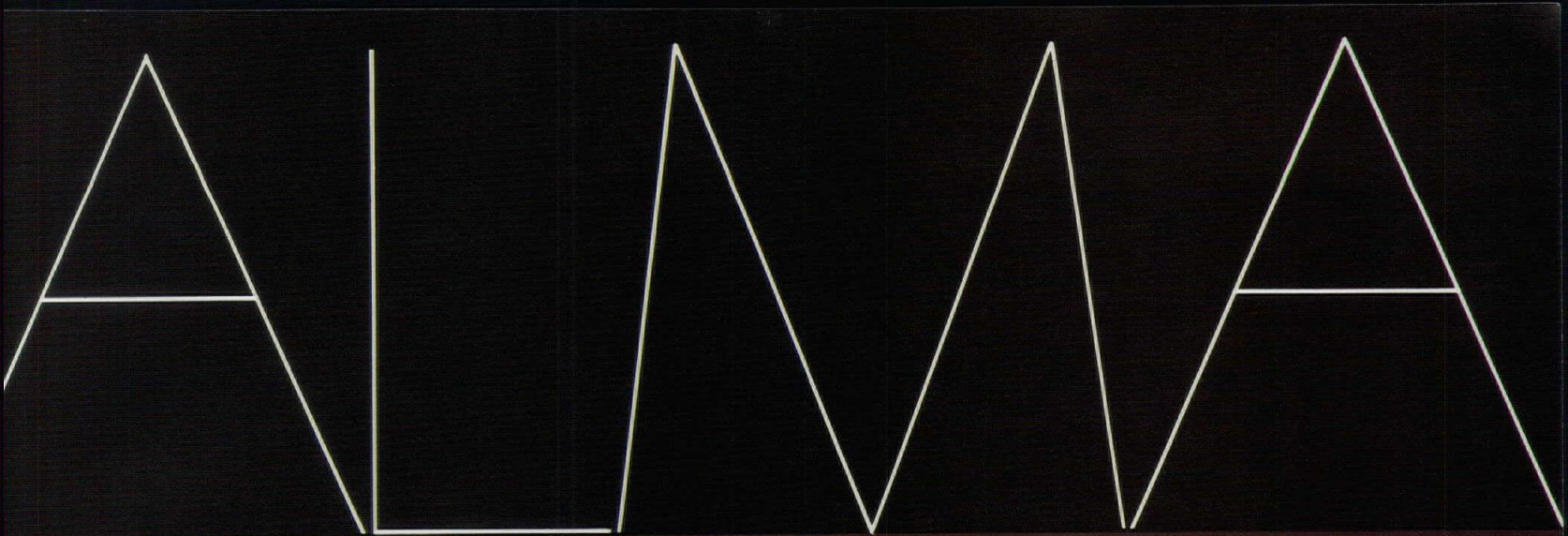
Like his buildings, the furniture and decorative objects of the Catalan genius Antoni Gaudi y Cornet are vividly, almost feverishly, expressive, performing an inimitable balancing act between ornate archaism and bold abstraction. Riccardo Dalisi, a professor of architecture at the University of Naples, has responded to this poetic work in a poetic manner: No more matter-of-fact than the designs he considers, his text concentrates on the symbolism and philosophical import of those designs.

He speaks of "the impression of a powerful internal force" in a chair, of furniture edges that "disappear, almost immersing themselves in the massive body of the center," of objects that "seem to be part of a continuing process of the maturing of a sinuous concept of space," and of Gaudi himself "moving between dream and reality."

The book is illustrated with many good photographs (above, the backrest of an oak chair for Casa Calvet), but with even more drawings than photographs—drawings that, like the text, attempt to interpret rather than simply exhibit. If the

continued on page 76





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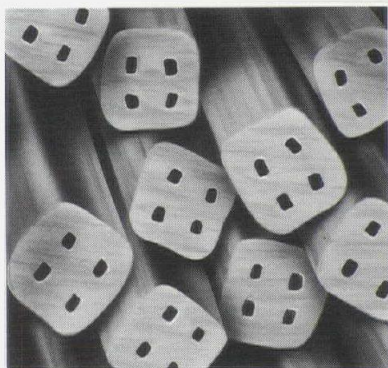
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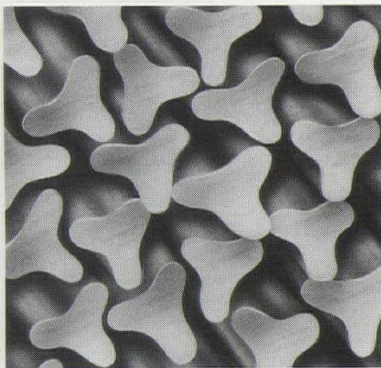
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Books from page 72

prose is at times a bit purple, Dalisi's book nevertheless treats a body of interesting work with the serious attention it deserves.

Gentle Architecture. Malcolm Wells. (McGraw-Hill, \$22.50.)

For all you fans of Malcolm Wells, this is the book you have been waiting for. This autobiographical, philosophical, architectural treatise covers it all, letting the reader know how Wells approaches life and his work. He shares his opinions with the reader on nearly everything, including some observations about architecture and architects. Let me summarize where Wells seems to be coming from.

First, he is pessimistic about man's fate on earth due to the abuse of natural systems. He says, "Statistically, there seems to be no hope at all. No government, no religion, certainly no new architecture, is going to set things straight." He further rings his hands by concluding, "Meanwhile, the most beautiful world we'll ever know slides deeper into trouble." His pessimism, however, seems to spur him into action. He offers a philosophy of designing buildings that in its small way offers a glimmer of hope.

Wells is best known for his underground architecture. For him, it calls to mind an age before technology, when man was not separated from natural systems and found shelter in caves. Wells says that "a million years ago, long before modern man, as we know him, started inventing war and bigotry (and the religions to excuse them) and learning how to lay continents bare and to overbreed himself . . ." man sought shelter in the earth. Underground architecture is to Wells as much a philosophic statement as it is a practical means of solving problems such as energy waste, water run-off, difficulty of maintenance and environmental conflict.

One refreshing aspect of this book is Wells' self-confessed naivete about his personal philosophy and its chance of acceptance among the masses and about his understanding of building technology in underground construction. In the final analysis, Wells turns out to be a philosopher with a sense of humor and a building and design technician willing to learn from mistakes, which he readily confesses in connection with various projects he has undertaken in the past 20 years.

Wells tells why cities and suburbs have failed, saying that "we've created so much convenience and ease, we've turned ourselves into an artificial people, with artificial values, who live precariously far from the roots of life. If you don't believe it, just listen to what most people are talking about. Look at what most of us are buying at the supermarket." Wells—an admitted suburbanite—now has a



Wells' second office and his first underground building, Cherry Hill, N.J. (1970).

gnawing feeling that all the conveniences, the appliances, the mechanical support systems, the gas-guzzling station wagon, the high consumption of electricity—all have a price that may have been too high philosophically. He offers little to solve the problems of urban sprawl.

On architecture and architects, Wells observes that "most modern architecture . . . now feels wrong." He says that look-alike buildings in look-alike cities were the architecture of abundance. "Now the abundant age is past, and the validity of all the things we took to be architectural certainties is called into question." He means that architects should be more accountable to the natural environment. If the architect had a good understanding of the full implications of the mechanical power the building used, how it was generated, what environmental damages were caused by the generation of that power, then architects themselves would begin to design a much gentler form of architecture—an architecture that does not exploit the environment.

Chapter headings give a further indication of what this book is about: Commitment, Reverence for Life, Design Theory, Land, Energy and Resources, Materials, Construction Practice and The Last Page.

If you are interested in Wells and his work, read this book. *Michael B. Barker, Administrator of Design, AIA*

Historic American Buildings. Edited with introductions by David G. DeLong. (Garland Publishing, \$90 per volume.)

The first federal survey of American buildings was instituted in 1933; it was limited to drawings and photographs of major structures built before the Civil War, and it was expected to take about 10 weeks. The Historic Sites Act of 1935 extended the scope of the work and its funds, as did the National Historic Pres-

ervation Act of 1966. Work is still continuing, administered by the Department of the Interior, with technical advice from local AIA chapters.

What has been accumulated since 1933 is awesome: more than 17,000 buildings documented with 31,000 drawings, 45,000 photographs and 15,000 pages of written description. Awesome, too, until now, was the prospect of using the documentation, deposited in the division of prints and photographs of the Library of Congress and cataloged there only by place, regardless of date or building type.

Now, David DeLong, a practicing architect and associate professor at Columbia University's graduate school of architecture and planning, has made this valuable material accessible in book form. DeLong has performed the enormous task of sifting, evaluating and organizing the material, and he presents the buildings of each state according to the period in which they were built, by building type and, within those limits, by their location, thus putting them in a logical historical sequence. He provides a map and an index for each state to make use of the material easier, and each state's set of volumes is prefaced with an informative and graceful introduction. Already available are sets for California (four volumes), Massachusetts (10 volumes), New York (eight volumes), Texas (two volumes) and Virginia (five volumes). Seventy-one further volumes are projected, and the publisher plans to complete the work by 1986.

The Historic American Buildings Survey drawings comprise the most ambitious, the most thorough and the most reliable record of our architectural past. These new volumes make those drawings even more valuable than before by providing a much needed tool for their use.

Stanley Abercrombie, AIA
Books continued on page 78

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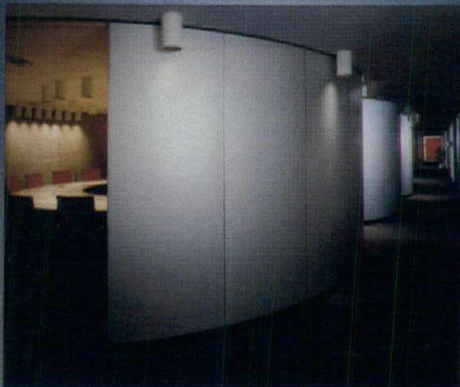
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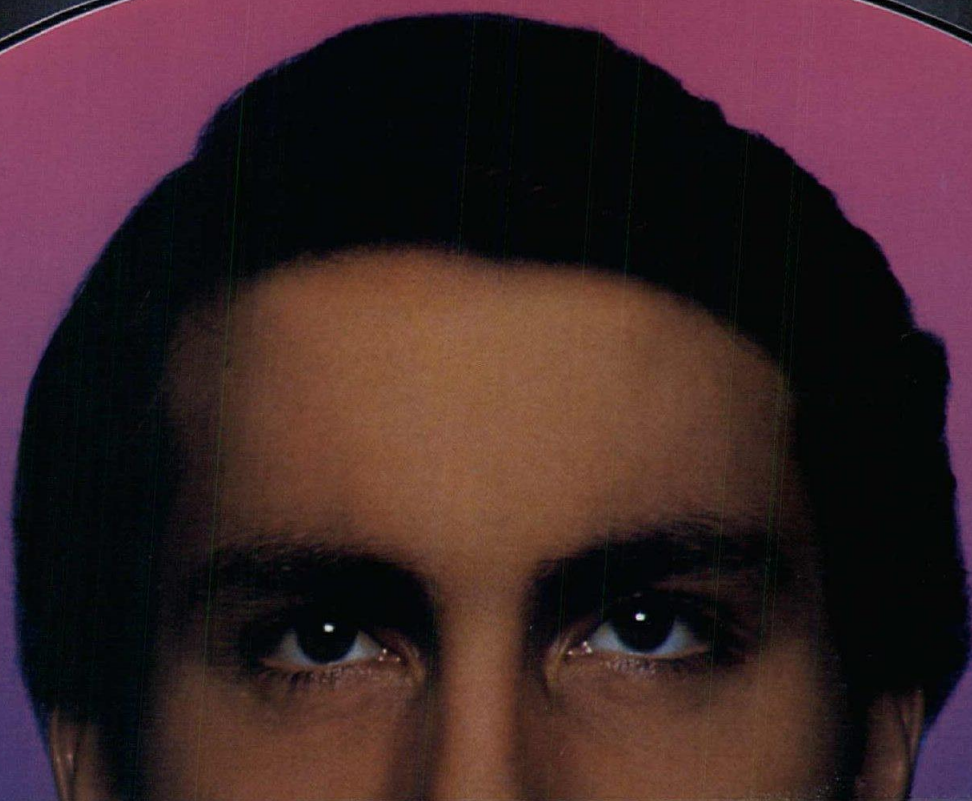
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Architecture and Interior Design. Volume I: A Basic History Through the Seventeenth Century; Volume II: Europe and America from the Colonial Era to Today.

Victoria Kloss Ball. (Wiley, \$45 per volume hardbound, \$27.50 paperbound; both volumes \$80 hardbound, \$50 paperbound.)

Heaven knows we don't need another history of Western architecture or even a history of interior design, but there is a place for a book—or pair of books—that combines both, particularly if it deals, as the jacket blurb of this pair promises, with “the special relationship that exists between” architecture and interior design. Toward that end, Victoria Kloss Ball, author of *The Art of Interior Design* and *Opportunities in Interior Design*, has summarized everything from Stonehenge to Giacometti, including information about pottery glazing, beds, goblets, fireplaces, frescoes, Oriental rug knots, medieval roof structures, Pompeian gardens, and even including occasional paragraphs about society, religion and politics. What an undertaking!

While it is absolutely terrific to have all this history digested for us and laid out side by side, it must be said that “the special relationship” between elements is seldom explicit: The reader will have to make his own syntheses and comparisons, but fair enough. Ball's writing style is clear and direct, but her machine-gun delivery of simple sentences is a bit monotonous, and, considering the astonishing amount of visual material Ball has assembled, her publisher has produced a surprisingly dowdy couple of volumes. But if the books are not pure delights, they are still valuable compendia; if we wouldn't want them on a desert island, they are still mighty handy on the desk.

Man, Climate and Architecture. Second edition. B. Givoni. (Van Nostrand Reinhold, \$14.95.)

First published in 1969, this new edition in paperback reflects some of the recent research in the physiological effects of the thermal environment, relating the climatic aspects of architecture both to environmental physiology and to the physical environment. The author, who is associated with the Israel Institute of Technology, explains in the preface to this new edition that there have been added two entirely new chapters. Among other changes is a rewritten chapter by Murray Milne of the University of California at Los Angeles' school of architecture and planning, on sun motion and architectural methods to control the sun.

Those who read the first edition will recall that the book is divided into five parts, the first of which considers climatic elements, their influences and methods of

evaluating their effect on man. The second considers the thermophysical properties of building materials and their effect on the indoor climate. Section three discusses the impact of solar radiation on building design and is followed by a section that deals with ventilation functions and requirements, the physical mechanisms of ventilation and design factors affecting ventilation. The final section considers how the information provided in the preceding sections relates to the principles of design and the selection of materials. This last section contains two new chapters, one on the use of natural energies to heat and cool buildings and one that summarizes recent research in the prediction of indoor temperatures of buildings without the use of airconditioning.

The Language of Stained Glass. Robert Sowers. (Timber Press, Forest Grove, Ore., \$27.99.)

Painting with light, which means radiant color, is the language of stained glass. Hence, it is regrettable that this 206-page book has only eight color photographs among the 145 illustrations provided. Nonetheless, the book will interest admirers of this magnificent art. It contains three major parts, beginning with a discussion of painting with light. Part two concerns the claims of the medium, and the final section discusses stained glass and the contemporary art world. Sowers

himself is a stained glass artist, having created such windows as those in the Holy Redeemer Church in West Lebanon, N.H., and in All Saints Episcopal Church in Palo Alto, Calif., as well as the facade of the American Airlines Terminal at Kennedy Airport in New York City. This is his third book on stained glass, previous ones being *The Lost Art* (1954) and *Stained Glass: An Architectural Art* (1965).

Contextual Architecture: Responding to Existing Style. Edited by Keith Ray. (McGraw-Hill, \$27.50.)

Compiled from the pages of *Architectural Record*, this copiously illustrated book explores the relationships between new and existing architecture, suggesting ways in which old and new may live together harmoniously. It is divided into four major parts: interiors, alterations, additions and in-fill. The examples in each of the sections are varied. Among those chosen for interiors is the office of Hellmuth, Obata & Kassabaum in St. Louis; one of those for alterations is Turtle Bay Towers in New York City (Bernard Rothzeit & Partners); among the inclusions in the chapter on additions is the Villa Strozzi Museum in Florence, Italy (Richard Meier), and AIA's building in Washington, D.C. (The Architects Collaborative) is among the projects discussed in the section on in-fill.

Books continued on page 84



The Mountain House. Katherine Kennish. (Northwood Institute Press, Midland, Mich. 48640, \$12.95.) Katherine Kennish writes engagingly about the dwellings sited in rugged mountain climate, most of the examples coming from the Sun Valley area of south central Idaho. She describes the log cabins, chalets, craftsman houses, shed roof houses, moveable houses and what she calls the “hybrid or frugal house” where energy conservation is a primary aim. Chapters are devoted as well to entries, windows, fireplaces and stoves, baths, siting and landscaping, roofs and details outside the house such as decks, balconies and fencing. The book is filled with handsome black and white photographs and drawings (the photograph above graces the book's jacket). But, as John R. Smith says in the foreword, this is no coffee table picture book. “It is a serious effort to continue that sometimes fragile thread of information passed from one generation to another.” It tells why the mountain house takes the form it does, and in so doing makes a contribution to regional architecture.



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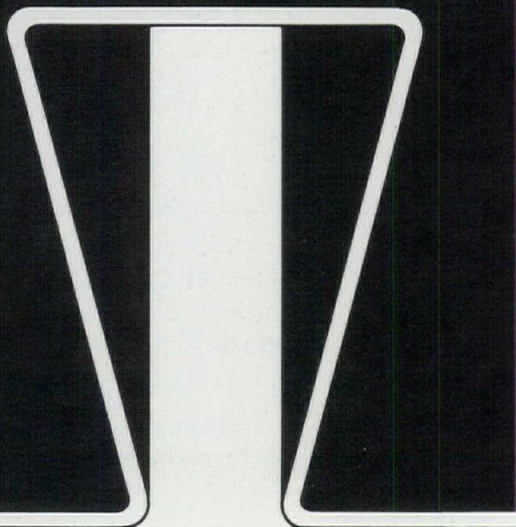
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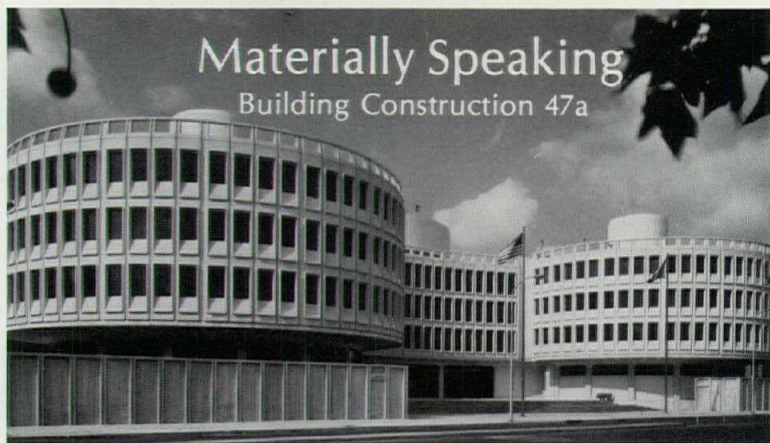
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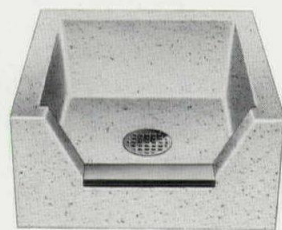
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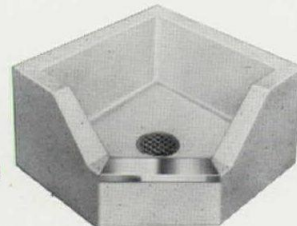


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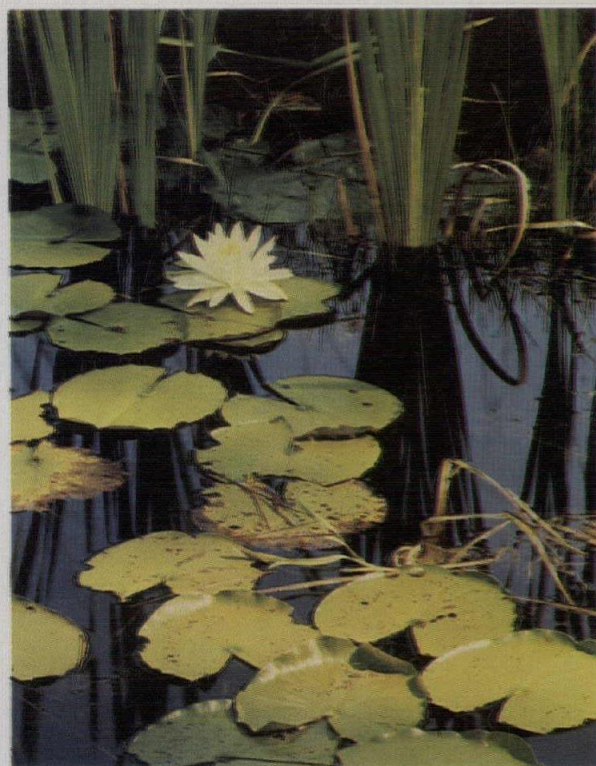
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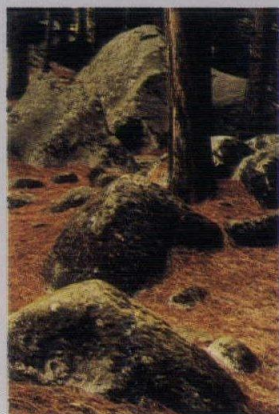
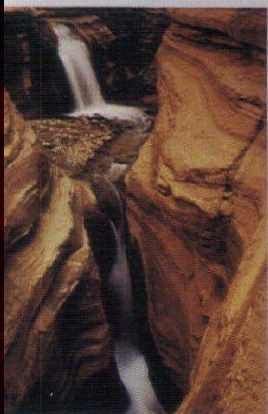
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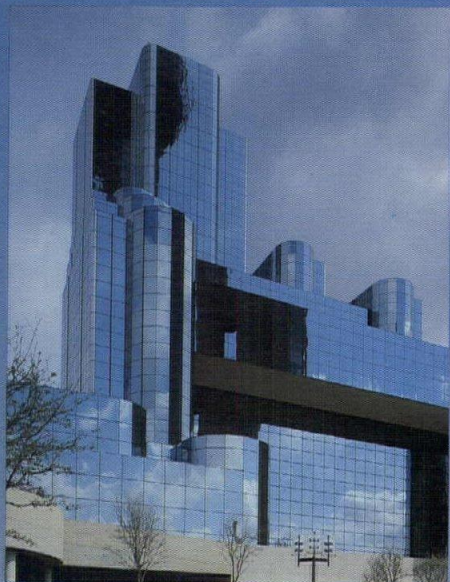


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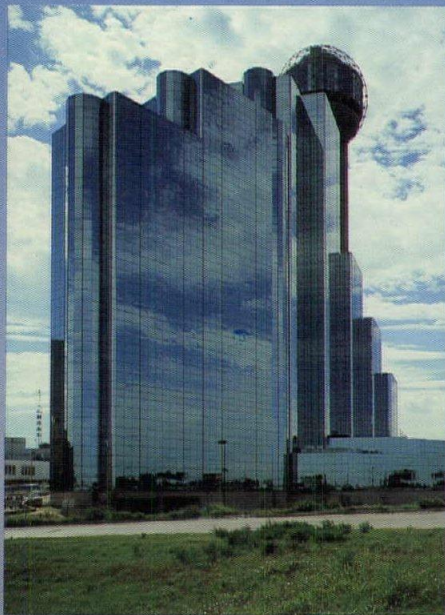


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Books from page 78

Collage City. Colin Rowe and Fred Koetter. (MIT Press, \$22.50.)

Colin Rowe, a literate and eloquent architectural essayist, has collaborated with Fred Koetter in an important discussion of environmental esthetics. While at times witty and fascinating, the book's arcane language reduces its value as a basis of general discussion, except for the "in-group" that enjoys a carefully nurtured elitism.

Yet, it would be unwise to ignore a book that could serve as the text of some kind of architectural counter-revolution. Though architecture is much on the authors' minds, theories of the esthetics of urbanism are the real substance of their interwoven discourse. As much as our situation can stand re-examination, the book also provokes dissent because of the constant reinterpretation of historical facts and ideological concepts to serve the ends of a personal philosophy that could set the clock back for centuries. Also, there is a lot of specious reasoning that would take another volume to deal with.

Much has been made recently of Rowe's position within the revisionist conglomeration called postmodern architecture and his influence on this spreading phenomenon. According to Charles Jencks' evolutionary tree, in which every

personality since the mid-'50s finds a branch, Rowe's place is the "urbanist ad hoc." Actually, adhocism is not necessarily advocated by Rowe and Koetter, who tend to qualify every argument. Under discussion are the contradictions that have evolved in the city.

The authors speak about the "final but logical degradation of utopian and millenarian dogma" and call for a "new order" that is to be "insidiously and gradually introduced. The technique is to be cultivation and not imposition." While this sounds like a fervent statement of free will, one may not forget that the whole argument pertains essentially to buildings that are considered to belong to architecture which is a "discriminating concept."

This is because "the demand that all buildings should become works of architecture (or the reverse) is strictly offensive to common sense." If this semantic exaggeration would prevail, and thus preclude graduation of artistic merit, it would not only serve to denigrate almost all buildings where most people live, but would also cast shadows on the quality of those edifices that may qualify in some respect but not in others. There is no need to postulate that others insist that there is no difference between Lincoln Cathedral and bicycle sheds. The trouble would be that there would not be enough "architec-

ture" left that could "enjoy a lively commerce with its vernacular."

Such discussions may well deteriorate to become trivial and querulous. What is rightly emphasized, however, is that matters of urbanism cannot be dealt with from a "monocular vision," but only by understanding the dialectical processes of history. On the other hand, the authors expose themselves by counting systems approaches as rigid and limiting methods. First they cite Christopher Alexander as an example of worshipping such rigidity, only to admit later that they do not deny the usefulness of "well-concerted information." Throughout the book one cannot help but gain the impression that much of the argument is contrived for the sake of verbal fireworks.

The major juxtaposition consists of rejecting "total planning" and "total design" versus the espousal of "Collage City." Contrary to one of the authors' many forced suggestions, the concept of total design rarely had anything to do with the limited Wagnerian *Gesamtkunstwerk*, which united music and drama, but dealt rather with the desire to design in the knowledge of all the imponderabilia that bear on architecture, be it artistic, technical, social, economic, political or what have you. Though all these philosophical

continued on page 90



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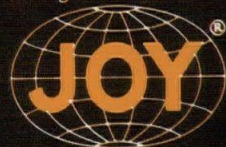
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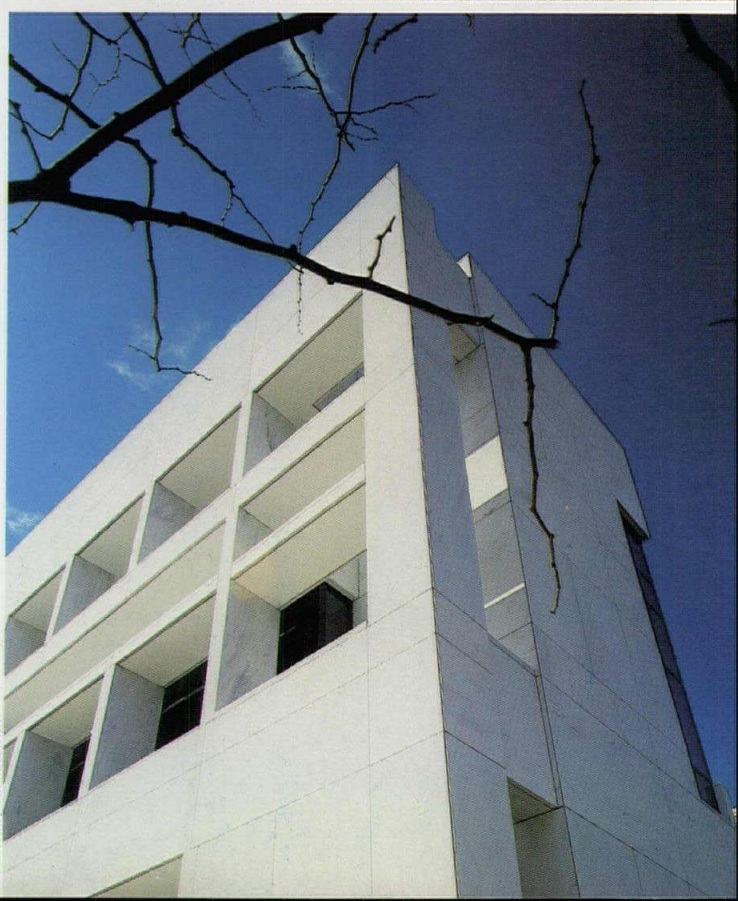
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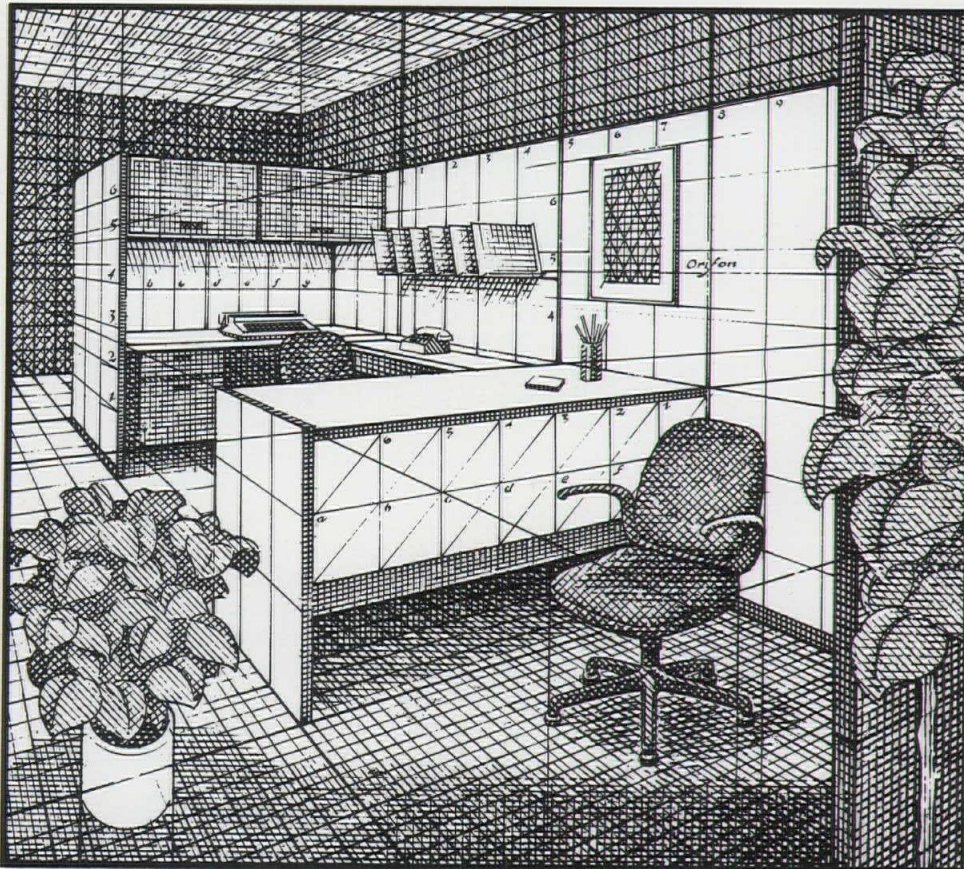
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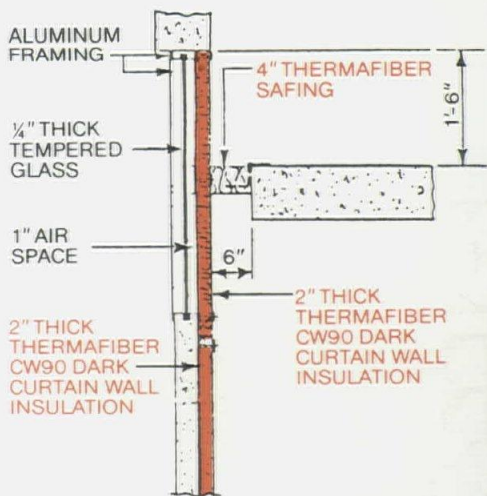
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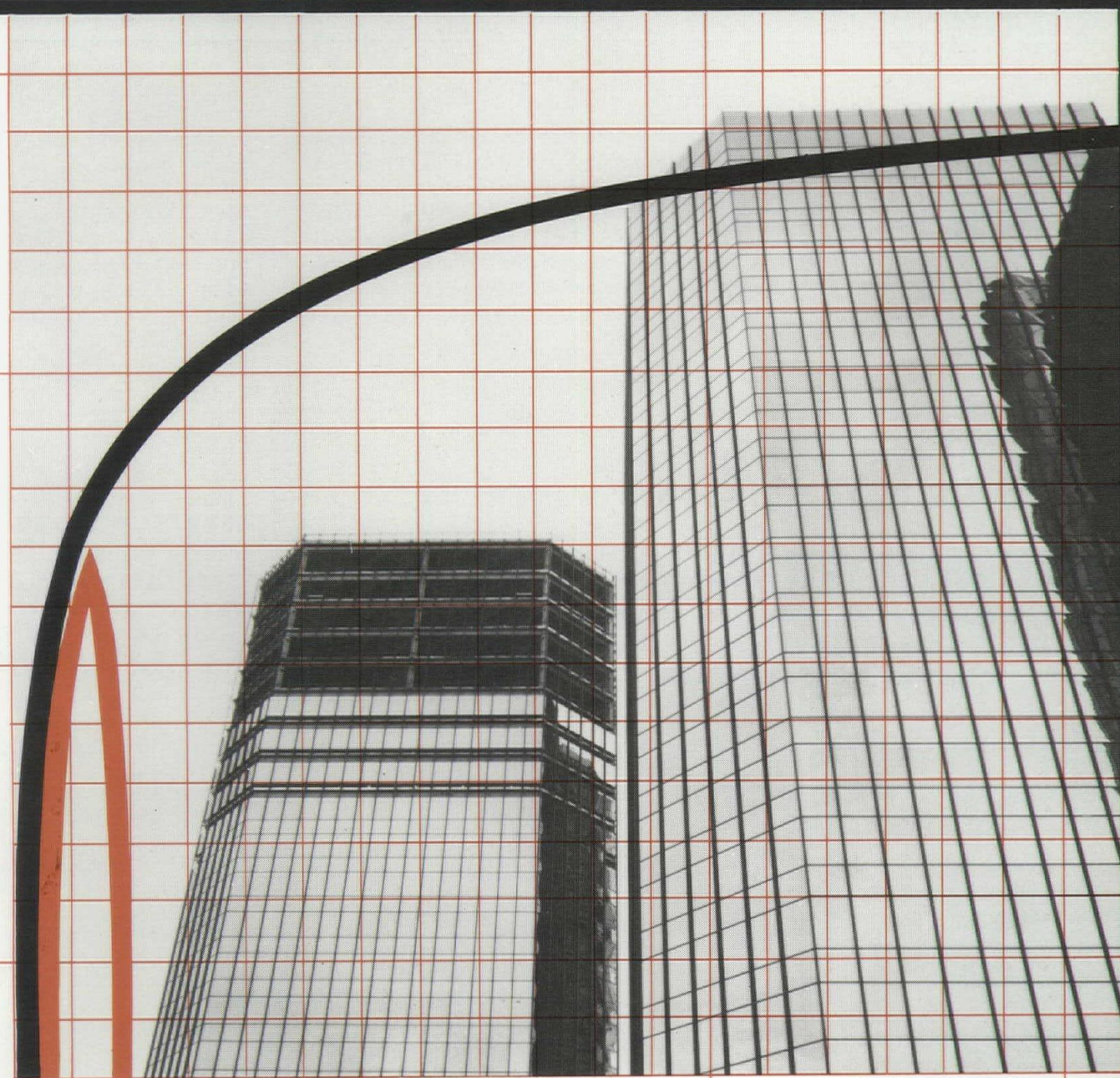


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Books from page 84

concepts can mean many things to many people, the sneering of the authors at a supposedly "unitary and holistic utopian faith" can only point away from anything that is not of an elitist estheticism.

What the authors do not recognize is that utopian city designs have been attempts to crystallize and demonstrate abstract and often romantic concepts. The designs were consciously models of an idea, not of "reality," as we know, for example, from Howard's Garden City.

In general, the authors are more interested in formalistic and monumental settings. Much space is given to the esthetic considerations of such settings in old sections of European cities. The book, with its more than 200 illustrations, draws primarily on examples from the architectural past in order to establish a critical context for the problems of our time.

In all this glitter of *bel-esprit*, it seems odd that the authors can marvel at the city as museum and find Munich to be a prime example. Certainly, Klenze's deadly dull revivalism never contributed much to the "positive concern of culture." By contrast, the elegance and tension in Schinkel's romantic classicism at least reveal a genius that pointed to possibilities far beyond the construction of the city's stylistic form.

Of course, the authors are not satisfied with just a city of neoclassicism. They prefer a "supremely conscientious profusion of references" and a "multiformity."

There is no clear indication of what Rowe and Koetter want to accomplish concretely in filling the needs of millions of people who live in cities. There is no attempt made to assess the social consequences of what is deemed to be desirable in the planning and design of our spatial environment. Thus the vision of "Collage City," perhaps yet another utopia, can be imagined as a situation where careful surgery and selective development would make room for inserts of an unspecified nature. It is a process of building cultural layer upon layer in contrast to clearing brutally large sections of a city in order to superimpose a new concept of the mastermind. If we just added another layer to old cities, we would certainly have all kinds of museums, but we would not begin to solve our own problems, esthetically or otherwise.

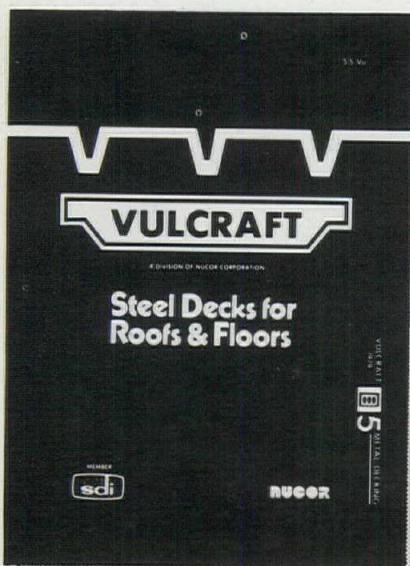
There is a recurrent and hardly suppressed sociopolitical bias in the book, particularly when the authors focus on names such as Hannes Meyer, Walter Gropius, Le Corbusier or Lewis Mumford. "Scratch the surface of modern architecture's matter of factness, simply

for a moment doubt its ideals of objectivity and almost invariably, subsumed beneath the veneers of rationalism, there is to be found that highly volcanic species of psychological lava which, in the end, is the substratum of the modern city." Here we find the poor artist is first accused of barren and systematic design and then has to take the blame for overstating his idealistic understanding of the purpose of design. The whole somewhat paranoid argument strikes me as backward in a musty way.

But toward the end of the book, through the welter of criticism, we see rays of conditioned hope penetrating the often unhappy view of our condition. I wish that the authors could have taken care of their doubts and reservations earlier and come up with a clearer vision. It is not illuminating to stir up the often muddy waters of philosophy in order to make a relatively simple point in esthetics. Esthetic criticism may give new insights, but it does not build a city.

This is an interesting and provocative, albeit controversial, book. The reader has to face the challenge of accepting or rejecting the premises of the authors as being something helpful in understanding the problems of our time. *H. H. Waechter, AIA.* Books continued on page 92

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Books from page 90

Schindler. David Gebhard. (Peregrine Smith, \$9.95.)

This is an expansion of an earlier edition, although the publisher does not say so in the book, except to repeat a foreword by Henry-Russell Hitchcock dated 1971 and to print an excerpt from a laudatory 1973 review on the back of the paperbound book. As admirers of the prior edition know, Gebhard carefully analyzes Schindler's work and the book is replete with line drawings, floor plans and black and white photographs.

Gebhard concludes that Schindler's contribution was twofold. "First, he transformed the symbolic image of the machine (as expressed in high art) into a form or set of forms which would have the impact and vitality of low art; the language to accomplish this was to be found in the everyday building methods used around him in southern California. Second, he sought to transform low art (the building and the way it was put together) into high art; and for him the high art aim of architecture was the creation of space." We are still strongly tied intellectually and emotionally to the International Style, Gebhard says, but "as we gradually perceive that style is packaging and nothing more, Schindler's stock will accordingly

rise in the architectural market." Recent assessments indicate the rise.

The reader who wants to study Schindler will appreciate Gebhard's chronological listing of his major buildings and projects and the bibliography of Schindler's own writings.

The Architectural Index for 1980. Edited and published by Ervin J. Bell, AIA. (Box 1168, Boulder, Colo. 80306, \$13.)

The 13th edition of this reference tool gives the user access to the contents of 11 architectural, landscape, urban design and interior design periodicals, including the AIA JOURNAL. Articles published in these periodicals are listed under general building type, location of the buildings and architect or designer. It is indispensable for quickly locating elusive articles you've forgotten the title of. Back issues to 1951 are also available.

Practical Guide to Home Restoration.

William F. Rooney. (Van Nostrand Reinhold, \$12.95.)

The principal use of this book for the architect would be to give it to a client who is interested in the restoration of an older house, for the professional will already be informed about the guidelines set down. Prepared by the editors of *Hudson*

Home Magazine, the book covers many practical considerations, such as the problems and principles of exterior and interior restoration, how to evaluate what is restorable, how to avoid restoration mistakes and where to get information about financing. One of the chapters, on "Working with the Pros," suggests that "the right architect is the key to a successful restoration job." The book is liberally illustrated, and contains a glossary of terms and a list of sources of information.

Chicago Interiors: Views of a Splendid World. David Low. (Contemporary Books, \$10.95.)

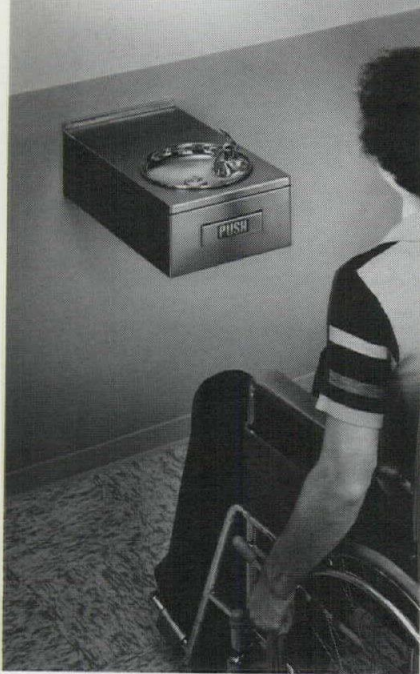
Dedicated to the author's mother "who loved shopping on State Street, watching the races at Washington Park and dancing at the Edgewater Beach Hotel," this is a delightfully chatty picture book, full of the magnificent and silly interiors of old Chicago houses, apartments, theaters, hotels and even railroad cars, many of them now vanished. (Lowe is also the author of *Lost Chicago*.) For a native Chicagoan, this book must provoke the most poignant nostalgia; for anyone, it offers insights into a society that is past, amusement at some fashions that are past and awe at some of the grandeur that is *certainly* past. *Books continued on page 96*

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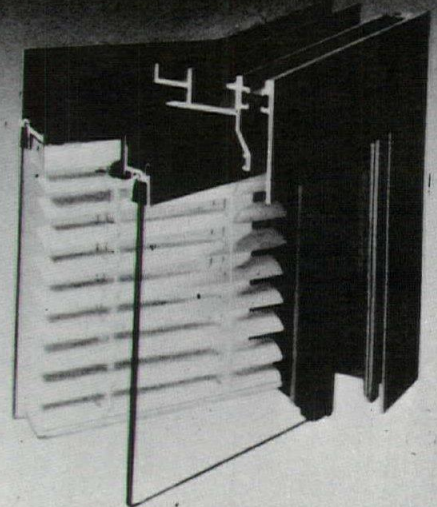


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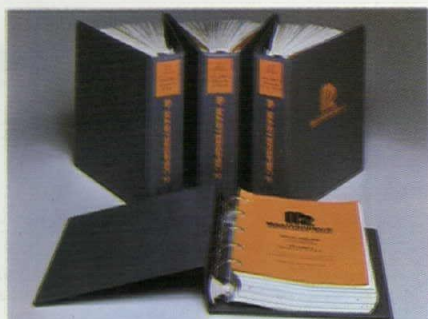
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Energy Planning for Buildings

Michael M. Sizemore AIA
Henry Ogden Clark AIA
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Building owners expect their architects and engineers to have the practical knowledge it takes to translate energy theory into a reliable form of practice.

This book, written by two architects and an engineer who have hands-on experience in energy-conscious building design and redesign, does just that. It presents a proven process that design professionals can use (or adapt) to study the present energy performance of a building, uncover opportunities for energy-conscious improvements, evaluate those opportunities, and see to it that they are carried out to the owner's best benefit.

The book describes in detail a manual technique for calculating energy usage and shows in a sample problem how that technique can be applied. This allows the reader to evaluate any energy design solution, including solar assisted alternatives. It also provides a basis for understanding computer-aided energy estimating techniques.

In developing their work, the authors have recognized that non-energy related concerns such as user comfort, environmental impact and visual appearance are as important in an energy-related design as energy performance itself, and they urge designers to iden-

tify these at the outset of a project and to keep them in mind to the end.

An opening chapter offers a look at the basic concerns of energy planning, including such concepts as comfort; illumination and daylighting; the building envelope; heating, ventilating and air-conditioning; and the very concept of energy itself.

Chapter 2 takes up the roles and responsibilities of the team needed to carry a project through to a successful end. Team members discussed include the owner, the architect/engineer, the building users and operators, energy suppliers, product manufacturers and building officials.

Chapter 3, a key part of the book, shows how to study a building's present performance (or, in the case of a new building, analyze a set of building plans) so the energy planner can examine the impact of any proposed changes suggested as a way to greater energy efficiency.

Chapter 4 pinpoints those opportunities, describing the best way of identifying them. The following Chapter 5 then shows how best to narrow the list of possibilities to those that make the most sense in terms of cost, time, payback and technical feasibility. Two

levels of evaluation are given—"quick" and "detailed."

Chapter 6 shows what is needed to carry out the recommendations stemming from the evaluation, and offers much sound advice to the energy planner and owner for monitoring the results and maintaining the renewed building at a peak of performance.

This chapter is followed by a sample problem which illustrates the procedural steps presented in the various chapters.

Finally, an appendix includes discussions on system response and cost benefit analysis.

There is also a glossary and a practical reference list.

ENERGY PLANNING FOR BUILDINGS fills a serious need for a practical, process-oriented book which energy planners can use, and owners can refer to, as they embark on a new building project or go about redesigning an existing one for greater energy efficiency.

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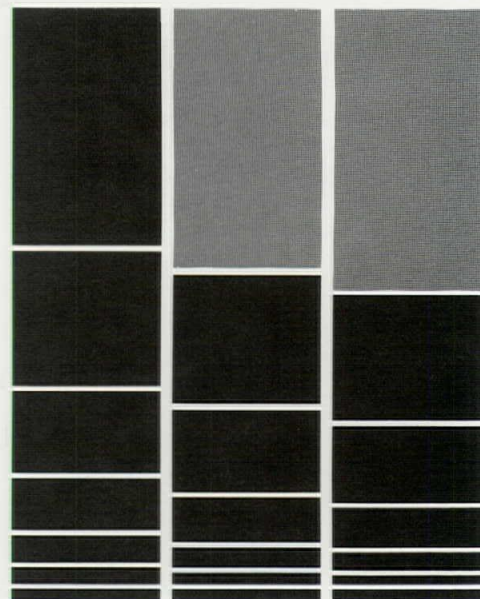
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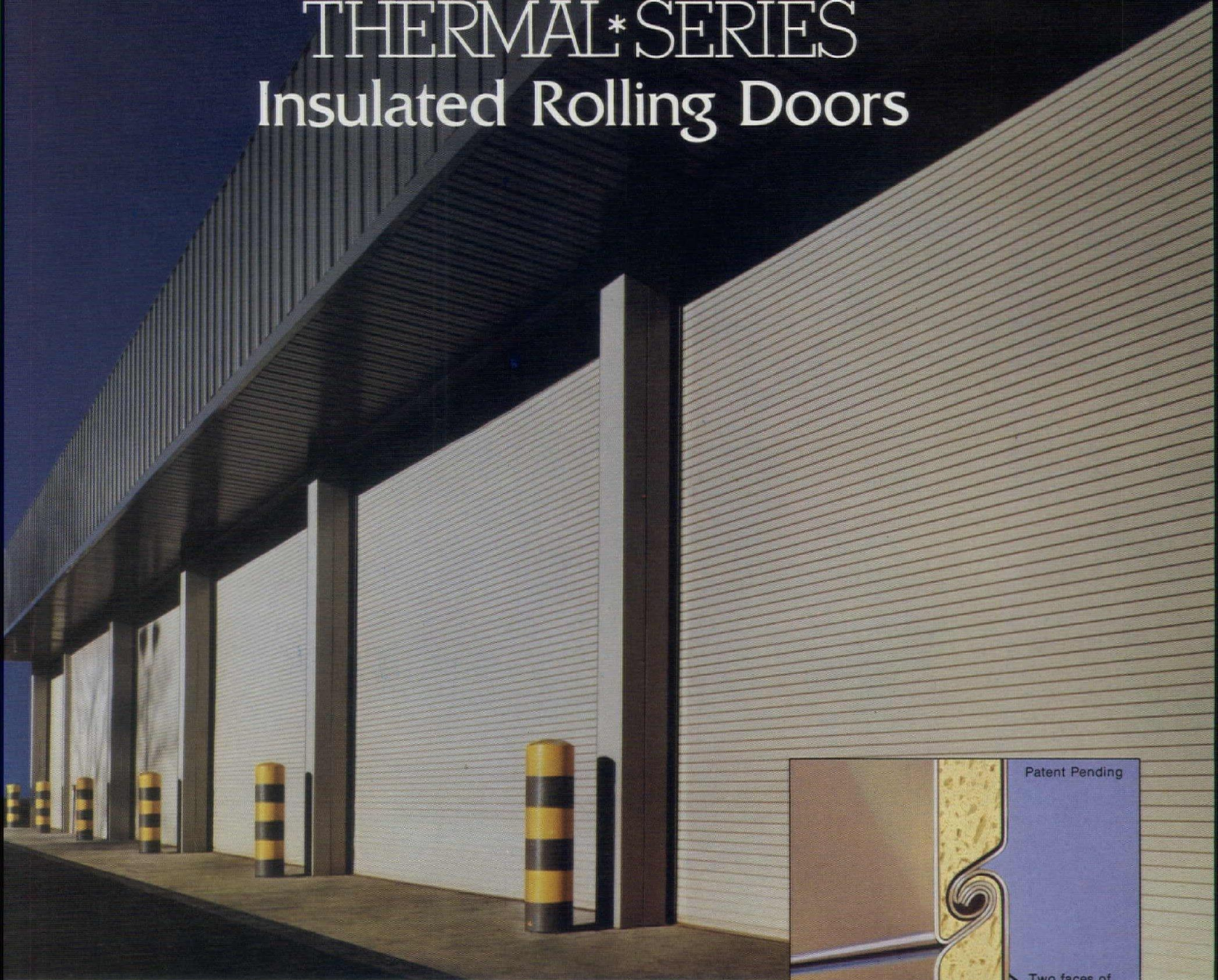
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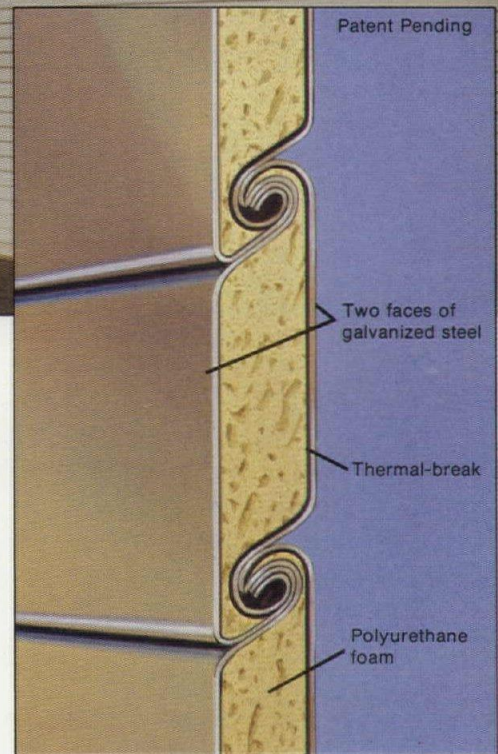
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Meeting the challenge of today...

The Grand Domestic Revolution: A History of Feminist Designs for American Homes, Neighborhoods and Cities. Dolores Hayden. (MIT Press, \$19.95.)

Dolores Hayden, whose *Seven American Utopias* (MIT Press, 1976), alerted many modernists to the "architecture of communitarian societies," has now produced a striking volume about what she calls the "material feminist revolution" of a hundred years ago and up to the period of the 1920s. Lest we be sunk in bemused study of the wild ideas for various "kitchenless homes" (a phrase to conjure with), let us at the outset point to the firmly held beliefs of this revolutionary group: that women should be paid for domestic labor and that public eating places and day-care centers should be "givens" in an egalitarian society.

The appendix of six pages telling of "Cooked Food Delivery Services Founded 1869-1921" is interesting in itself, showing organizer, technology, costs and why discontinued. It is worth careful study. The extent to which the organization of space in domestic housing should or could be completely restudied is as fascinating today as it was in the post-Civil War period.

Hayden's domestic revolutionists did

now ready to concern themselves with these issues? Few have any idea of the groundwork already done by Charlotte Perkins Gilman, Melusina Fay Peirce, Mary Livermore, Ethel Puffer Howes and others in attempting to transform the spatial design and material culture of the American home. Hayden has given us a provocative study which applies to today's problems faced by the majority of two-job families, and by architects who care about these clients. *Sara Holmes Boutelle, Founder/Director, Julia Morgan Association, Santa Cruz, Calif.*

Bob Vila's This Old House. Bob Vila. (Dutton, \$21 hardbound; \$13.50 paperback.)

"This Old House" is the title of an award-winning television series presented on PBS-TV. This book, a companion to the TV programs, is by Boston-based contractor Bob Vila who, says the publisher, was the star in the programs devoted to the rehabilitation of the Bigelow house in Newton, Mass. The real star, however, appears to be the handsome house, designed by H. H. Richardson, which Vila converted into condominium units. The book actually goes beyond the TV shows, giving the reader basic infor-

tion, covering everything from financial considerations to sewage disposal. The book, handsomely illustrated with more than 200 color photographs, will delight any client who is about to become involved in the rehabilitation of an old structure.

Japanese Gardens: Design and Meaning. Mitchell Bring and Josse Wayembergh. (McGraw-Hill, \$23.50.)

As this book testifies, Japanese gardens are surely among man's most sensitively harmonious landscape designs. The bulk of the book focuses on 10 gardens built in Kyoto before 1650. It was in Kyoto, the authors say, that Japanese garden art "reached its zenith." Each garden is placed in its historical context and is described both in words and with photographs and drawings. The other two parts of the book—much briefer—consider such matters as Japanese landscape traditions, Chinese influences, Japanese synthesis, the principles of design and construction details. The authors, who are well versed in their subject, spent three years at Kyoto University on research for the book under grants from Japan's ministry of education.

Books continued on page 98

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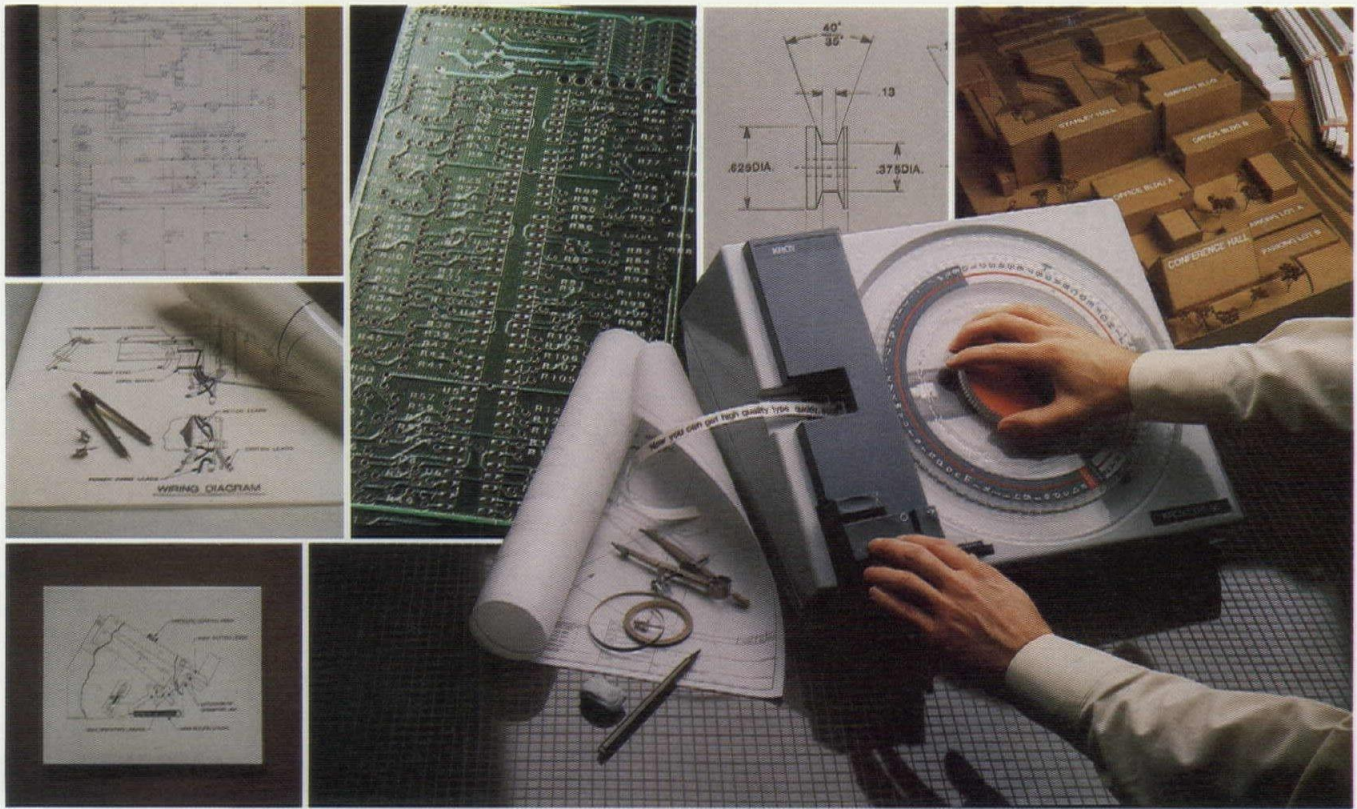
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Books from page 96

Construction Cost Estimates. C.R. Tumbler. (Wiley, \$27.95.)

The author of this book is a general contractor in California, with more than 35 years' experience in bidding and construction. His book is a practical manual on the cost estimating process. In the first section he discusses such basics as contract documents, the role of subcontractors, the procedure on bidding day and estimating the time required for completion. Parts 2 and 3 are given over to in-depth discussion of unit costs and general job costs. The remainder of the book is devoted to cost estimates on specific jobs, such as concrete structures, roadway excavation and earthwork. There are numerous tables based on actual cost records.

A Century of Chair Design. Frank Russell, editor. (Rizzoli, \$37.50.)

A thorough, useful survey of chair design since 1850, particularly distinguished by beautiful line drawings by John Read. As with any such survey, one can quibble about selections: Why was the Hardoy "sling" chair, so ubiquitous in the '50s, omitted, and why were some particularly nasty pieces from the 1951 Festival of Britain included? But the last century has seen a remarkable development in design, and this record of chair design, relatively uncomplicated by architecture's reactions to social and economic upheavals and changes in functional requirements, provides a useful account of that development. □

DEATHS

V. Bohm, Rockaway, N.J.
Miles L. Colean, FAIA, Washington, D.C.
Walter W. Duson, Houston.
Charles D. Faulkner, Downers Grove, Ill.
Louis R. Fosner, Pittsburgh.
John E. Haley, Newnan, Ga.
Raymond Viner Hall, Port Allegany, Pa.
G. Thomas Harmon III, FAIA, Columbia, S.C.
Donald A. Hawkins, Mobile, Ala.
Jens Fredrick Larson, Winston-Salem, N.C.
Merrill Clifford Lee, FAIA, Richmond.
William G. Lyles, FAIA, Columbia, S.C.
John E. Moore Jr., Texarkana, Tex.
Robert L. Murphy, St. Louis.
Kenneth E. Nelson, Ballwin, Mo.
C. Edgar Newcomer, Harrisburg, Pa.
Elmer C. Roberts, Oak Park, Ill.
Lloyd Ruocco, FAIA, San Diego.
J. Michael Schneider, York, Pa.
Herbert H. Sobel, Chicago.
Wendell R. Spackman, Orinda, Calif.
John F. Staub, FAIA, Houston.
D. Paul Witmer, Hershey, Pa.

BRIEFS

Stephen A. Kliment, FAIA, author, editor and graphics consultant in New York City, has been named senior editor of the Whitney Library of Design.

Edward Larrabee Barnes, FAIA, was awarded the Thomas Jefferson Memorial Foundation medal in architecture by the University of Virginia.

The new president of the American Planning Association is Irving Hand, professor of state and regional planning and director of the Institute of State & Regional Affairs, Pennsylvania State University.

The Laminator's Safety Glass Association is launching an awards program open to all U.S. and Canadian architects who have completed a project in 1981 that contains at least one laminated safety glass application. The prize is a \$1,500 scholarship awarded to the architectural school of the winner's choice. Entries must be post-marked by Oct. 31. For information, contact: LSGA Design Scholarship Award, 700 Van Ness Ave., Fresno, Calif. 93721.

The 1981 Rotch scholar is William A. McGee, of Cambridge, Mass. The 1981 second Rotch scholar is David Collins of Boston and the alternative is John M. Reimnitz of Cambridge, Mass. The Rotch Traveling Scholarship is administered by the Boston Society/AIA.

Professor John G. Williams, FAIA, was recently honored by the Arkansas Chapter/AIA through the establishment of an annual \$1,000 fellowship to be awarded in his name to a student at the school of architecture, University of Arkansas.

New members of the Octagon committee of the AIA Foundation are James C. Massey, director of the Historic House Association of America; Samuel A. Chambers Jr., architectural historian at the Historic American Buildings Survey, and Mrs. Douglas Sprunt, a Washington, D.C., community leader.

William R. Ratliff, Houston, Tex., has been elected the 1981-82 president of the American Consulting Engineers Council.

A design tour of Germany, Italy and Switzerland is being sponsored by the Institute for Continuing Studies in Design, Management and Communication. The 17-day tour will concentrate on tracing the roots of today's graphic and industrial design. For information, contact the Center for Design Arts Technology, Institute for Continuing Studies in Design, Management and Communication, 1112 Sixth St. N.W., Washington, D.C. 20001.

The architecture of Andrea Palladio is featured in a film available from Fogg Fine Arts Films, Box 315, Franklin Lakes, N.J. 07417.

Papers are sought for a new annual design publication to be published in Spring 1982 by the College of Architecture, University of North Carolina, Charlotte. Articles should address the forms and meanings that the idea of the city holds and has held in the South. Contact: Reconstruction, College of Architecture, University of North Carolina at Charlotte, Charlotte, N.C. 28223.

The American Academy in Rome has awarded fellowships in architecture and the design arts to Robert Sherman Kahn, David B. Middleton, William McMinn, FAIA, Fred Travisano, AIA, Paul Steinberg and Emily Whiteside. In addition, the Steedman/American Academy fellowship has been awarded to Craig Walton.

The International Council for Building Research, Studies and Documentation is offering two new publications: *Building Research and Practice Journal* (\$52) and the fourth edition of the *Directory of Building Research, Information and Development Organizations*. Contact: CIB General Secretariat, Weena 704, P.O. Box 20704, 3001 JA, Rotterdam, Netherlands.

Information on postwar Germany is being sought from architects who went to that country after the war under the auspices of one of the military services, the Foreign Economic Administration or the Department of Commerce. Of interest is nontechnical information such as photographs, memoranda, letters, personal reports. Contact: Professor John Gimbel, Department of History, Humboldt State University, Areata, Calif. 95521.

The developer of the Willard Hotel in Washington, D.C., has been granted a six-months extension to arrange financing for restoration of the historic Pennsylvania Avenue landmark. Stuart S. Golding now has until Dec. 7 to find money, estimated at \$90 million, to begin construction on the project, designed by Hardy Holzman Pfeiffer Associates. The Willard is a pivotal part of the Pennsylvania Avenue Development Corporation's redevelopment plan for the avenue from the Capitol to the Treasury (see April, p. 81).

An international design competition, "House for Longer Life," is being sponsored by the Misawa Homes Institute of Research and Development. The competition is for housing and living patterns necessary to realize "a sound and longer

continued on page 100

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Briefs from page 98

life." For information, contact: Misawa Homes Institute of Research & Development, Design Competition '82, 2-4-5, Takaido Higashi, Sugunami-ku, Tokyo 168. Entries deadline is Jan. 10, 1982.

A&E Job Line is a monthly bulletin of senior level professional positions available with architectural and engineering firms. The bulletin is free to job hunters; employers who wish to list open positions pay a one-time annual fee.

I. M. Pei, FAIA, is the recipient of Brandeis University's 1981 creative arts award in architecture.

John O. Merrill, FAIA, of Skidmore Owings & Merrill, is the recipient of the National Conference of Christians and Jews' Brotherhood Award for distinguished service in the field of human relations.

The 1981 catalog of standards is now available from the American National Standards Institute. The publication, which lists more than 10,000 current standards approved by and available from ANSI, can be obtained for \$8.50 from the Sales Department, ANSI, 1430 Broadway, New York, N.Y. 10018.

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continued on page 102

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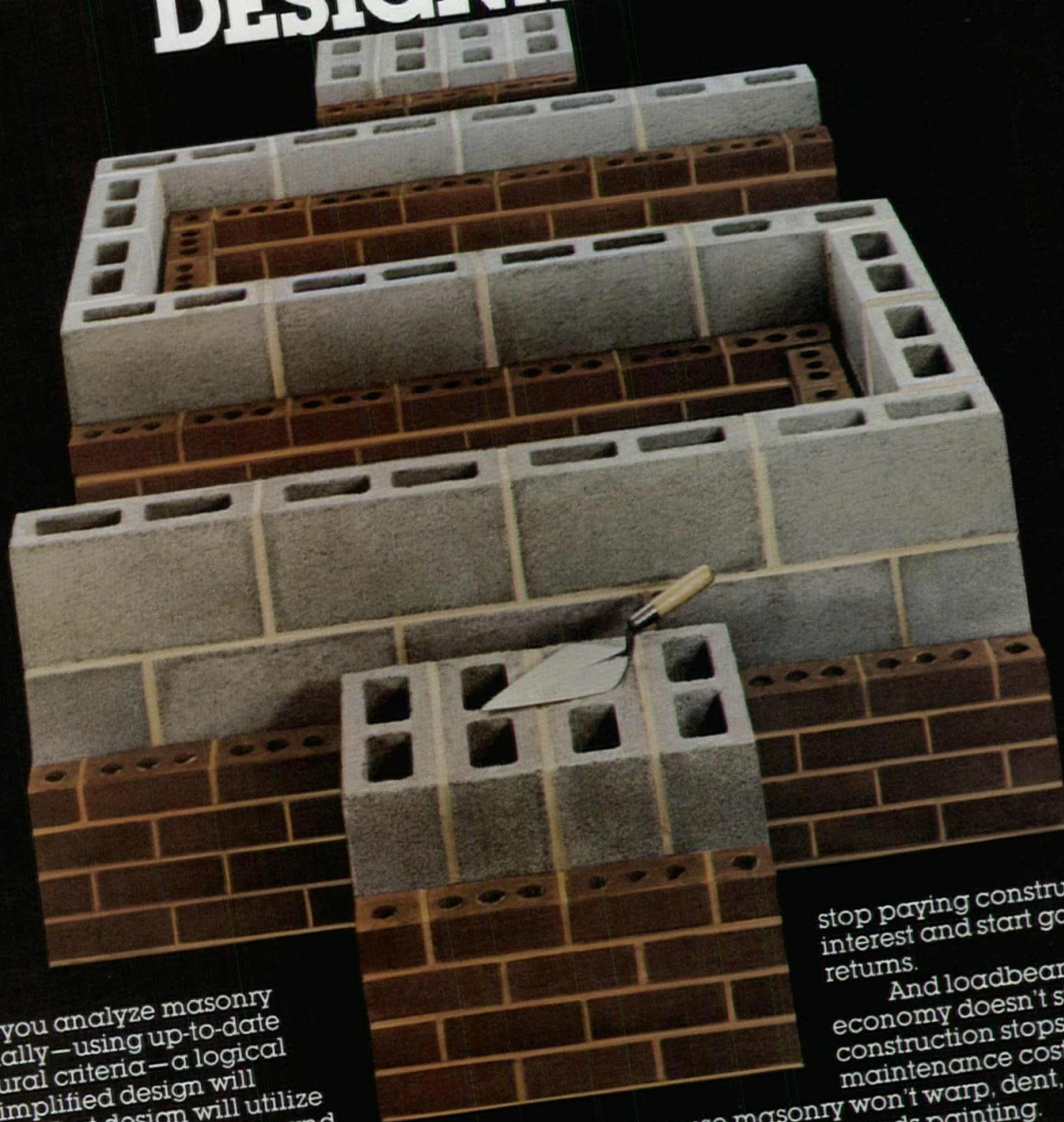
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and one CAD/CAM software application package. The system is available in a number of packaged versions such as mechanical design and drafting and integrated circuit design. (Computervision Corporation, Bedford, Mass. Circle 179 on information card.)

Triple Glazed Doors.

Three panes of tempered glass are separated by two one-quarter inch air spaces sealed with butyl glazing tape and silicone spacers. The glass doors are designed to hold heat loss to a minimum for thermal efficiency for passive solar heating. (Anderson Corporation, Bayport, Minn. Circle 186 on information card.)

Window Overglazing.

A Lexan sheet of unbreakable polycarbonate provides an overglaze that can be adapted to different window sizes and configurations. When connected to the existing windows, the units produce a sealed double-walled thermal window that contains a dead air space. (Shenandoah Studios, Front Royal, Va. Circle 176 on information card.)

Aperture Card Reader.

Front focus control, uniform image resolution and a reference system for existing

projects are features of a new aperture card reader designed for draftsmen, engineers and technical specialists who use micrographic aperture cards to access blue print data. (Micro Design, Hartford, Wis. Circle 170 on information card.)

Carpet.

Nouveautek is a "public area" carpet designed for heavy traffic areas. The Dupont Antron III fiber carpet has a static control primary backing, water resistant latex and a denser secondary backing. It is available in 24 colors. (Customweave Carpets, Fountain Valley, Calif. Circle 178 on information card.)

Vinyl Framed Windows.

Maxitherm windows have seven-eighths-inch double glazed insulating glass encased in a vinyl frame. The vinyl only allows a heat loss of 1.3 Btus per hour compared to 312 Btus per hour for steel and 1,410 Btus per hour for aluminum. (Vinyl Sash Manufacturing Co., San Carlos, Calif. Circle 165 on information card.)

Desks.

The 900 Executive Burl Edition desks feature inlaid walnut burl tops. The desks are available with optional decorative chassis molding and in top sizes of

42x86, 42x78 and 36x72 inches. (Keller Crescent Co., Evansville, Ind. Circle 164 on information card.)

Stacking Chairs.

The model 8830 stack chair has an all-welded steel chrome frame with a welded-on ganging device for fast set-up of chair rows. The seats and backrests are covered with high density polyurethane foam pads. (Virco Manufacturing Corporation, Torrance, Calif. Circle 163 on information card.)

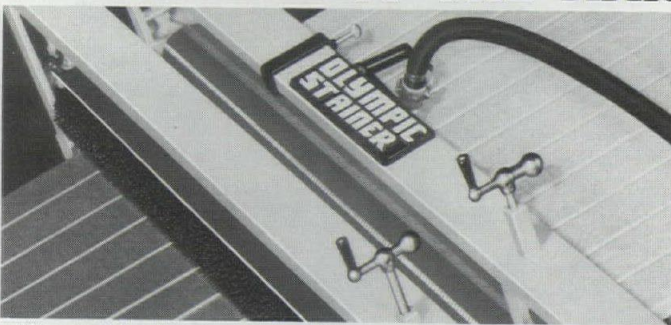
Wall Tiles.

Pigskin Suede wall tiles are said to be waterproof, stain resistant and colorfast. The suede is permanently bonded to lightweight aluminum, and the tiles come in four sizes and 18 hues. (Lucia Leathers, Richardson, Tex. Circle 162 on information card.)

Lighting.

Downlights and accent lights are specifically designed for major commercial buildings and use dimmable high-intensity lamps. A dichroic reflector is combined with a borosilicate glass lens to remove 99 percent of ultraviolet and infrared radiation in the visible beam. (Capri Lighting, Los Angeles, Calif. Circle 161 on information card.) □

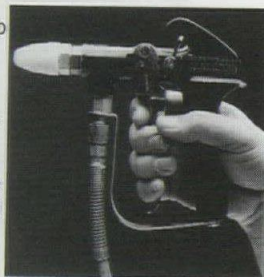
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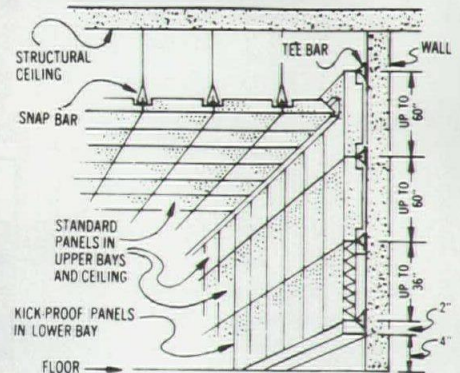
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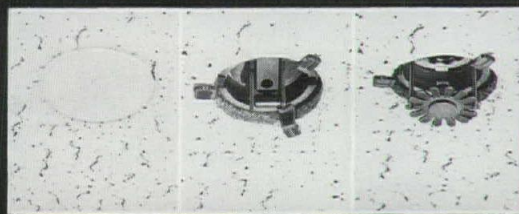
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