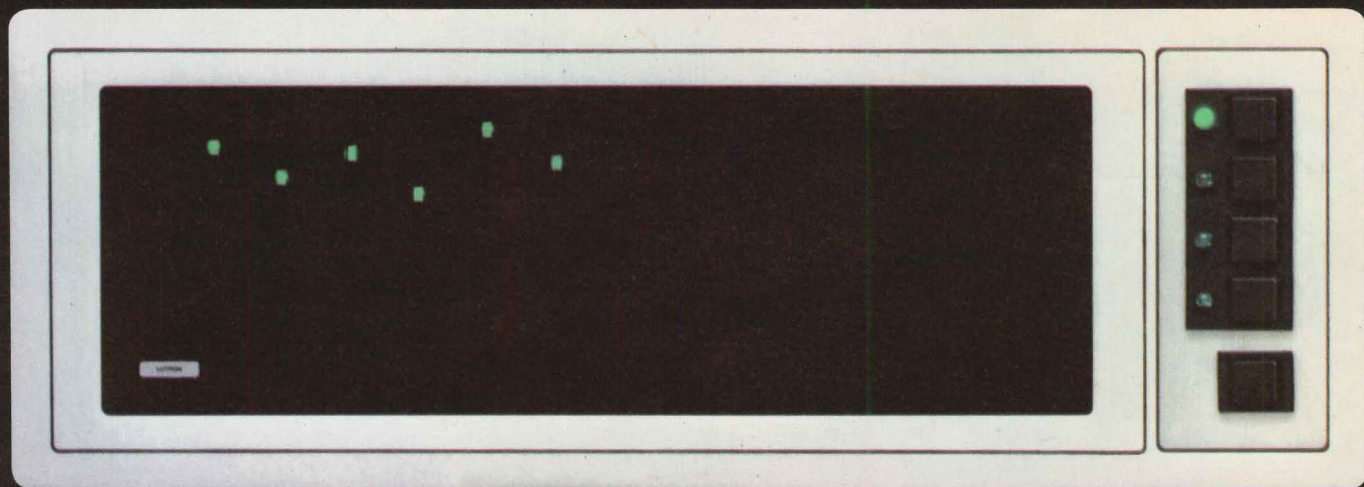


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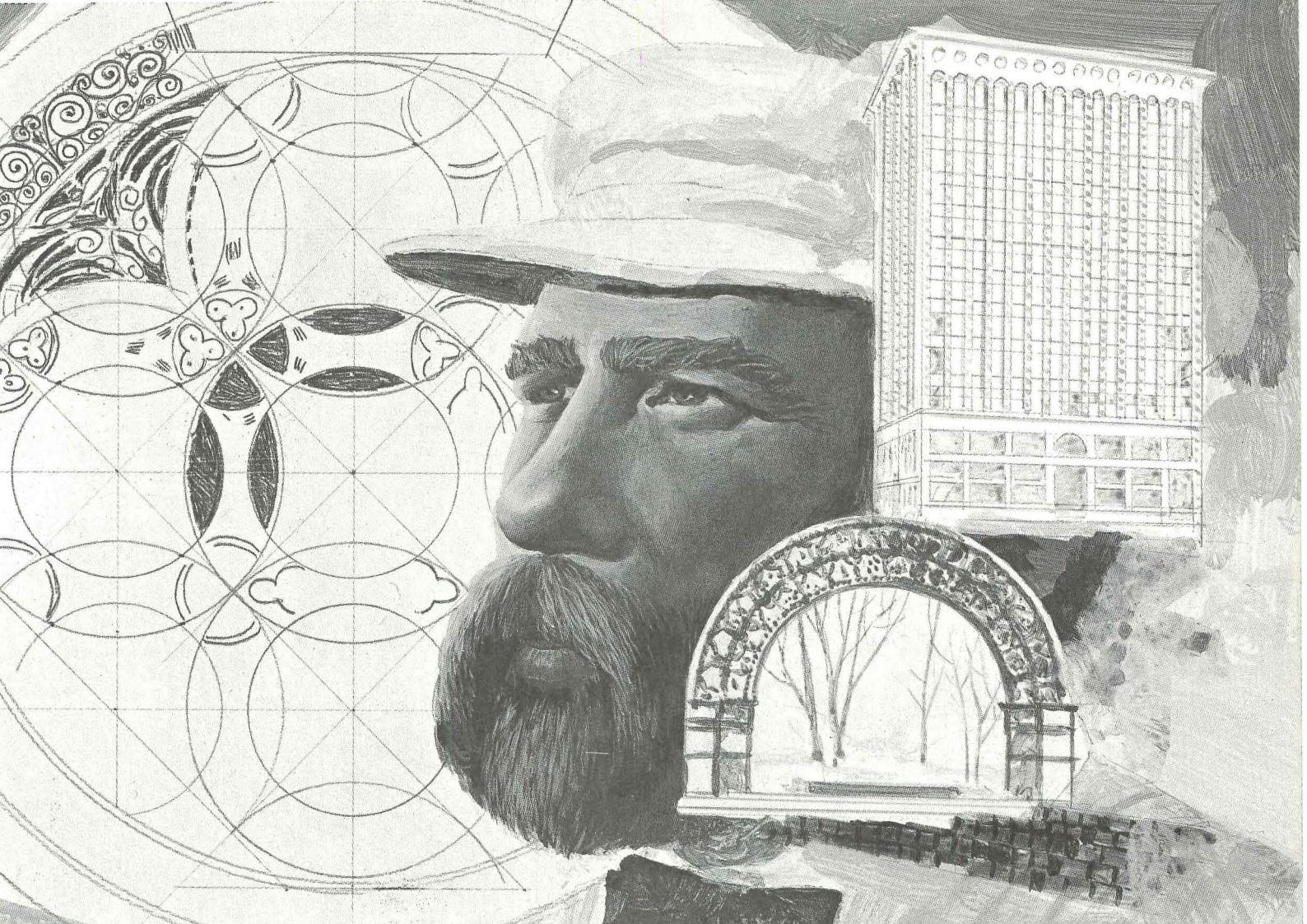
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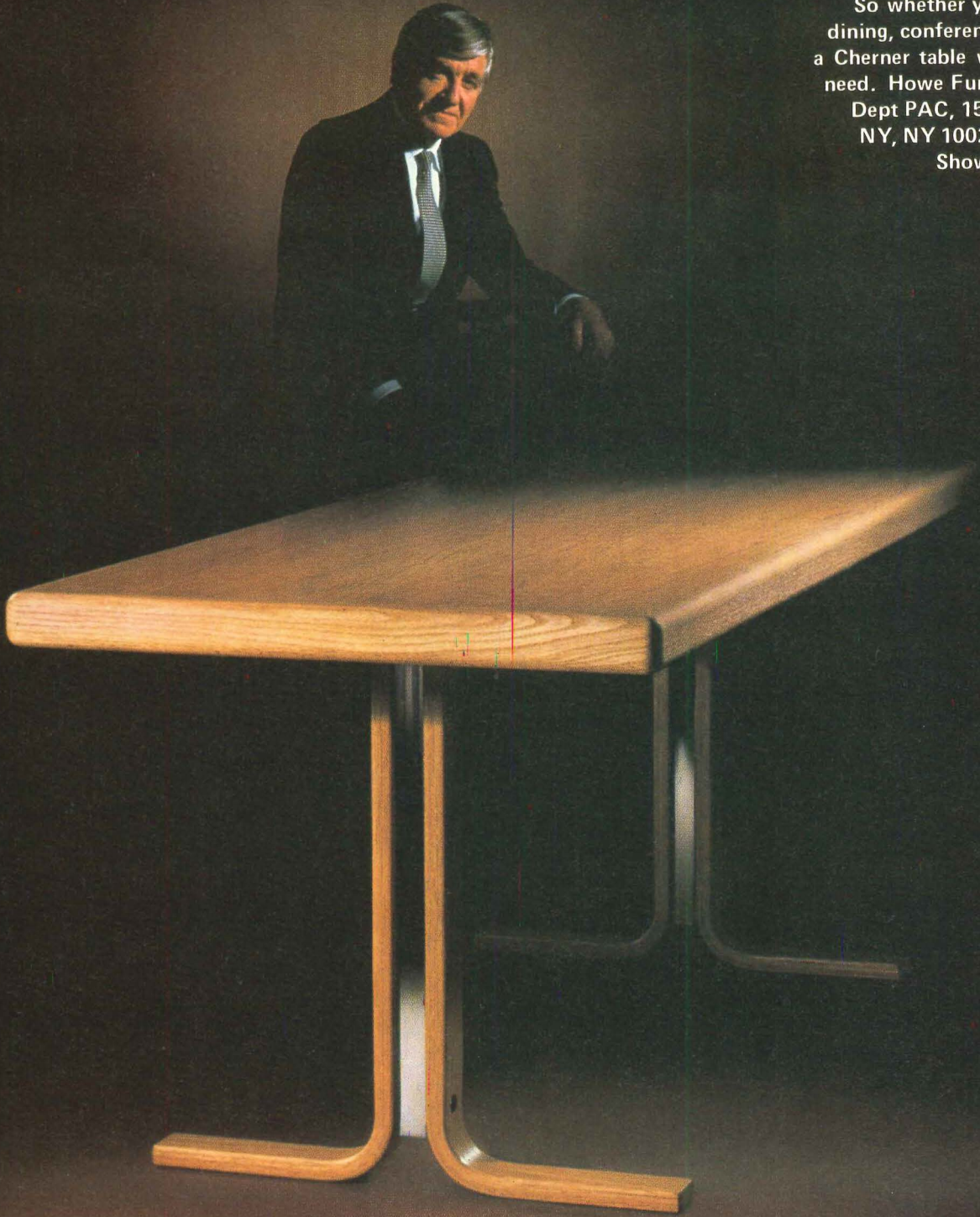
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Cover: Watercolor by Jean-Michel Folon for Knoll entitled "Treatment of a Familiar Theme."

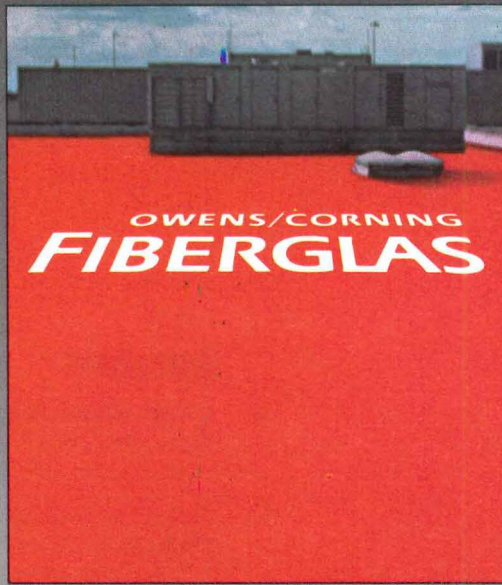
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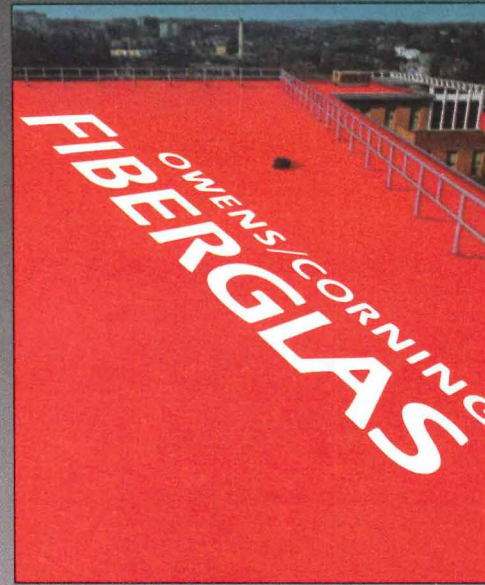
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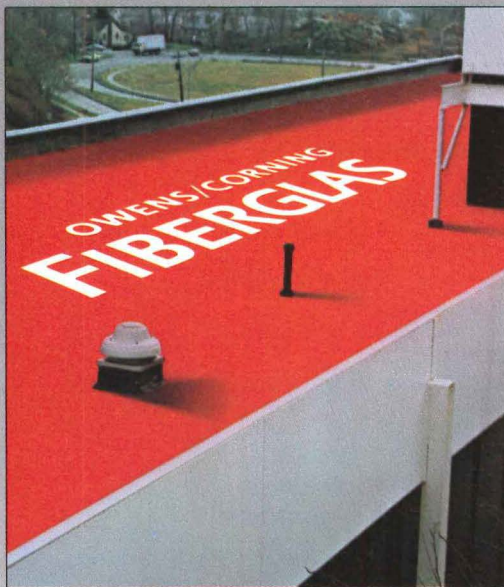
Double-layer Fiberglas insulation over FURI.
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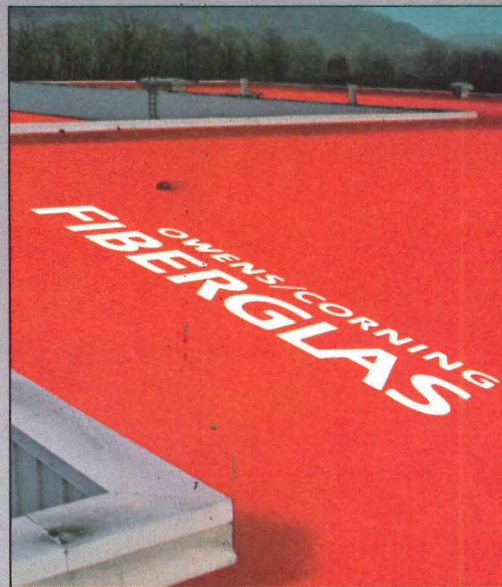
Single-layer Fiberglas insulation.
3 plies Perma Ply-R. Perma Cap® surface.



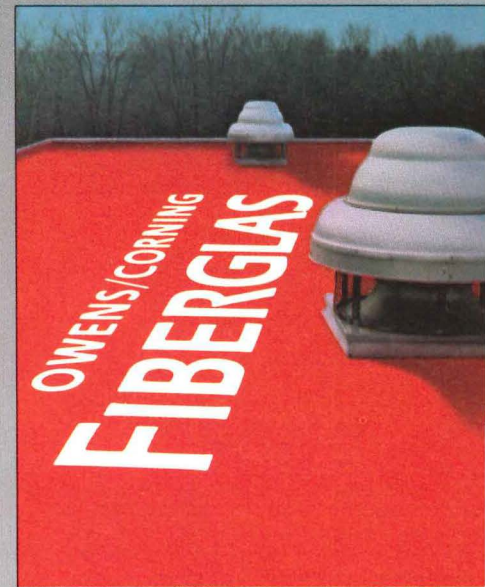
Single-layer Fiberglas insulation with taped
joints. 2 plies Perma Ply-R. Gravel surface.



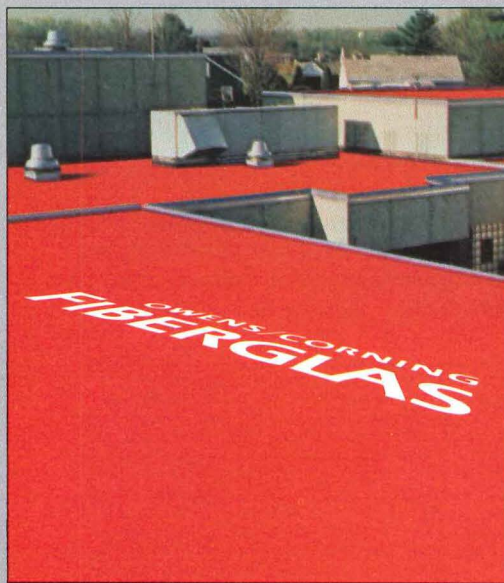
Double-layer Fiberglas insulation.
4 plies Perma Ply-R. Smooth surface.*



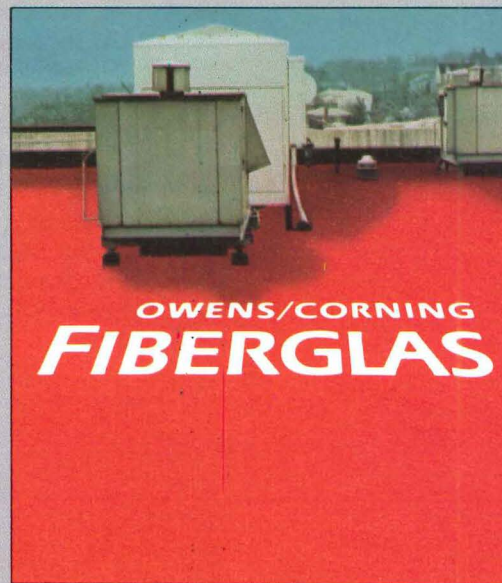
Single-layer FURI. Perma Ply No. 28 perf. base
sheet. 2 plies Perma Ply-R. Gravel surface.



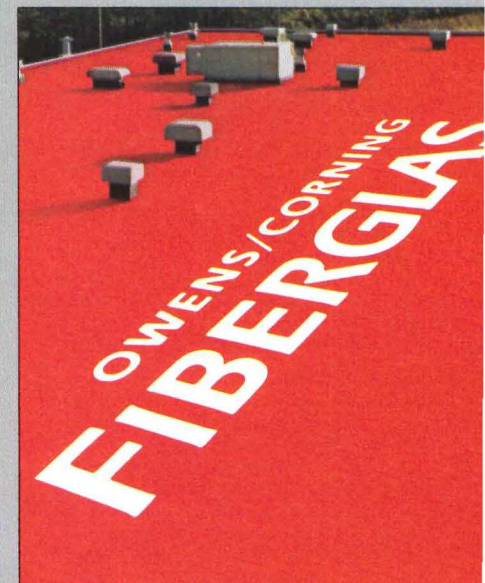
Single-layer Fiberglas insulation. New Perma
Plus-2® system.† Smooth surface.



Double-layer Fiberglas insulation. New Perma
Plus-2 system.† Gravel surface.



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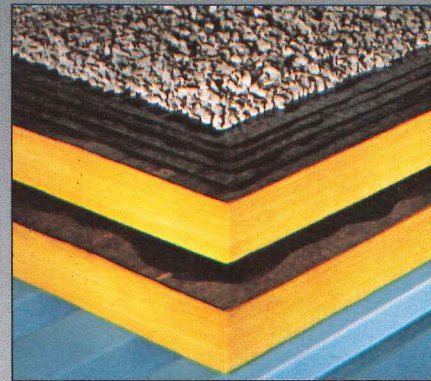
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EVENTS

May 2-4: 10th National Technical Institute of Docks and Marinas, Department of Engineering, University of Wisconsin, Madison.

May 4: Seminar on Urban Multi-Family Housing, Boston. Contact: Institute for Energy Conscious Design, 320 Newberry St., Boston, Mass. 02115.

May 5-6: AIA Energy in Design, Process Workshop, Seattle, Wash. Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

May 5-6: Design ADAC '83, Atlanta. Contact: Pat Adams, Atlanta Decorative Arts Center, Suite 2200, 240 Peachtree St. N.W., Atlanta, Ga. 30043.

May 5-7: Seminar on Testing, Balancing and Energy Auditing HVAC Systems, Chicago. Contact: Wendes Engineering, 500 E. Higgins, Suite 206, Elk Grove Village, Ill. 60007.

May 6-7: AIA Energy in Design, Practice Workshop. (Repeat workshop June 10-11, Pittsburgh.) Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

May 6-7: AIA Energy in Design, Techniques Workshop, Georgetown, Del. Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

May 9-11: North American Session of the Third International Colloquium on Stability of Metal Structures, Toronto. Contact: Structural Stability Research Council, Fritz Engineering Laboratory, Lehigh University, Bethlehem, Pa. 18015.

May 11: Seminar on Indoor Environmental Quality, Boston. Contact: Institute for Energy Conscious Design, 320 Newberry St., Boston, Mass. 02115.

May 12-13: Seminar on Evaluation of Structural Failures, Department of Engineering & Applied Science, University of Wisconsin, Madison.

May 12-15: Workshop on Successful Rehabilitation, Baltimore. (Repeat workshop June 9-12, Pittsburgh; June 23-26, St. Louis.) Contact: Education Services/Successful Rehabilitation, National Trust for Historic Preservation, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

May 13-14: Architects and Real Estate Development Conference, Monterey, Calif. Contact: California Council/AIA, 1414 K St., Suite 320, Sacramento, Calif. 95814.

May 13-15: Symposium on The Design of the Fitting Environments, University of Pennsylvania, Graduate School of Fine Arts.

May 13-15: ASC/AIA Northwest Regional Conference, Eugene, Ore. Contact: Don Logue, ASC/Department of Architecture, University of Oregon, Eugene, Ore. 97403.

May 18-20: "Bridge to the Future," Symposium Commemorating the Centennial of the Brooklyn Bridge, New York City. Contact: Conference Department, The New York Academy of Sciences, 2 E. 63rd St., New York, N.Y. 10021.

May 22-25: AIA National Convention, New Orleans.

May 23-24: Seminar on Adaptive Reuses of Historic Buildings, Memphis. Contact: Judy Daniel, Elkington & Keltner Development Inc., P.O. Box 171285, Memphis, Tenn. 38117.

May 26-27: Course on Wind Effects on Buildings and Structures, University of Missouri-Columbia, Kansas City.

May 30-June 3: Second International Congress on Building Energy Management, Iowa State University, Ames, Iowa. Contact: James E. Woods, 110 Marston Hall, Iowa State University, Ames, Iowa 50011.

June 6-12: Second World Biennale on Architecture, Sofia, Bulgaria. Contact: Union of Architects in Bulgaria, International Liaison Committee, 3 Evlogy Georgiev St., Sofia 1504 Bulgaria.

June 28-July 5: International Conference on Passive and Low Energy Architecture, Crete, Greece. Contact: PLEA 83, 36 Bedford Square, London WC1B 3ES UK.

LETTERS

Structure of the Tacoma Building: Please permit me to correct a few popular misconceptions pertaining to the Tacoma Building that were contained in Richard Guy Wilson's otherwise excellent overview of Holabird & Root (see Feb., page 43). The Tacoma Building, like the Home Insurance Building, was *not* "one of the first all frame buildings." Both buildings incorporated continuous masonry bearing walls of significant proportions. The first all-iron framed building in Chicago didn't appear until after Minneapolis architect Leroy Buffington popularized the all frame concept by publishing a pro-

posed 28-story building (twice as high as any existing building in the U.S. at the time) in the March 1888 issue of *Northwestern Architect*.

As floor plans of the Tacoma show, four continuous interior bearing walls, up to 36 inches thick, were used not only to carry floor loads to minimize the size of columns in the facade, but also to provide lateral rigidity. Therefore, there was no need for any other wind bracing, contrary to that suggested in the article. Also, the framing was not "full steel." The columns were cast iron and the majority of the girders were wrought iron. Steel was used very sparingly, apparently reserved for the smaller beams. Lastly, the exterior cladding was not "almost entirely terra cotta." Only the horizontal banding at each floor was terra cotta. The working drawings show all of the vertical piers, which comprise a significant portion of the opaque surface area, as pressed brick.

The Home Insurance and the Tacoma buildings were the first experiments, after the 1871 Chicago fire, in utilizing fire-proofed iron framing at the exterior of a tall building. However, by no means do either deserve the claim erroneously made by many historians that they were *completely* skeleton framed structures.

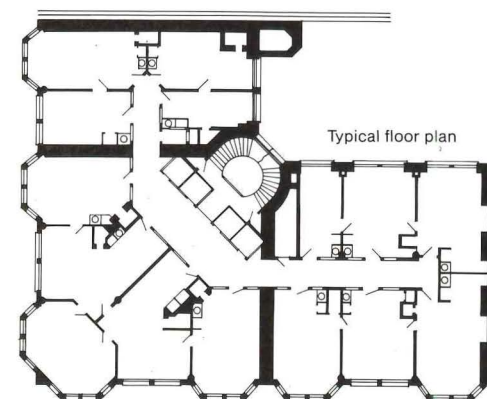
Gerald R. Lars

Assistant Professor of Architecture
University of Cincinnati

Richard Guy Wilson responds: Mr. Lars is correct. I did oversimplify a complex building. I am especially glad to see this corrected by a former student of mine.

'Commitment to the Studio': I cannot remain silent on an article by Robert Campbell in the December 1982 issue (page 9). The article was in reference to a conference sponsored by the AIA committee on design at Harvard's Graduate School of Design. The reported result of the conference: "a deep commitment to the concept of the traditional design studio."

As a recent graduate of Texas A&M University (bachelor of environmental design) I have been exposed to the design
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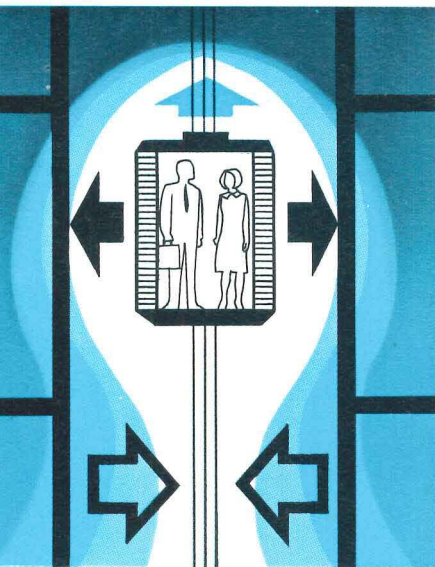
Addenda: The alternative plan for the Chicago 1992 World's Fair (Feb., page 2) was designed by a group that included Paul Janicki, Max Underwood, Paul Danna, Steve Lacker, and Stuart Cohen & Anders Nereim.

Viking Press reports a "major mistake" in its expanded reissue of *Gaudi: The Visionary* by Robert Descharnes and Chris Prevost. The author of the essay on "The American Hotel," to which reference was made in our review (see Dec. '82, page 89), is Robert Descharnes and not George R. Collins as cited.

CAVITY SHAFT WALL:

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From a life-safety point-of-view, walls that enclose elevator, stairwell and mechanical shafts are the most important walls in a building, whether the building is four or 40 stories tall.



Pressure effect of elevators in a shaft causes oscillations in the shaft wall that require a wall with well-designed, thoroughly-tested details.

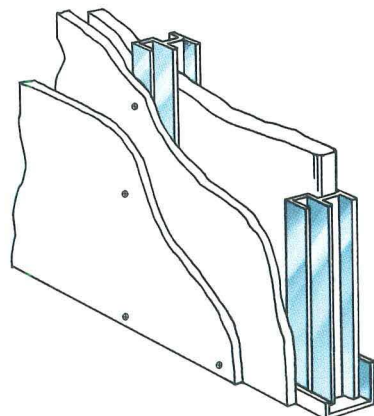
In the event of fire, stairwells are the primary means of human escape or rescue. Elevators are used by fire fighters to reach a floor near the fire. Mechanical shafts are vital channels for vertical communication, power, water, fresh air and exhaust. These shafts are truly the life-lines of the building. It is critically important that these walls protect people and necessary services from fire and that they be structurally able to withstand air pressure loads and impact.

Drywall systems have become the most universal for shaft wall applications because of their light weight, economy and inherent fire-resistive qualities, and few architects or engineers will choose any other type of system. There are specific performance needs that a system selected for these important walls must satisfy. Thus a system used for shaft enclosures must

be thoroughly tested and fully developed. A particular system should be selected because it is the most reliable and safest.

The following check list contains the most important features and tests applicable to shaft wall performance. These may be used as criteria to measure the systems of the various manufacturers. Comparing these criteria against manufacturers' product literature will show whether a chosen system or "equal" has all the needed performance features.

- Tested to meet codes for 2-hr. fire rating (Note: some situations require 1-hr., 3-hr. or 4-hr. ratings).
- Tested with the 1½-hr. fire-rated entranceway (elevator or stairwell doorway) that is to be used on the job.
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- Tested with call-button and floor-indicator penetrations to confirm that the wall still meets the required fire rating.
- Limiting height tables for the system, covering design loads for 5, 7½, 10 and 15 psf intermittent air-pressure loads and allowable deflection criteria.
- Limiting height calculations based on all critical design factors, including stress and end-reaction shear of the system components, as well as deflection.
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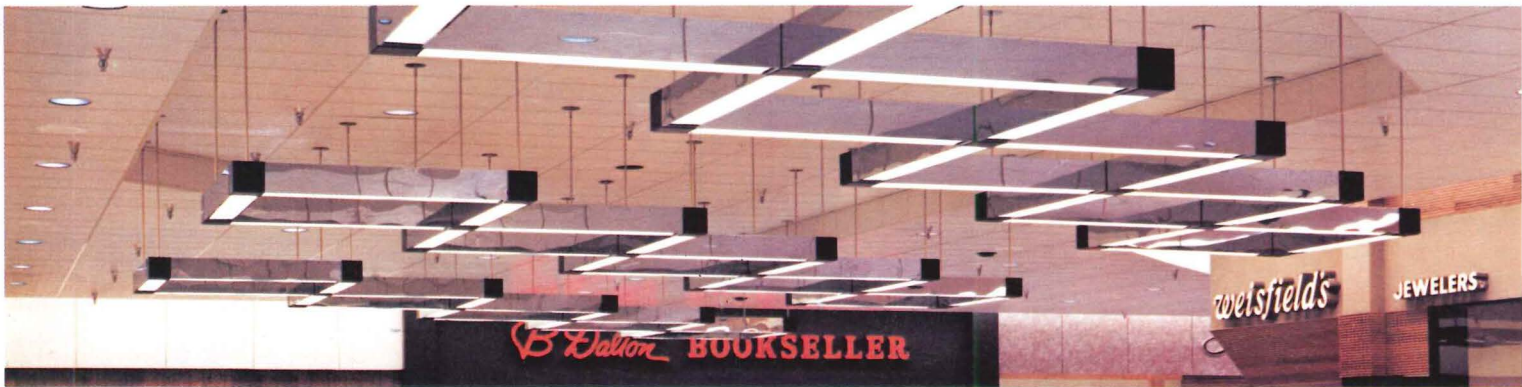
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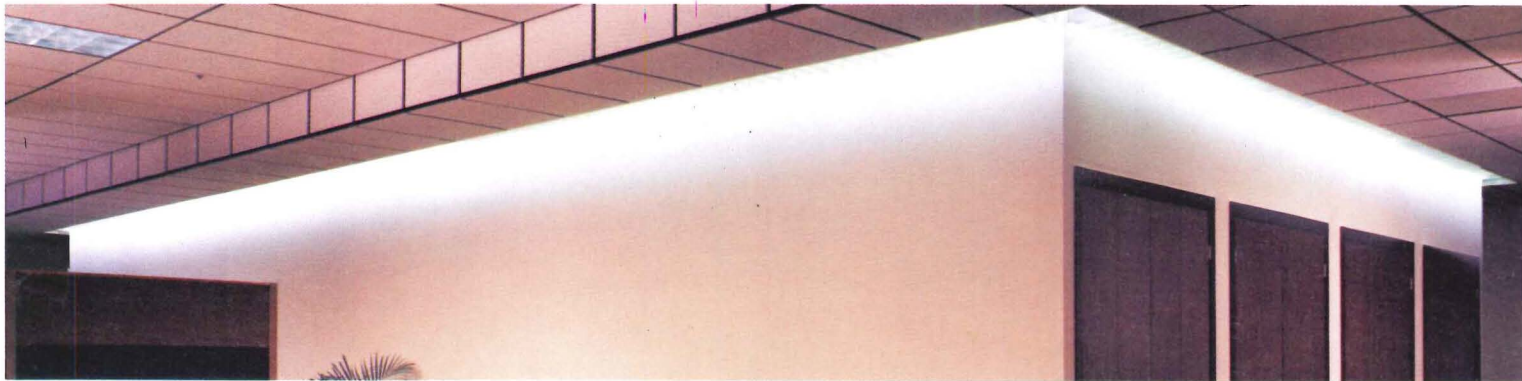
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Letters from page 6

studio concept. I have also been exposed to some work experience, since I have been working in heavy and residential construction as well as architectural design work since my graduation. My own conclusions are that good architecture emerges from the ability to translate ideas to drawings and the knowledge of construction necessary to turn the drawing into a building, the true and final statement of architectural design. To neglect one is to destroy the other.

I think this belief was the motivating force that produced Taliesin. It was the same belief that pushed Le Corbusier away from that same idea. It should not be a choice between design studio or apprenticeship; between a lecture format or a studio format. Architecture can not afford to be defined solely on a studio format. It is not enough just to draw. It is necessary to create with a structural system, with building materials, that design idea. A building is not a building until its last stone is placed.

A "feel" for materials has to be developed. They have to be perceived in their true nature. Is this "good" concrete or "bad" concrete? How far will concrete go in the expression of the design idea? Architectural education cannot afford a deep commitment" to anything. Its method must respond to the "needs" of the buildings to be designed. The buildings must respond to the needs of the people who will use them.

*Alvaro Andrade
Guatemala*

NCARB's Degree Requirement: If Keith White, AIA, exhibits grand disappointment with the National Council of Architectural Registration Boards and its degree requirement and its elitist attitude (see Feb. Letters, page 6), I am quite pleased with this position. Perhaps the lack of criticism in our profession is a major factor in our chronic economic malaise.

Architecture stands alone among the professions as not requiring a universal degree for licensure. One cannot practice as a nurse for 12 years to become a physician, so why should education be waived for an architect. In my own case, an education was obtained concurrent with fulltime employment.

Let us not forget we are a profession entrusted with the protection of the safety and welfare of society, in addition to development of esthetics. If standards are raised, we and society benefit.

*Burton L. Roslyn, FAIA
New York City*

I wish to encourage the continuing chorus of protestations of architects across the country regarding the pending mandatory degree requirement for NCARB certification. I would further warn that

NCARB's assurances that an alternative to the degree requirement will be "studied" are totally unsatisfactory and should lull no one into thinking the battle has been won.

Although the arguments and beliefs exchanged by both sides are in my opinion sincerely presented, there remain two glaring facts that NCARB must address if it is to proceed in clear conscience. First, the Institute roundly rejected the mandatory degree concept at its 1981 convention in Minneapolis. To continue on its course despite that rejection, NCARB must realize that it is out of step with the sincere desires and experienced judgment of the architectural profession. Second, in presentation of its case in support

of the mandatory degree requirement, NCARB has failed to produce any substantial research or hard facts to establish the validity of its position. Where are the statistics that show that a non-degreed architect is a detriment to the public good? Indeed, where are the facts that indicate a non-degreed architect is any better or worse than those of us who were fortunate to obtain degrees.

Anyone can recite a story or two to make a point, but a drastic measure such as the NCARB action should be supported by solid research and statistics and be in response to a public or professional demand, or it should be abandoned as an elitist whim. *Thomas H. Teasdale, FAIA
St. Louis*

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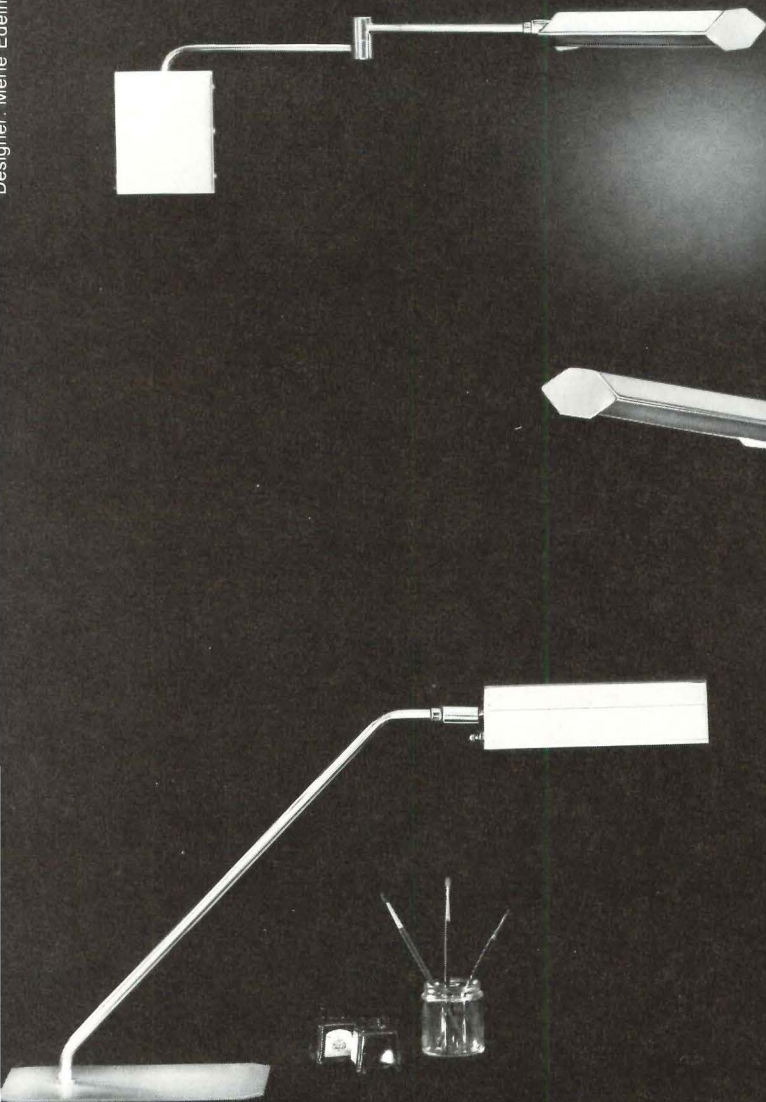
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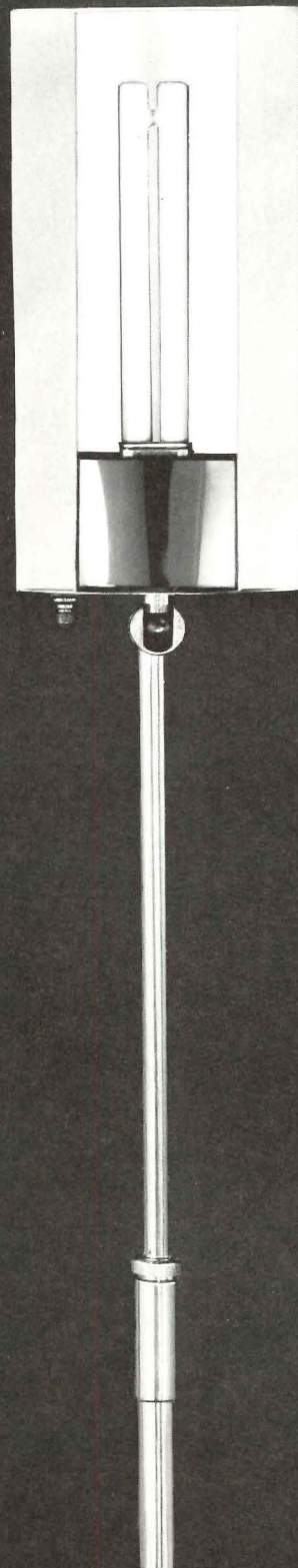
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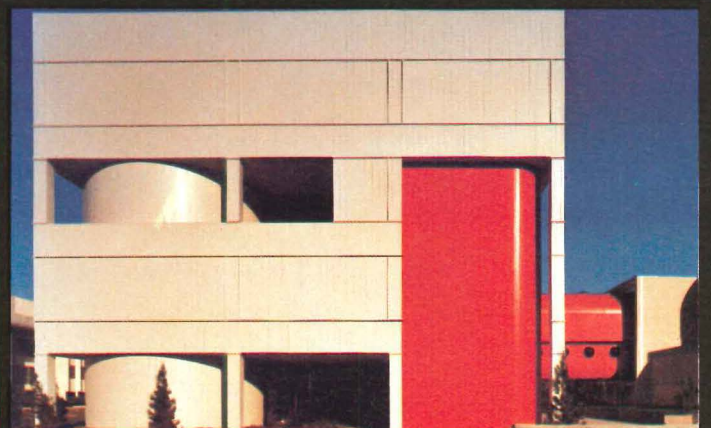
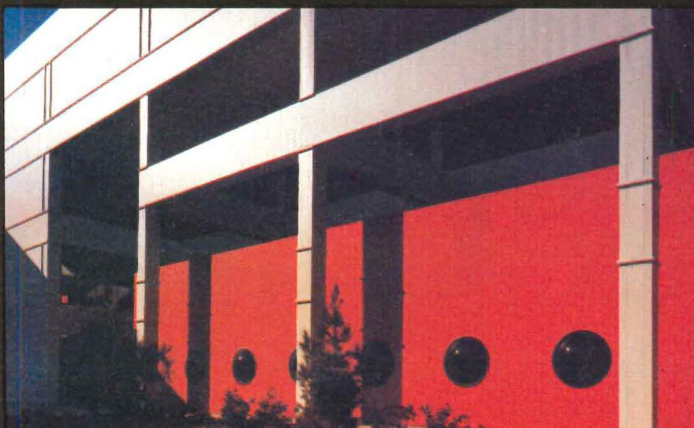
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Government

Lever's Landmark Status Upheld; Demolition Threats Defeated

By a vote of six to five the New York City Board of Estimate has voted to uphold the landmark status of Lever House, which has been called a "key monument in the evolution of the International style." Designed by Gordon Bunshaft, FAIA, of Skidmore, Owings & Merrill in 1952, and winner of AIA's 25-year award in 1980, Lever House is now the city's most contemporary landmark.

Earlier this year the New York City Landmarks Preservation Commission designated the Park Avenue skyscraper a landmark amid threats of demolition. Since the commission is restricted from conferring landmark status on structures less than 30 years old, it acted at the earliest possible date (see Jan., page 30).

Following the commission's designation, the Board of Estimate had until Mar. 25 to either uphold or deny the landmark status. In its meeting on Mar. 18, Mayor Edward Koch, City Comptroller Harrison J. Goldin, and City Council President Carol Bellamy voted to uphold the status, each having two votes. All five borough presidents, including Manhattan borough President Andrew Stein, voted against the designation. (New York City's *Village Voice* reported that Stein had collected \$45,000 in campaign contributions from Fisher Brothers, the developer that sought to demolish Lever House to construct a 40-story office tower.)

In February, a proposed new design to replace Lever was unveiled by Swanke Hayden Connell of New York City. Described as an "art deco tower with 528,000 square feet of space," by the developer, the scheme featured a "landscaped urban park" on its southern exposure, with a multi-level fountain and extensive seating along Park Avenue."

Fisher Brothers claimed that the new tower would generate \$9.4 million in annual taxes for the city, 1,500 new jobs, and \$78 million in annual economic activity. The architectural firm also presented a report to the Landmarks Preservation Commission claiming that Lever House was "not worthy of landmark status," and has been "substantially compromised from its original appearance by the deterioration and replacement of its glass panels, and with a gloomy and unsuccessful plaza and arcade space."

John Barie, AIA, of Swanke Hayden

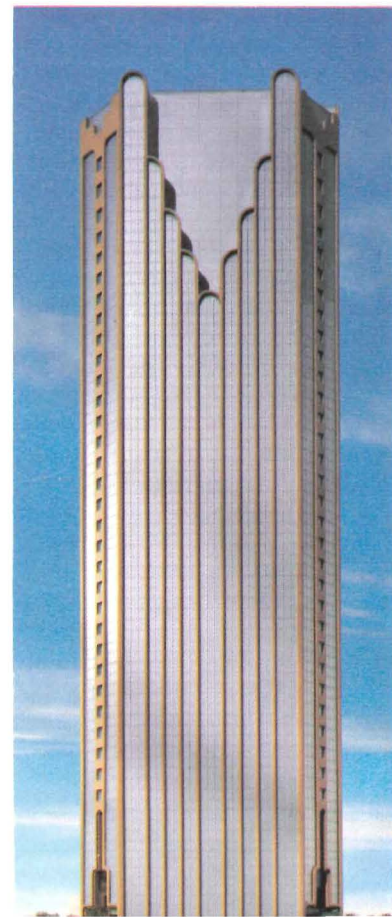
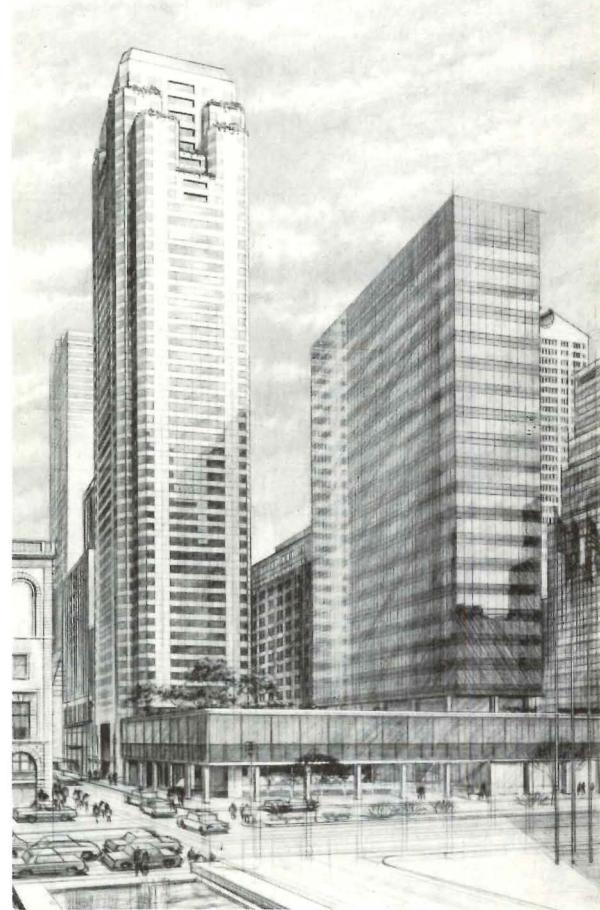
Connell, said that landmark proponents had inaccurately described Lever House as "this glimmering, shimmering green glass form." In reality, said Barie, "the green glass is falling out of the facade, it's breaking, and the frame that holds it in place is rusting away. You would have to take away the entire skin of that building . . . and replace it with something of current technology, make a new glass skin, and you're going to mummify that structure." In a radio interview, Barie said that the building would need an estimated \$12 million facelift.

According to New York City's Welton Becket Associates, however, of the \$12 million needed to retrofit Lever House, only \$5 million would be needed to restore the facade. The firm, as consulting architect for the Lever Brothers Co., submitted a report to the Board of Estimate saying that less than one-half of the estimated retrofit costs would be used for exterior wall repairs. "The other \$7 million was budgeted for upgrading and replacing the building's aging interior finishes and building systems, a basic necessity which has no bearing on discussions of the building's historic significance."

As an alternative to tearing down Lever House, Welton Becket proposed the construction of a 51-story hotel on the adjacent Jofa site, which would be possible with the transfer of air rights. In light of the landmark designation, Mark Curtin of Welton Becket said that "the potential is there for this building to go ahead, if the leaseholder of the land were to agree to it."

The New York Landmarks Conservancy became a major opponent of plans for demolishing the structure. In February the conservancy held a rally of support at Lever House. Brendan Gill, arts critic for the *New Yorker* and chairman of the conservancy, said that "there's no doubt on anybody's part, including the people who want to throw this building down, that this building is of great historic and esthetic importance. We want it to be known—this building must be saved."

Top, Welton Becket Associates' proposed 51-story hotel behind Lever House; bottom, Swanke Hayden Connell's proposed 40-story office tower to replace Lever.



Jacqueline Onassis, who has supported other landmark designations in the city, said that, "I think it's a shame if we begin to treat our buildings as disposable, like razor blades. Every 30 years take them down; put up a new one so someone else can make more money. You shouldn't treat architecture like that."

Following the Board of Estimate's decision, Laurie Beckelman, executive director of the conservancy, said that "we're extremely pleased because it is our first modern building that has been designated. I'm glad once again that the landmarks law has not been abused. It was nice that there was a rallying point where people, not only from the preservation community, had become much more sensitive about architecture and what's being built."

AIA support for the landmark designation was communicated to the Board of Estimate in a telegram from Institute President Robert Broshar, FAIA. The AIA executive committee voted unanimously to support the designation. Broshar said that "from the day of its completion in 1952, Lever House . . . has been widely recognized in this country and abroad as quality design at its best." He noted that the building had received an AIA honor award upon its completion, and a 25-year award, "in recognition of architectural design and enduring significance."

Presidential Medal of Freedom Awarded to Buckminster Fuller

R. Buckminster Fuller, FAIA, has been awarded the Presidential Medal of Freedom. The medal is the highest civilian award by the U.S. government and is conferred by the president "to persons who have made exceptionally meritorious contributions to the security or national interests of the United States, to world peace, or to cultural or other significant public and private endeavors."

Fuller, now 87, has long been recognized for his work with geodesic domes, industrialized building, and conservation and distribution of world resources. He was winner of the 1970 AIA gold medal.

Fuller was one of a dozen recipients of the Medal of Freedom at a White House presentation on Feb. 23. In awarding the medal President Reagan read Fuller's citation: "A true Renaissance man of our times, Richard Buckminster Fuller has made contributions as a geometrician, educator, and architect/designer that are benchmarks of accomplishment in their fields. Among his most notable inventions and discoveries are synergetic geometry, geodesic structures, and tensegrity structures. Mr. Fuller reminds us all that America is a land of pioneers, haven for innovative thinking, and free expression of ideas."

Controversy Resurfaces over The U.S. Capitol's West Front

Proponents of restoring the west front of the U.S. Capitol received unexpected support last month as Vice President George Bush, Senate Majority Leader Howard Baker, House Minority Leader Robert Michel, and Senate Minority Leader Robert Byrd voted to restore rather than extend the last remaining visible facade of the original Capitol. The four-to-one vote came in an unannounced, closed session of the little-noted Commission on the West Front of the Capitol. House Speaker Thomas P. O'Neill continues to favor extension, and House Majority Leader James Wright, the sixth member of the commission, did not vote.

The commission thus began a new round of the generation-long debate over the only remaining exterior wall of the Capitol designed by William Thronton, Benjamin Latrobe, and Charles Bulfinch and completed in 1822. Expansion was first proposed in the 1960s by George Stewart, then architect of the Capitol. The question of the fate of the west front has come to the floor of the House for debate periodically over ensuing years. Historically, the House has voted for extension by a small margin, while the Senate has consistently supported restoration and won in conference.

The expansion scheme currently under consideration, proposed by Architect of the Capitol George White, FAIA, would reproduce the sandstone exterior wall in marble 22 feet in front of the original, with the old wall becoming an interior partition. An earlier expansion scheme required moving and altering the Olmsted terraces in order to accommodate a restaurant, visitors center, and vehicular access. The current proposal eliminates those features and does not require altering the terraces. According to White, the current proposal would provide 147,000 square feet of new space.

On the day following the vote of the commission, a subcommittee of the House Committee on Public Works and Transportation heard arguments for both expansion and restoration. The problem, as stated by William L. Ensign, FAIA, assistant architect of the Capitol, is the "need to restore the structural integrity and appearance of the wall, which has weakened, deteriorated, and cracked over the years. Damage has resulted from the thermal expansion and contraction, from settlement, from being burned first by the British in 1814 and then by a fire that virtually destroyed the old Library of Congress in 1851, from excessive weathering of the poor quality sandstone, and from questionable workmanship in parts of the original construction. The wall can no longer be depended upon to resist the horizontal forces that result from the interior arched masonry construction."

Proponents of extension base their esthetic arguments on the concepts of Thomas U. Walter, the architect who added the House and Senate wings and the great dome to the Capitol in the mid-19th century. "The design concept for completing the building as Walter had intended once the appearance and scale of the Capitol had been expanded by the additions of the dome and House and Senate wings would be preserved in its historic context," Ensign said. "We feel that this is as valid an approach to historic preservation as the more limited interpretation of preserving the wall as is. . . ."

Concurring with Ensign was Albert Swanke, FAIA, of Swanke Hayden Connell, New York City. Swanke, who was an associated architect on the east front extension completed in 1961, testified that the exterior walls cannot be repaired without danger to the structure. He also said such a restoration would not be "an honest job," but rather more of a recreation "like Williamsburg."

On the other hand, the subcommittee heard from an architectural historian that reproduction of the original front in an extension scheme would greatly reduce its significance. Barbara Miller Lane, a fellow of the National Gallery of Art speaking on behalf of the Society of Architectural Historians, said such a reproduction would "destroy the fabric of the nation's most important building." Walters' 1850 plan for extension is historically "curious," she said, but like many interesting unbuilt proposals, it should not be carried out.

The Institute's position was expressed by Professor Frederick D. Nichols, FAIA of the University of Virginia. Nichols said that "the infill between the central and flanking wings" created by extension "would destroy the articulation of the massing, which, in our opinion, is a very positive esthetic value of the present facade."

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Unless otherwise indicated, the news is written by Allen Freeman, Nora Richter Greer, and Michael J. Crosbie.

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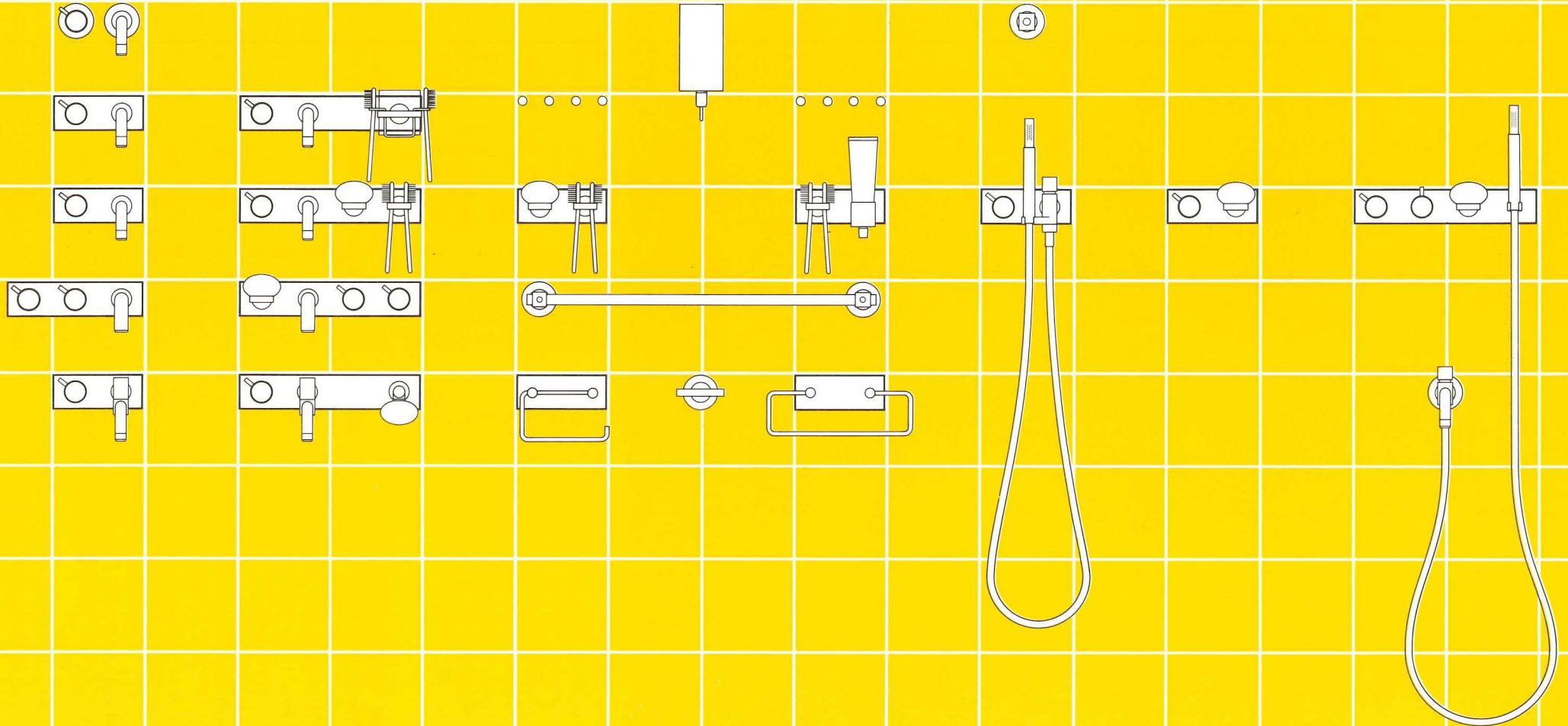
Sanitary Fittings
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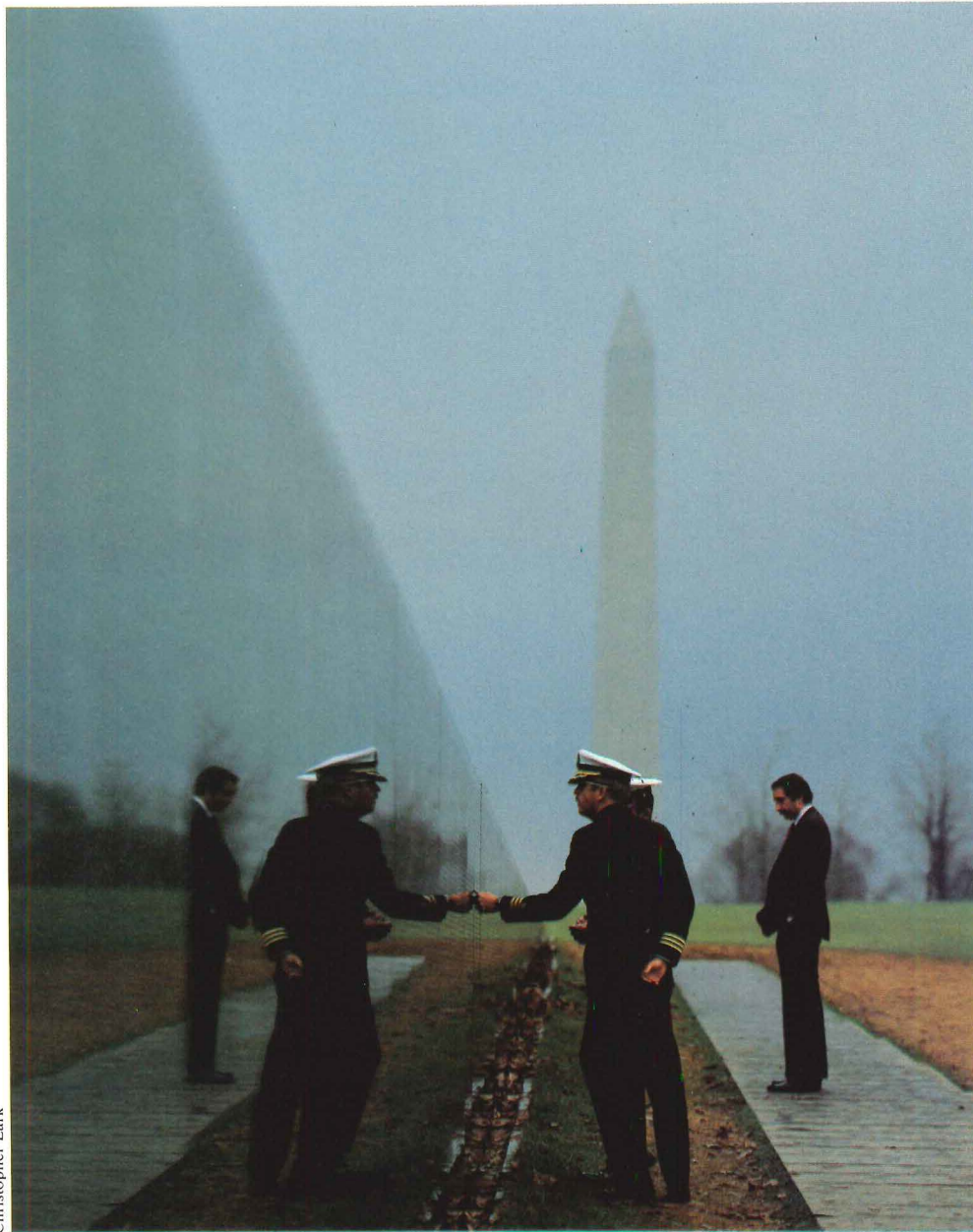
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Christopher Lark

Final Approval—The protracted battle over siting a statue and a flagstaff near the Vietnam Veterans Memorial on the National Mall came to a quiet close last month with acceptance by the National Capital Planning Commission of a scheme previously approved by the Washington Fine Arts Commission (see March, page

40). Jan Scruggs, founder of the fund that built the memorial, says the 50-foot-high flagpole and eight-foot-high bronze statue of three infantrymen—to be grouped at the southwest approach to the black granite walls—could be in place by the end of the year. Meanwhile, the memorial has become a major Washington attraction.

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cade. The proposed infill would create a more monolithic, flat, and monotonous wall to the west,” and extension of the center wing “would add visual bulk to the massing and effectively diminish the visual impact of the dome as perceived from the Capitol grounds.” The effect on the Olmsted terraces would be to “destroy much of their character” by bringing the front “uncomfortably close.” Concerning the effect of enclosing the original front behind an extended front, Nichols said emphatically: “Entombment is not historic preservation.”

One of the rationales for expansion, of course, is to provide additional space

within the Capitol. Under questioning from Representative Clay Shaw (R.-Fla.), Ensign said that no specific program has yet been written for the space. Nichols in his testimony said that when George White presented the 1981 Capitol master plan to the AIA board, “he assured AIA that the master plan provides that future space needs of the Congress can be accommodated, and without expansion of the west front.”

And Samuel S. Stratton (D.-N.Y.), testifying for restoration, said “there is no justification for destroying this historic architectural monument just for the purpose of putting in costly hideaway offices for more senior members. . . . I recognize

the need for some space to be made available in the Capitol for the House Appropriations Committee, but their needs could readily be met by simply clearing the architect and his large staff out of the window suites facing the Mall, which they now occupy.”

The debate is to continue this month with additional hearings scheduled for April 13 in the legislative subcommittee of the House Appropriations Committee.

New Navy Memorial Approach Approved in Concept by PAD

A new design concept for a Navy memorial in Washington, D.C., contrasting dramatically with the 110-foot arch unsuccessfully proposed last year, has been given preliminary approval by the Pennsylvania Avenue Development Corporation.

Designed by Conklin Rossant, the New York City firm that also designed the arch, and Stanley Bleifeld, a Weston, Conn., sculptor, the proposed memorial would be a circular plaza, sunken an average of about six feet below grade, with wave-like forms sculpted in granite. On the southern part of the plaza, the “waves” would be high and rough, rising from a pool of water. On the northern half, the waves would be gentler and also serve as seats for audiences at the military band concerts.

In addition there would be figurative sculptures and flagpoles. The figures could include a 30-foot-high bronze statue of a seaman, a 15-foot-high group of three mariners climbing shroud lines, or a 7-foot-high sculpture of a sailor, according to William Leonard, chairman of the Navy Memorial Foundation. The new memorial would not include a storage chamber nor a naval museum, which were included in the original arch proposal.

The new design, which is being further developed, must gain final approval from the PADC, as well as approval by the District of Columbia Fine Arts Commission and the National Capital Planning Commission. It was the NCPC that last year rejected the proposed Navy memorial arch/bandstand (see Aug. '82, page 10). Its opposition centered around the arch's scale, the “destruction of vistas,” and the “incompatibility of its dual functions.” However, the commission did, at that time, endorse the concept of an “appropriately scaled memorial.”

The site for the proposed sunken plaza is the same as for the arch: Pennsylvania Avenue's Market Square. The square, lying between Seventh and Ninth Streets N.W., is on an important minor street connecting the National Archives with the National Portrait Gallery and Museum of American Art.

News continued on page

Knoll International is deeply gratified that the American Institute of Architects has recognized the company's 45 year commitment to excellence and innovation in design and manufacturing with an AIA Institute Honor for 1983.

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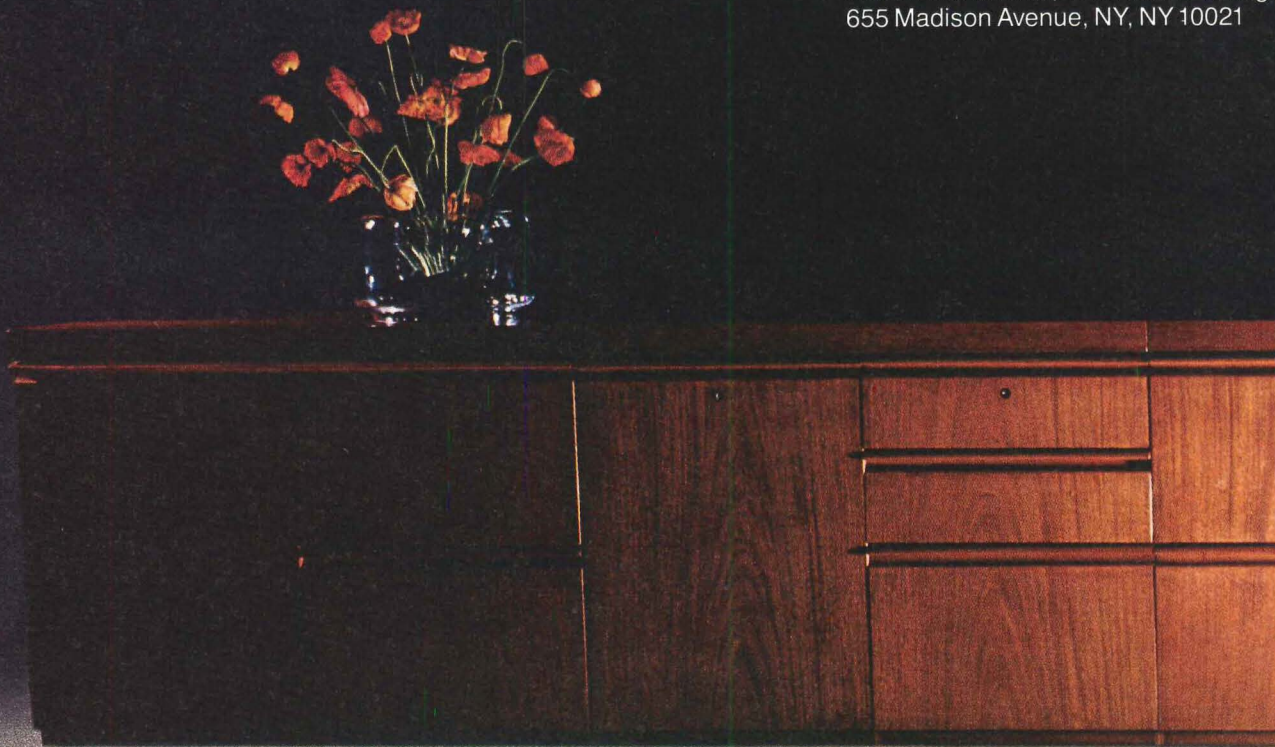
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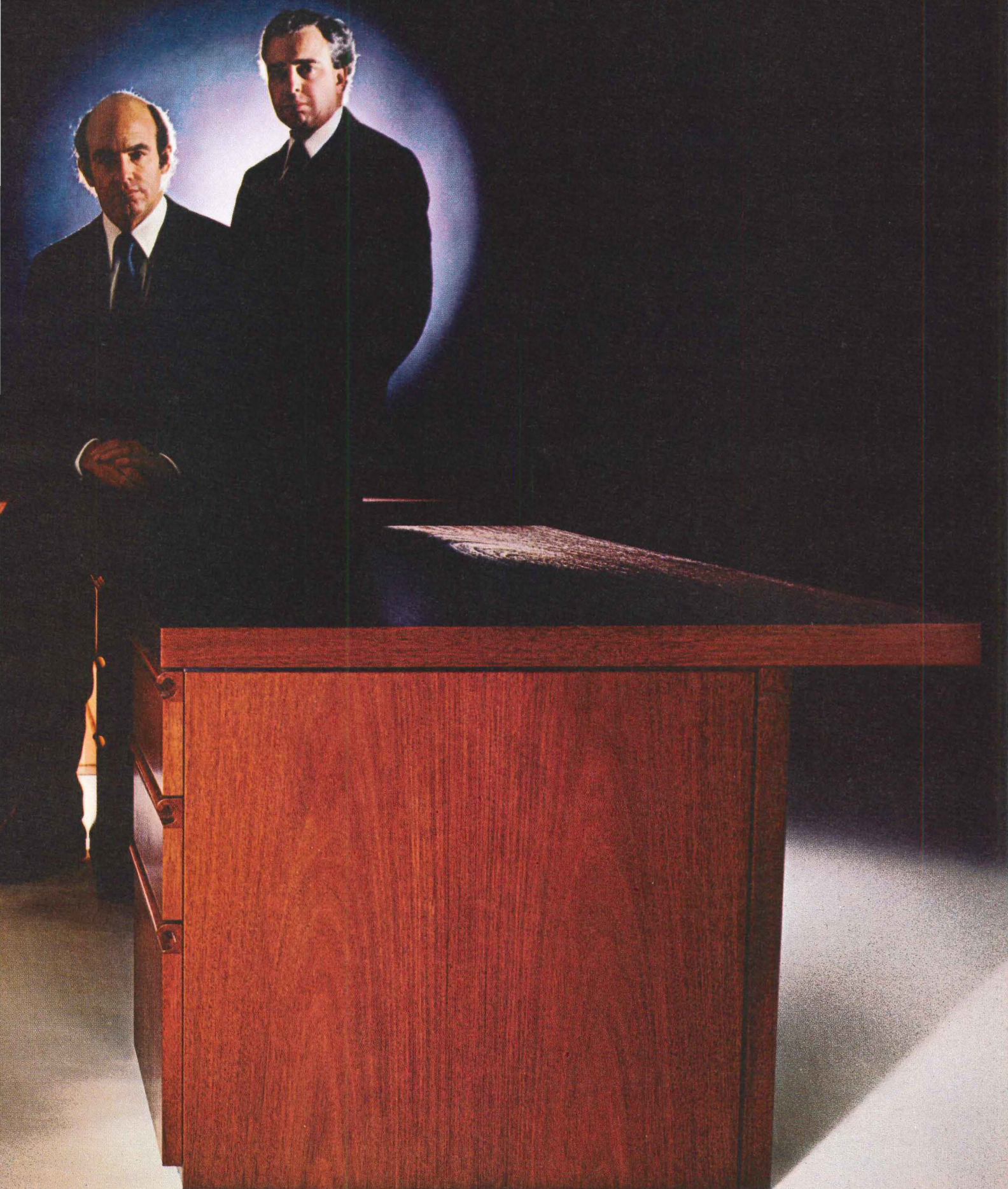
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'Modest Proposal' Honored in Harvard Gate Competition

The local newspaper compared it to a *Harvard Lampoon* stunt. More than 300 entries were submitted in February in a competition for the design of a ceremonial gate across a Cambridge, Mass., street at one corner of Harvard Yard. A distinguished jury then met and awarded first prize to an entry that ignored the program and offered, instead, the suggestion that no gate was needed.

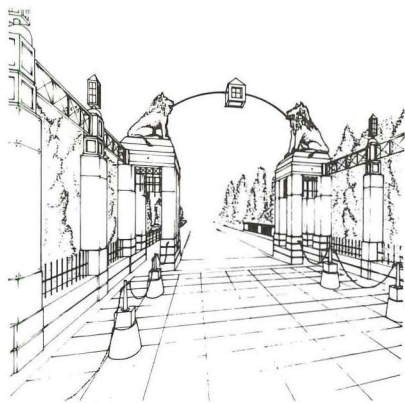
The competition wasn't a joke, though, and may even prove to merit a footnote in history as an early warning of the beginning of the end of the recent obsession with historic motifs. Sponsored by students of the Harvard Graduate School of Design, it was a paper competition intended to explore the theme of "Precedent and Invention" in order to provide fodder for an issue of the *Harvard Architecture Review*, the student publication. By the second day of deliberations, the jury clearly never wanted to see another Georgian gate, Lutyensesque gate, attic gate, Palladian gate, Krierish gate, topiary gate, deco gate, or another gate attempting a collage of all possible styles. A modest proposal that had been largely ignored on the first day began to look better and better. Submitted by Thomas Bartels, a young German architect currently teaching at Virginia Polytechnic, this entry pointed out that a gate already existed adjacent to the competition site, a gate to Harvard Yard designed by McKim, Mead & White but now never used because it is blocked off by the ungainly Lamont Library. Bartels proposed demolishing and replacing Lamont and reopening this old gate, leaving the competition site to remain as a public street.

The jury lauded Bartels' entry as a response to context instead of a self-referential object like many other entries. All agreed that the competition program, which implied a gate dividing town from town, was problematic to begin with. The winner insisted on principle," commented juror Anthony Vidler. Said juror Jones: "It shows an embarrassment about making honorific form in the present age. We're not in the nineteenth century when armies marched through gates."

The jury was obviously also enchanted, after viewing several hundred lavish presentations, with Bartels' tactic of presenting his entry by simply doctoring the competition poster. The literary style of his next led the jury to suspect the hand of Colin Rowe, the Cornell architectural theorist, and Vidler went so far as to read

it aloud mimicking Rowe's voice. "That makes me very happy," later commented Bartels, who once attended Rowe's lectures as a Fulbright scholar at Cornell.

Second prize went to another non-gate, this one an obelisk by Sandra Paret, Andrew Roth, and William Ryan, all architects at RTKL in Baltimore. Third was the design of Cary Tamarkin, Timothy Teckler, and Steve Johnson of Cambridge. Tied for fourth were Frederick Schwartz, a partner in Venturi, Rauch & Scott Brown, and the team of Craig Spangler and Stephen Bartlett of Baltimore. Jurors were Vidler, Jones, Jacquelin Robertson, FAIA, Susanna Torre, Henry Cobb, FAIA, Laurie Olin, and Stanley Tigerman, FAIA. ROBERT CAMPBELL



Range of gate entries is typified by two that tied for fourth place.



Manufacturer Found Liable for Deteriorating Building Facade

A recent court decision has found a manufacturer of mortar additive containing vinylidene chloride responsible for the deterioration of a building's facade. This type of additive has been used extensively in buildings since the late '60s to improve the structural qualities of cement mortar.

The case involved charges brought by Central National Bank and its holding

company, Centran Corporation, against Dow Chemical Co. The bank claimed that Dow's product Sarabond leached out chloride ions when in contact with unprotected steel. This caused an excessive build-up of rust on the steel, which then exerted outward pressure on the building's facade, the bank claimed, eventually causing the bricks to crack.

The building in question is a 23-story structure with a six-story garage in Cleveland built in the late '60s. It has a full-height, four-inch-thick, single course of brick with no backup block. The bricks are set in Sarabond mortar. Major cracking in the facade was discovered in 1978. Repairs made in 1979 and '81 included removing the brick and mortar that was in contact with the structural steel, sandblasting the steel, painting it with epoxy, and connecting the replaced brick with non-Sarabond mortar. Some sections of the corroded steel were replaced.

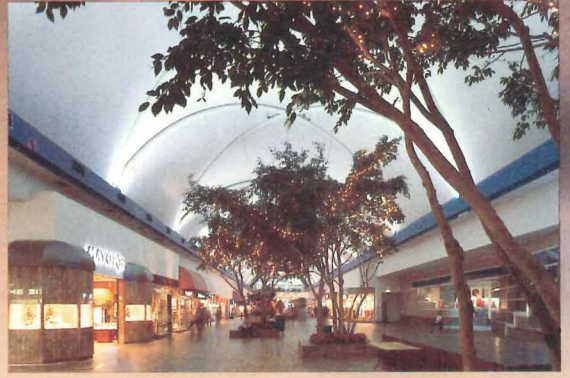
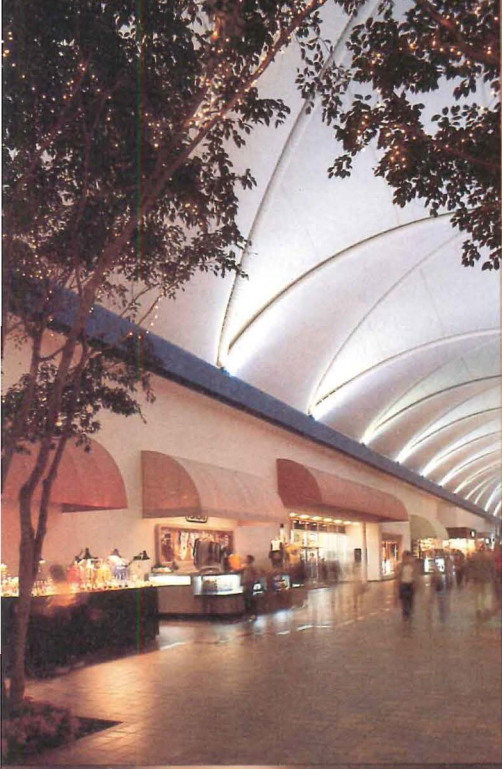
In its argument Dow denied that Sarabond had anything to do with the problem, claiming that the cracking was the result of faulty design and construction. Dow stated that it refused to sell the product unless a sales contract was signed stating that the buyer would protect any metal used in proximity to Sarabond with cadmium or galvanizing.

The Cuyahoga County Court of Common Pleas, however, disagreed with Dow and awarded CNB \$13 million in compensatory damages and \$13 million in punitive damages. The jury also found Tishman Liquidating Corporation, the original owner and builder of the CNB building, free of responsibility and awarded the company \$12 million for litigation expenses. The project's structural engineer, Hertzberg & Canter, was also freed of responsibility. The building's architect, Charles Luckman Associates, was freed of responsibility during the trial. Dow plans to appeal the case.

Arguments over the problems caused by mortar additives with vinylidene chloride are far from over. There are currently 14 similar lawsuits against Dow, which is no longer manufacturing Sarabond. (The product is still available, however, from Masonry Systems of Missouri, Inc.) Numerous owners say they have problems caused by the product, and experts say deterioration of those buildings may just be a matter of time.

In addition, AIA's architects liability committee is advising that architects "carefully investigate the chemical components of any admixtures to be specified on new projects" and has called for a "thorough investigation of the application and the potential for deterioration." The committee also said that mortar additives containing vinylidene chloride have been specified in over 1,000 buildings since the late-1960s.

News continued on page 32



Architect & Engineer: Wolfberg/Alvarez/Taracido & Assoes.
Design Architect: Charles Kober Associates.

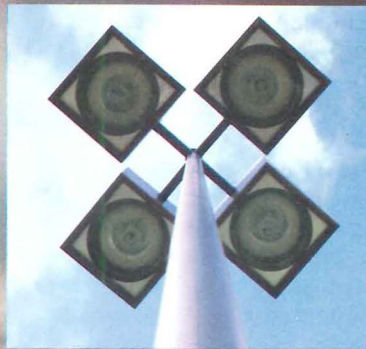


THE MALL AT 163RD ST. — MIAMI, FLORIDA

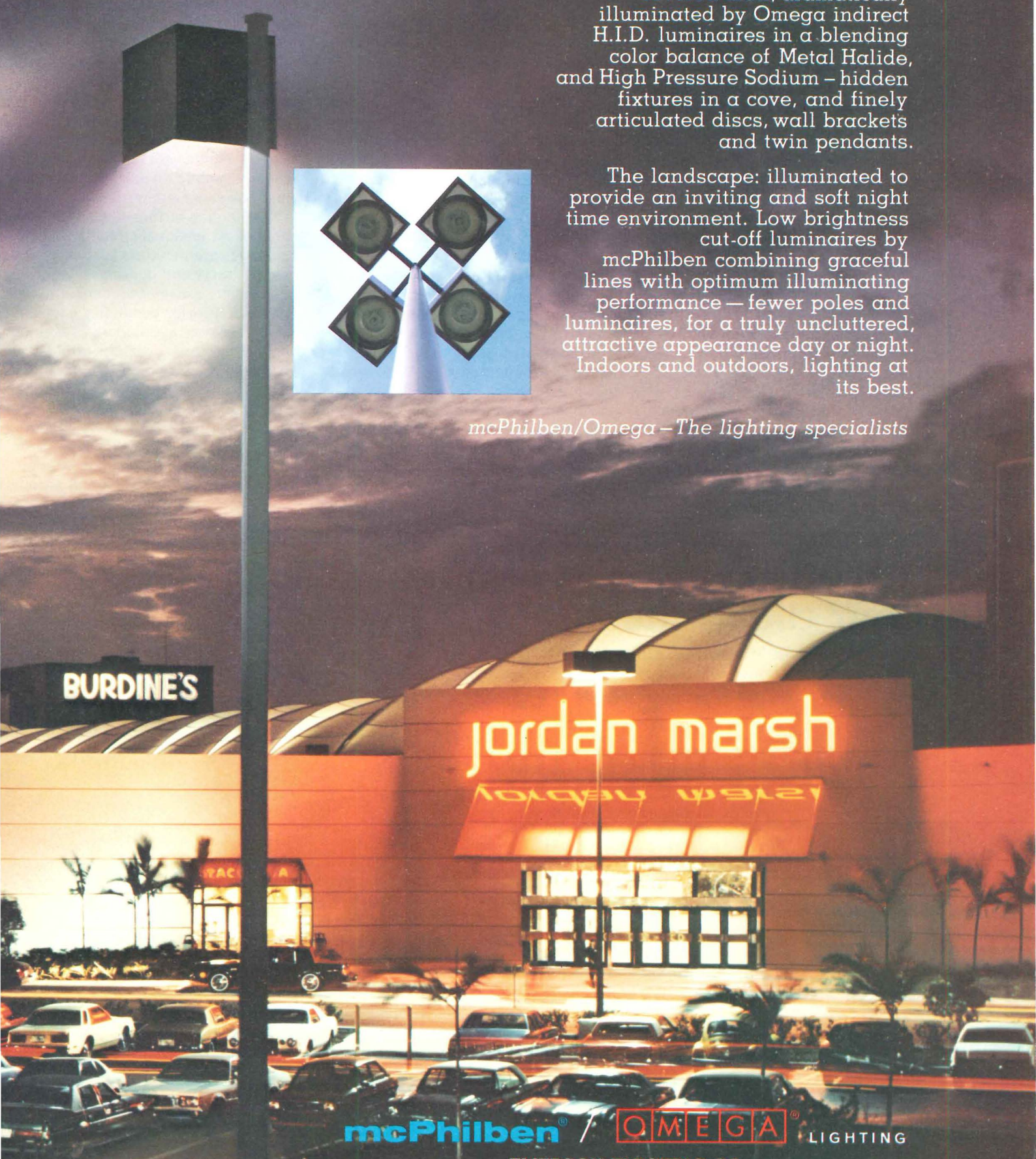
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Board Adopts Education Policy; Receives Convention Resolutions

At its March meeting in Seattle, Wash., AIA's board of directors adopted a comprehensive education policy and accepted a slate of resolutions to be brought before the national convention next month in New Orleans.

Developed over two years by AIA's education policy task group, the comprehensive education policy addresses all facets of public and professional education, from early environmental education and career awareness through adult education and continuing professional development. Overall the policy states that "AIA recognizes its responsibility for leadership in the education of the public and the profession, and will continue to strengthen its programs, services, and activities toward that objective."

Concerning public education, the policy states: "A sensitive citizenry is required to understand and positively influence the natural and built environment. The AIA is committed to fostering this sensitivity in formal and nonformal settings through education programs, learning aids, liter-

ature, and communication." To do this, the task group recommends promoting the expanded use of AIA's *Sourcebook* (a reference resource designed for primary and secondary educators); developing other teaching aids; improving ways for architects to communicate with educators; coordinating AIA's public education/public relations efforts to assure that messages being conveyed about architects and architecture are consistent; and identifying key individuals, who "serve as conduit of information to the public and/or are particularly influential in shaping public opinion on environmental issues."

Concerning nonprofessional, architecturally related education (such as two-year programs leading to an associate degree in architecture), AIA "advocates a thorough review of the nonprofessional role in architecture and industry and the implications for the educational institutions." Among the recommendations in this area are developing new guidelines for two-year programs and identifying all support positions related to architecture

and ways in which those individuals can best be trained.

The policy statement defines professional architectural education as "the foundation for lifelong learning," with purpose to "provide students with the skills, knowledge, abilities, and judgment critical to the practice of architecture." Through the policy AIA "reaffirms that design is the central component of architectural education and supports the inclusion of the allied design disciplines and the teaching of a multidisciplinary approach to problem-solving within the context of environmental design." It calls for the incorporation of instruction in life safety, science and technology, political science, public affairs, social sciences, and business management.

The policy further states that in the area of professional education, AIA "encourages architectural schools to sponsor graduate and doctoral-level study, investigate areas of specialization and research, provide continuing education to the profession, and undertake community service projects," when possible. Concerning professional education, the policy calls for a faculty "equipped with effective teaching skills and representing a balance of active practitioners, practitioner educators, and professional educators." It also encourages the creation of grants and scholarships for research and advanced

continued on page

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The Institute from page 32 study and the "emergence of doctoral-level professional educators who have a foundation in architectural practice."

Although AIA endorses the value of a professional degree from an accredited architectural program for state registration or the National Council of Architectural Boards' certification, it also recognizes that "there are equivalent routes to this level of learning that will serve as a prerequisite." Among these alternative prerequisites are "appropriate combinations" of independent study, on-the-job training, examinations, among others. The policy, therefore, called for continuing efforts by NCARB to define alternative routes to licensure.

The policy states that "AIA endorses a structured internship and maintains its support of the voluntary Intern-Architect Development Program and other organized efforts to enhance internship."

Also at the Seattle meeting the board reviewed 11 resolutions to be presented to the 1983 convention.

The resolutions address the following concerns:

- Grassroots meetings (submitted by the New York State Association of Architects/AIA): "That henceforth, the Institute sponsor a single grassroots to be held annually in Washington, D.C., to coin-

cide with the congressional session; and that the Institute develop a more equitable travel reimbursement system during the 1983 budget process that will encourage all components to participate in grassroots meetings."

- Supplemental dues (submitted by the New England Regional Council): "That the Institute initiate a study to determine a more equitable method of assessing supplemental dues and report back to the 1984 annual convention, with an interim report submitted to grassroots 1984."

- Document sales (New Hampshire Chapter/AIA and New England Regional Council): "That it should be Institute policy that the AIA Service Corporation be encouraged to ensure that components that sell documents not lose revenue to non-AIA vendors, and that the Institute encourage the AIA Service Corporation to prepare a plan of action to be implemented at the earliest possible time that addresses that policy."

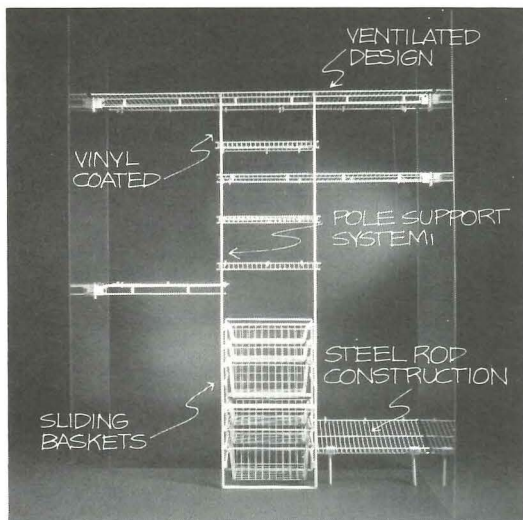
- Membership dues for newly registered architects (New York Chapter/AIA and Peter B. Thompson, AIA): "That AIA membership, at a reduced rate, be made available to newly registered architects within one year of original registration, for a period of four years prior to their obligation to pay full membership dues at the fifth year."

- Women in architecture (New York Chapter/AIA and Peter V. Thomson, AIA): "That the officers and board of directors of the past 10 years be commended on their interest and efforts on behalf of the women in the profession, and that present and future officers and boards of directors be urged to continue in this direction until such time as women both in number and opportunity, are indeed fully integrated into the profession of architecture."

- Minority board member (William E. Patnaude, AIA, and the affirmative action committee): "That the Institute encourages and actively solicits full participation of minority architects in the activities of the Institute, and that an appropriate bylaw revision be prepared for presentation and action at the 1984 convention that will provide an ethnic minority architect with full voting rights be appointed to the board of directors of the Institute and that the architect so appointed shall be aware of and concerned with problems affecting the minority architect, and shall act as a speaker for those concerns, and, in addition to other board responsibilities, shall be charged with representing the interests of affirmative action to the board."

- AIA board of directors (member petition)

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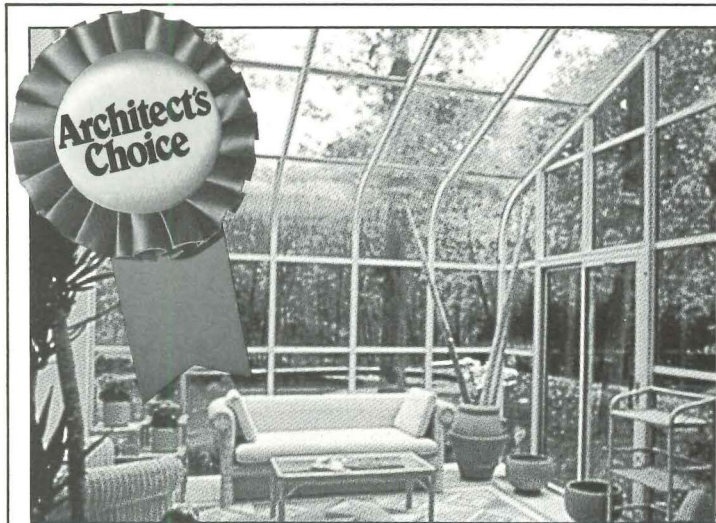


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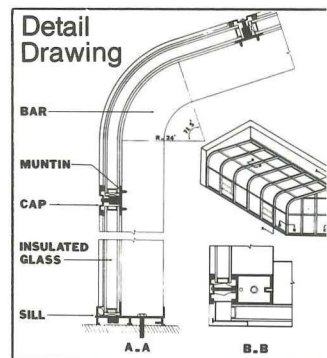
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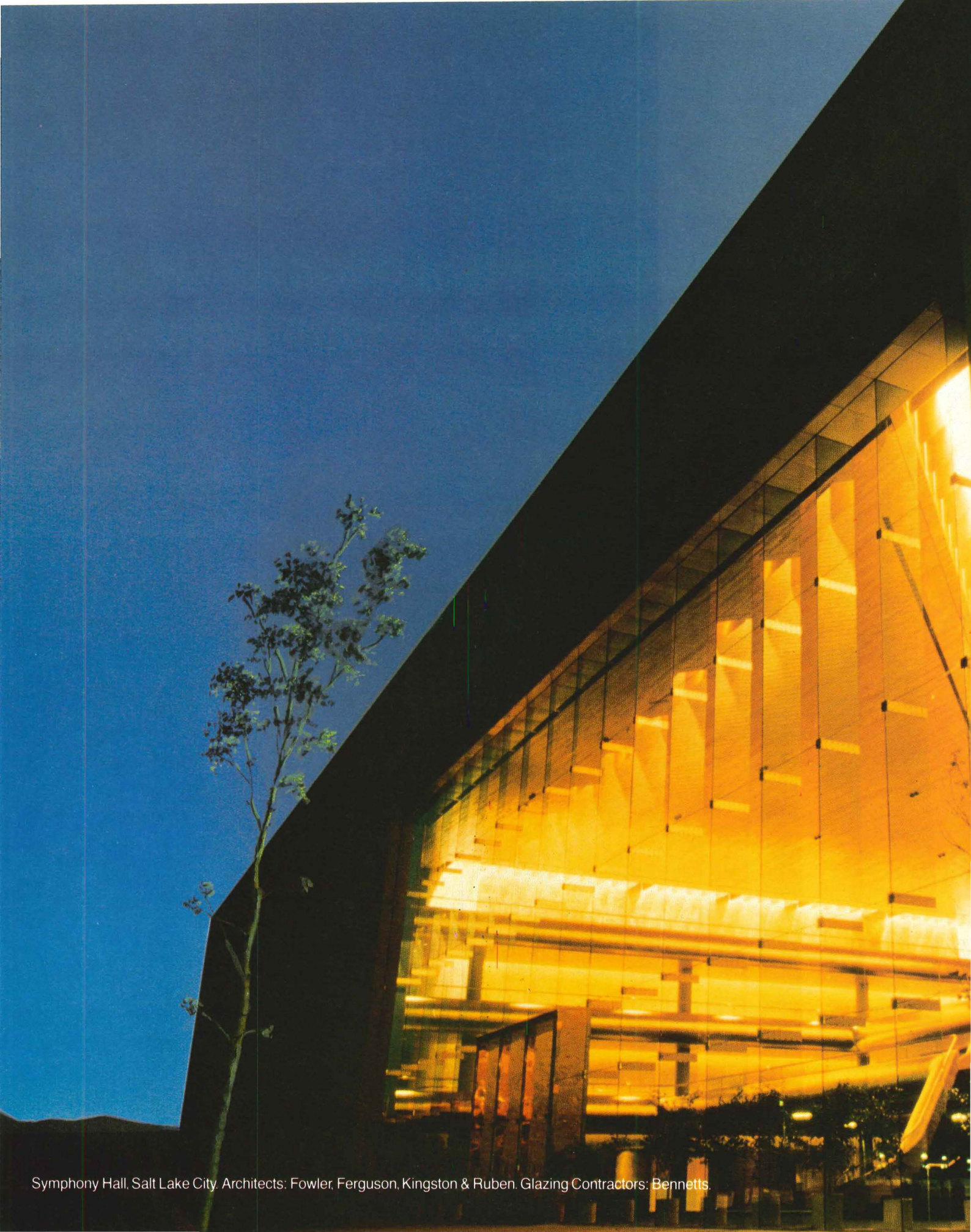
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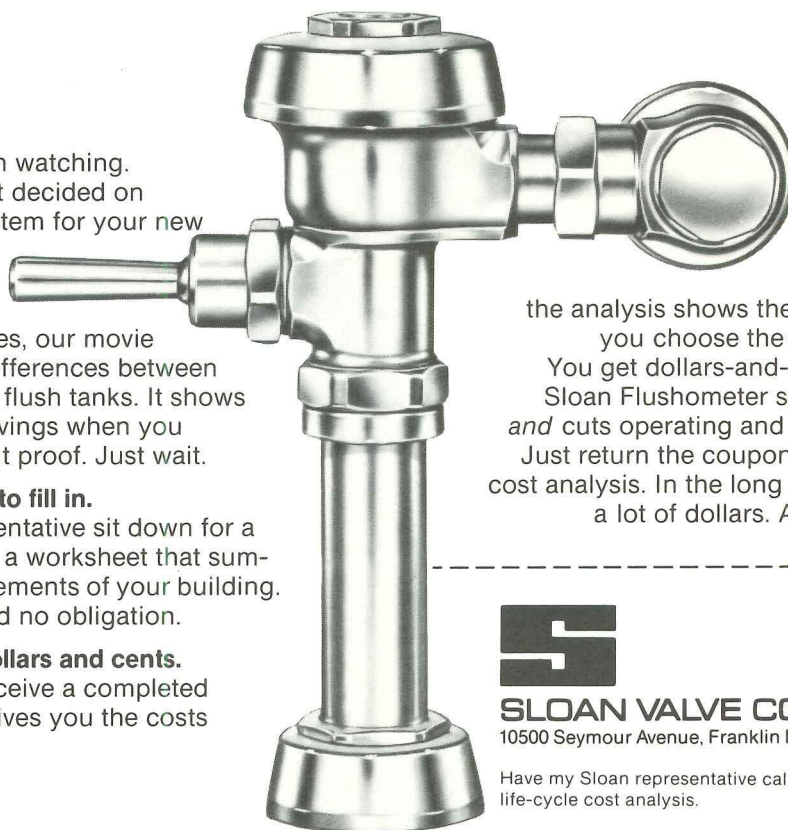
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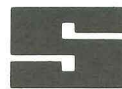


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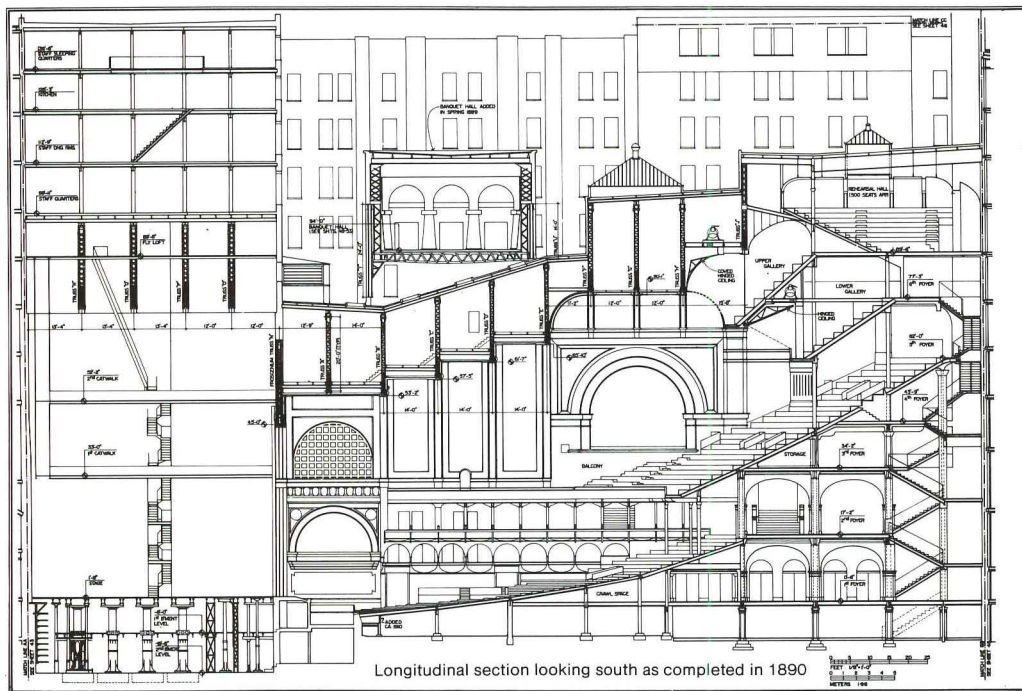
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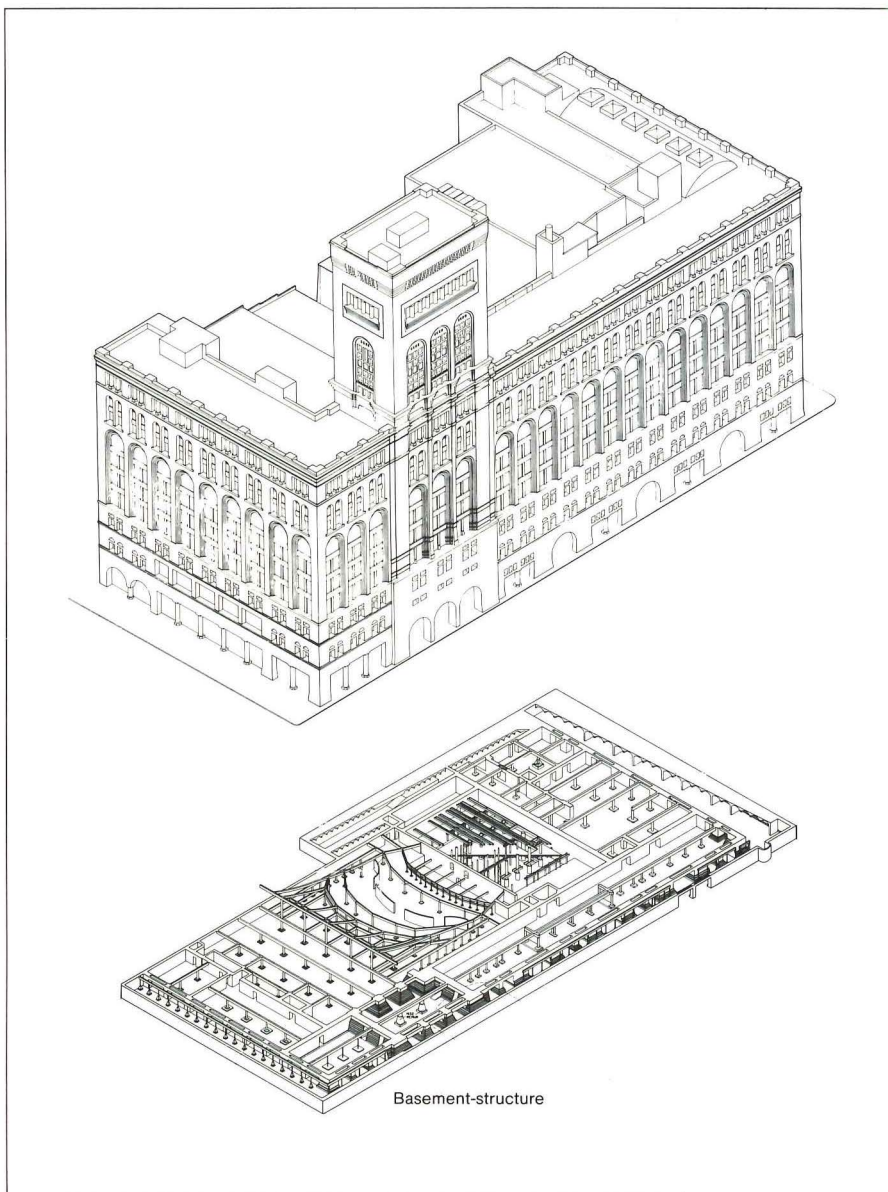
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Structure and Mechanics Viewed as Sculpture

Photographs by Jet Lowe, text by John A. Burns, AIA



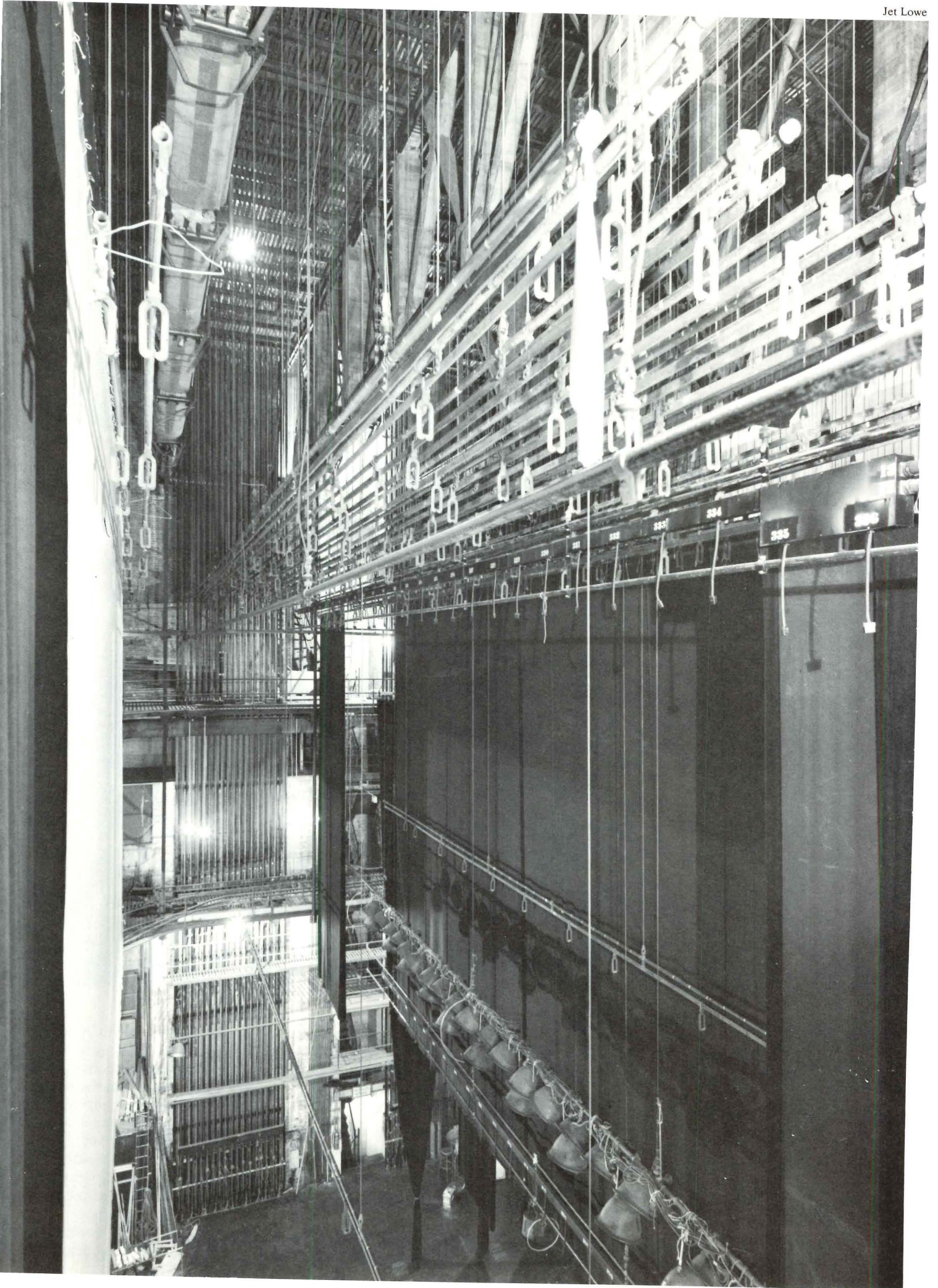
Adler & Sullivan's Auditorium Building, now Roosevelt University, was the largest structure of its kind in America at the time of its completion in 1890, combining a 4,237-seat theater, hotel, and office building. The complexity of a structure containing three unrelated functions on a small site created design problems of space and access for the architects and engineers.

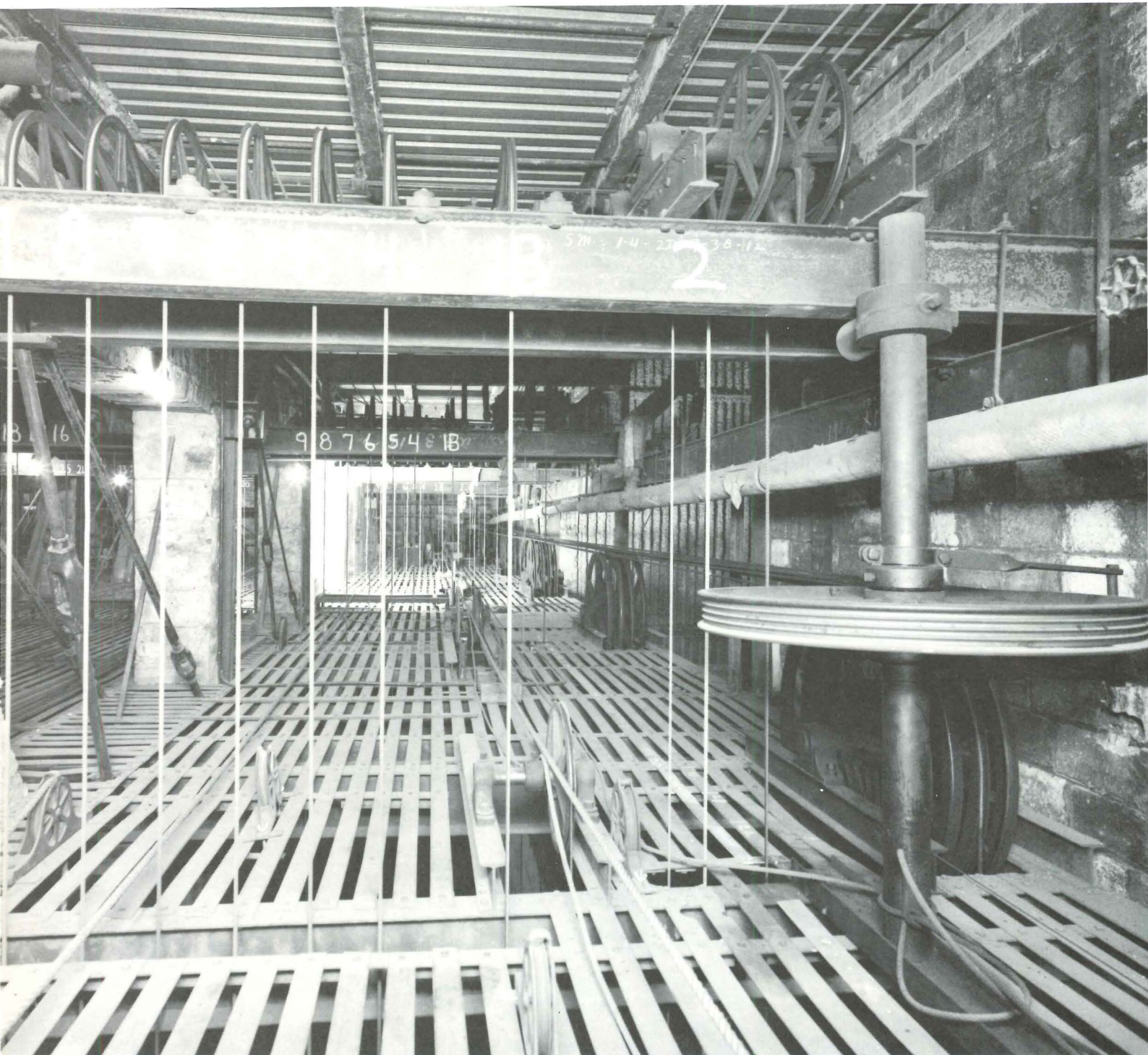
The combination of these factors with the desire of the clients to have the latest conveniences and most luxurious surroundings required state of the art structural systems and associated building technology. The result is a building that in its structural, heating, ventilating, cooling, lighting, electrical, hydraulic, and sanitary systems reveals all the virtues and limitations of the available technology of that time.

Much is known and much has been written about the Auditorium Building. Only the most detailed and scholarly accounts of the building cover more than what is visible to any Chicago pedestrian or theatergoer. Yet, what is behind the scenes, the architectural technology of the building, rivals the significance of its vaulted esthetics. From the foundation, carrying widely varying loads on both point and linear spread footings bearing on clay

This page, section and isometric views of the Auditorium's exterior and basement, across page, roof trusses and stage rigging high above the performance floor.

Mr. Lowe is a HAER staff photographer. **Mr. Burns**, an architect at HABS, was project director of the Auditorium Building documentation.



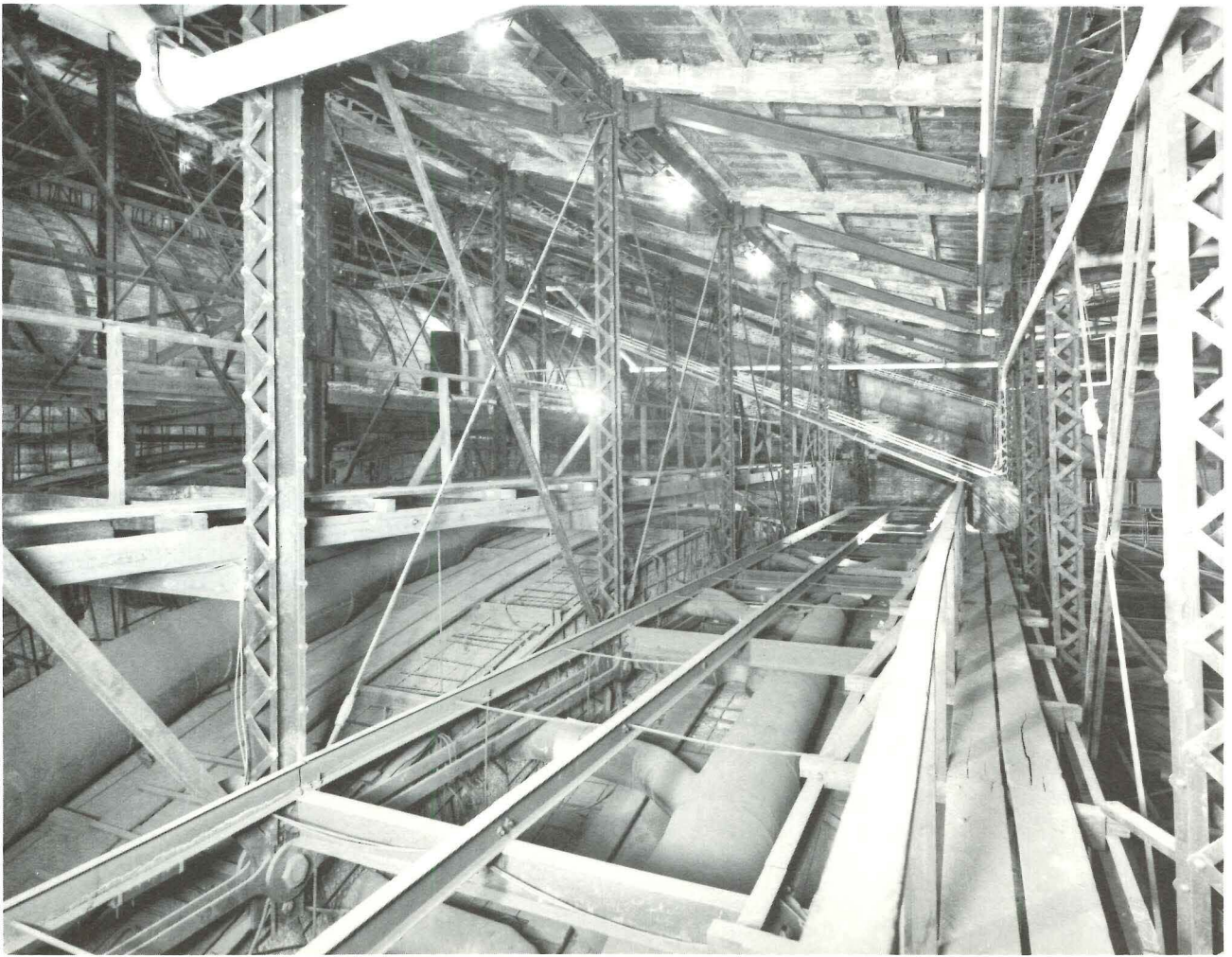
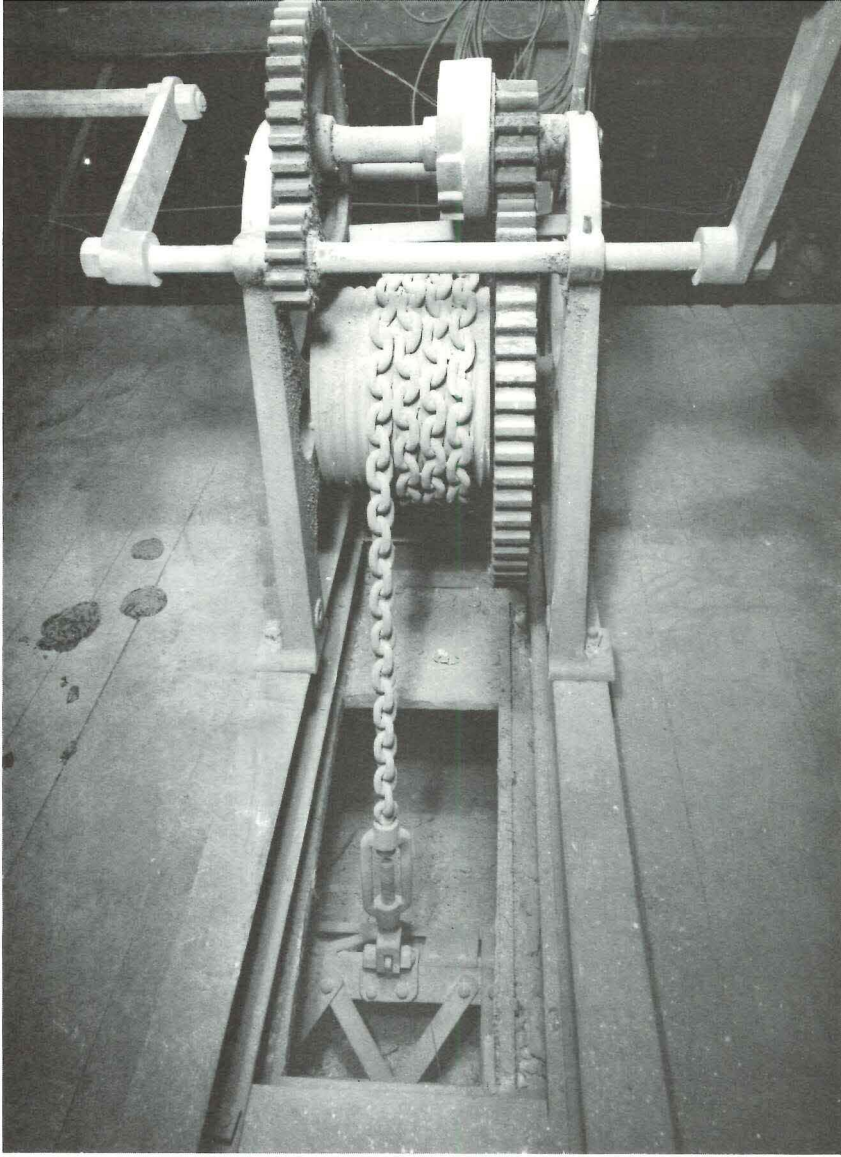


subsoil, to the offices of Adler & Sullivan over the water tanks in the tower, the building is a masterwork of integration of esthetic design solutions and structural and mechanical systems.

Research into and documentation of

Above, a loft over the stage house with a plethora of pulleys for positioning flown sets; across page, clockwise from top left, hand cranked chain winch for operating cove ceiling; roof trusses intersecting a firewall, with cove ceiling curving away; theater attic space with Pratt trusses.

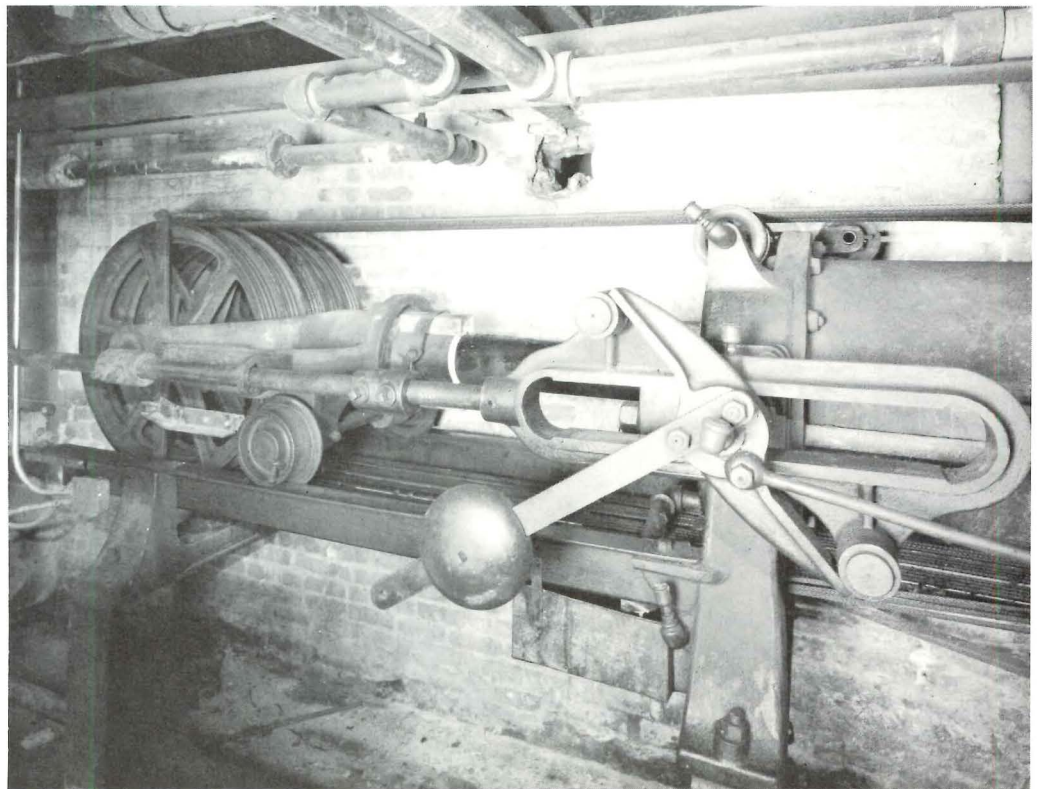
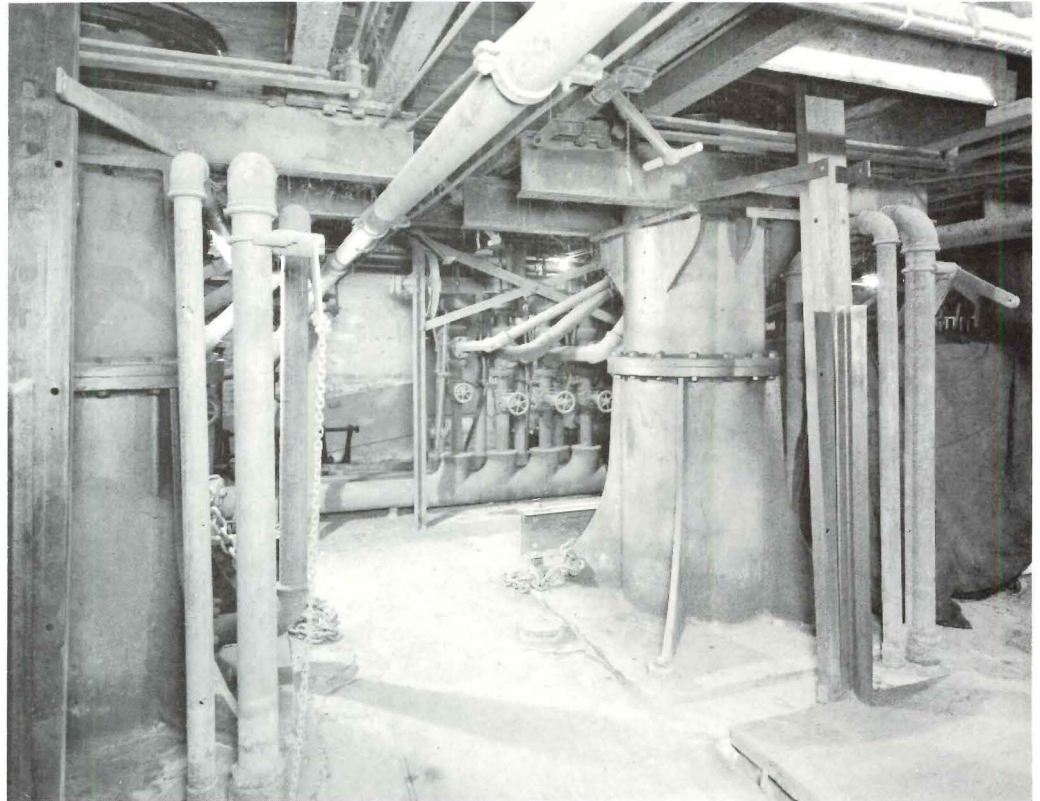
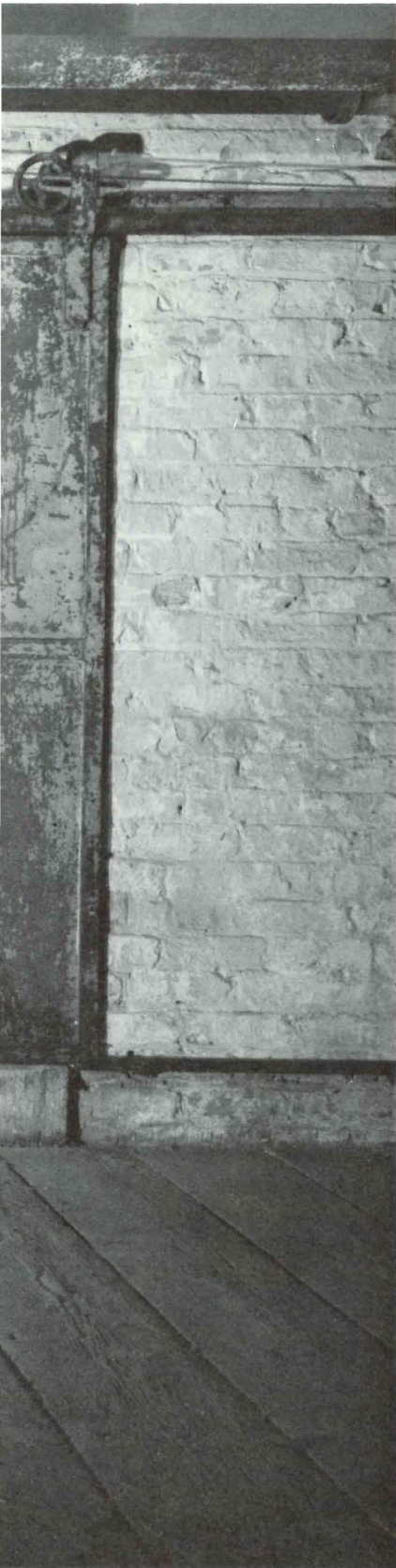
the engineering systems of the Auditorium Building were undertaken by the Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) in cooperation with Roosevelt University and with financial support from the Graham Foundation of Chicago and the State of Illinois Department of Conservation. These photographs and drawings are the product of this documentation effort. They illustrate, in just one building, many of the tremendous changes in American building technology in the late-19th century.



Photographs by Jet Lowe



Photographs by Jet Lowe



above right, hydraulic rams on the second basement level allows stage floor to be raised, lowered, or inclined; right, hydraulic ram for operating stage curtain; above, 'star lift' (circular cutout) at the first basement level allows actors to appear on stage from below. Behind the fire door is the orchestra pit. □

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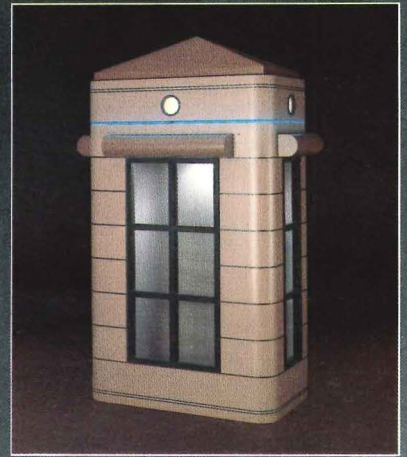
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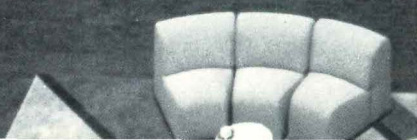


Elevator concept and design by Trisha Wilson & Associates Inc., Dallas
Elevator fabrication by Coerver Industries Inc., Dallas

Color Quest
1982 Product Design Award Winner



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AIA JOURNAL

In July and thereafter the AIA JOURNAL will publish under the banner ARCHITECTURE.

The new name reflects the fact that for several years the magazine's prime concern has been architecture as an art and profession.

To use a distinction drawn by AIA's Direction '80s task force, our concern is architecture rather than architects.

The new name also reflects the fact that the magazine speaks for the profession, not AIA per se, and that reporting on AIA activities, while part of its content, is by no means the major part.

The magazine will continue to be the AIA JOURNAL, the Institute's principal periodical service to the profession. But the large letters of its logo will proclaim its focus upon ARCHITECTURE.

D.C.

Color: Media and Messages

A portfolio of varied approaches to brightening building interiors. By Michael J. Crosbie

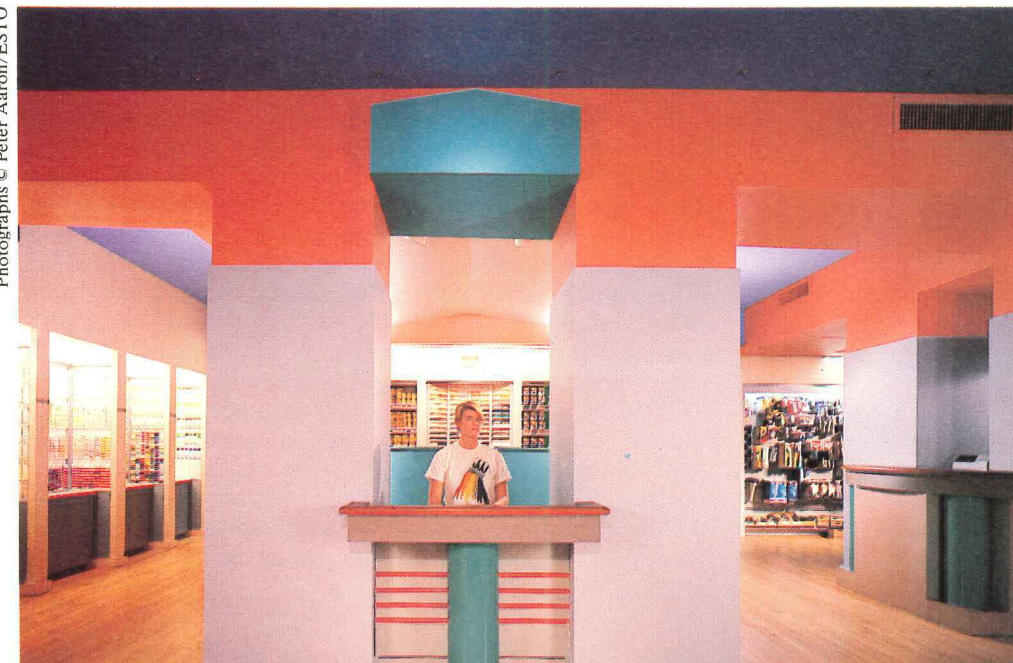


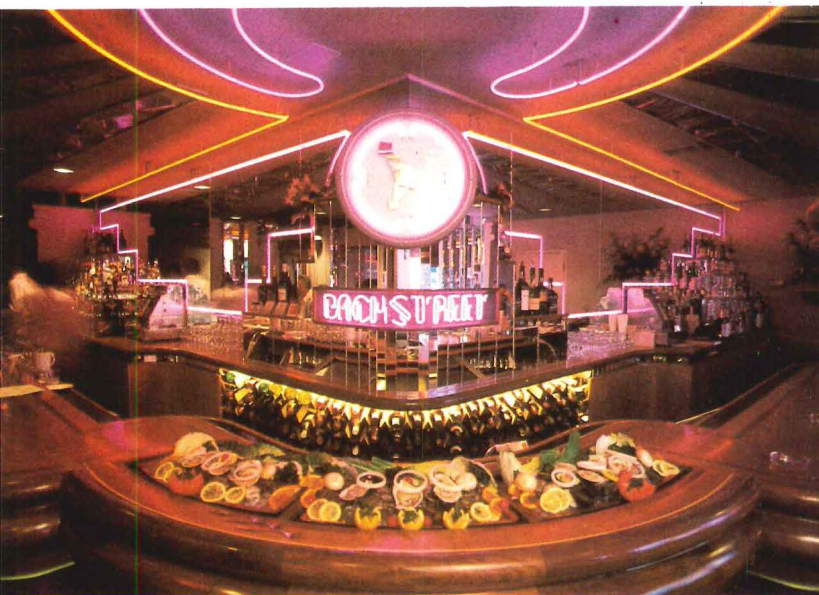
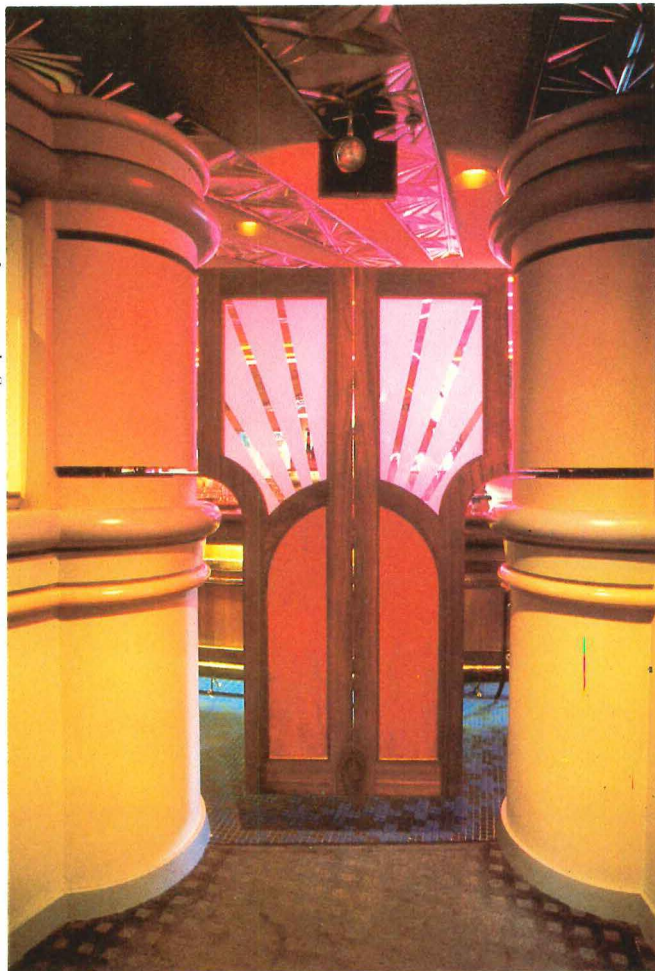


Use of color in architecture continues to increase space, and to range across the spectrum of hues, techniques, and purposes, as the examples on these pages indicate. They also seem to show that there is purpose present; that color more often is being used, not just for decoration, but as a design tool.

Appropriately lavish color and flights of detailing fancy distinguish the interior of the Janovic/Plaza paint and home decorating store in New York City. The sales floor is U-shaped, thus the architect used color to encourage customers to circulate throughout. Edward Mills, AIA, of Voorsanger & Mills Associates, says that this progression is reflected in the ceiling. At the entrance (below), which faces east, the ceiling is a dark, predawn blue. As one moves through the store, due west, it lightens and finally turns to a sunset orange.

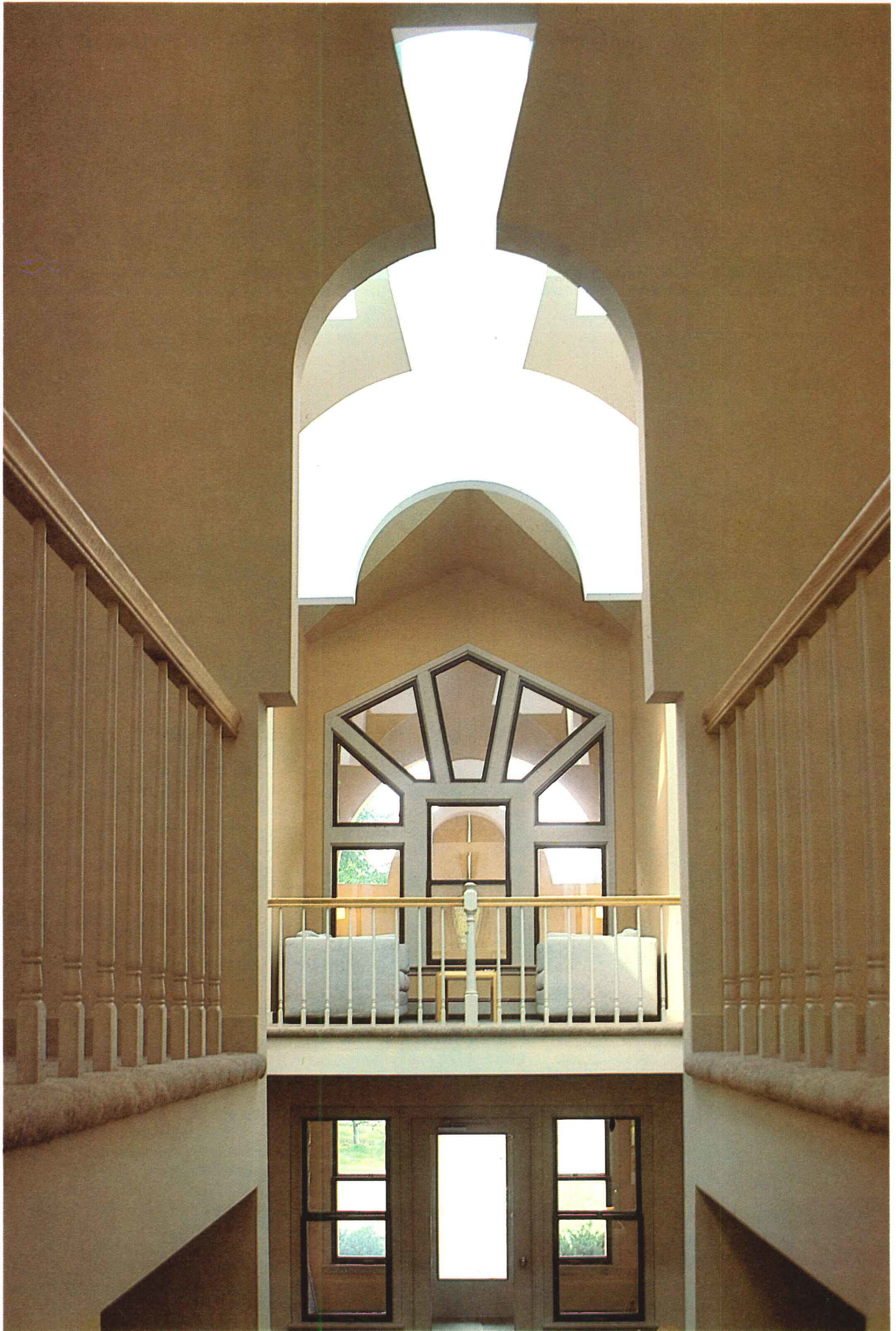
Playful details include the "paint brush order" (across page) and miniature houses whose roofs display floor tiles (above). The "paint can rustication" of a doorway (right) uses colors relating to the visual weight of its elements: heavy green on bottom, light yellow on top.

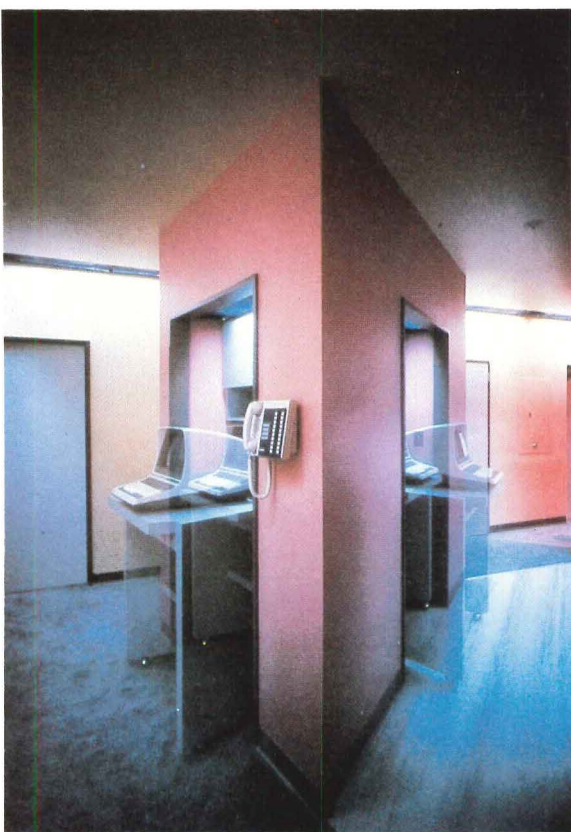
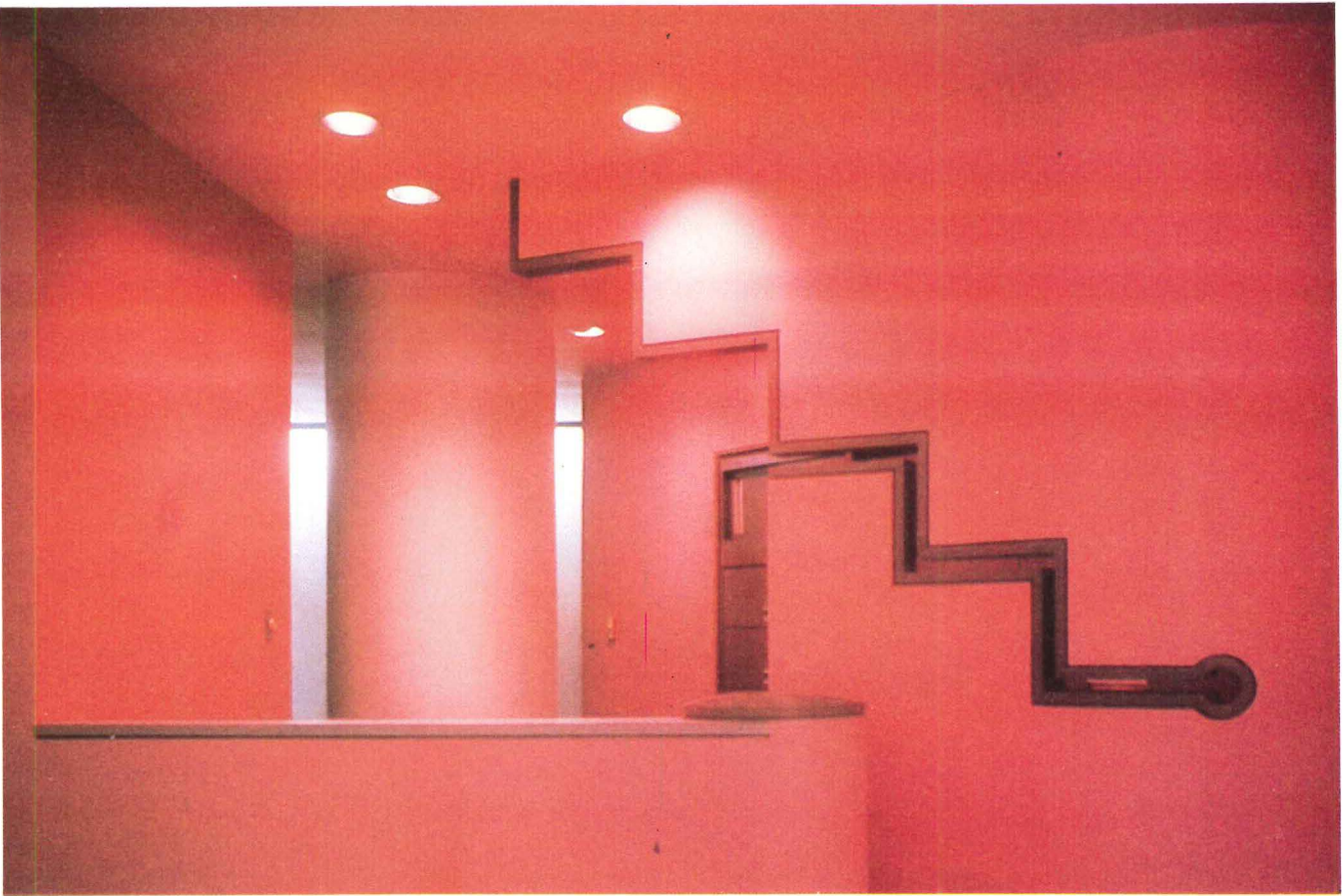




“Orange and pink neon,” says Mark Simon, AIA, “are great colors for dining. They not only make the food look good, but everybody looks like they’ve got a suntan.” With those effects in mind Simon, of Moore Grover Harper, Essex, Conn., used glowing loops of light reflected in metal and glass to make the Backstreet Restaurant into what he calls “a carefully considered excess.” The New Haven, Conn., restaurant has a set of swinging doors (above left) into its bar. Simon points out that they are hinged from inside two large columns to avoid hitting the bead molding. The molding is rendered in pastel pink and blue, soft counterpoints to already strong forms. The bar’s woodwork (left) was molded in natural walnut and cherry. Strands of light zip across the ceiling, culminating in a pink neon clock at the corner. With polished metal and glittery glass, the entire ensemble is vaguely reminiscent, Simon suggests, of an art deco steamer ship.

For a tranquil setting conducive to scholarly pursuits, Moore Grover Harper turned to academic Palladio. Sammis Hall at Cold Spring Harbor Laboratory on Long Island, N.Y., is a symmetric arrangement of rooms about a two-story core of sunlight (across page). William Grover, AIA, says that color is used to zone the building concentrically. “The lighter elements are in the middle, with darker colors toward the building’s periphery.” The center core is white to reflect as much light as possible. The spaces surrounding the core are beige with the same color carpeting. The ceiling inside the core is blue, “in association with the sky,” says Grover, “so it seems like the top is gone.” Over the entrance stairway floats Grover’s “Slice of Light” chandelier (above right). A tube-shaped cotton and rayon fabric is stretched over a rectangle of neon, its ends shaped like the center core cutouts. When viewed axially, the chandelier appears as a single white line, denoting the symmetry of the building, says Grover.

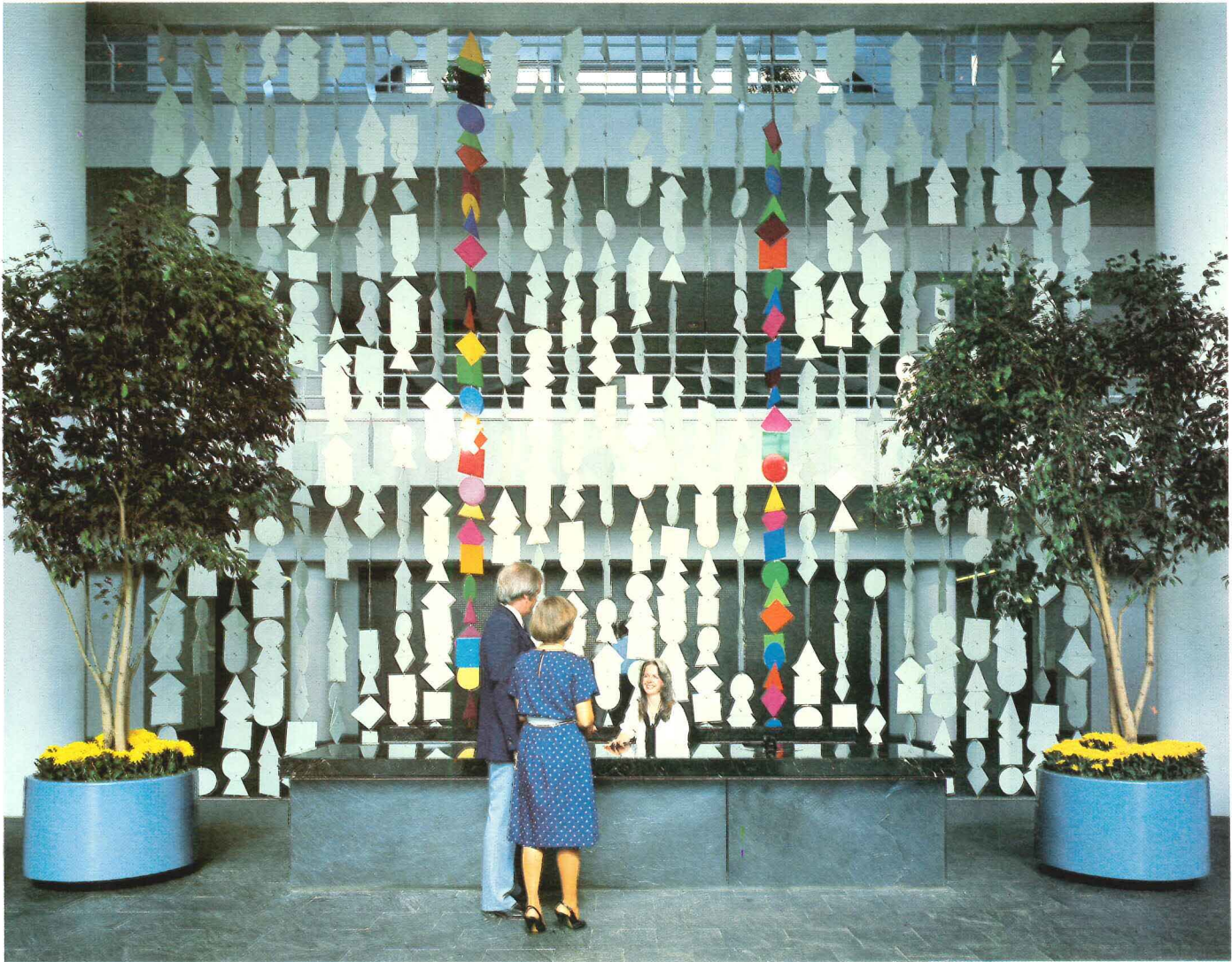




The color scheme in the Capitol Hill Medical Center in Washington, D.C., is judiciously applied to enhance the overall design concept. The work of Cross+Little Architects of Silver Spring, Md., the clinic occupies the first floor and basement of a small office building. Dennis Cross, AIA, says that, "Color is not an element in the design by itself," but works to enhance the figural quality of the free-standing elements, such as the reception desk (above) and computer terminals (left). These sculptural forms are grouped in the center of a "doughnut" plan, and their lively pink is accentuated from the surrounding pale peach walls. The peach walls are bathed in soft, fluorescent cove lighting, while the center elements are illuminated with incandescents. Soft gray is used to articulate edges, such as the "stepped thermometer" element (above), with the entire composition set on a gray carpet. The choice of colors was a departure from the "hard, clinical, antiseptic white," and also denotes a "home atmosphere," as architect Donald Little, AIA, explains.

In Davis, Brody & Associates' Philip Morris headquarters in Richmond, Va. (across page), color is used to punctuate the geometric quality of the building. Chermayeff & Geismar Associates of New York City was in charge of the interior graphics and art. Designer Keith Helmetag says that the forms used in the screen behind the reception desk "started with the architecture." Circles, squares, triangles, and diamonds echo the geometric, overlapped quality of the floor plans. The colors were used in different zones throughout the complex to help orient visitors and employees. Large airbrushed canvases (across page, bottom left) also pick up on the color scheme. In the employees' cafeteria, the four shapes were raised in plywood against a white background, their reveals illuminated with bright neon, lending an air of "corporate punk."

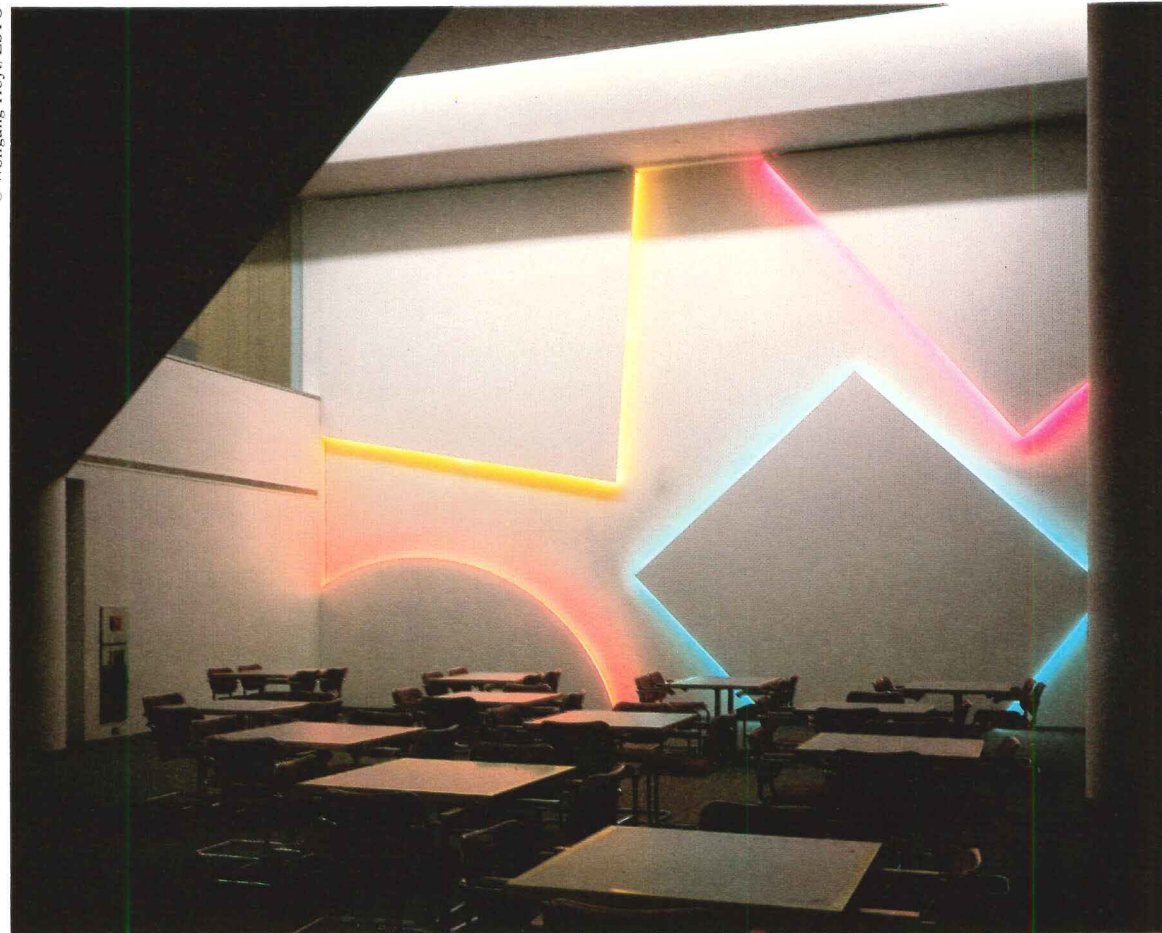
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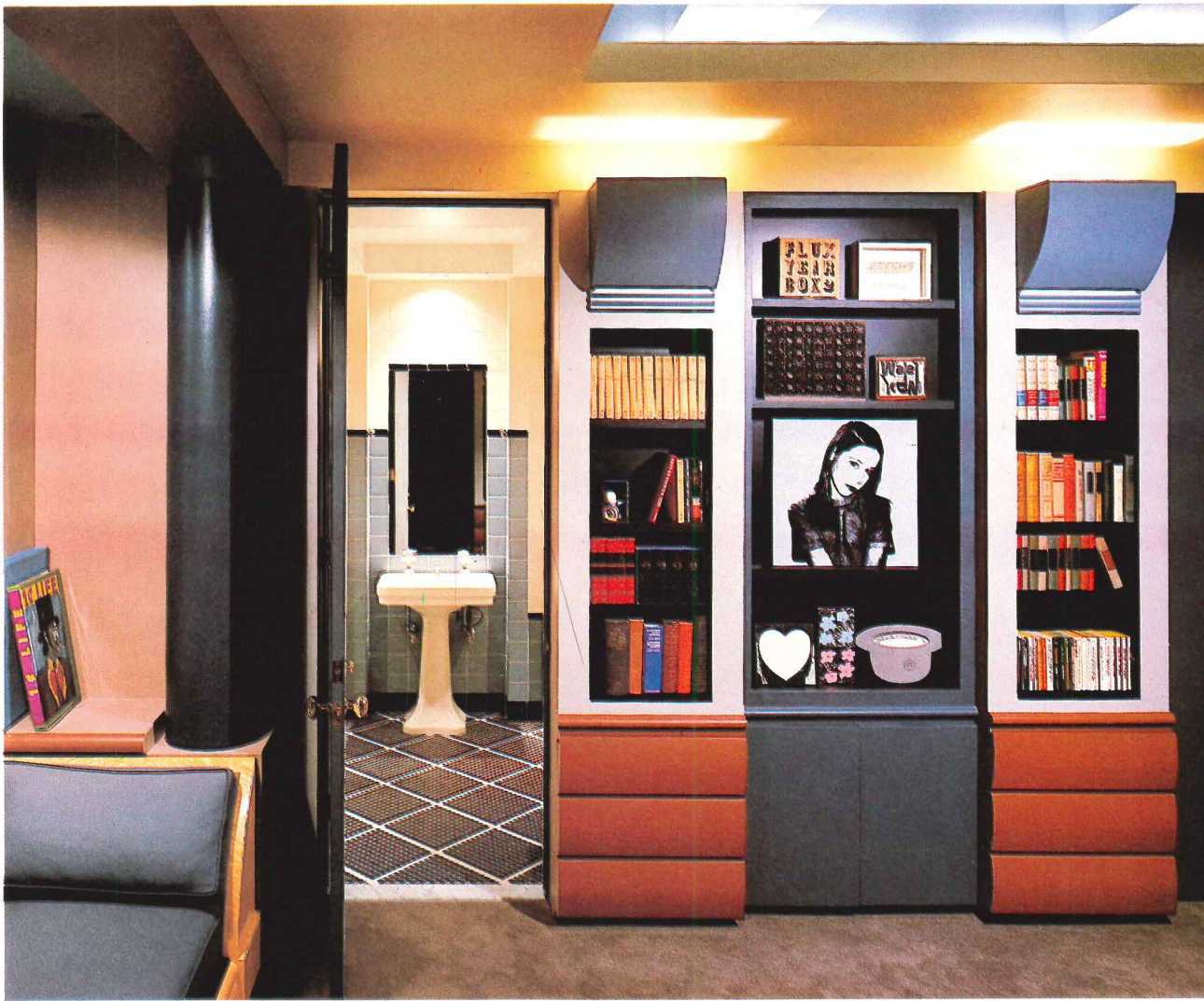


Boston's One Post Office Square (left) uses color with a Renaissance flair. Robert Brannen, AIA, of Boston's Jung/Brannen Associates, selected 10 varieties of Carrara marble from the Italian quarry. He also studied the use of marble in Florentine and Venetian churches. The result is a two-story columned space displaying the "richness and exuberance" that Brannen sought.

For his own loft apartment in a converted factory, Chicago architect Kenneth Schroeder, AIA, used color to code the design's major elements. A three-story edicular tower, "a house within a house," says Schroeder, is painted yellow (above). The skewed tower separates the kitchen from other living areas and is crowned with a skylight. The color, says Schroeder, is associative with sunlight, and makes the form figural against white walls. Historical pieces, such as the columns, are gray.



Rothzeit, Kaiserman & Thomson of New York City employs warm and cool colors, varying light intensities, and hard and soft materials in a Greenwich Village apartment house conversion. The complex comprises 10 former meat refrigeration warehouses, "which first had to be defrosted," says Bernard Rothzeit, AIA. For security reasons, access was limited to one entrance. The resulting long corridor uniting the complex is a string of ramped spaces of differing character to lighten the trip. A wide corridor (above right) is a gallery of pulsating blue with carpeting on top, illuminated with interior "windows." Cool mauve, floating panels of carpet, and fluorescent lighting distinguish a transition space (top). An elevator bank (above) is dressed in earthy tan and blue with luminous trim. The walls also skew, says Rothzeit, "so as you look up the ramp, it appears shorter than it really is."



© Peter Aaron/ESTO

Michael Graves, FAIA, uses color in a New York City apartment renovation and expansion to communicate some idealized notions about nature. Patrick Burke, associate in Graves' Princeton, N.J., office, describes the color concept as thematic. "It's always derived from nature, it's associative, it's representational." Set upon a gray carpet, the columned bookcases (above) have bases of terra cotta, "which implies an earthy, three-dimensional material," even though it is painted gypboard. The middle section, or body of the column is flesh colored but lighter at the face (left), "to relate the idea that the wall is being sheared," says Burke. Blue sconces on top throw a warm light on a cream ceiling. The mural at the end of a hallway (left) is Graves' conception of an "alternative landscape" incorporating the apartment's colors in their natural setting. The mural faces a window overlooking Central Park.

Another New York City apartment of quite a different stripe is the work of Peter Wilson. The client wanted to convert his small bachelor apartment into a home for two, which called for an expanded bedroom and an enlarged living area to accommodate a video system. Here, Wilson uses color to articulate the spaces' edges. A wandering line of pink and gray ceramic tile (across page, top) leads one up from the entryway, becomes a border for the dining area, and then zags over to double as a kitchen counter. In the entertainment area (across page, bottom) the tile encircles the seating pit, which is oriented toward the video screen and a marble hearth. Wilson says that the bolt of red neon adds a theatrical note. Providing a quiet background, the walls are varying shades of rose-beige, which reveal their subtle changes of hue under the indirect lighting. The carpet throughout is beige, and the floors are white oak. The private areas not shown are decorated with richer versions of rose-beige. □



Norman McGrath



Norman McGrath



Adler & Sullivan's Wainwright Building in St. Louis, constructed in 1891, contained all of the new technical elements that would become standard features of the high-rise office for the next 50 years: raft footings, fireproof tile covering structural steel, movable interior partitions, and fully operable windows for ventilation and daylighting. The Wainwright Building represented Louis Sullivan's deliberate attempt to create a special form for the multistory office block.

However, more importantly, the Wainwright offered a supremely logical solution to the technical and environmental problems important to the success of this new building type, the large office block. It introduced working and workable structural use of the steel frame; building anchoring techniques; provisions for heating, ventilation, and airconditioning; provision for daylight penetration into individual room type offices; fire safety; vertical circulation by elevator.

The Wainwright functioned as an organic unit, providing light, air, and temperature control to the interior office and commercial space. The skylit ground floor and U-shaped plan of the office floors above maximized daylight penetration and provided outer exposure for all offices. Fully operable windows allowed adjustable fresh air ventilation, while steam radiators provided a clean, adjustable heat source. The Wainwright lacked the sophisticated, mechanical airconditioning system we now rely on, yet for nearly a century of constant use, until major renovation in 1981, it satisfied the spatial and environmental needs of office tenants.

The glass curtain wall, the deep floor plan, and the open office entered the American scene with a vengeance after the Second World War. These new architectural elements, combined with Willis Carrier's invention of the airconditioning system, provided the raw material from which the new mechanistic aesthetic of the fully sealed, airconditioned building, evolved. One of the earliest buildings representative of the effects of these changes is Pietro Belluschi's Equitable Savings & Loan Building in Portland, Ore., opened in 1949. The Equitable Building was one of the first sealed, glass, mechanically serviced, and fully airconditioned office buildings in the U.S. In 1980 it was designated a National Historic Mechanical Engineering Landmark by ASHRAE and last year was honored with AIA's 25-year award (see July '82, page 84). Considered a landmark in the transition to sealed, glass, airconditioned buildings, its office space incorporated year-round airconditioning, good natural illumination and artificial light sources, sound control, attractive durable finishes, and a structure and utilities easily adaptable to change in office partitioning.

The design of the airconditioning system is of admirable simplicity. Each floor has its own fresh air supply through louvered intakes on the stair tower. Air is conditioned by a separate system on each floor. Incoming air is distributed through ceiling outlets. Return air is removed through slotted window sills into the plenum of the floor below. Perforated ceiling panels allow air, heated by the light fixtures, to be removed directly into the return air plenum. The building skin functions as a passive environment modifier. Heat absorbing glass was used not so much to reduce the solar heat load, but more to cut sky glare so that blinds or shades would not be needed for comfort. Similarly, double glazing was intended primarily to reduce cold drafts off exposed glass surfaces. Economically the use of a mechanical system was justified to allow an increase in leasable space over earlier window ventilated buildings. The Equitable was so successful that it became the model for a generation of American high performance, sealed office buildings.

Elia Sterling, research director for the Vancouver research firm of TDS Limited, is coauthor of the forthcoming book, *Modern Buildings and the Public Health*. **David McIntyre** is senior researcher for TDS Limited. **Theodore Sterling** is a professor, faculty of interdisciplinary studies, Simon Fraser University, Burnaby, British Columbia.

New Health Hazards In Sealed Buildings

*Findings from recent research.
By Elia and Theodore Sterling
and David McIntyre*



monitoring of electrical use, and an underground heat storage system using 600 tons of rock are technological features integrated into the building to enhance energy conservation.

Despite the architects' desire to design an office environment sensitive to the needs of the worker, the Gregory Bateson has been plagued by environmental quality problems since it opened in 1982 (see Sept. '82, page 18). Complaints of respiratory, gastrointestinal, skin, and eye problems began soon after the first occupants moved in. Some occupants complained of suffering dizziness, loss of balance, occasional sore throat, and itchy skin. There were reports of unpleasant odors. Most complaints seemed to come from areas with the lowest ventilation rates. More complaints occurred when the ventilation system was operated only in the daytime than when operated around the clock. Complaints were sufficiently insistent to lead public health authorities to study conditions. In fact as a result of the problems, contractors, subcontractors, and suppliers have been sued and the state faces worker compensation and class action suits, claiming health damages from poor air quality inside the building.

Air quality tests conducted by the California Occupational Safety and Health Administration found slightly elevated levels of formaldehyde, carbon dioxide, and other pollutants. Fun-

Across page, glass wall addition to the Wainwright Building; left, detail of the curtain-walled Equitable Building; below, atrium of the Gregory Bateson California State Office Building.

But much of its success was based on a variety of conditions that no longer exist for the subsequent generation of sealed buildings, including stable, mostly natural materials and durable interior finishes; lighting by cold cathode tubes with good color balance, no flicker, and minimal ultraviolet radiation emissions; a constant supply of fresh, outside air; an air conditioning system designed for good circulation by placing exhaust fans under the windows near the floor with supply vents in the ceiling; perforated ceiling panels allowing heat to escape from the lighting fixtures directly into the return air plenum; and an abundance of inexpensive energy that frees the design from constraints imposed by climate.

With the rapid rise of energy costs in the 1970s, which brought an end to the era of the high performance, sealed building, the search began for new design solutions responding to energy constraints and performance requirements. The Gregory Bateson State Office Building in Sacramento, Calif., designed and implemented under successive state architects Sym Van der Ryn and Jerry Wasserman, FAIA, is a prime example of recent energy conserving office buildings.

Approximately of the same scale as the Equitable Building (7,000 square feet), the Bateson was designed to respond to a wide variety of functional and esthetic constraints, including energy use and employee working conditions. Wasserman has been described as uncommonly sensitive to the impact of work upon worker, often pointing out that employees spend more of their waking hours in the office than anywhere else and that lower level employees are particularly affected since they have so little administrative control over their own working conditions. The Bateson, like the Equitable, is for all practical purposes sealed, with the environment created and controlled by a mechanical system. The focus of the building is an interior atrium, designed as a flexible energy management device that redistributes heat and provides natural light to interior office space.

As a means to minimize energy use, the Bateson, like the Wainwright a century before, uses the structure and massing to passively control the indoor office environment. A massive, exposed concrete frame stores daytime heat and slowly releases it at night. The many terraces, stepbacks, and re-entrant corridors increase the surface area available for thermal transfer and provide daylight penetration. On the interior, the suspended ceiling has been eliminated to permit heat stratification and indirect ambient lighting. Solar collectors for hot water, computer



© 1981 Rob Super

gal spores were found present in the air exhausted from the rock bed thermal heat storage.

Inspection of the ventilation system revealed that up to 80 percent of the induction boxes (a strategic component that controls the mix of air to diffusers) were found to be defective. Office space divider partitions were identified as a major inducer of formaldehyde and contributors to air stagnation.

All indications pointed to inadequate ventilation and poor air circulation and filtration as the most serious sources of occupant complaints. By good fortune, declining energy costs have allowed the ventilation system to be put back on 24-hour operation, providing a maximum fresh air supply without severely increasing operating costs. Better ventilation has resulted in dramatic reductions in both complaints and contaminant levels. This solution, however, is not permanent. When energy costs again escalate, the increased cost will force the choice between comfort and energy conservation.

With the best of intentions (to provide optimum environmental quality conditions within the context of an energy conserving office building), the architects stumbled upon the dilemma of modern, airconditioned office buildings. Major changes in building technology and energy supply that have occurred over the past decade and are still in progress may reduce the capacity of airconditioned office buildings to provide conditions fit for human habitation. These changes have included sealed building envelopes; dependence on mechanical heating, ventilation, and airconditioning to provide acceptable thermal comfort and air quality; introduction of unstable synthetic materials, maintenance products, and finishes that off-gas toxic contaminants such as formaldehyde, chlorinated hydrocarbons, and respirable particles or that leave dust residues; dependence on fluorescent and other gas vapor lighting that emit nonionizing radiation and may be a major catalyst of photochemical reactions indoors; technological advances in office equipment such as photocopiers and video display terminals that emit radiation and airborne contaminants and may require specially designed environments for safe use; and increased cost of energy and possible shortages at times of greatest demand that have become major incentives for reduction of fresh air ventilation.

In many ways the sealed, airconditioned, energy conserving building with minimum ventilation resembles a submarine, in that its indoor atmosphere must be kept fit for human lungs through the extensive use of sophisticated, mechanical equipment. The quality of the ambient environment depends primarily on inside activities, and materials, and on ventilation procedures that clean and refresh the air. Filtration of many contaminants is often neither economically practical nor techni-

cally possible. For this reason many maintenance products containing volatile chemicals commonly used in buildings are no longer allowed in submarines. Air quality problems in sealed buildings and submarines differ in specific instances but are often similar in kind. For example, there is a parallel between experience in submarines where deadly phosgene gas was produced by accidental combinations of leaking gases and the failure of the ventilation equipment in the Bateson Building leading to increased exposure of occupants to formaldehyde and other fumes.

There are now nearly 200 investigations on record across North America of building-associated epidemics of illnesses and comfort complaints similar to those experienced by the occupants of the Bateson Building. Investigations were undertaken by government agencies, research institutes, and private consultants. Complaints ranged from minor to serious reports of reproductive system and pregnancy problems. Almost all instances have occurred in new or refurbished buildings in which conditions of ambient air and ventilation are completely mechanically controlled and lighting is supplied by fluorescent lamps. The overwhelming majority of these investigations coincided in time with a concerted effort to minimize building energy use by reducing fresh air ventilation rates and increasing the operational comfort ranges for acceptable temperature and humidity.

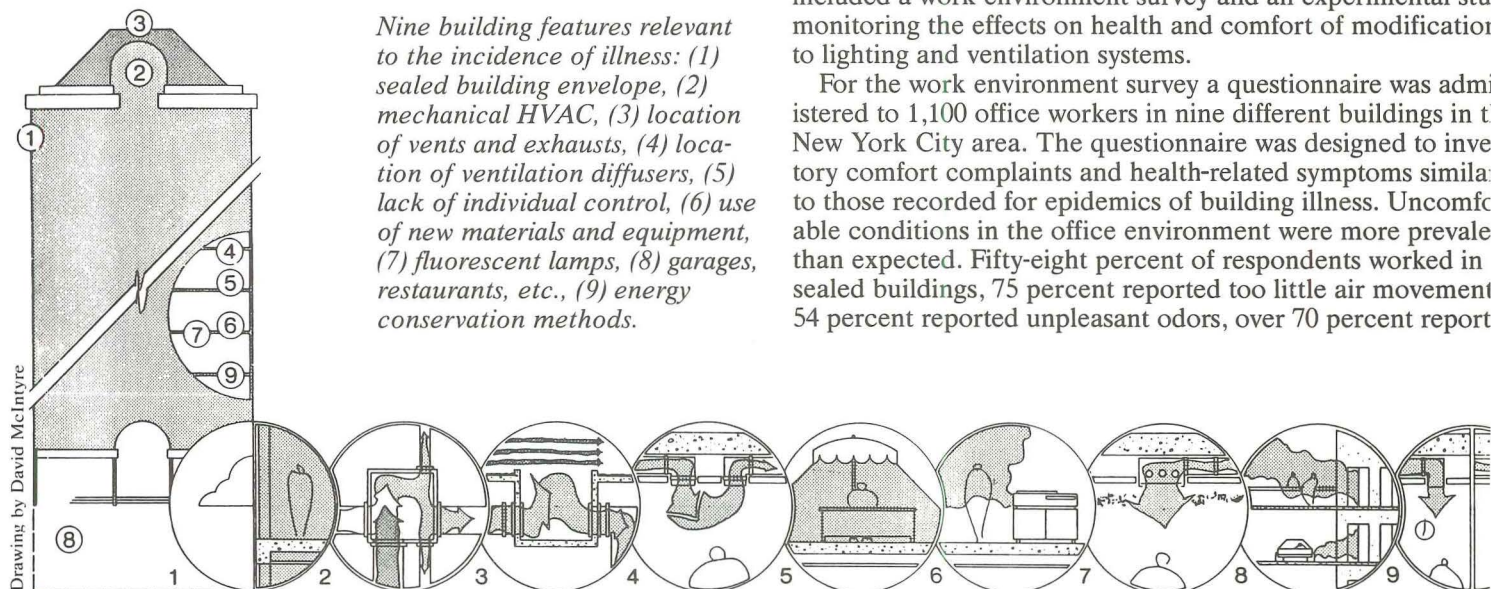
Tight building syndrome, insulated building illness, office building syndrome, and often simply building illness, all refer to epidemic complaints of illness or discomfort including headache, burning eyes, irritation of the respiratory system, drowsiness, and fatigue. The symptoms are generally experienced over an extended period of time and recur during occupancy in sealed buildings. The cause is rarely definitely determined but is often suspected to be related to components of the building or air supply system. A few of investigated epidemics have been explained by specific causes such as carpet shampoo residues, glass fiber from ducting systems, asbestos, or formaldehyde. (Although smoking has been considered in nearly every investigation, no data have been presented that link smoking in buildings to health related complaints.)

In most investigated buildings, specific causes for symptoms have not been determined, yet many investigations have concluded the symptoms to be related to components of the building, particularly the ventilation system, operated at minimum ventilation rates.

In 1979 with the collaboration and support of the Legal Services Society of British Columbia and the British Columbia Government Employees Union in Vancouver and the Office and Professional Employees International Union in New York, TL Limited began evaluating the effect of contemporary buildings on the health and comfort of office workers. This research included a work environment survey and an experimental study monitoring the effects on health and comfort of modifications to lighting and ventilation systems.

For the work environment survey a questionnaire was administered to 1,100 office workers in nine different buildings in the New York City area. The questionnaire was designed to investigate comfort complaints and health-related symptoms similar to those recorded for epidemics of building illness. Uncomfortable conditions in the office environment were more prevalent than expected. Fifty-eight percent of respondents worked in sealed buildings, 75 percent reported too little air movement and 54 percent reported unpleasant odors, over 70 percent reported

Nine building features relevant to the incidence of illness: (1) sealed building envelope, (2) mechanical HVAC, (3) location of vents and exhausts, (4) location of ventilation diffusers, (5) lack of individual control, (6) use of new materials and equipment, (7) fluorescent lamps, (8) garages, restaurants, etc., (9) energy conservation methods.



at the temperature was either too cold or too hot, 65 percent reported the air too dry, and 74 percent reported the air too stuffy. Building illness symptoms experienced more than once a week were also prevalent: 37 percent reported headaches, 51 percent reported fatigue, 59 percent reported sleepiness, 31 percent reported nasal irritation, and 34 percent reported eye irritation.

A consistent association was found of all relevant symptoms with ability to control ventilation. A more detailed evaluation of the work environment survey (reported at the recent Second International Conference on Building Energy Management) showed building illness symptoms to be significantly associated with ventilation, air movement, and lighting. As could be expected, of the nine office buildings surveyed, fewer health and comfort complaints were reported in buildings with functional windows. This "I can open the window" effect agrees with other studies. In 1982, pollster Louis Harris conducted "comfort and productivity" survey (commissioned by Steelcase) that found 46 percent of office workers believe air circulation through open windows is better than in offices where only the HVAC system circulates the air. The study also found a profound negative impact on the comfort of white collar workers of the contemporary office workplace and concluded that office comfort has a direct impact on job performance.

An experimental study was undertaken to determine the effect of ventilation and lighting on symptoms reported by occupants of one sealed building. Office workers in the sealed building were paired with occupants of an older building with operable windows. A comparison of symptoms showed 50 percent more complaints of eye irritation, 25 percent more complaints of headaches, and 40 percent more complaints of sleepiness and fatigue among occupants of the sealed building. The cause was suspected to be indoor-produced smog generated by ultraviolet emitting, full spectrum (sunlight simulating) fluorescent lighting impinging on indoor pollutants. Ultraviolet radiation is known to enhance the production of photochemical oxidants, a major component of atmospheric smog believed to be responsible for eye and respiratory irritation.

Next, symptoms were monitored while experimentally modifying lighting and ventilation conditions. In a blind test (subjects were not aware that conditions were being modified) the ventilation was increased to the maximum fresh air supply, and in half the offices the existing full spectrum lamps were replaced with cool white lamps. When only ventilation was increased, eye irritation diminished by 7 percent; when only lighting was changed, eye irritation diminished by 8 percent; but when both lighting and ventilation were modified, eye irritation diminished by a significant and substantial 32 percent.

All the necessary conditions exist in offices to produce photochemical smog— ultraviolet radiation (from fluorescent lamps and photocopiers), formaldehyde (off-gassing from particle board, insulation, and other materials), hydrocarbon vapors (from infiltrated auto exhaust and off-gassing from paints and plastics), benzylcyclic monoalicylbenzenes including toluene and styrene (ingredients coming from glues, solvents, and cleaning materials), and even trichloroethylene (contained in white-out materials used by typists). Thus the decreased eye irritation could very well be the result of reduced photochemical smog production when ultraviolet radiation is decreased and fresh air supply increased.

Overall, we have identified nine features common to office buildings where health and comfort have been problems.

A sealed building envelope: Generally the amount of fresh air drawn into a mechanically, environmentally controlled building is minimized, as it is energy efficient to recirculate as much of the building air as possible.

Mechanical heating, ventilation, and airconditioning: The HVAC system aids dispersal throughout a building of the many irritants and pollutants generated by materials and equipment. The system also may incubate and spread fungi, bacteria, and

viruses. (A mechanical ventilation system was, in part, responsible for the spreading of *Legionella Pneumophila* bacteria that caused 21 deaths in the incident of legionnaires disease at the Bellevue Stratford Hotel in Philadelphia in July 1976.)

- **Location of vents and exhausts:** Air supply vents can introduce outdoor contaminants into a building. For example, supply vents located overlooking a busy street or transit stop are often the source of entry for auto or diesel exhaust. Also poor placement of supply and exhaust vents can prevent exhaust from escaping. Exhaust air may even be reintroduced directly back into the air supply.

- **Location of ventilation diffusers:** Both inlet and exhaust diffusers are commonly located in the ceiling. This often creates stratification and short circuiting of supply air at the ceiling level, which may result in pockets of dead air and poor circulation.

- **Lack of individual control over environmental conditions:** All people are not equally comfortable in the same environment. Elimination of the possibility to modify the environment tends to contribute to discomfort, stress, strain, and minor health problems.

- **Use of new materials and equipment:** Synthetic materials and modern office equipment as well as the industrial soaps, detergents, and waxes used for maintenance generate many irritating and sometimes toxic fumes and dusts, including formaldehyde, hydrocarbons, amines, ozone, and respirable particulates.

- **Fluorescent lamps:** The new popular sunlight simulating type as well as the standard fluorescent tubes emanate ultraviolet light. These lamps may provide energy for photochemical reactions among pollutants, thus forming the basis for indoor photochemical smog production. While the photon path length is quite short, affecting only a small amount of air around the fluorescent fixture, many ventilation systems circulate air around and over the light fixtures and even through vents built into them. This practice exposes a very large volume of air to photon bombardment.

- **Parking garages, restaurants, and other nonoffice space use:** Many large office developments also contain within the same building parking garages, access to transportation (such as buses and subways), restaurants, health clubs, and laundry and recreation facilities. These spaces may add substantial amounts of combustion byproducts, including carbon monoxide, oxides of nitrogen, carbon dioxide, and diesel exhaust to the indoor environment.

- **Energy conservation methods:** These usually involve reduction of fresh air ventilation rates. Reduction of the fresh air supply increases the rate of accumulation of pollutants by reducing the volume of air exhausted. The efficiency of standard air filters and their ability to control contaminants is reduced substantially as the velocity of the ventilation air is lowered. Many buildings now use a variable air volume system, which only introduces fresh air when cooling or heating is required. Occupants of buildings with this type of system often complain of stale, stuffy air, an indication of insufficient ventilation.

Today an estimated 25 percent of the U.S. workforce can be found in office buildings. Sealed, airconditioned buildings no longer provide occupants sanctuary from air pollutants and often do not even provide adequate thermal comfort. Yet new laws and standards now being considered to promote energy conservation, including ASHRAE series 100 energy conservation standards and the building energy performance standards proposed by DOE, are likely to cause severe discomfort, possibly leading to reduced productivity and even illness in the office workplace.

The 1980s are a transitional period for architecture. The human health and comfort component of the building, in addition to energy conservation, new technology, and new materials, has begun to define a new design esthetic. Height, massing, and material use are the key architectural elements, combined with ingenuity and imagination, that will chart the course back to an architecture that serves rather than irritates. □



Inside Chinatown's Tiny Apartments

Making them more habitable through interior and furniture design. By Mary Comerio



San Francisco is a picturesque city with lively and diverse neighborhoods, and Chinatown may be the most colorful of them all. Jammed into its narrow streets are hundreds of exotic shops: Roast ducks hang in storefront windows; cases are filled with dim sum, dried mushrooms, sandlewood soap, teas, and herbs. For all its attractions, however, Chinatown is a slum, in the strictest sense of the word. Behind and above its thriving streets, a high concentration of low-income people inhabits dilapidated, unsanitary buildings.

Chinatown has the nation's highest residential density outside of Manhattan. In its core, more than 20,000 people live in an area covering only 35 square blocks. This population is crammed into 8,400 dwelling units, most of them in poor physical condition: 4,400 residential hotel rooms (in 115 hotels), 3,400 apartments and flats, 519 public housing units, and only 32 single-family homes. Most buildings have 100 percent lot coverage, and there is a shortage of open space—only two acres.

Despite these grim figures, for some residents the Chinatown community itself offsets housing problems. It offers convenience for shopping, transportation, and work, and most important, a place to live among persons who speak the same language, a matter of special importance to recent immigrants. For them, and for all the old and the poor, the community is essential to life, even if the quality of life is inferior to that found in mainstream America.

Half of Chinatown's population is elderly, and half of its elderly, about 5,000, live in low-rent residential hotels, often called SROs (for single room occupancy). The poor pensioners who live in them are without leases or other guarantees of tenancy, and have no control over their rooms. As one resident said, "There's not much to like (or dislike). It's just a place to sleep."

Mrs. Mak Kwong, age 77, is typical. She can barely afford the \$50 a month she pays to live in a 7x10-foot room, a room so crowded that half of her bed is covered with stacks of boxes and bags. Apart from the landlord's bed and bureau, her furnishings consist of discarded crates. Boxes and tins are everywhere. The ceiling leaks badly, the paint is peeling, and the plaster walls crumble whenever she tries to put in a nail. Her only window faces into a lightwell, but most of the light is blocked by a large box.

Ms. Comerio, an assistant professor of architecture at University of California at Berkeley, was a consultant to the project she describes here. A fuller description in the form of a booklet titled "Inside Chinatown" is available from Asian Neighborhood Design, 576 Vallejo St., San Francisco, Calif. 94133.

Mrs. Mak's room is not heated; she must put on extra clothes to keep warm. She has one electrical outlet (with a lot of extension cords), and her only light is a bare bulb. She seldom cooks a meal on her hotplate—she's afraid of fire—and most days eats only tea and noodles. She washes her dishes in a basin she keeps under the bed and throws out the dishwasher in the bathroom down the hall. She goes out for a few hours each day to visit her family association, to purchase food, or to sit in a nearby park. Most of her time she spends in her room.

The lives and rooms of many elderly residents in Chinatown hotels are similar. Eighty-nine-year-old Mrs. Mui K. Lee, for example, spends her evenings in darkness because her landlord told the tenants that everyone should keep the lights off as much as possible. Mrs. Yuet Ming Wong carries her dirty dishes downstairs in a bucket to a public restroom. Mrs. Mei Jin used to poison the mice, but she couldn't move the bed to retrieve them, and they smelled.

SRO tenants have learned not to complain. They have no other options. And the situation is not much better for apartment dwellers. Mr. and Mrs. Hu, who just came to the U.S. with their three children, live with her elderly parents and her sister's family in a rundown Chinatown flat. When the Hus approached their landlord for a rent cut, he refused them, making it clear that he was already doing them a favor to let all 11 family members stay in the five-room flat. They didn't complain.

Chinatown's housing shortage is part of a citywide plight: The cost of housing in San Francisco ranks among the highest in the nation, and the vacancy rate is less than 1 percent. As San Francisco has grown as an international center of trade, downtown office and commercial spaces have expanded tremendously. Increasing numbers of young, affluent professionals have been attracted to the city's jobs and activities.

The result has been condominium conversions and demolition of existing units to make way for new condominiums. At the same time, no-growth attitudes and high interest rates have brought the construction of rental units to a virtual standstill. Consequently, even the demand for "less desirable" rental housing exceeds the supply. With this shortage, the SROs are a particularly valuable resource for seniors. In fact, a recent San Francisco ordinance has frozen the number of SRO units in an attempt to slow the conversion process.

There is relatively little hope for poor and elderly Chinatown residents to move out of the SROs. If the ordinance stands, there is at least relatively little danger that they will be supplanted, except by others like themselves. Even this danger, however, makes them afraid, and fear com-



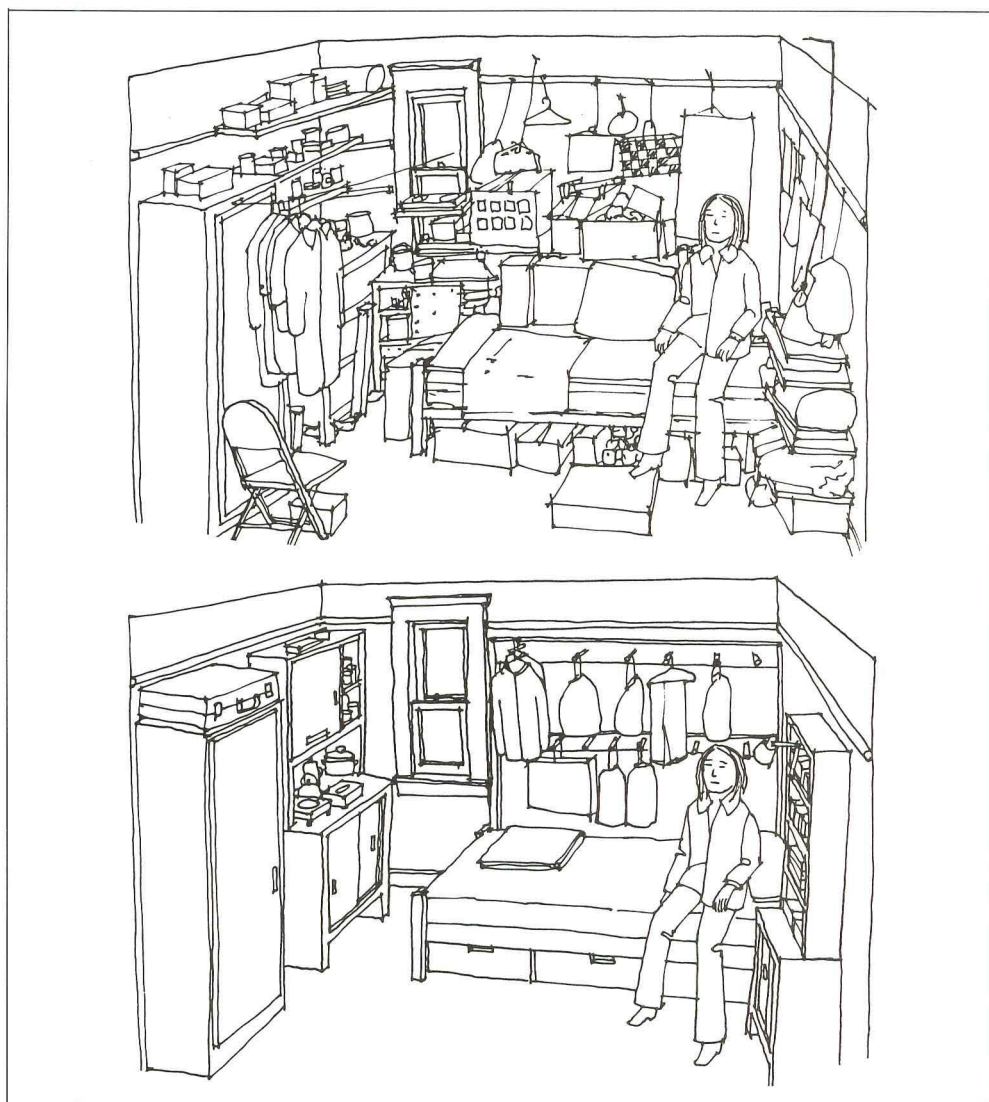
bines with apathy to create a sense of helplessness.

Since 1980, helping improve Chinatown's living spaces has been the focus of Asian Neighborhood Design (AND), a community design center whose work includes architectural and construction services to other community agencies, employment training in the construction trades for youths, and general housing and self-help programs in the community.

Like other housing agencies involved in upgrading the environment, however, we realized that the desire to provide a "decent" physical environment could displace the very community we hoped to help preserve. AND recognized that its services could be beneficial to the low-income community only if tenants were allowed to participate in the improvement and control of their living spaces.

So AND began to explore design and education programs that would help tenants to take the initiative in upgrading their living spaces and begin to raise their

Facing page, two views of typical Chinatown streets. Resident in crowded single room apartment, left. Mrs. Mak Kwong's room before and after, below.



Drawings by Gilbert Chan

consciousness of housing issues. It was clear that tenants in the most deteriorated buildings—those that required upgrading the most—would be very hesitant to press their landlords for improvements, and that the only space over which they felt some control was the interior of their rooms. Because of this, AND focused on the improvement of that space.

AND's design demonstration project in Chinatown combined design research on finishes and furnishings for small living spaces with a variety of related community services. Research focused on furnishings because furnishings are the only features that SRO or apartment tenants can change.

We conducted a number of case studies in which seniors and families participated in the design process and received free furniture prototypes. Housing educators conducted community workshops and followed up with home audits on health, safety, and energy issues. As direct services, AND offered a furniture loan program and an emergency repair service.

The first case studies involved single, elderly tenants in SROs owned by private landlords, family associations, and community agencies. In the second round of case studies families were included, and also a younger group of tenants in a hotel, the Aarti, being transformed into a cooperative. AND designed and built furniture for each of the clients and worked with these clients on organizing their possessions, arranging their furnishings efficiently, and simplifying housekeeping tasks. We also tried to determine what motivations the tenants might find for

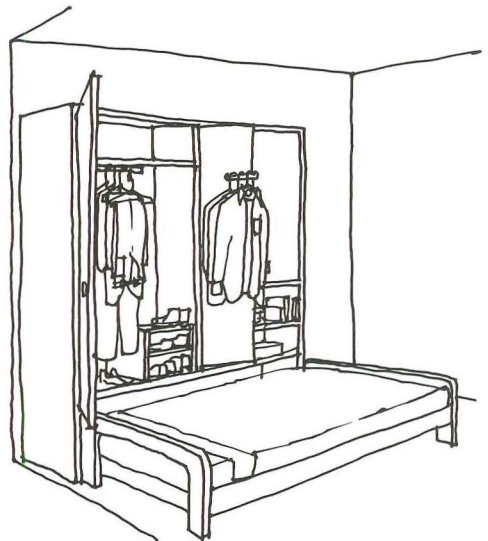
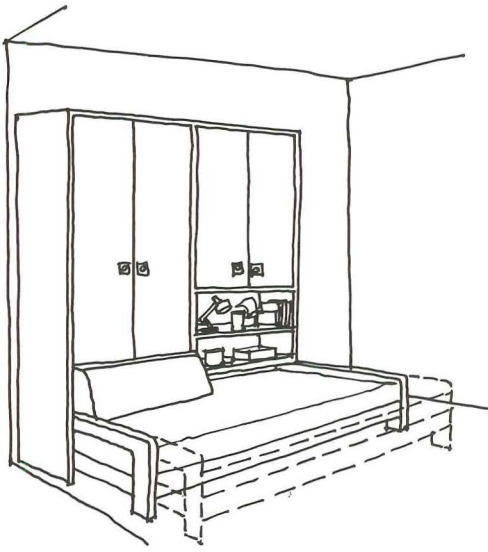
doing their own painting and repair work and what strategies they might use to persuade their landlords to absorb the cost of such improvements.

Interviews with the first six SRO tenants AND studied covered every aspect of their lives that might affect or be affected by their living quarters: family background, previous housing, daily activities, social patterns, and current building conditions. We found that most of the day-to-day problems facing them were physical ones. Each had to live in a room in which the bed filled 20 to 30 percent of the living space, one roughly the size of a walk-in closet in the average detached house. Commercial furniture does not fit in such rooms and the SRO tenants could not afford it anyway. Clothes and personal belongings were stacked in cardboard boxes, hung from clotheslines, kept in plastic bags, left strewn about on recycled orange crates. Antiquated hotplates and overloaded extension cords posed a lethal fire hazard and clutter attracted pests and rodents.

In such a tiny room, a tenant had to wash, dress, cook, read, relax, entertain, and sleep. In order to accommodate all these activities, each piece of furniture had to serve more than one purpose. A chair also had to function as a stepping stool. The bed had to include storage. The lighting had to be adjustable, to suit different activities.

Multipurpose products do exist, such as the elaborate component storage units made of brightly colored plastic and metal sold in design boutiques. But open shelving and wire baskets were not appropriate for AND's clients, who liked to keep their possessions clean—in something rather than on something. They preferred the pink and yellow plastic bags free at most grocery stores, which they used to sort clothing or food and hang on the walls.

For the case study clients, AND designed a bed and modular storage units. Mrs. M and Mrs. Wong each received a 32x72-inch bed with a trellis above the long side for hanging clothing and plastic bags. The trellis saved the walls from nail holes, a because the bed was so narrow it could be used as a couch when pillows were added for a back. Also, the bed itself is higher than most to accommodate a drawer underneath. The drawer provides extra storage, pulls out for cleaning, and discourages people from stacking newspapers and other items that draw bugs under the bed. The various beds and storage cabinets were lightweight and flexible for easy use in small spaces. The multipurpose pieces were designed for purposes specific to hotel rooms and local habits: Pieces like metal-lined food storage and cooking units and lattice work with pegs for hanging plastic bags took up where commercial furnishings left off.



Drawings by Gilbert Chan

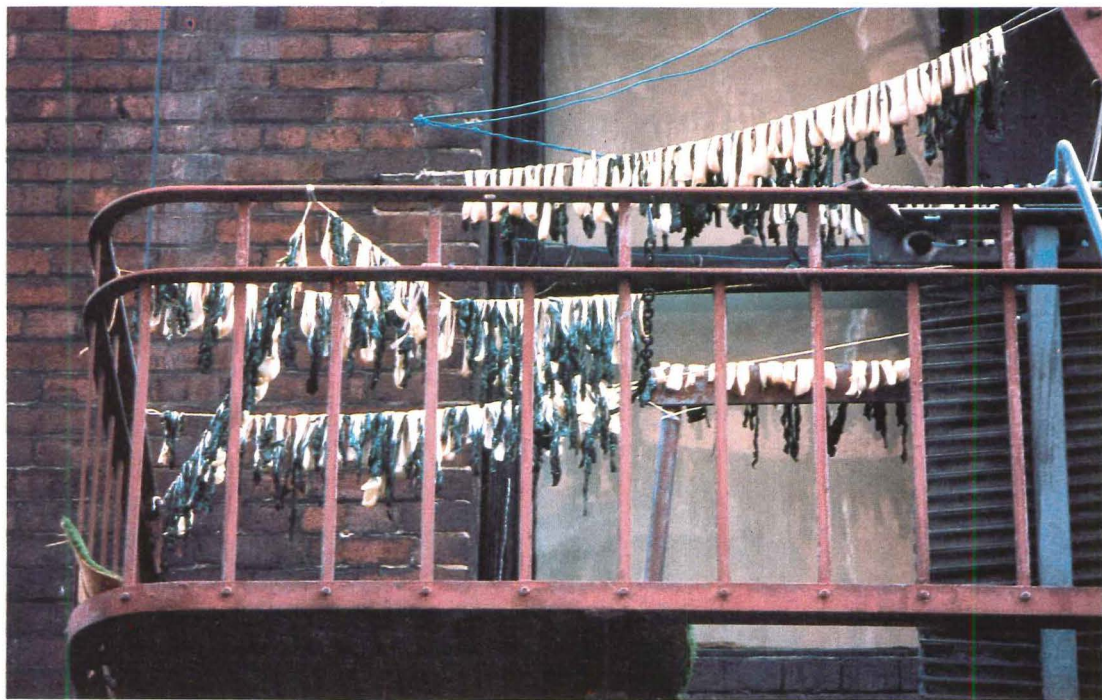
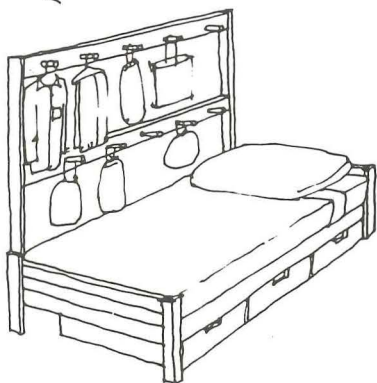
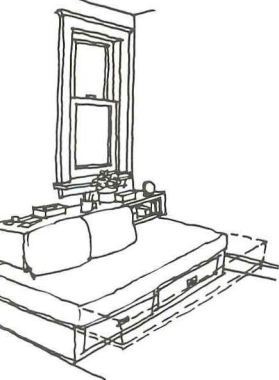
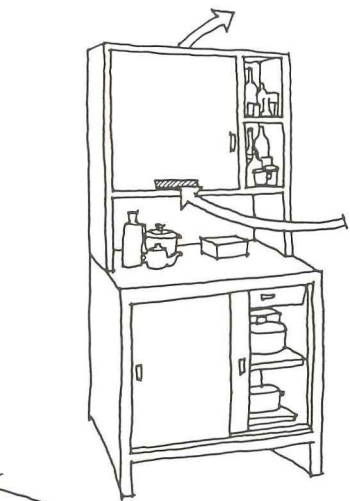
Pull-out bed doubles as sofa, left, with narrow wall storage unit. Below, resident in redesigned room.



New furniture provided an immediate, visible and economical improvement in living conditions for the clients, and it also served to develop their awareness of how the environment affects their lives. In effect, it was part of the educational trust of the project. The effectiveness of such a combination of physical improvement with housing education was recognized more than 10 years ago by the Jefferson-Lou (JVL) Community Development Corporation in St. Louis. JVL's Opportunity House provided temporary shelter for displaced residents and basic instruction on how to manage and live in tenements, including training in simple repairs, consumer problems, and community services.

AND took a similar approach in its case studies. Mr. Hu had become accustomed

to hanging bok choy on fire escape. Cabinet for food and utensils, roll-up bed, bed with storage units, below.



to covering holes with masking tape, and it took several sessions to convince him that there were better alternatives. AND provided Mrs. Hu with bathroom accessories for storing toiletries, but several follow-up discussions were necessary before her children stopped leaving toothbrushes on the windowsill. When another family requested instruction in painting their mildewed rooms, we helped them identify a leaky roof as the source of their problem.

To demonstrate what could be done to improve the livability of an entire building, AND worked with tenants and community organizers on the conversion of a 52-room hotel in the Tenderloin to a housing cooperative. Like most residential hotels, the Aarti consisted of single rooms, shared bathroom facilities, and no kitchens. While the Tenderloin Neighborhood Development Corporation organized its tenants, AND worked with them on the design of communal facilities and model rooms, providing architectural drawings and some construction training for them. The final design reduced the number of units from 52 to 41, and made room for shared kitchens, dining rooms, lounges, and bathroom facilities.

For the rooms, AND developed furnishings that could be built in. In one model room, a closet and storage unit was hung from the wall that the bed could be rolled under it during the day; this opened up two feet of floor space. In another, a platform for dead storage hung over the door, supported by drawers and a closet on either side. For the younger tenants, platform beds provided space underneath for desks or storage. In one unusual room with an angled wall, AND proposed a "V-berth" and modeled the storage units after those on sailboats.

Participation and a sense of control were much more important to the tenants at the Aarti than particular details in the model rooms. Tenants themselves did much of the construction work, and they were full of design ideas by the time they began to finish their rooms. Each tenant was allotted \$100 for furnishings in his or her room. Some chose to build platforms on their own; others elaborated on AND's designs. One man opted for a second-hand bed so that he could afford to install track lighting. We saw all the tenants become aware of and make choices about their living environment, and we saw that they transformed an anonymous hotel into a home.

If all the city's residential hotels could be converted immediately to tenant cooperatives, as the Aarti was, the education program would not be necessary. In most Chinatown and Tenderloin buildings, however, conversion is out of the question, and upgrading will be a painfully slow process.

A room made tolerable is not necessarily a "good living space," but living spaces like those in Chinatown's SROs will continue to be used, accepted, and necessary. We do not believe that interim solutions like our upgrading of these rooms are pacifiers—token reforms to placate the poor. We believe that they represent the beginning of a practical incremental process. In the next year, our community design center will search for new ways to involve tenants and landlords in the improvement of housing conditions in Chinatown. AND will seek out building owners applying to city loan programs for funds to repair code violations and improve communal space and try to persuade them to consider designs that include furnishings and finishes as well as repairs. □



AIA honors a firm with a lengthy history of commitment to design quality. By Peter Blake, FAIA

AIA next month will honor Knoll International for its "distinguished achievements that enhance . . . the environment and the architectural profession." The Institute honors jury took special note that "the new leadership of this company has protected the firm's tradition of high quality and extended its unique role by commissioning America's most talented architects and designers for its most recent collection of furnishings and showrooms." The article on these pages deals mainly with the beginnings of the whole enterprise, from a very special and personal point of view. The author is former editor in chief of Architectural Forum and Architecture Plus, an architect and author, and chairman of the architecture department at Catholic University in Washington, D.C. Ed.

It was exactly 40 years ago this spring, and I was the most junior copywriter on the old *Architectural Forum*. It was my first assignment, and Howard Myers, our editor and publisher (and godfather) told me to take a look at some chairs that were about to be produced by H.G. Knoll Associates. The firm, it seemed, was an offshoot of a company that had made early modern furniture in Germany and in England in the 1920s and 1930s; and these new easy chairs were about to be made and distributed by the original Knoll's son who had come to the U.S. in 1937. The chairs had a form-fitting wood frame and a continuous seat-and-back made out of surplus parachute webbing—one of the few materials still available in the civilian sector, in 1943. "You'll like Hans Knoll, I think," Howard said.

As a matter of fact, I wasn't sure I did. I went up to that little showroom at 601 Madison, and met Hans and together we looked at the chairs. The trouble was that Hans was just too beautiful, too charming, too elegant, too blond, his voice (that Swabian accent, overlaid on European English) just a bit too mellifluous. He was just too much.

Well, of course, we became (just about) each other's closest friends, or a reasonable facsimile thereof. He and Shu (who later became his wife) and I—we became, for a brief time, anyway, almost inseparable. Hans and Shu worked like maniacs, late into

every night, trying to find ways of designing and manufacturing this or that, squeezing materials out of the war economy, discovering and then supporting young and relatively unknown designers. And whenever Hans and Shu were ready to call it a day—usually around 10 P.M.—I'd drop by and we would go out for a late dinner, or to some nightclub conveniently located on the way back to their apartment in one of those charming, black-and-white-striped houses that used to inhabit Sutton Place.

The nightclub we liked best was a place called Cafe Society in Uptown, and we had a regular table there, on the balcony level. There was a delightful little clown called Jimmy Savo who performed at Cafe Society Uptown, and he sometimes joined us after he'd finished his act. There was also Hazel Scott and a nonstop drummer whose name I have forgotten.

Shu, like Hans, was really something: She was even more elegant, even more beautiful, even more charming—and also very cool and very sophisticated. Hans was probably the smoothest salesman I had ever met; but while he was totally dedicated to what we used to call "Good Design" (capital G, capital D), Shu was the one with flawless taste. Hans learned a lot from her, but he never stopped deferring to her judgment.

I suppose they were in all of this to make a living, though I don't recall that money was ever discussed or ever made the prime criterion for a decision to abandon or to go ahead with new design. I think they really believed that they could help make a better world through Good Design! There was nothing about Hans' and Shu's apartment that wasn't ravishingly beautiful from the view of the East River and the passing boats, down to the smallest ashtrays.

Even their dog was ravishingly beautiful. His name was Cartree, and he was an enormous, enthusiastic, fluffy, and playful English sheep dog. I don't know who laundered him, but he, too, was impeccably groomed, all of the time—quite an accomplishment in itself, in view of the fact that Cartree spent most of the day asleep on a fire escape overlooking Sutton Place. When Hans and Shu and Cartree went out for a walk, they caused traffic jams.

Though we didn't know it at the time, we were really at the center of everything that was happening in furniture design and architecture in America in those days. Because of their enormous energy and their unfailing taste and their great generosity, Hans and Shu attracted everyone in those fields who had anything to contribute—including some people who had little to show other than promise.

It wasn't the beginning of modern furniture design by any means, of course. There had been all those remarkable Breuer and Mies and Le Corbusier pieces in Europe in the 1920s and 1930s, and we knew all about them. But in the U.S. there was only imported Aalto furniture, and the so-called "Butterfly Chair," and an occasional piece imported from Sweden or Denmark. There really was no one else in the U.S., with the possible exception of Herman Miller Inc., who was trying to manufacture well-designed modern furniture in a consistent way. Hans and Shu led the way.

The event that triggered much of this was the so-called organic design competition organized in 1940 by the Museum of Modern Art's Eliot Noyes. The most interesting winning designs were some proposals for molded plywood chairs by Eero Saarinen and Charles Eames. These were extraordinarily innovative; unlike Aalto's earlier plywood chairs, which bent laminated sheets of wood veneer in one direction only—the way one might bend a flat sheet of paper—the Saarinen and Eames designs consisted of three-dimensionally formed (i.e. molded) shells of plywood, manufactured in a process that was being developed during the war years by the U.S. Navy.

None of the MOMA competition designs could be manufactured until the war was over and industry had been permitted to revert to civilian production. When that happened, the Saarinen and Eames entries to the organic design competition were divided between Knoll and Miller: Eero Saarinen (who had

known Shu since childhood) developed a molded chair for Knoll; and Charles Eames developed a whole series of molded chairs for Miller. (Saarinen and Eames, incidentally, remained close friends and frequent collaborators until Eero died in 1961. They went their separate ways only in this particular effort because neither Knoll nor Miller was in a position to develop all the MOMA designs.)

But I am getting ahead of myself. A few months after I had met Hans and Shu and Cartree, I was drafted into the Army, and, for a while, I was stationed in Virginia and Maryland. Whenever I could manage a weekend pass or a more extended leave, I'd make a beeline for New York and Sutton Place and the Cafe Society Uptown. Hans had failed his Army physical (he'd had some serious problems with his lungs), and so he felt he should do his bit for the war effort by pampering draftees like me: While in basic training at Ft. Belvoir, I'd get postcards from Cafe Society, signed by Hans and Shu and Jimmy Savo, suggesting that I go AWOL. Cartree, it seems, missed me. And one day, in a typical fit of generosity, Hans phoned me while I was scraping the mud off my face in some swamp in Florida, and offered to finance my postwar architectural education, at Mies' school in Chicago. (I begged off.) Then he fixed it so I would be transferred to New York, so that he and Shu and Cartree and I could pick up where we'd left off when I was drafted.

Those months in New York were slightly bizarre. The nights were spent at one of our usual haunts; but every morning, at 7 A.M., I had to report for close-order drill at the old Armory, now demolished, at 34th Street and Park Avenue. Somewhere along the line I managed to get married; and then I was shipped overseas. The postcards from New York followed me across Europe, and I recall having to explain to an Army censor, on one occasion, why I was receiving postcards from an English sheep dog.



Across page, the first Massimo Vignelli-designed poster for Knoll International. Left, Hans and Shu Knoll, and Cartree, too. Below, Eero Saarinen and Charles Eames.



Expanding geographically and in scope.

It is now the spring of 1945, and I had been assigned to a U.S. Armored Division on the River Elbe. It was very late at night, and the war was nearly over. A ragtag army of Germans, Hungarians, Rumanians, Ukrainians, and God-only-knows-who else—something like 250,000 troops in all—was fleeing across the river from the east, pursued by the Red Army, and surrendering to us. Among this tidal wave of sick and hungry and wounded humanity I saw an unbelievable character: a kind of comic-opera Rumanian field marshal, wearing a green-and-red-and-gold-braid shako, carrying a long silver sword, and lugging over one shoulder, an enormous sheepskin coat. There wasn't a moment to lose: In exchange for a carton of Camels (worth a small fortune on the black market), I acquired the sheepskin coat. It was filthy, but I knew it would fit Hans to perfection.

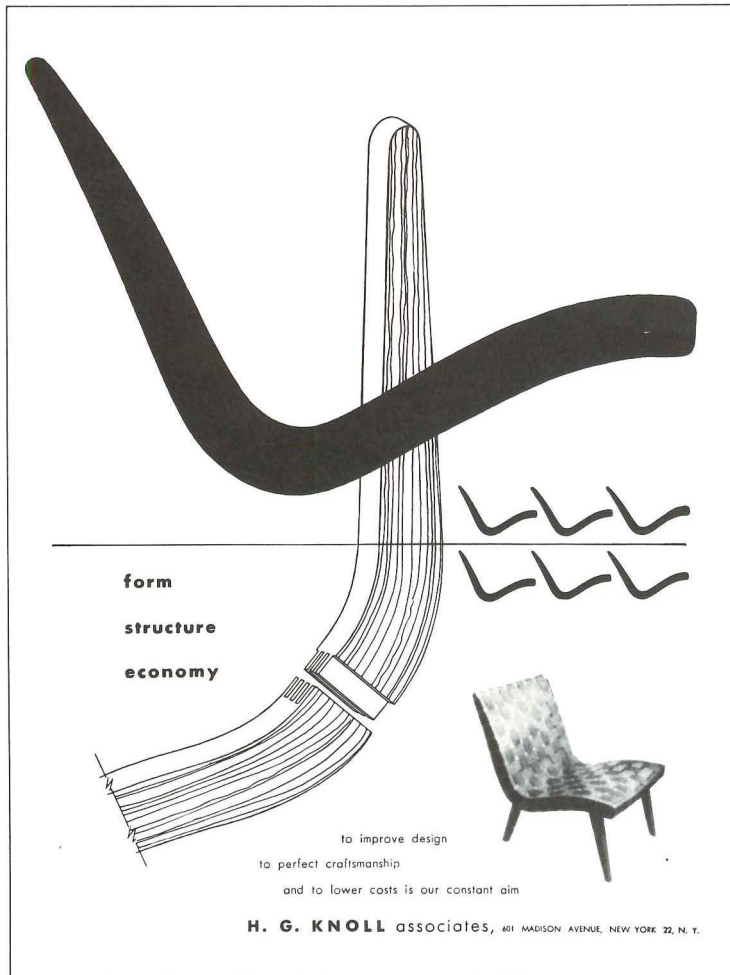
It took me another two years to get myself and that Rumanian field marshal's coat back to the U.S.; but when I did, and delivered it to its only rightful owner, Hans and Cartee made quite a pair on their walks along Sutton Place.

When I came home from the Army, things had changed a bit: Hans and Shu were well on their way to making Knoll Associates the most prestigious firm of its kind in the U.S. and, in fact, in the modern world. Many new designers had been discovered and added to the Knoll stable—among them a talented very Hungarian friend of Marcel Breuer's, Eszter Harastzy, who became director of the Knoll Textile Division and whose electric prepunk colors represented a significant break with the white-on-white purity of the modern tradition. There was Harry Bertoia, who had worked with Charles Eames and contributed significantly to the design of the original Eames Chair, and whom Hans (typically) established as a sculptor, in a studio next to the Knoll plant in Pennsylvania—in the hope that Bertoia would be producing innovative furniture as a byproduct of his sculpture (Bertoia did, in his plastic-coated wire chairs.) And there was Eero, of course: His huge, molded and upholstered easy chair was finally in production in 1948. At the press party for the chair my wife, who was enormously pregnant, sat in it happily and comfortably. So Shu named it the "Womb Chair," and the name has stuck. Our daughter was born a few days later. (Eero Saarinen continued to design for Knoll for a dozen years or so.)

Before long, almost all the leading U.S. and European furniture designers, with the exception of Charles Eames and George Nelson, were working for Knoll. There were pieces by Franco Albini, by Pierre Jeanneret, by Ralph Rapson, and by many others—in addition to the Jens Rimson designs that I had seen the day I met Hans. Moreover, Hans and Shu had noted a growing interest in early modern classics, like Marcel Breuer's tubular steel furniture of the 1920s, and Mies van der Rohe's Barcelona chairs, stools, and tables. And so they signed up Breuer and Mies, and began to make those "modern antiques" in factories in Italy, Germany, and the U.S. Knoll Associates, in the course of all this, had become Knoll International, and the showroom had moved a couple of blocks downtown, into a large office building at Madison and 57th.

Although we saw less of one another than we had before I had gone into the Army, we continued to be close friends. But Hans was spending more and more time traveling to the many different showrooms that Knoll had opened in the U.S. and abroad. I would run into him in the Middle West, in France, in Italy. He was not only establishing new showrooms all over the

On these and following pages, a history of the firm told through its advertising, also noted for its execution by name designers. Top left, 1945 advertisement, by Alvin Lustig, for Ralph Rapson armchair collection; left, Lustig advertisement in the '40s for chairs by designer Jens Rimson. Across page top, two advertisements by Herbert Matter for Bertoia chairs in the mid-1950s; across page bottom, chairs by Saarinen and Mies van der Rohe advertised in the mid-'60s.



HARRY BERTOIA

designs a lounge chair in an exciting new sculptural form. Highly versatile, it is planned for indoor-outdoor, all weather use. Non-rust black oxide base, white enamel or vinyl seat, foam rubber padding. With or without pivot mechanism to adjust seating position.

Available in standard K160 rough textured cotton/wool in colors of charcoal, yellow, camel, red, grey. In canvas, colors of lemon, turquoise, tangerine, black. Style No. 421.

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KNOLL ASSOCIATES, INC., 575 MADISON AVENUE, NEW YORK 22, FURNITURE AND TEXTILES

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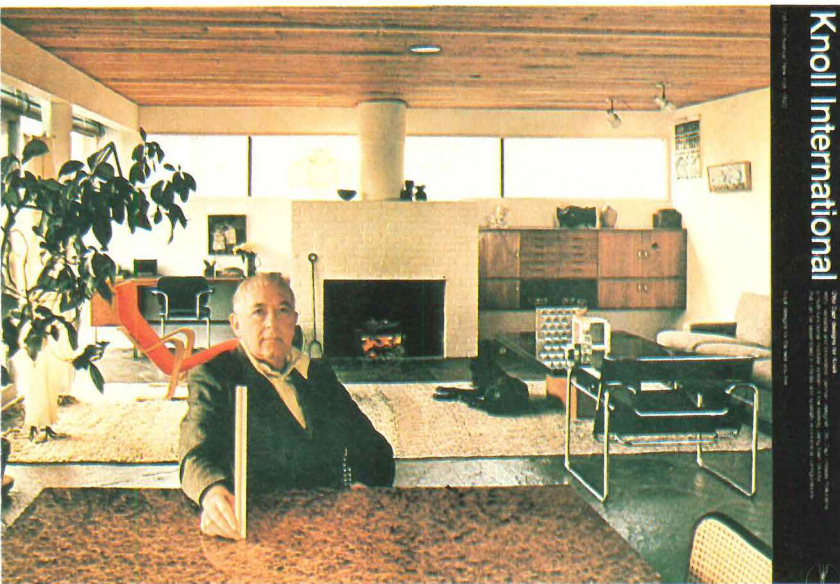
Hubert Miller

Eero Saarinen designed the Pedestal Chair for Knoll Associates. See it at the Museum of Modern Art in New York or Knoll Showrooms in 28 countries.

Knoll Associates, Inc., Furniture and Textiles, 320 Park Avenue, New York, New York 10022.

In 1929, Mies Van Der Rohe designed the Barcelona Chair. See it at The Museum of Modern Art in New York, and buy it through Knoll Showrooms in 28 countries.

Knoll Associates, Inc., Furniture and Textiles, 320 Park Avenue, New York 10022.
The 1929 Fortuny Gown, courtesy of The Brooklyn Museum



A design explosion following World War II.

place, but arranging to have Knoll furniture made in various other countries as well. I would run into him in Paris, where I was setting up a Knoll showroom on the Left Bank, with Yves Vidal in charge, and we'd promise each other that we'd have dinner as soon as we both got back to New York. Occasionally I would see him in East Hampton, during the summer months. But, most of the time, it was "work, work, work" for all of us—and for Hans that meant, more often than not, travel.

For Shu, it meant setting up the Knoll Planning Unit—an organization capable of handling very large interior design projects, such as complete corporate headquarters, and so on. Shu is one of the best-organized professionals I have ever known, and she handled the design of entire skyscraper floors with as much aplomb as she brought to the design of a single cabinet. Since she had been trained as an architect, at Mies' school and at Cranbrook, architects liked to work with her. She was a perfectionist second to none.

So there was less and less time to meet—but, hell, we were young, and there would be plenty of time to catch up, next year or the one after that. But, of course, we were wrong. All of a sudden, time had run out for the three of us.

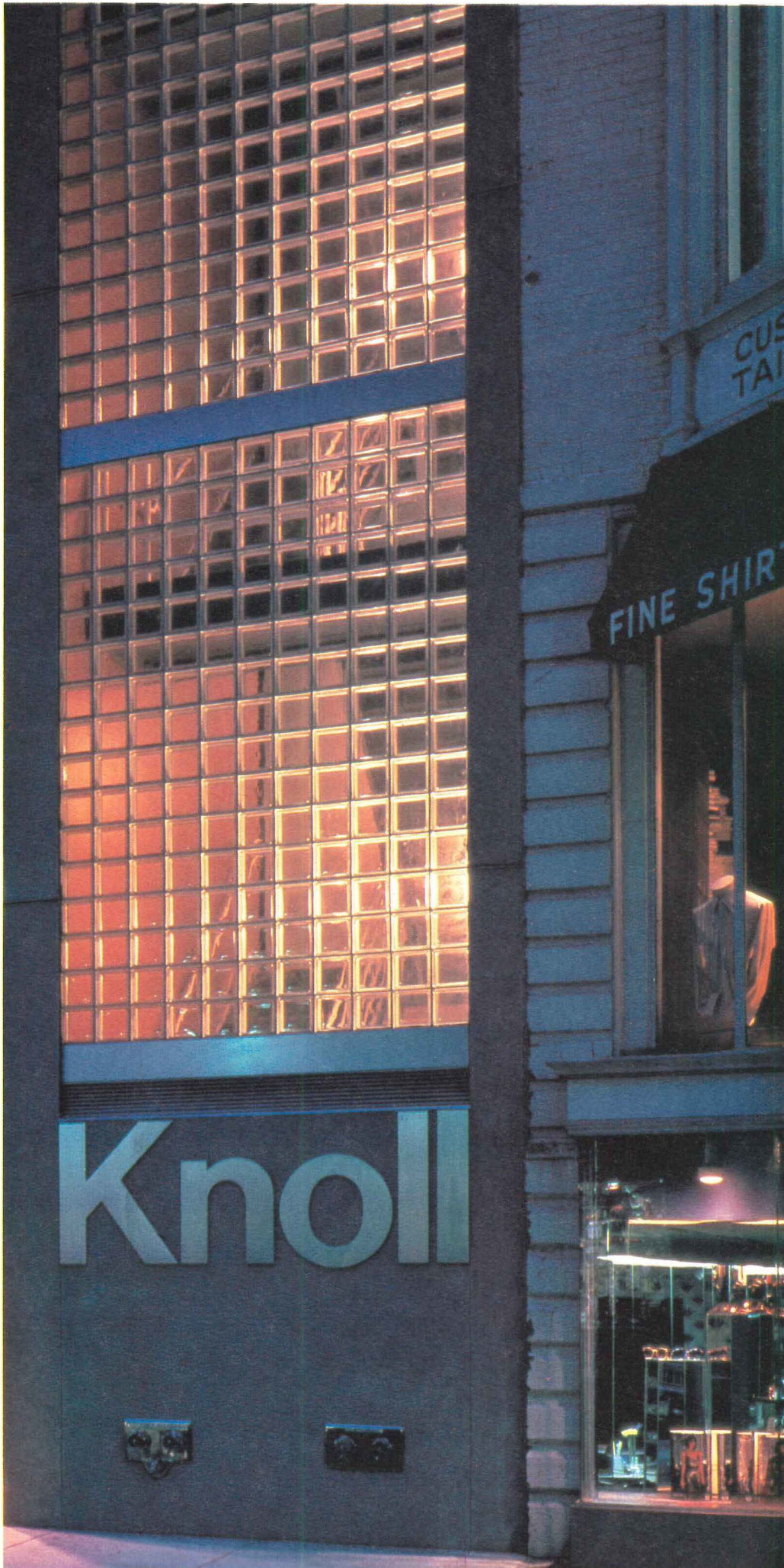
When the news came in 1955 that Hans had been killed in an automobile accident in Havana on one of his business trips, it was, in a way, the end of our youth. I looked at Shu at the funeral, and she was shattered; and so was I; and so were many of us there. It was the end of our youth, and our hearts were broken.

I saw Shu, on and off, for a number of years after that day, after we had pulled ourselves together. Craig Ellwood and I designed a house in East Hampton for her and Hood Basset, whom she married several years after Hans' death—but it never got built because she and Hood decided to buy a farm in Vermont instead. I sometimes think of Hans, and what it would have been like if he had lived beyond his 41st year. And I realize now that it would have been impossible—he was always young and beautiful and charming and more than a little silly, and I am glad that he never grew old.

What made Hans and Shu so successful? The answer is simple. They were first rate, and they thought that everything they did should be, too. They did not tolerate mediocre people, or mediocre talents, or mediocre craftsmanship. Quality was so much a part of their lives that it was never discussed. Although their decisions had to be affected, in some way, by practicality, or cost, or the market, the overriding consideration was always quality.

Nowadays, companies that design and manufacture things tend to be run by committees; and committees tend to make compromise decisions. Hans and Shu never did. It was really as simple as that. □

Top left, Marcel Breuer at home in a Vignelli-designed advertisement of the 1970s; left, Vignelli's quiet understatement for an advertisement in 1976. Across page, Knoll's Boston showroom by Gwathmey Siegel, 1980. As has long been its tradition, Knoll continues to draw furniture design talent from contemporary architects such as Gwathmey Siegel, Robert Venturi, and Richard Meier.



Milan's Annual Design Extravaganza

A front-line report. By Stanley Abercrombie, AIA



Italian furniture design is a recognized phenomenon. Perhaps it is the wildly superfluous number of Italian architects that is behind it all, for the schools of architecture in Venice, Rome, and Milan produce hundreds of graduates every year, yet there is relatively little actual construction for them to design. Students are aware of their future predicament when they begin—it is not therefore tragic—and Italians seem to consider architecture school a good foundation for all useful arts (and some useless ones), just as Americans think of law school as training for a wide range of business ventures.

So it is that many Italian architects practice architecture but rarely, turning instead to exhibitions, graphics, interiors, design magazines (another Italian phenomenon), polemical discussion (another, alas), and furniture design. All this is a postwar development, of course, with Italian furniture first receiving international notice in the '50s, a time when most attention was being paid to Scandinavian design influences. It was well established by the early '60s, with the export of Italian furniture more than doubling in the four years from 1961 to 1965, and then doubling again and again every three years after that until the slowdown of the '80s.

Emerging right along with this new industry and esthetic force keeping step with it all the way, simultaneously nurturing it and feeding on it, has been the Salone del Mobile (to most of us in this country, better known as the Milan furniture fair), which began not all that modestly in 1961 with 328 exhibitors and which was held this past fall for the 22nd year, this time with a record 2,090 exhibitors and well over a million visitors.

As if that weren't enough, the fair is accompanied by two other concurrent fairs: Euroluce, an international lighting exhibition being held this year for the seventh time, and, new this year, an exhibition of office furniture and equipment. The fair has also spawned a show of kitchen furniture, Eurocucina, last held with the fair in 1974 and, since then, held every two years at different times. Another complication is that several important furniture firms have their headquarters in Milan and choose to use their own downtown showrooms for most introductions with only token representation at the fair itself, although at least one firm, Cassina, did provide a shuttle bus service.

The fairgrounds are set rather apart from the heart of Milan but are linked to it by the Metropolitana, the city's extraordinarily handsome subway, designed in the early '60s by architect Franco Albini with wall facings of granite and with then-new, now ubiquitous embossed rubber flooring.

Once there, one finds the fairgrounds to be a collection of 50 or more undistinguished buildings crammed together with no discernible master plan. It is Italian design at its worst. Yet compared to the compact order of Chicago's Merchandise Mart where this country's nearest equivalent exhibition (the mam-

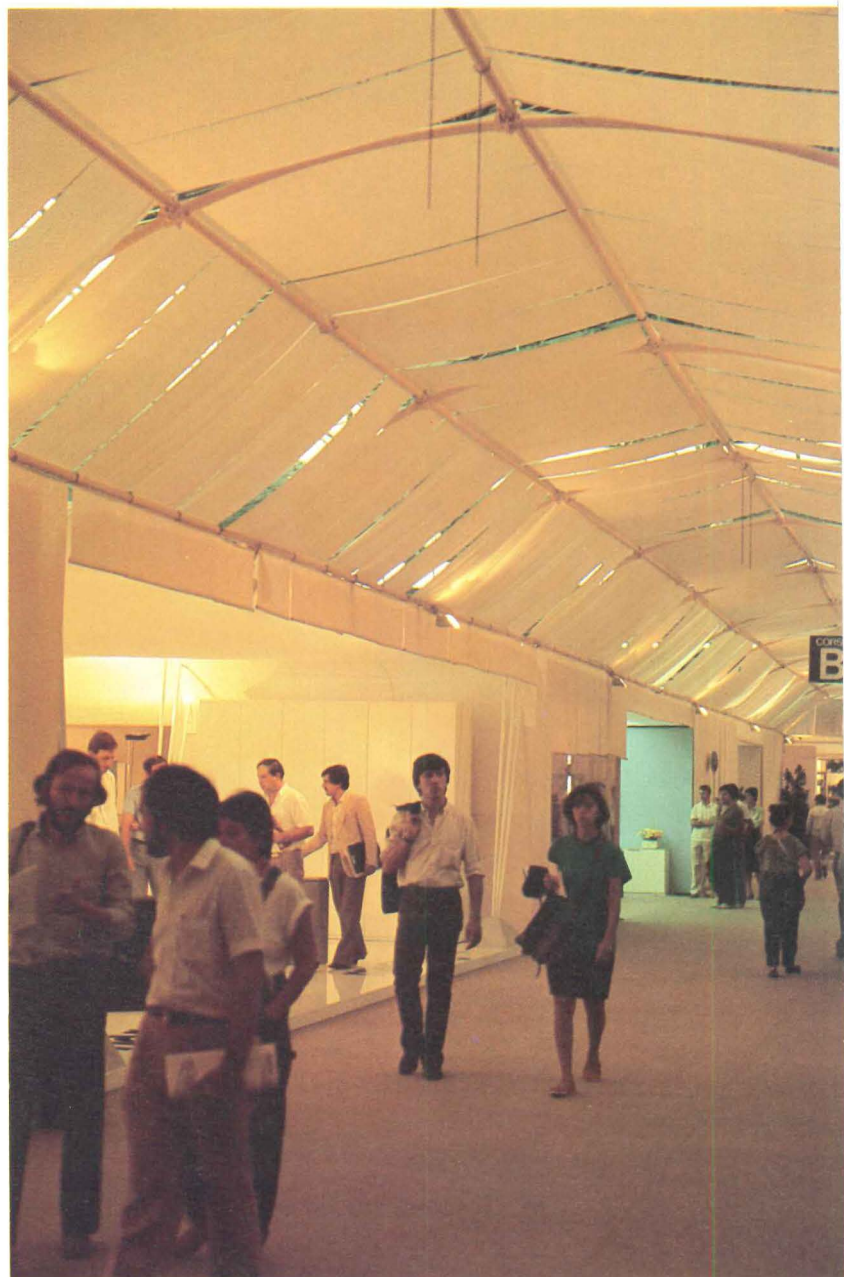


moth but all-in-one building NEOCON show) is held, Milan offers a pleasant environment, at least in good weather, for moving from one building to another allows occasional moments of light and air, sometimes even a tree and a bench (though rarely an empty one). And next to the number of showrooms is the number of bars—one at every corner, it seems—offering prosciutto sandwiches and coffee as well as drinks. And close behind the bars in frequency, suggesting the commercial heart of the enterprise, are branch banks.

The Milan fair differs from NEOCON and from such other American events as WestWeek in Los Angeles and Designer's Saturday in New York in another way: The American exhibitions are in relatively permanent, established showrooms, whereas the Milanese exhibits have all been erected only for the six days of the show and will disappear immediately afterwards. This transitory character has the obvious disadvantage of time and budget restraints, but it seems, somehow, to free the imaginations of the exhibit designers. Tents, giant kites, walk-in grids, mirrored arcades, even tiny forest glades—these and more make the fair a visual phantasmagoria.

And then, speaking of phantasmagoria, there is the furniture. The Milan fair has come to be known as *the* place to find furniture innovations, furniture novelties, and even furniture shocks (in 1981, for example, the designs of the Memphis group, already known in these pages). Those who sought such titillations again in 1982 cannot have been disappointed. It had been only a matter of time before someone began using the term "neo-modern," and it happened first, so far as we know, in Milan, applied in most cases to furniture composed of combinations of simple geometric forms and turning away from the recently popular "postmodern" colors such as mauve, terra cotta, and various pastels, back to the more robust primary colors of early modernism.

But beyond this rather superficial (but perhaps, by now, obligatory) smattering of up-to-the-second high fashion, there was a more serious message in the 1982 introductions: With a tight economy, high land costs, high construction costs, high energy costs, and—particularly—high interest rates, there has come to be a clear and growing reduction of living space and a consequent need for furniture that is small-scaled, practical, and adaptable. So that, in addition to the show-stoppers, there was the furniture that kept the show going: chairs that could be folded and stacked and put away, tables that could be extended to larger sizes, battery-operated floor lamps that could be rolled from one room to another, sofas that could be disassembled for storage or shipping, other sofas that could be collapsed into closet-size packages, still others that could quickly become beds. The Milan fair of 1982 may have been served with a frosting of "neo-modernism," but the key ingredient was flexibility. □



Across page and above, overviews of the fair: Top, the temporary showrooms allowed displays of varying moods set by color and light.



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Furnishings: Josef Hoffmann

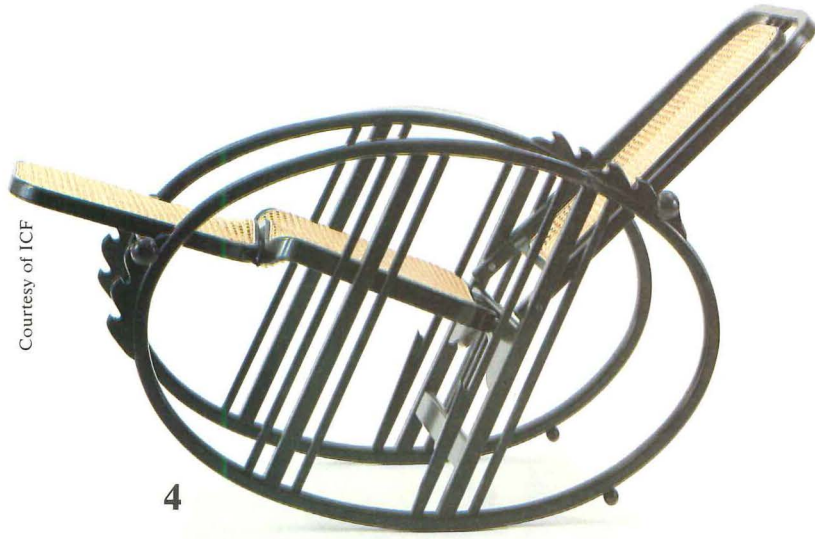
An influential early designer attracts renewed attention. By Nora Richter Greer

A leading figure in the design world at the turn of the century was Viennese architect Josef Hoffmann. Influenced by English and Scottish designers (particularly Charles Rennie Mackintosh) Hoffmann made a rapid switch from the curvilinear and floristic motifs of the then avant-garde art nouveau style to the angular and geometrical style of the European arts and crafts movement. Hoffmann's rectilinear designs were to have great influence on European and American design.

The height of Hoffmann's career was during 1900 to 1930, and recently there has been renewed interest in his work of this period. Late last year, the Fort Worth Art Museum opened the first exhibition devoted solely to Hoffmann's designs. And numerous reproductions of his furniture are now being manufactured (among them, the reproductions shown on these pages from International Contract Furnishings Inc.).

Of great importance to Hoffmann was designing an object in close relationship to the interior for which it was intended. In fact, in 1903 he cofounded the Wiener Werkstätte for the production of decors and buildings as coordinated projects. Among such projects were the Fledermaus Cabaret and Purkersdorf Sanatorium. Hoffmann designed chairs and tables for both the cabaret (1 & 3) and the sanatorium (6), and from these numerous variations, such as one on the Purkersdorf chair (5). His emphasis on the total design is seen in his drawing of a living room for *Ver Sacrum* magazine (2). He also designed numerous chairs for mass production, such as the bentwood lounge rocker (4).

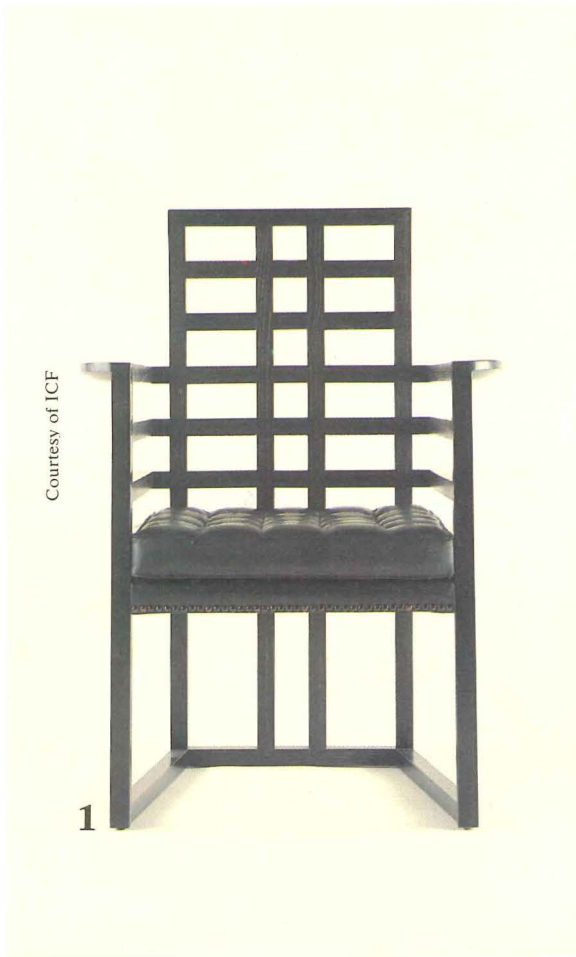
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Malcolm Varon Associates, courtesy of Fort Worth Art Museum

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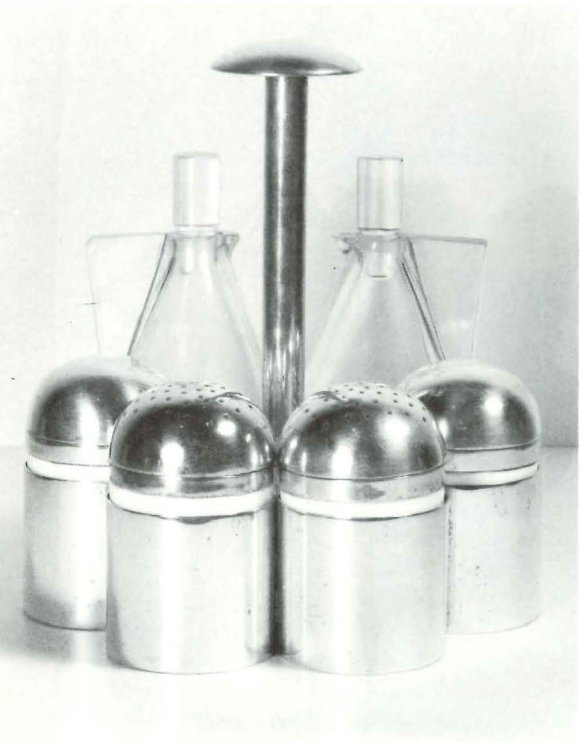


The influence of Mackintosh is evident in the Armloeffe chair (1) and the Vitrine cabinet (2), in their thin-screened geometrical shapes. The Vitrine cabinet, as the Fledermaus and Purkersdorf chairs on the preceding pages, incorporate a Hoffmann trademark: Large wooden balls tucked into the joints. Their use was essentially decorative rather than functional. These pieces also illustrate the difference between the American and European arts and crafts movement. Unlike the furniture produced in America at that time, Hoffmann's furniture does not openly reveal the production methods. Instead, their surfaces, joinery, and detailing reflect the tradition of sophisticated European cabinetry.

Another bentwood rocking chair designed for mass production (3) illustrates Hoffmann's nontraditional approach. In his rockers, Hoffmann combines customary elegance with thin linear parts to create an object of seeming instability.

One of Hoffmann's credos was a call to "estheticize" daily life through authentic, contemporary artistic expression. "As long as our towns, houses, rooms cupboards, utensils, clothes, jewelry, language, and feelings fail to express the spirit of the times in a clear, simple, and artistic manner, we shall remain indefinitely far behind our ancestors and no pretense will conceal our lack," he wrote. He therefore designed numerous household objects, among them his elegantly simple design for tableware (4).

By the second decade of the 1900s, Hoffmann's style began to change. Still using rectangular shapes, these forms were softened somewhat by covering the frames with decorative fabric, as in the Cabinette chair, two-seat sofa, and table (6). The Haus Koller chair (5) more clearly shows Hoffmann's reversion to ornament, decoration, and circular forms. The style is different from that of art nouveau; it is more a precursor of art deco. In fact, Hoffmann is often viewed as the individual who, more than anyone else, set the stage for the art deco movement of the '20s. □



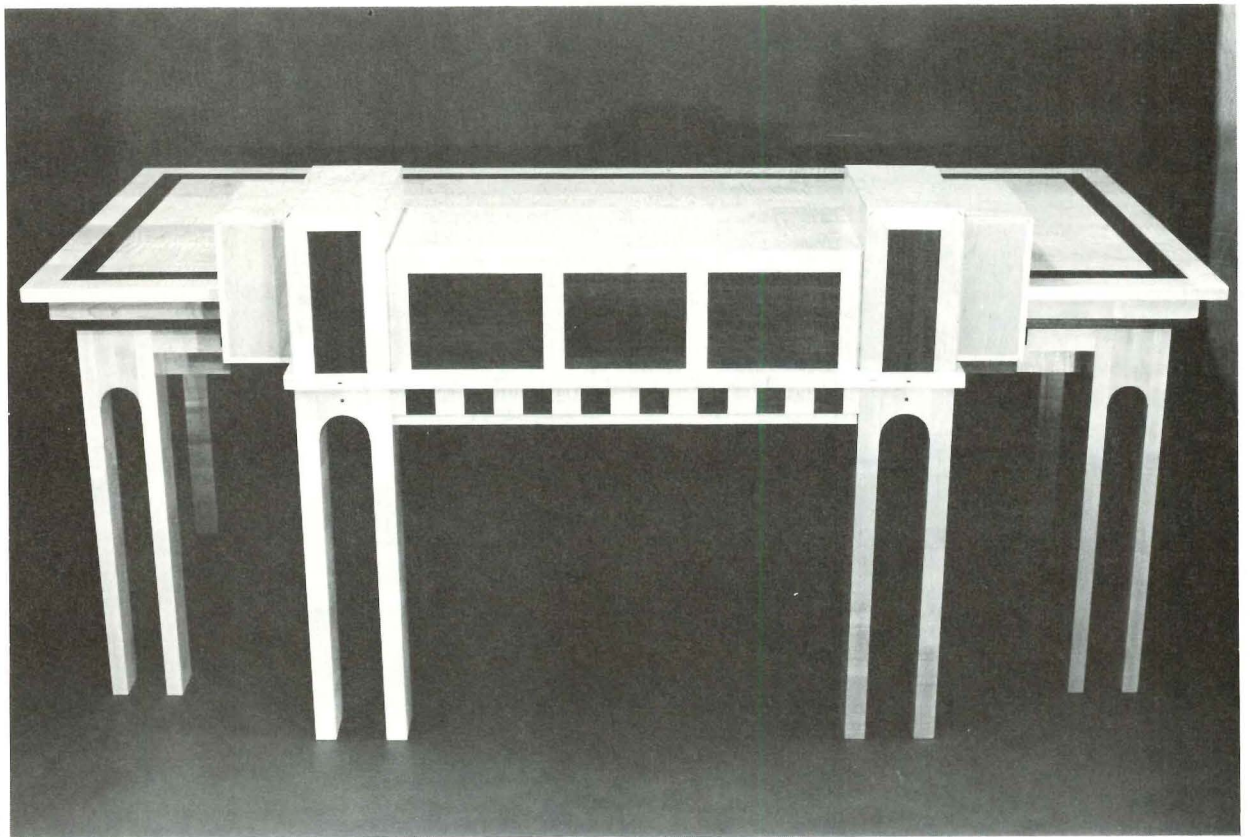
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Furnishings: Craftsmanship

A Long Island gallery's diverse collection of hand-molded pieces. By N.R.G.

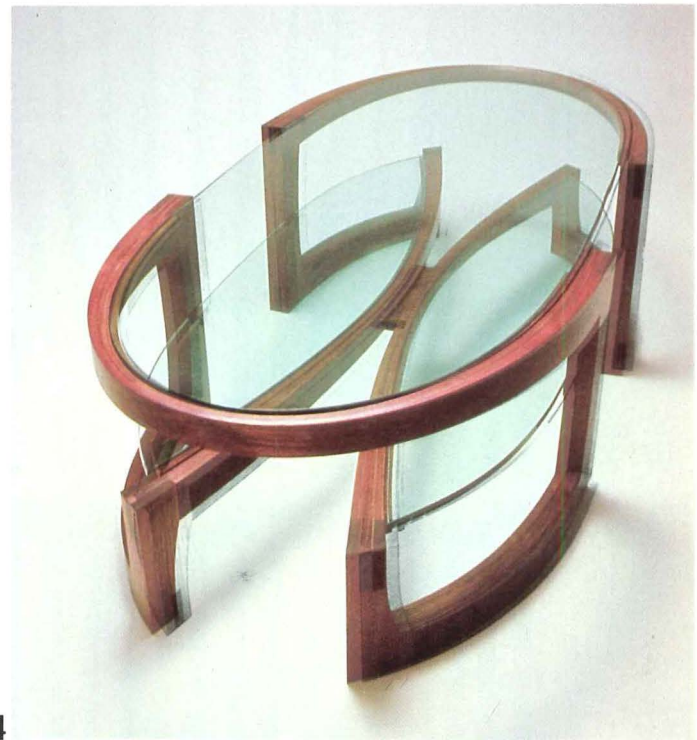
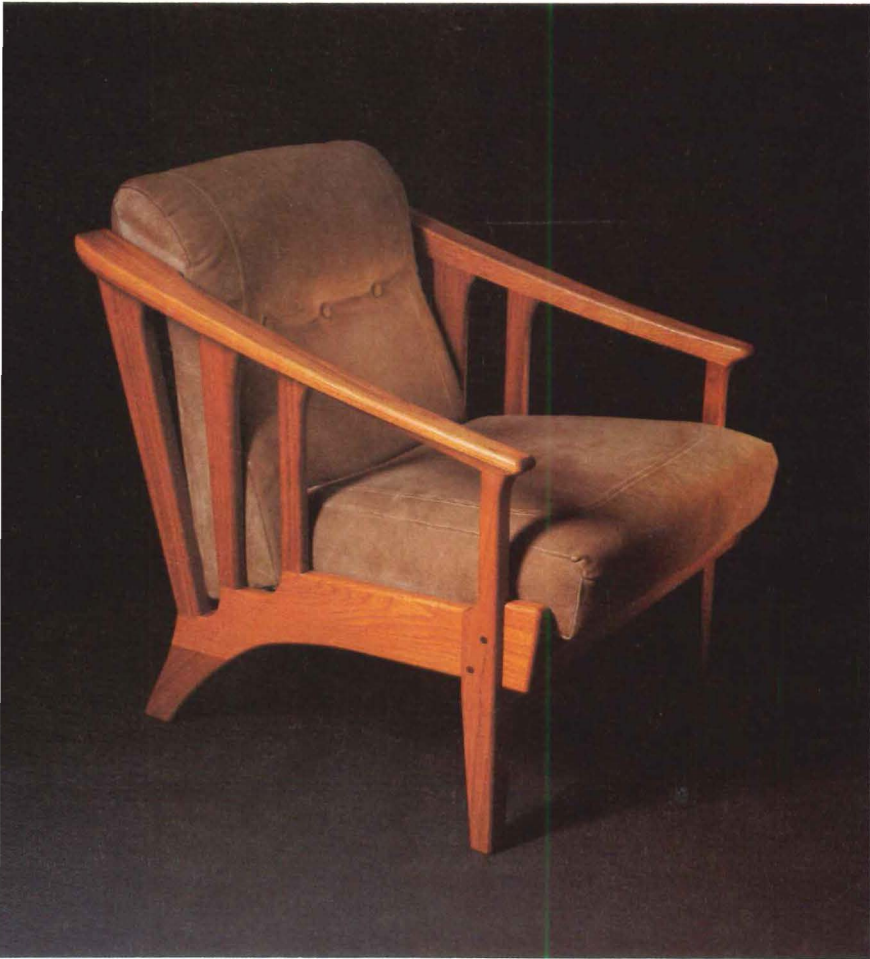


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In an age when machine-manufactured, mass-produced furniture is the norm, the art of the individual craftsman is re-emerging. The revival of this utilitarian art form had its beginnings in the '50s; what makes the '80s significant is the appearance of a handful of galleries dedicated solely to promoting hand-molded furniture. One such establishment is Pritam & Eames, in East Hampton, N.Y. Shown here are the artisan works recently added to its collection. Each piece is one-of-a-kind or a limited edition (up to a half-dozen copies). And each is an example of dazzling workmanship with styles ranging from the idiosyncratic variations of the traditional.

For an executive desk (1) designer Ed Zucca borrows from the architecture genre. High arches are the desk's legs and building blocks its frontal piece. The desk is made of curly maple, maple basswood, fiddleback mahogany veneer. Light emitting diodes highlight the center arches (small red dots above the arches) and incandescent and fluorescent lights, located under the frontal piece, are directed toward the floor. The backs of the building blocks provide drawers and shelves. Another Zucca design is the throne chair (2) in which he wittily blends the old with the new. The throne itself (made of cherry and gold leaf with leather seating) borrows from the Egyptians and sits on top of a contemporary office chair base.

A more traditional style is reflected in the elegantly simple reading chair (3), designed by Alan Marks. The materials are white oak and leather. The walnut and clear glass coffee table (4) by John Dean Dodd expresses its form through the geometry of the oval: The outline of the table is inverted and repeated to support a second surface level. For the torchere light (5) Neville White uses ash sapplings to connect tulipwood blocks. In addition to the center light, there are four reflector lights on top. And in the limewood blanket chest (6), Judy Kensley McKel extolls the movement of birds.



4



5



Judy McKie

6



1

For his walnut rocker (1) Peter Korn explores straighter lines than are traditionally employed. Another variation on the traditional is Robert March's roll-top desk (2) made of padouk. Here the lines are gently curved. For the table with bird (3), Judy Kensley McKie again expresses her fascination with winged creatures, this time using the form of the bird as the table's pedestal. And John Dean Dood's interest in geometric shapes are again seen in the bird's-eye maple desk (4), in which the edges curve downward and that motif is repeated in the shape of the solid supporting legs. George Gordan's corner display cabinet (5), of maple, pearwood, and macassar ebony, echoes Oriental. The side table and reading chair (6), by David Ebner, appears as if delicately sculpted from a single piece of English brown oak. And for the dining room extension table (7) Jonathan Wright cleverly places the extension leaves in their own carrying case. The bubinga and maple table consists of three triangular pieces connected at their apexes to form a circular table top. □



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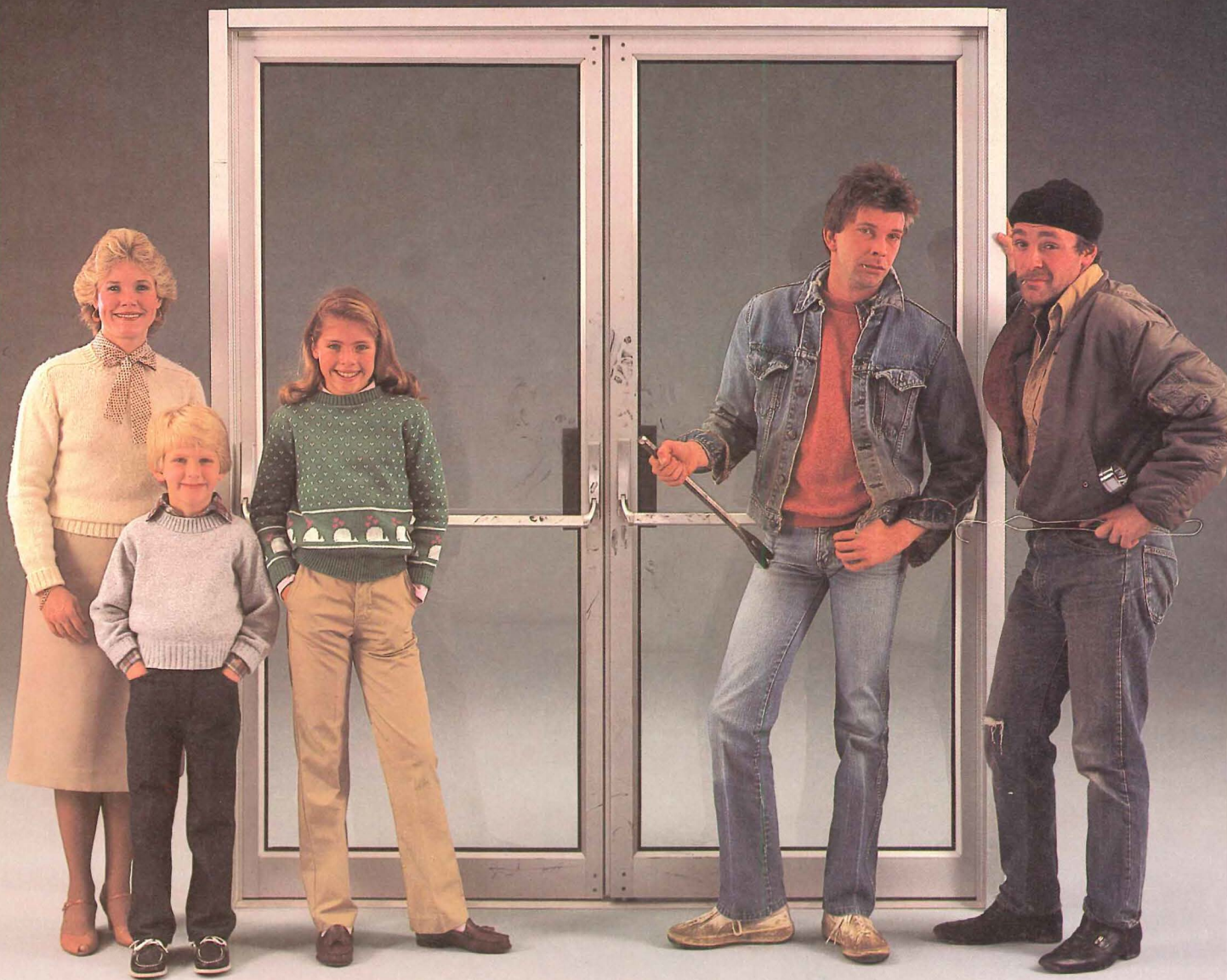
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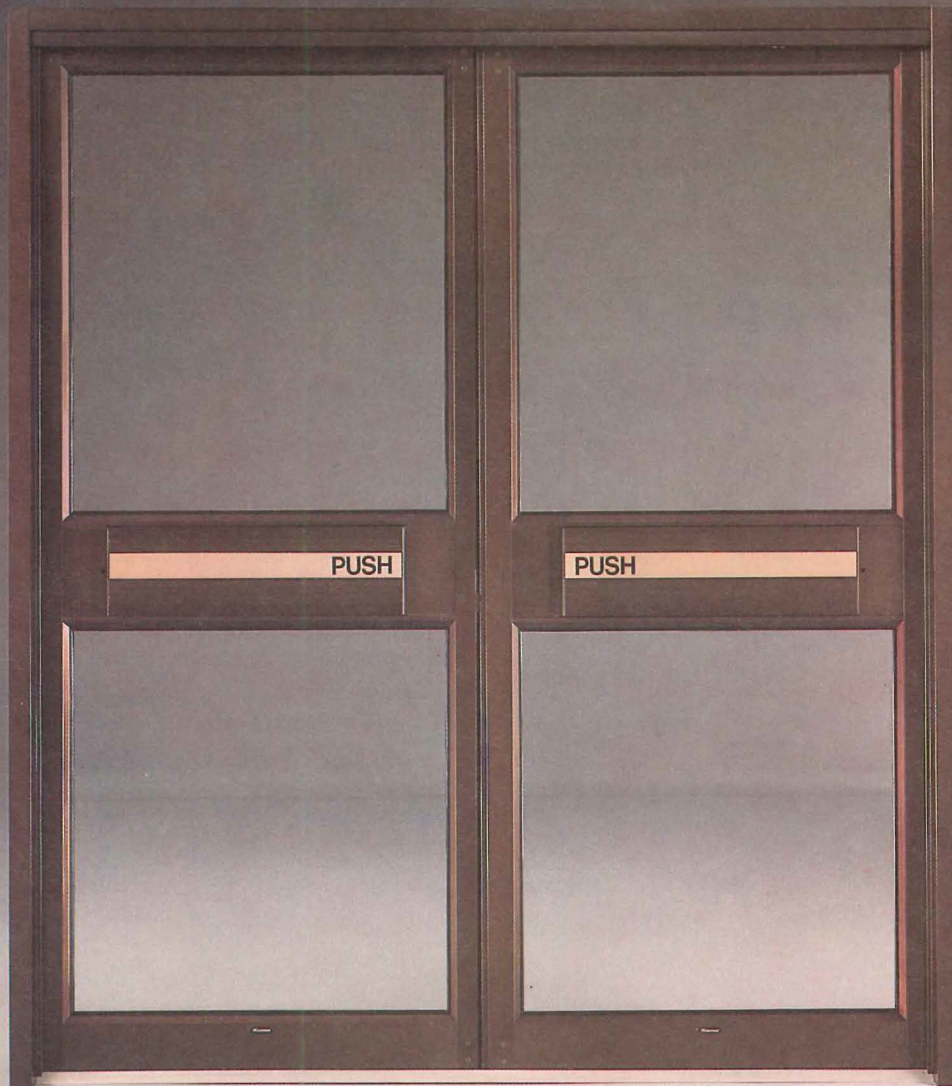
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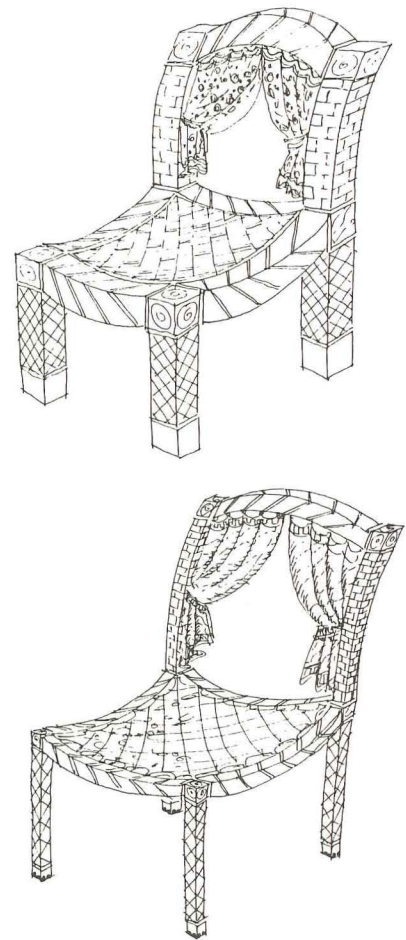
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BOOKS



Left, a sideboard, ca. 1877, that William Burges designed for his own house. His and her chairs of 1979 (above) exhibit John Outram's literal translation of architectural syntax. Below, Charles Francis Annesley Voysey's 1895 design for a clock case resembles his project for a monument to Queen Victoria drawn three weeks later.

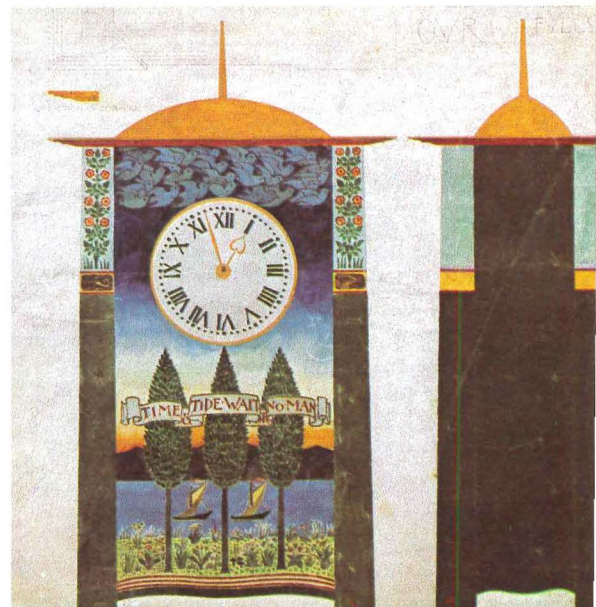
The Esthetic Pleasure Of Integrated Interiors'

Architects' Designs for Furniture.
Jill Lever. (Rizzoli, \$25 hardbound,
\$15.95 paperbound.)

Only the architect can achieve the integration of building, interior, and contents, says Jill Lever in this book, which concludes that, "by and large," architects design the best furniture." The book contains a selection of drawings from the treasures housed in the Royal Institute of British Architects' drawing collection, and the drawings show a vast array of styles of furniture, designed primarily by British architects. "When eye and mind discover . . . that curved walls are matched

by architraves and doors of the same curvature and that the geometry of walls, doors, ceiling, and floor in an oval room are accentuated by ornaments executed in a variety of media, and that tables and chairs reflect the form and details of the room, then some basic human need for order and wholeness is satisfied," Lever writes. The esthetic pleasure of a truly integrated interior is "intense."

In the introduction to the book, Lever recounts the history of architects' involvement in furniture design. "New styles of architecture create new kinds of interior spaces that have to be matched by new finishings and furniture," she says. She describes the role of the architect in fulfilling this requirement for new furniture design—from the time of the earliest



known surviving design of English furniture (a bed by John Smythson in the 17th century) on through the glorious 18th century when such stellar designers as Robert Adam and John Vardy flourished.

Lever continues with the Gothicism of the 19th century exemplified by furniture designed by A.W. N. Pugin, through the arts and crafts movement when C. F. A. Voysey and Charles Rennie Mackintosh reigned in the decorative arts, to the time of Edwin Lutyens, who designed furniture to match the design for the viceroy's house in New Delhi.

Lever moves on to the furniture designs of so-called modern movement architects who performed in new ways with tubular steel, preformed plywood, aluminum, and other materials, and then to post-modernism where the furniture "expresses that movement's preoccupation with metaphor and language."

Lever's introduction consumes about 25 pages, and the remainder of the book's 144 pages (with notes, bibliography, and index) are given over to the handsome illustrations, in black and white and in color. Lever supplies full descriptive captions for the drawings. Lever concludes, "It seems as though furniture design finds the architect at his happiest."

Macmillan Encyclopedia of Architects. Adolf K. Placzek, editor. (Macmillan, \$275.)

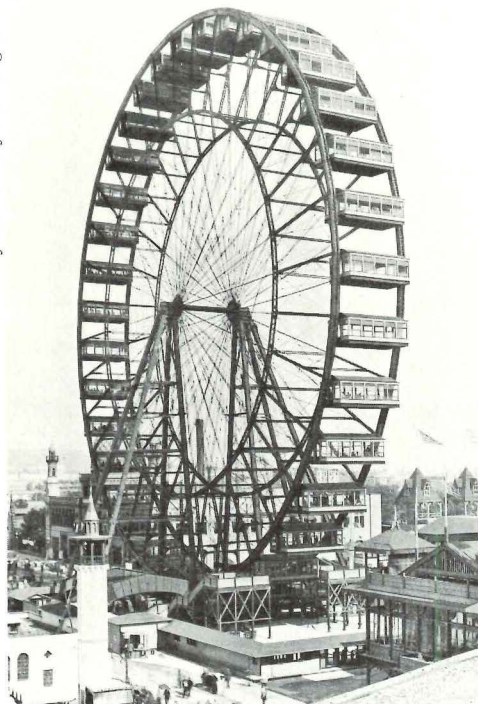
An enormously ambitious endeavor, this four-volume reference work attempts to write a history of the world by looking at its man-made structures from earliest times to the present. This new encyclopedia brings together biographies of 2,450 architects and persons involved in building design who have worked during the past 4,000 years on six continents. It presents, in the words of editor Placzek, "their lives, their personalities, their social and intellectual contexts, their traditions and innovations, their ideas, their styles and techniques, and above all the structures they created."

Included in these pages are also painters for whom architecture was important (Raphael), planners of cities (L'Enfant), craftsmen (Tiffany), critics and theorists (Mumford and Fuller), as well as famous design firms (McKim, Mead & White).

Only persons born before 1930 are included. But, notes Placzek, "wherever possible we came down in favor of inclusion; the vernacular builder, the modest but masterly craftsman, the accomplished amateur, and most importantly, the woman architect whose contribution has been suppressed or ignored."

The encyclopedia includes 1,500 illustrations, two computer-generated indexes, a chronological listing of every architect profiled in the book, a glossary of architectural terms, and a bibliography after each article.

Courtesy of University of Chicago Press



Half a Truth Is Better Than None. John A. Kouwenhoven. (University of Chicago Press, \$17.95.)

Subtitled "Some Unsystematic Conjectures about Art, Disorder, and American Experience," John Kouwenhoven's new book offers some astute observations about the art of building and the cultural milieu in which that art is pursued.

Kouwenhoven has long been a student of the built environment, especially the vernacular variety. His book *Made in America: The Arts in Modern Civilization* (later titled *The Arts in Modern American Civilization*), which appeared in 1948, still stands as a classic study of America's cultural inferiority complex and the uniqueness of its vernacular arts.

The strength of Kouwenhoven's architectural critiques has always lain in the fact that they are written by one on the receiving end of the profession. This allows him to meld his experiences with interdisciplinary considerations, be they literary, historical, or philosophical. That talent is evident in this latest volume, which is actually a collection of monographs that, for all but two, have previously appeared whole or in part in other publications.

The preface and the first chapter set the theme for the collection, weaving the thread that binds it together. Despite the variety of subject matter, every chapter is a personal view—Kouwenhoven's way of looking. While offering some novel perspectives, he cautions us that they may be valid only from his viewpoint.

"I have become increasingly aware," he reports, "that what may seem to one or another of us to be a full and shining truth is, like the full moon, only half of

Above, the original Ferris wheel, erected at the Chicago Exposition of 1893.

the actual object. Nothing is true or even half true except from the point of view where it appears to be so...."

Of the 10 chapters that follow, five consider architecture, design, art, and their American vernacular idioms; two consider the vernacular roots of the photograph in modern culture; two deal with the symbolic function of words; and one with a facet of America's response to technology.

The value of Kouwenhoven's insights is that they come from a man with a view wider than most. A professor emeritus of English at Barnard College and a former editor of *Harper's*, he has a knack for writing about things outside the realm of architecture in a way that makes them relevant to architects.

The chapters on words are a good example. Kouwenhoven writes that "we have a weakness of mistaking words for things. We tend to forget that a novel about life in the slums of Chicago is not life in the slums of Chicago." That point may appear blatantly self-evident, but as we now stand hip-deep in "talkitecture," we should take it to heart. A plethora of theories, books, and lecture circuits has made some architects' words more real than the buildings they represent.

The same can be said of the chapters on photography. "All of us live," Kouwenhoven writes, "... in a world of which we are aware primarily because of photography." This world needs some serious consideration, since many of us are aware of architecture primarily through photos.

Among the chapters on architecture and design, in one Kouwenhoven sketches the fascinating history of America's technological contemporary of the Eiffel Tower—the Ferris wheel—which made its debut at the Chicago Exposition in 1893. It is this "structure in motion," this mixture of machine and building, that Kouwenhoven sees as a more dynamic—and inherently American—engineering feat, when compared to the Eiffel Tower. Its form against the sky changed from circle to ellipse to line as the spectator moved. And where the tower only suggested movement, the wheel *was* movement.

"By that motion and by its changing aspects," Kouwenhoven writes, "it gave symbolic expression, as the tower could not do, to significant characteristics of nineteenth century technology and democracy: those characteristics of movement with which modern art has been largely preoccupied."

For Kouwenhoven, the combination of technology and the "democratic impulse" was the force behind the development of the American vernacular. He traced its development in *Made in America* and in this current work, the chapter "Democracy, Machines, and Vernacular Design" reaffirms his thesis. *continued on page 94*

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Books from page 92

Two historic moments coincided to encourage the American vernacular: the advent of manufactured power and the birth of a democratic republic. The vernacular arts were encouraged also by the new country's cultural parameters or, more precisely, the lack of them. Kouwenhoven writes that the "people who came here to live were those least content with the traditional forms and values evolved in aristocratic societies founded upon agriculture and handcrafts. Among such people the shaping of elements introduced into their lives by democracy and the technology of power-driven machines developed very differently than it did elsewhere. . . ."

It was this tradition of vernacular design, Kouwenhoven argues, that influenced the work of early modern architects such as Sullivan and Wright. He exhibits the clean, geometric lines of Shaker architecture in the early 1800s and the stark, Mondrian-like composition of a locomotive cab built by the Trenton Locomotive Works in 1855 as examples of the precursors of modern forms. And his argument is convincing.

"It is my hope," Kouwenhoven concludes, "that these illustrations will stay with you as specific visual evidence that the expressive forms of modern art derive,

in large part, from the empirical attempts of untutored designers to give satisfying order to elements introduced into our lives by modern technology and the democratic spirit."

The book closes with a thoughtful essay on the relation between human life and design, but I won't give that one away. In all, Kouwenhoven has offered a collection of illuminating and readable gems that will be enjoyed and pondered by anyone interested in American architecture and its cultural incubator.

MICHAEL J. CROSBIE

Conservation of Historic Buildings. Bernard M. Feilden. (Butterworths, \$124.)

Every conservation architect will want this book by the one-time director of the Rome Center, and the architect for the reconstruction of York Minster, St. Paul's, and Norwich cathedrals in England. It is written to serve the needs of the practitioner in the field and addresses the structural aspects of historic buildings, the causes of deterioration, and the work of the conservation architect. Detailed treatment (with examples) of building repairs and many special conservation measures are described.

This well organized book is made more useful by an excellent presentation, good illustrations and drawings, a comprehen-

sive bibliography, and a detailed index. Feilden recognizes the need to orchestrate the services of many specialists in materials conservation and other related fields, but this teamwork also requires leadership and coordination that is rooted in clearly stated objectives of such work. One regrets the minimal treatment of North American experience, but it may be the price we must pay for failing to participate more actively in international programs in the field.

FREDERICK GUTHEIM, HON. AIA

Mr. Gutheim teaches in the graduate program in historic preservation, department of urban and regional planning, George Washington University.

The Builder's Guide to Solar Construction. Rick Schwolsky and James I. Williams. (McGraw-Hill, \$32.50.)

Rick Schwolsky, Jim Williams, and McGraw-Hill have produced an almost flawless resource. There are many books on the market today on designing solar buildings, but very few with details on how to actually build them.

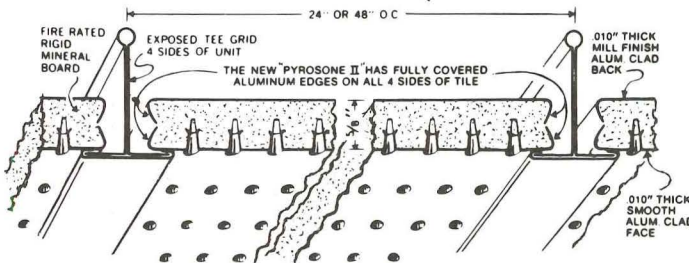
The book is divided into three parts, beginning with the basics of solar design and ending with case studies on five successful solar contractors. The first third *continued on page*

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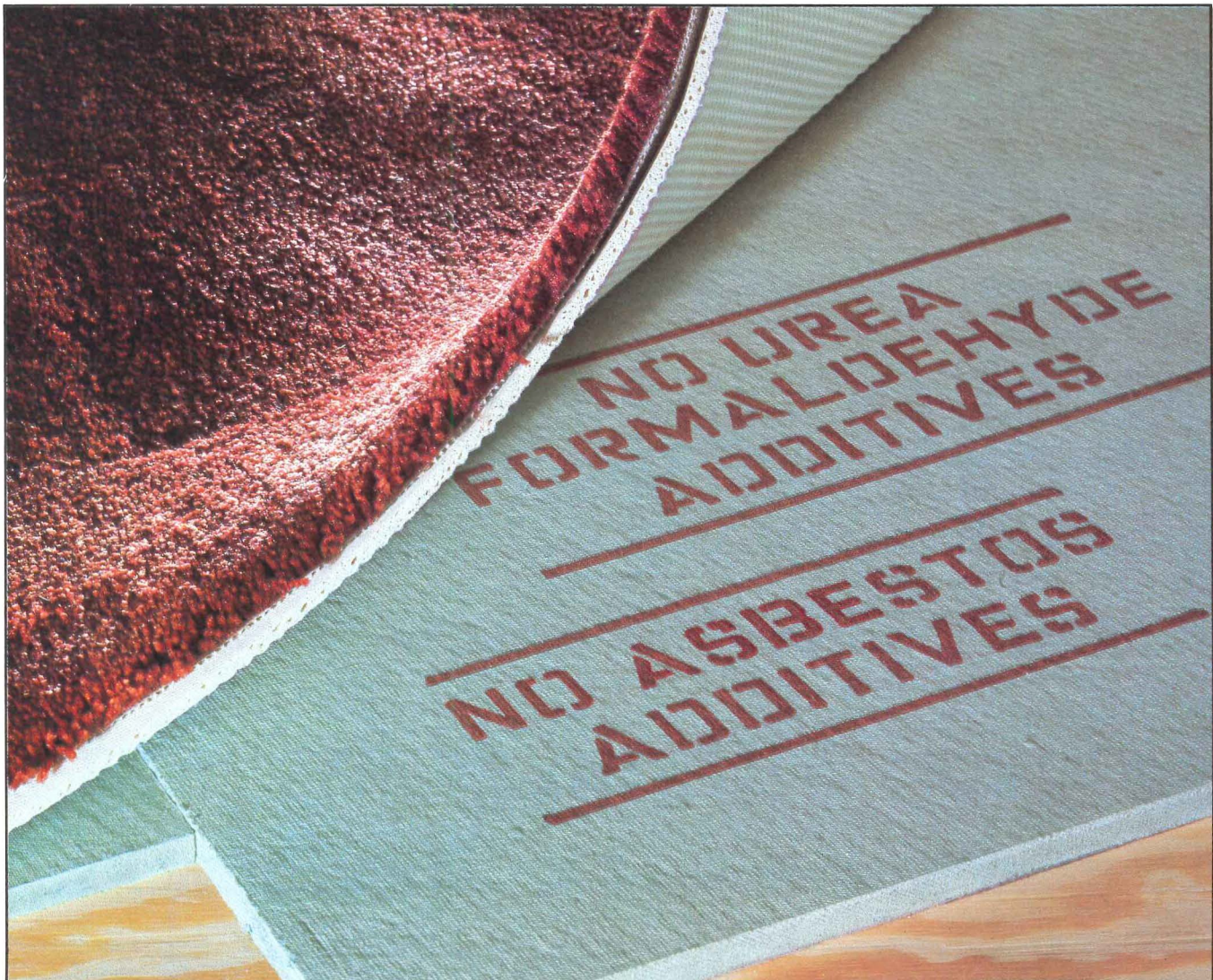
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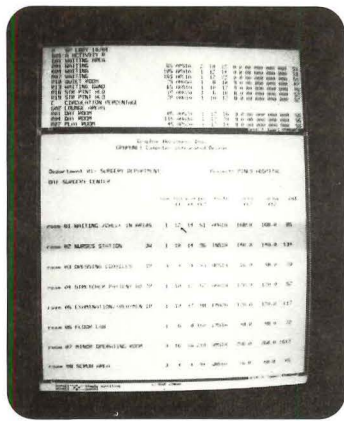
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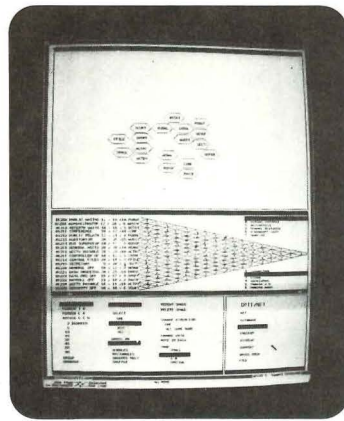
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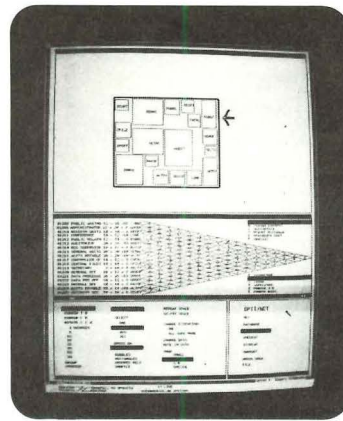
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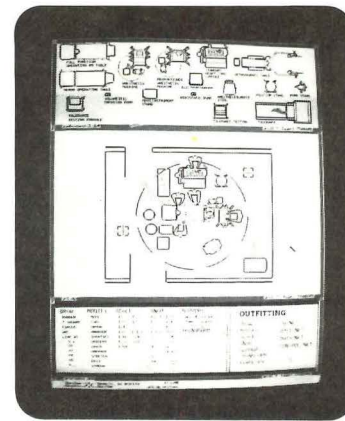
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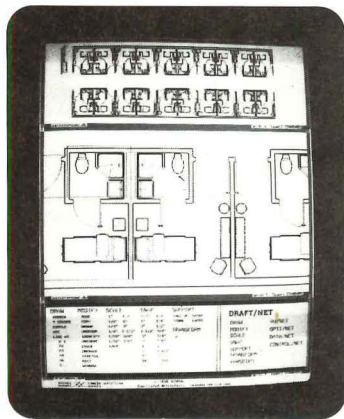
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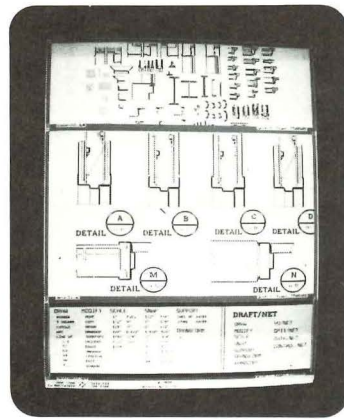
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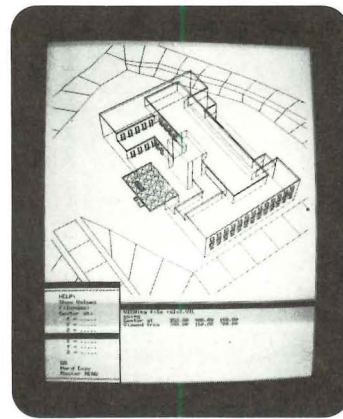
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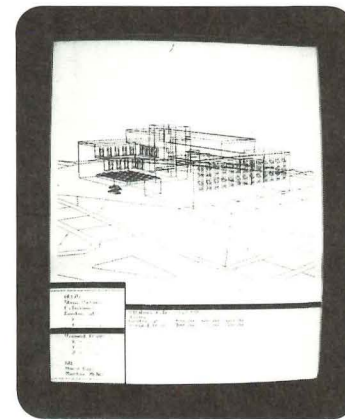
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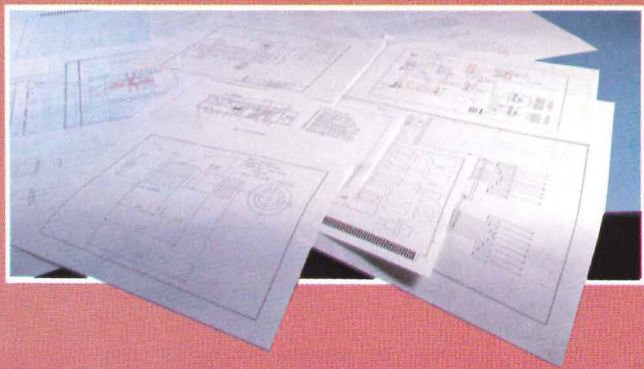
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Books from page 94

of the book presents the rudiments of the human comfort zone and its relationship with mechanical and solar heating systems. It is refreshing to see much of the same material explained in a way that is not reminiscent of a third grade primer, often so typical of introductory solar books. The case studies are easy reading, encouraging vignettes for the contractor who is considering a solar practice.

But the real value of the book is in the center section entitled "Materials, Details, and Techniques of Solar Construction." It dissects the art of building into five building phases, and explains where solar construction might depart from standard practice in each. Options on materials and techniques are detailed in the text and in the excellent illustrations, which are sometimes entertaining, but are more often specific in building details that can be incorporated by the designer and the contractor.

This book won't tell the reader how much mass-to-glass is required, nor how much to insulate a particular building. But it does spell out in detail what kinds of mass are preferable, the different glazing options available, and the pros and cons of different kinds of insulation in different situations. It has the hands-on experienced answers to many of the

questions that contractors have when it comes to putting the designer's theories into practice. JENNIFER A. ADAMS

Ms. Adams, head of the Boulder, Colo., firm Write Design, is a freelance writer on solar energy.

Design for Independent Living: The Environment and Physically Disabled People.

Raymond Lifchez and Barbara Winslow. (University of California Press, \$9.95.)

The 1981 International Year of Disabled Persons came and went, increasing public consciousness and spurring government action, but one is left to wonder how much progress has been made in understanding the reality of disabled individuals—as unique beings, with aspirations, joys, and challenges unique to each.

Of the many books that have now been written about disabled people, and about design to meet their requirements, this publication seems the richest in helping us toward understanding. Why do they strive to lead independent lives? How can they accomplish it on their own terms, what are the costs they pay and the rewards they reap? Rarely is a book about environment so people-oriented. It reveals to us disabled individuals as they relate to their own selves, to other human beings (peers, parents, able-bodied, disabled), and

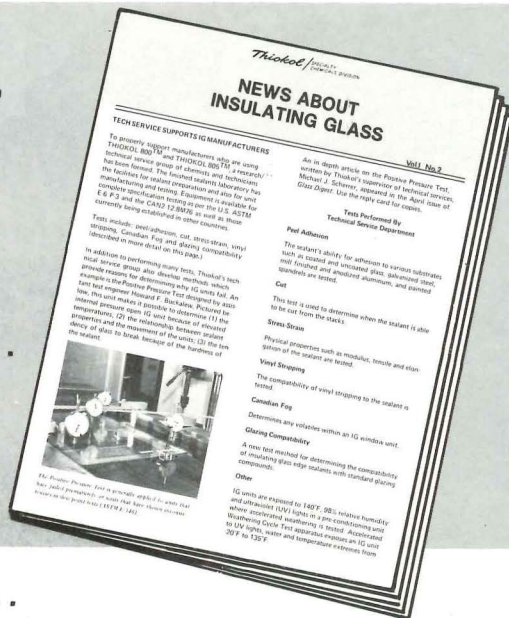
to their home and community setting. Through their perceptions, the reader able to reflect on his or her own habits, expectations, and reactions to people and places.

Persons with physical limitations tend naturally to develop sensitive reactions to the social and physical environment around them, since they have to confront continually the attitudinal, physical, and operational barriers within them. The disclosure of their experiences sheds new light on the daily activities of living that everyone encounters.

Written with empathy, the book lets both able-bodied and disabled persons identify with it, since its theme—the search for independence on the one hand and for love, help, and security on the other—is universal. Rarely, however, do we have the opportunity to focus on the many details that comprise this struggle—to isolate all the functional and emotional requirements that define our intimate environments. Where and how we go for rest, hygiene, pleasure, or work; how we organize, manage, and enjoy our home; how we explore and cope in the neighborhood and community—we see this through the eyes of the seven disabled people.

I find the book fascinating because it
continued on page 1

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is a very personal book. Seven persons share their thoughts, fears, and successes, bringing them close, almost painfully close. At those moments, one is conscious of learning, of understanding, of reaching past stereotypes and undefined images to touch essential qualities of behavior and the environment in which it takes place.

Though the study is based on a theoretical system that analyzes tasks against settings and is supported by environmental research, the results are blessedly free of academic jargon, functional generalizations, and simplistic design solutions. Both words and pictures tickle the imagination, because the many photographs show rare moments of being and living—what people do to take care of themselves, to enjoy themselves, to interact, to accomplish and achieve.

Paradoxical as this may seem, the authors stress the liberating qualities of disability, and the book offers not only an experiential but also a philosophic lesson: "When you are disabled, you just don't have time for all the false values, the materialism, the 'modesty.' You have to define your values and devote your energy to the things that are important," as one of the individuals sums it up.

Finding out about ourselves, in relation to those whom we have isolated

because of ignorance and anxiety, can be quite a trip. This book goes a long way toward demystifying the fear of an unknown frailty and an assumed hopelessness. It is dedicated to eradicating barriers among human beings. With simplicity and honesty the authors communicate to our intellect and to our emotions, and thus open a way to break the barriers that separate us all. LADIA P. FALTA

Ms. Falta is an assistant professor in the school of architecture, University of Montreal.

Interior Design: The New Freedom.

Barbaralee Diamonstein. (Rizzoli, \$35.)

This recently published book resulted from conversations between Barbaralee Diamonstein and an array of designers of interior spaces as part of a 1981 lecture series at the New School/Parsons School of Design, videotaped and produced by ABC/Arts Network. The book is handsomely illustrated with 118 plates (many in color) that show the work of the designers interviewed. Diamonstein, author of *American Architecture Now* and other books, very briefly discusses the changes in interior design since the 1897 publication of *The Decoration of Houses*, by novelist Edith Wharton and interior designer Ogden Codman Jr. She says that there is no longer much freedom for in-

dividual self-expression, but among the notable exceptions "is the design of one's own surroundings."

Certainly, the conversations reported in this book reveal a diversity in approach to the design of one's own surroundings or those of others. "The substance of these conversations does not add up to a neat, easily packaged summary of the direction in which interior design is moving at this moment," says Paul Goldberg in introductory comments. "There is surely a sense of freedom; whether this is something new, as the title tells us, or whether it is just a tendency to mix different kinds of designs, different esthetic approaches which were heretofore kept quite separate, is a question worth asking. In any case, there is something in the air right now that was not there a decade ago, and these conversations help clarify it."

The reader learns the views of decorators Ward Bennett, Bob Bray and Mike Schaible, Murio Buatta, Joseph Paul D'Urso, Angelo Donghia, Mark Hampton, Sarah Tomerlin Lee, and John F. Saladino. There are the views as well of Warren Platner, FAIA, who says that interior design is far more difficult than the architecture of a building per se. "It means dealing not with systems or structure of a building, but dealing with people, and

continued on page 102

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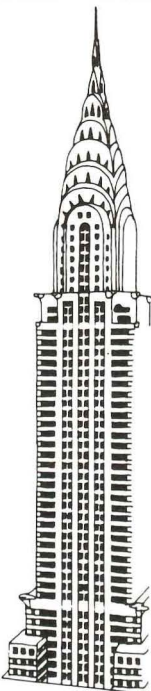
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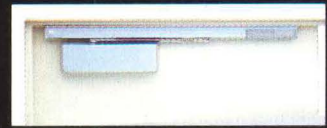
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Books from page 102

what makes them psychologically comfortable. . . ." All interior designers should be architecturally trained, he says. "I think there are many disciplines they lack if they don't have an architectural education."

In the conversation with Robert A. M. Stern, FAIA, he declares that architecture does not improve people's lives and finds it "amusing that all the interior design magazines are filled with stuff that architects stopped doing 20 years ago." Architecturally trained, Italian-born designers Lella and Massimo Vignelli agree with Stern in saying that "good design does not transform society." Despite this fact, they say that they have been "preaching design. Really, that is what we have done for the last 25 years."

All the interior designers quoted in this book also preach design. And their messages vary. No "neat, easily packaged summary" here, as Paul Goldberger pointed out. Perhaps this is one reason that the book makes for enjoyable and provocative reading.

William Lescaze. Essays by Christian Hubert and Lindsay Stamm Shapiro. (Institute for Architecture and Urban Studies and Rizzoli, \$18.50.) This commendable catalog surveys the work of Swiss-born William Lescaze (1896-1969) who came

to the U.S. in 1920 and left a legacy in his influential architectural projects. He was "of the generation for whom the International Style was to become a common idiom." His most celebrated design in this idiom (with his partner George Howe) was the Philadelphia Saving Fund Society Building. Other projects in the International Style include the Longfellow Building in Washington, D.C., that city's first building in this style, as well as many other structures. This catalog, whose many illustrations are an important element, supplies a great deal of information on Lescaze from his apprenticeship years to his late work. There are also bibliographies of writings on Lescaze and his own writings.


The Works in Architecture of Robert and James Adam. Edited with an introduction by Robert Oresko. (St. Martin's Press, \$17.50.)

Originally published in three volumes covering 1773 to 1822, *The Works in Architecture of Robert and James Adam* in this new edition combines into a single volume the text and engravings of the three volumes. This edition is based upon a French reprint of 1902, but it differs in that the prefaces to all the volumes and explanations of the plates are combined into a single section of the text. Also, the plates are reassembled to bring

together the designs for a specific building. This edition also omits the French translation. There is an introductory essay by Robert Oresko on the work of Robert Adam, whom he calls "the liberator of architecture and design from what had become merely ossified standards of procedure." Oresko also says that Adam's style is marked "as one of the most uniquely personal and elegant statements in the history of British art and architecture." Some of the plates in this edition are so dark that this elegance is hard to discern.

Sixty Years of Interior Design: The Work of McMillen. Erica Brown. (Viking, \$50.)

Erica Brown, author of *Interior View. Design at Its Best*, chats at great length here about Eleanor McMillen Brown (in relation), founder of the New York City interior design firm of McMillen Inc., in 1924, and a leading figure in the field for decades. We learn of her personal and professional life and her work for the likes of William Paley, Tiffany's, Mobil Oil—and at the Blair house in Washington, D.C., and the home of the American ambassador to Great Britain in London. There are many exceedingly beautiful photographs in black and white and in color that show the firm's prodigious efforts to try to achieve near perfection in interiors. □



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Institute from page 38

a): "That the directors representing h of 18 regions be limited to one duly elected member, and that each director elected have a vote proportionate to number of members in his region, and that those directors now serving in regions be given the opportunity to vote out their full elected terms, and that regions shall have the right to elect director-elect if needed to assist the director in service to components, but at additional expense to the Institute."

architectural registration (California Council): "That the AIA institute and maintain an aggressive effort that will assist the components in addressing registration issues threatening traditional practice, and establish equitable definitions of architecture, engineering, and building contracting, which will provide use-guidance to the components within the context of registration."

life safety awareness (Delaware Society of Architects and Middle Atlantic Region): "That prior to Institute business sessions of 20 or more persons, the person in charge of the meeting shall present key information about exitways or access to areas of refuge, and point out any special conditions relative to safety and, that at Institute business functions where there are known handicapped persons present, it is suggested a plan be worked out to provide assistance if needed."

indoor pollution (California Council/AIA): "That AIA develop a national position on the issues of indoor pollution; develop a strategy to assist the profession in its ability to address the implications of indoor pollution; and coordinate activities of the other component levels in their initiation of, and reaction to, legislative and regulatory proposals dealing with the issue of indoor pollution." Direction '80s redefinition of purpose (Eastern New York Chapter/AIA and New York State Association): "That the purposes of the AIA," as stated in Direction '80s, "to foster the advancement of the quality of people through an improved built environment and make the architectural profession of ever-increasing services to society" be amended to include "to improve and promote the profession of architecture through service to its members and through its members representing the interests of all architects and aspiring architects in the nation."

In other business, the board reaffirmed AIA's policy supporting "restoration in the West Front of the U.S. Capitol"; reaffirmed AIA's policy "commending the architect of the capitol and endorsing the Capitol Hill Master Plan presented to the board of directors in May 1981"; and approved for publication AIA Document G602, "Geotechnical Services Agreement."

Institute Honors Given to Eight For 'Distinguished Achievements'

AIA has announced the eight winners of its 1983 Institute honors, which recognize "distinguished achievements that enhance or influence the environment and the architectural profession." Thomas S. Marvel, FAIA, of Hato Rey, P.R., chaired the awards jury, which included Robert Royston of Mill Valley, Calif.; James L. Nagle, FAIA, of Chicago; Russell Keune, AIA, of Washington, D.C.; Gary W. Johnson of Atlanta; Sonia McNabb of Jackson, Miss.; and Malcolm Holzman, FAIA, of New York City. The honors will be awarded at the Institute's annual convention in New Orleans next month. Among the winners is Knoll International of New York City, (see page 72). The seven other winners are:

- Missouri Governor Christopher Bond, who was instrumental in ensuring the preservation and conversion of Adler & Sullivan's Wainwright Building in St. Louis. "The governor's actions in saving this national historic landmark represent exemplary government commitment to the preservation ethic and merit national emulation," said the awards jury.

Bond instituted a national competition for adaptive use of the Wainwright for state offices. Mitchell/Giurgola and Hastings & Chivetta won the competition. The resulting renovation and addition now house 18 state offices previously scattered throughout the city (see Mid-May '82, page 162).

Bond, now 43, was elected governor in 1972 and at that time was the youngest governor in the nation. From 1973 to 1977 he chaired the Midwest Governors Conference and the economic and community development committees of the National Governors Conference. In 1980 he was elected to a second term.

- Donald Canty, who was cited for his achievements in architectural criticism and writing. On Canty's nomination for the award, the jury commented that he "has been a significant force in the field of architectural journalism and criticism for the past 30 years. As editor and writer he has sought both to communicate and to interpret architecture, as much for the public as for the profession."

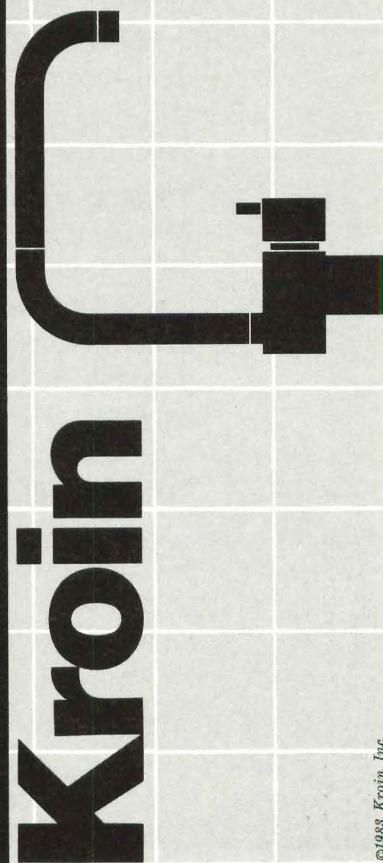
Canty began his career as a newspaper editor in his native Northern California, and entered architectural journalism as editor of the *California Book of Homes* and *Western Architect and Engineer* in the 1950s. In 1962 he joined *Architectural Forum* at Time Inc., as senior editor. He became managing editor when the magazine was acquired by Urban America Inc. in 1965. Two years later he joined the Washington staff of Urban America and launched *City*, a national magazine of

continued on page 109

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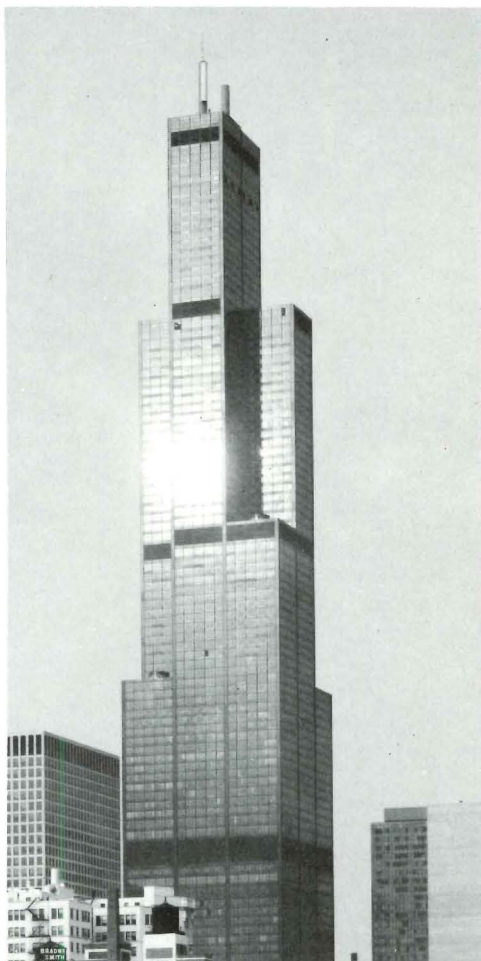
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The Institute from page 107
 urban affairs. While at Urban America
 he wrote *One Year Later*, an assessment
 of the response to the Kerner Commis-
 sion Report, and *A Single Society*, which
 considered urban racial problems. He also
 edited and wrote much of *The New
 City*, containing the report of the Na-
 tional Commission on Urban Growth
 Policy.

Since 1974, he has been editor of the
 AIA JOURNAL.

The late Fazlur Khan, who made his
 mark in the structural engineering of
 highrise buildings. The jury wrote that
 besides his innovations in highrise build-
 ings, cable and tension structures, and
 teaching, he demonstrated a human aware-
 ness and commitment to structural and
 architectural design collaboration that
 has particular importance for architects
 today."

Born in Dacca, Bangladesh, Khan grad-
 uated from the University of Dacca in
 1950, and continued his education at the
 University of Illinois, Champaign-Urbana.
 In 1955 Khan joined Skidmore, Owings
 & Merrill in Chicago, where he became
 general partner in charge of structural
 engineering in 1970. He remained with
 the firm throughout his career. He also
 served as adjunct professor of architec-
 ture at Illinois Institute of Technology.
 He died in March 1982 at the age of 52.



John Hancock Center in Chicago.

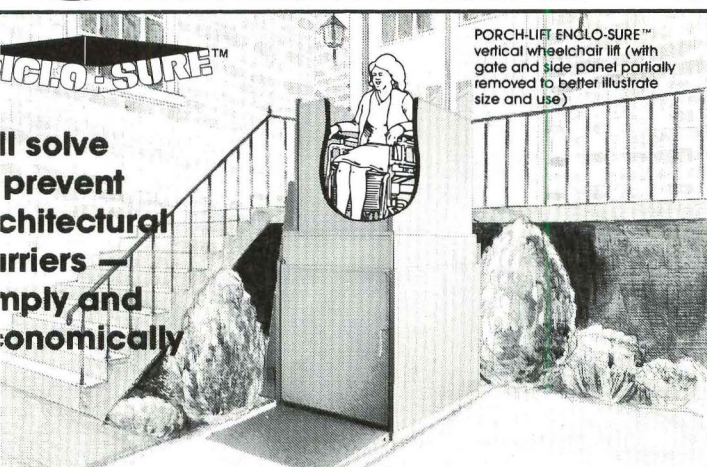
Khan was perhaps best noted for his
 development in the early-1960s of the
 tubular design system for highrise struc-
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 mally required. John Hancock Center and
 the Sears Tower, both in Chicago, are
 two famous examples of its use.

• Christian Norberg-Schulz, the Norwe-
 gian architectural writer and theorist,
 whose work, the jury noted, "has had an
 international impact on the contemporary
 thinking of students and practicing archi-
 tects alike."

Born in Oslo in 1926, Norberg-Schulz
 studied architecture at the Technologi-
 cal University in Zurich, Switzerland, and
 studied at Harvard and in Rome. Much
 of his writing has explored the role of
 architecture in man's striving for meaning
 in existence. "Since remote times," he
 writes, "architecture has helped man in
 making his existence meaningful. With
 the aid of architecture he has gained a
 foothold in space and time. Architecture
 is therefore concerned with something
 more than practical needs and economy.
 It is concerned with existential meanings."

A prodigious lecturer throughout Amer-
 ica and Europe, Norberg-Schulz has also
continued on page 111

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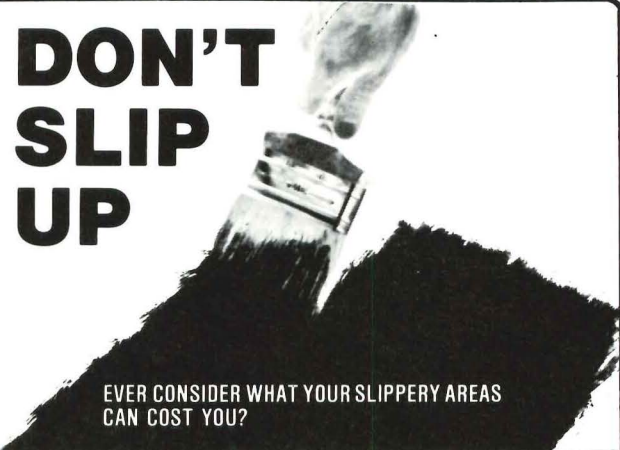


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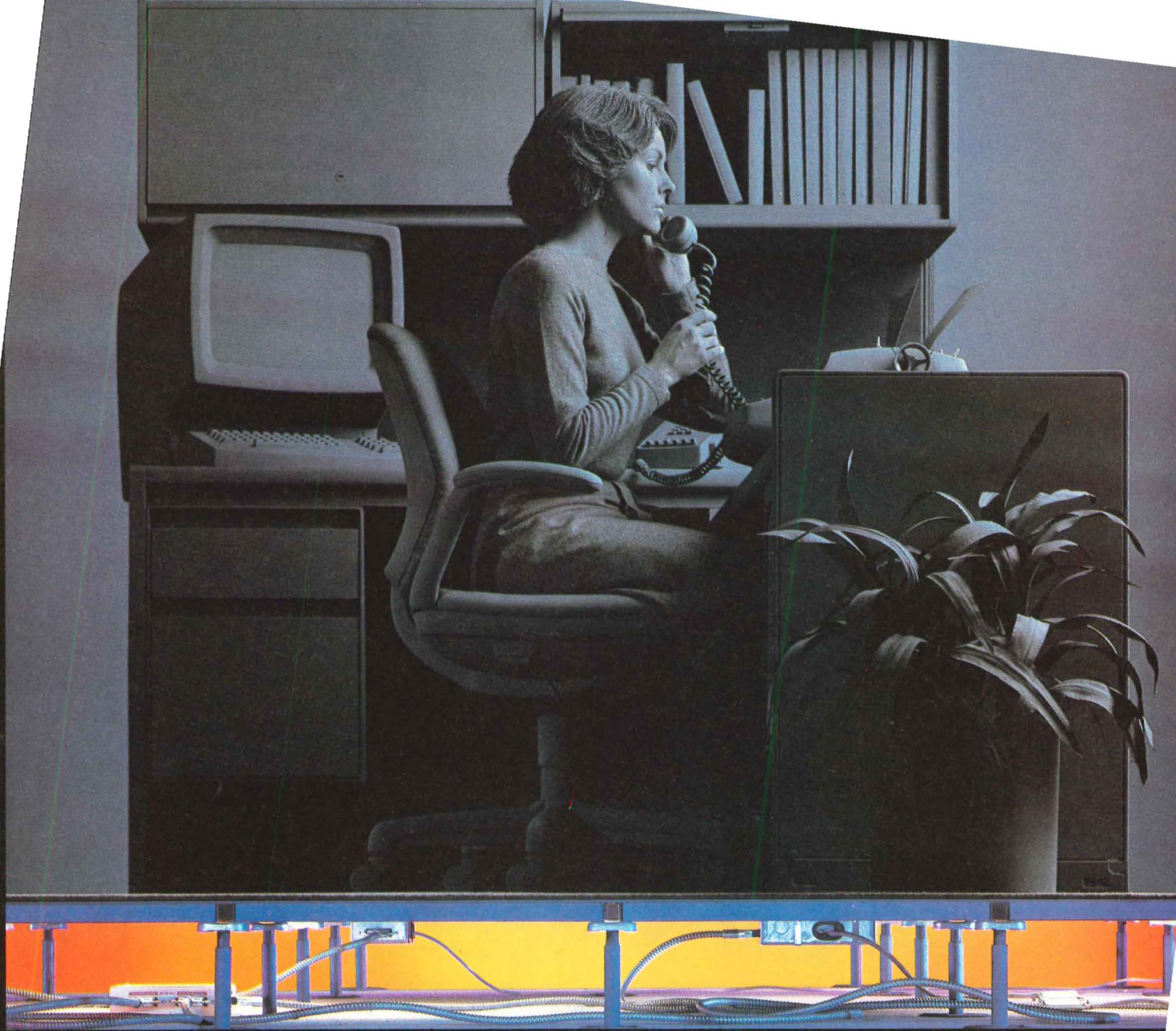
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the Institute from page 109

en visiting critic at Yale, MIT, and the University of Dallas. In 1963 he became editor of *Byggekunst*, the journal of the Norwegian Architects' League, for a tenure that lasted a decade. He has also published articles in other architectural magazines around the world and has authored books.

Norberg-Schulz is currently professor at the Oslo School of Architecture. In the mid-1970s he served as dean of the school and in 1969 was director of its Institute of Architectural Theory.

Paul Stevenson Oles, AIA, who as architect, renderer, and teacher, produced the textbook *Architectural Illustrations: The Value Delineation Process*. Of his talents the jury said, "as an architect with a sophisticated eye and a creative mind, he has lent his gifted hand to helping other designers search for, discover, and communicate solutions to diverse architectural problems. He has explored new directions in the graphic presentation of buildings. As a teacher, he has communicated the intricacies of his art to a whole generation of architectural students."

After his architectural training at Texas Tech and Yale, Oles worked for The Architects Collaborative, Cambridge Seven Associates, and MIT. In 1971 he founded his own firm, Interface Architects, with offices in Boston and New York City. In 1975 Oles joined the faculty at the Rhode Island School of Design and in 1981 became a lecturer in architecture at Harvard.

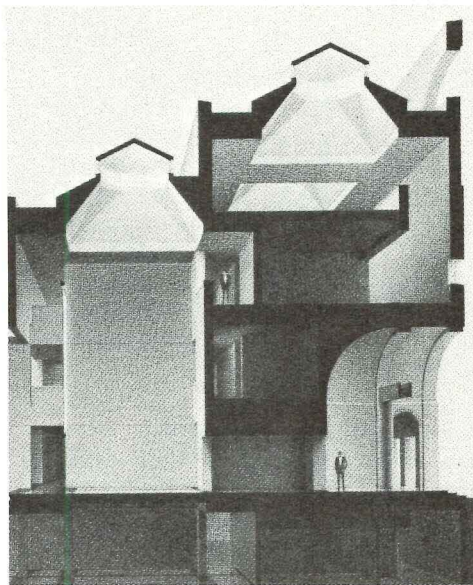
Examples of his work have appeared in more than a dozen books, besides his own. He has worked as a design and delineation consultant with I.M. Pei, Josep Luis Sert, Pietro Belluschi, and others, and has lectured on drawing around the country.

The Washington, D.C., Metropolitan Area Transit Authority (WMATA) for the city's Metro subway system, which the jury praised as a "national standard for the design of urban mass transit systems."

The fruition of nearly 30 years of organizing and planning, Metro includes 101 miles of track, and transports nearly 10,000 passengers daily through 44 working stations, with 30 more under final design or construction.

It began in the mid-1950s, when the National Capital Transportation Agency assembled a team of transit planning professionals that presented a basic plan for the system in 1959. The plan won final approval from Congress and the Commission of Fine Arts in 1965. That same year WMATA was formed. Harry Weese & Associates of Chicago was selected as general architectural consultant for Metro.

The jury praised the system for the manner in which many professional disciplines and regional interests were brought together [making] it one of the



Delineation by Paul Stevenson Oles of the Portland, Maine, Museum of Art.

most successful public transportation projects of recent times. The award recognizes the total system design—from the stations to the graphics to the equipment. This synthesis of all the design elements stands as an example worthy of our national capital."

- William H. Whyte, author of *The Organization Man*, *The Exploding Metropolis*, and, most recently, *The Social Life of Small Urban Spaces*, for his research in architecture and urban design. The jury praised Whyte's work, noting that "through his writings, lectures, films, and television appearances, he has served for over 23 years as a highly literate, often witty, design communicator to the American public."

After serving in World War II, Whyte was an editor for *Fortune*. In the late-1950s his interests turned to cities, and he left the magazine to pursue his studies of urban life. Whyte's analysis of urban open spaces led to a number of changes in urban planning statutes and policies around the country.

Appointed to President Johnson's task force on natural beauty, he authored the nation's urban beautification grants program, worked on the 1965 White House conference on natural beauty, and chaired the New York conference on natural beauty. Between 1964 and 1972 he served on the Hudson River Valley Commission of New York, and he also drafted the text of the Plan for New York City in 1969.

After one year at Hunter College as distinguished professor of urban sociology, Whyte organized the Street Life Project in 1971. With the use of time-lapse photography, he studied how people use streets and spaces in the center city. As a result of this work, New York City adopted a new open-spaced zoning code. Whyte will be a major speaker at AIA's convention in New Orleans.

News continued on page 112



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Shingle/Shake Awards Program.

The Red Cedar Shingle & Handsplit Shake Bureau in conjunction with AIA is seeking entries in its sixth biennial awards program for residential and light commercial structures. Application forms are due by June 10, and completed entries must be received by July 15. Contact Red Cedar Shingle & Handsplit Shake Bureau, Suite 275, 515 116th N.E., Bellevue, Wash. 98004.

Architectural Firm Directory.

The 1983 edition of PROFILE, official directory of AIA membership and architectural firms, has been published by Archimedia in conjunction with AIA. The directory is available in soft cover to members for \$77.50 and to nonmembers for \$86; the hardcover version is \$91.50 (members) and \$100 (nonmembers) from Publication Sales, AIA/SC, 1735 New York Ave. N.W., Washington, D.C. 20006.

Disaster Mitigation Summer Institute.

The Federal Emergency Management Agency, the National Science Foundation, and the U.S. Geological Survey are sponsoring a two-week design institute for teachers of architecture and engineering

July 18-29 at FEMA's National Emergency Training Center in Emmitsburg, Md. Courses will be offered in wind engineering, protective construction, earthquake protective designs, and designing building firesafety. Travel, meals, lodging, tuition, textbooks, and registration are free to participants, but enrollment will be limited to 50 people. Deadline for application is May 13. Contact Shelter-Rad Technology, 2000 Century Plaza, Columbia, Md. 21044.

Housing Awards Program.

The Western home awards program, co-sponsored by AIA and *Sunset Magazine* is calling for entries in its 13th biennial program. Application deadline (with a \$5 entry fee) is May 2. Completed binders must be received by June 2. For more information, contact *Sunset Magazine*, 2345 Menlo Park, Calif. 94025.

Information on Mies Sought.

For a critical biography of Mies, Franz Schulze would appreciate hearing from anyone who has unpublished letters, manuscripts, photographs, reminiscence or anecdotes. Such material should be sent to Professor Schulze, Department of Art, Sheridan and College Roads, Lake Forest College, Lake Forest, Ill. 60045.

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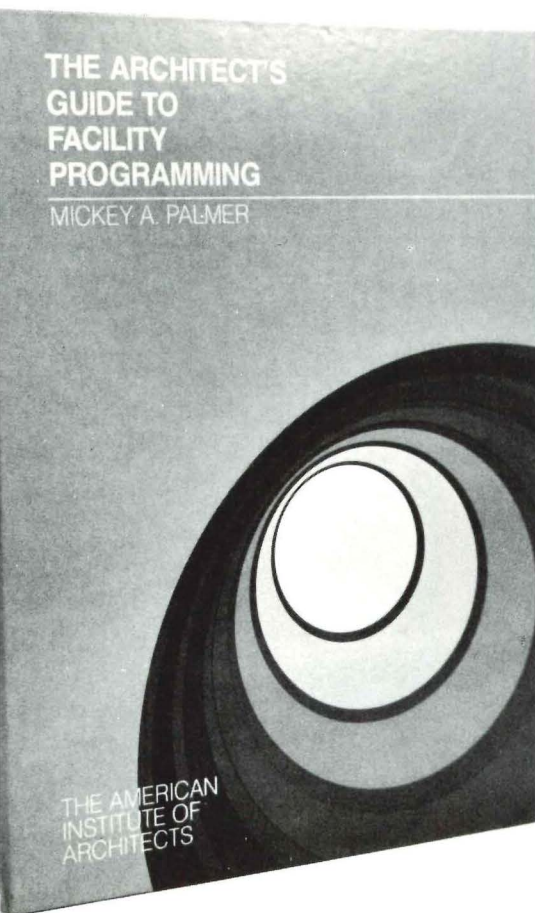


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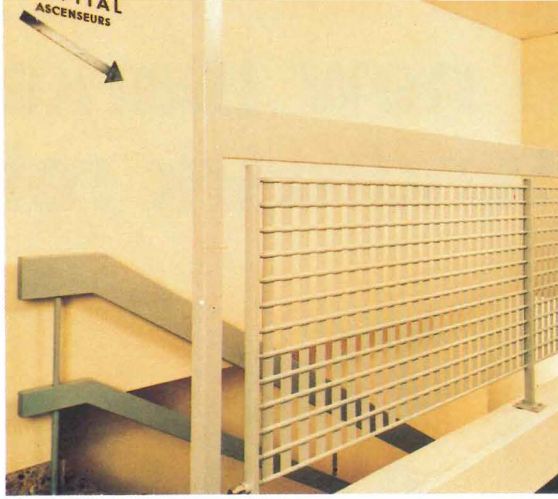
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3

Products

*A selection of notable offerings and applications.
By Lynn Nesmith*

Stylish hot water and steam radiators by the Swiss manufacturer Runtal, available throughout Europe for 25 years, are now offered in this country by North American Energy Systems. The radiators are compatible with hot water, forced circulation, steam, and gravity hydronic heating systems, as well as solar and water heated heat pump systems in renovations and new construction. The units come with a flat white primer and may be painted with almost any paint using a brush, spray, or electrostatic process. The flexible styles are designed to complement interiors by doubling as functional objects such as partitions (1), coat racks (2), and kitchen utensil holders (3). (Circle 161 on information card.)

Round Top windows (4) by Marvin Windows are built to customer specification in a variety of shapes, including curvilinear and elliptical arches, and full, half, and quarter rounds. Sizes vary from 13 inches to 15 feet in diameter. Units are constructed of fine-grained ponderosa pine with a laminated frame designed to accept stain and varnish or paint finishes. The windows feature 1/4-inch or 1-inch in-

sulated glass or triple glazing with an operating sash available on some designs. (Circle 164.)

The Biblical Arts Center in Dallas by Burson, Hendricks & Walls includes a Naturalite cluster skylight system (5) comprised of 36 double domes. The system, measuring 36 feet square, provides natural lighting for the interior courtyard. Aluminum framing components are available with a standard mill finish, clear or color anodized, and baked-on paint finishes. The units are constructed with glass, polycarbonate, or a variety of acrylic glazing materials. (Circle 165.)

Broadloom woven virgin wool carpets from Couristan feature a square geometric pattern in three tone-on-tone berber shades. The Kalahari II Checkpoint design (6) is made with a cut and loop patterned weave with two levels of pile height. (Circle 166.)

Monier's Mission S concrete tiles (7) feature the high barrel design and deep color shadowing of Spanish style clay tiles. Each tile weighs 10 pounds and measures 16 1/2 x 13 inches. (Circle 167.)

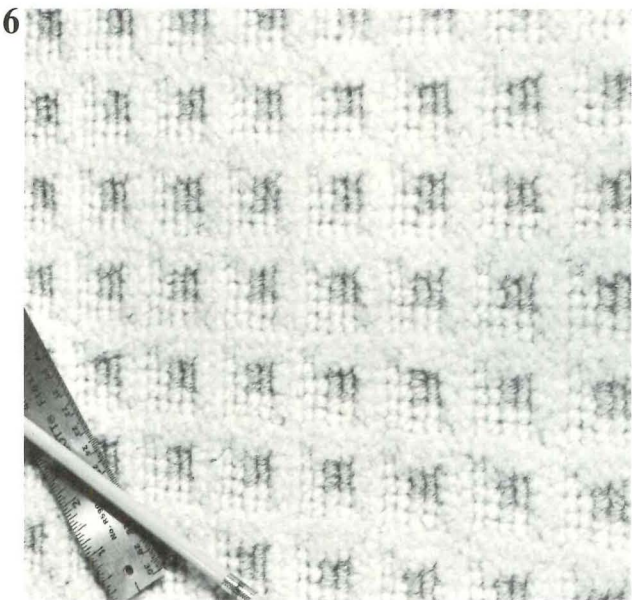
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6



7



Computer Furniture Line.

Word processing support furniture line (above) by Glynn Brown for Inner Concepts includes CRT and printer stands, workstations, file units, mobile storage units, conference tables, and custom designed models. Plastic laminate, solid wood, and wood veneer finishes are available. (Inner Concepts, Kansas City, Mo. Circle 142 on information card.)

Signage.

Modulex System Signs' self-adhesive interchangeable letters attach to a knobbed background designed to ensure consistent spacing and straight lines. The uniformity and flexibility of the lettering allow the signage to be continually updated. The signs are designed for interior and exterior installations. (Modulex Inc., Racine, Wis. Circle 186 on information card.)

Solar Water Heater.

This compact water heater, designed for roof or ground level installation, features an insulated shutter controlled by a solar electric cell that senses light levels. The unit is completely assembled and requires only two plumbing connections. (TEF Manufacturing, Fresno, Calif. Circle 168 on information card.)

Electrical Access System.

Midline desktop raceway system conceals three-circuit, six-wire power and communications distribution behind two-inch thick acoustical panels available in a variety of colors and fabrics. (Panel Concepts, Inc., Santa Ana, Calif. Circle 169 on information card.)

Mirrored Ceiling.

Mirraplank ceiling system features a totally concealed supporting grid. Panels measure 1x4 feet and are available in brass or chrome with brushed or polished finishes. The system is designed to incorporate most downlight and track lighting. (Integrated Ceilings, Los Angeles. Circle 184 on information card.)

Security Door.

Roll-up steel door bolts directly into existing framework of residential closets. It is available in widths of 24, 30, 32, and 36 inches and custom sizes. (Saf-T-Case, Irving, Tex. Circle 170 on information card.)

Insulated Wall Board.

Extruded polystyrene foam bonded to 1/2-inch gypsum board is designed to provide a moisture barrier and insulation. Standard panels measure 4x8 feet and may be fastened to studs or directly to masonry walls. (Spirex Structures, Warren, Mich. Circle 171 on information card.)

Modular Work Unit.

Open-frame modular factory system includes a series of interchangeable frames in various sizes designed to solidly lock together to form work stations that conserve floor space. (Wilfab Systems, Wilmington, Mass. Circle 172 on information card.)

Metal Core Laminate Panels.

Wilsonart panels, designed for heavy duty commercial and institutional installations, are constructed of a decorative laminate fused to a lightweight aluminum core. Panels feature a low fire hazard classification and are available in a variety of solid colors, wood grains, and patterns. (Wilsonart, Temple, Tex. circle 173 on information card.)

Heat Recovery System.

Blackhawk Heat Recovery System provides controlled ventilation of continuous fresh air and offers preheating and precooling capacities. It is designed for residential, agricultural, commercial, and light industrial applications. (Blackhawk Industries, Inc., Saskatchewan, Canada. Circle 145 on information card.)

Drafting Table.

Mayline drafting table (below) features a power pedestal for automatic tilt and lift control. The system is capable of lifting 250 pounds ranging from 30 to 50 inches with an 88-degree angle adjustment. (Mayline Co., Sheboygan, Wis. Circle 143 on information card.)



Wood Casement Window.

The Ariel window by Peachtree features a slim frame and sash with concealed interior and exterior hinges, scaled operator handles, and an unobtrusive screen. The interior wood is free of finger joints. The windows are designed for residential and light commercial installations. (Peachtree Windows and Doors, Norcross, Ga. Circle 150 on information card.)

Acoustical Wall Systems.

Vicracoustic sound absorbing component feature perforated Vicrtex vinyl covering over a high-density, 1/8-inch molded glass fiber sheet bonded to a one- or two-inch glass fiber core. Seven different styles are available. (L. E. Carpenter and Co., Wharton, N.J. Circle 149 on information card.)

Acoustical Ceiling Panels.

Wrapped panels designed to absorb noise and limit sound transmission are available with fabric or vinyl finishes in 16 standard colors. Panels are sized to customer specifications in thicknesses of 5/8 inch to 1 1/2 inch and can be coordinated with metallic, woodgrain, or pastel grid systems. (Interchange Inc., Chicago. Circle 148 on information card.)

Insulation Inserts.

Korfil inserts molded of expanded polystyrene are designed to fit standard two corner masonry units of 6-, 8-, 10-, and 12-inch sizes for both single wythe and cavity wall construction. Preinstalled inserts provide consistent insulation value and permit excess moisture to escape. (Korfil, Inc., Chicopee, Mass. Circle 147 on information card.)

Fluorescent Lighting Fixtures.

Acrylic lenses for fluorescent fixtures feature a bold prism pattern composed of radiused pyramidal shapes designed to provide even light distribution and improve energy efficiency. The lens is available in clear acrylic and with gold, silver, or black ink embellishments. (K-S-H, Inc., St. Louis. Circle 146 on information card.)

Ceramic Fiber Insulation.

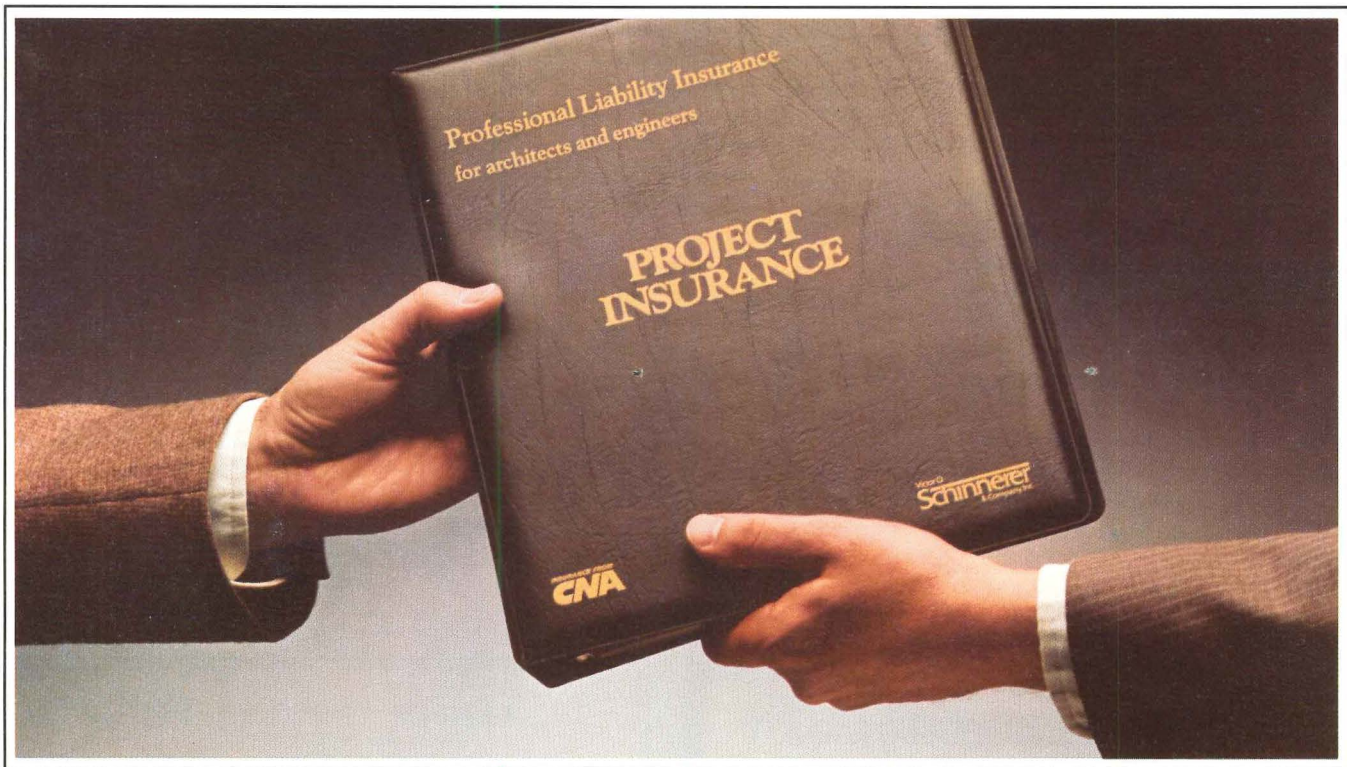
Fire retardant Fiberfrax is an asbestos-free ceramic fiber insulation available in 40 different forms, including blankets, boards, coatings, and woven textiles. (Carborundum, Niagara Falls, N.Y. Circle 152 on information card.)

Reinforced Structural Panels.

Corflex plastic double wall structural panels are constructed of two parallel, 1/8-inch thick surfaces separated by vertical I beams. Panels are available in various lengths, widths, colors, and finishes with a hollow or foam core. Edges feature interlocking devices designed to provide water

continued on page 1.

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Circle 55 on information card

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tight assembly in various configurations. The system allows a building to be constructed without metal for a static-free environment necessary for the testing of some computers and sensitive electronic equipment. (Corflex Inc., Bamberg, S.C. Circle 144 on information card.)

Task Lighting.

Fluorescent ambient Lite-Savers by Steelcase are designed to easily adjust light levels needed in different work areas. Free-standing 65- and 75-inch models provide "fill-in" light between work stations. Panel mounted, shelf mounted, and 15-inch-deep portable units are also available. (Steelcase, Grand Rapids, Mich. Circle 159 on information card.)

Elevator Control Monitor.

Westinghouse's elevator information control center features a switch panel, an optional communications module, and an information display monitor. The CRT display can identify cars out of service, monitor corridor calls and responding car movements, and indicate special operating instructions. The system is used in new construction or may be retrofitted to existing systems. (Westinghouse Electric Corp., Pittsburgh, Pa. Circle 156 on information card.)

Undercarpet Cabling.

Electrical and communications circuit wiring is installed with a plastic tape bottom shield attached to concrete flooring with pressure sensitive adhesive. The flat cable features 3-, 4-, or 5-wire construction and is covered with a polyester film. Carpet squares are laid directly over the cable system. (AMP, Inc., Harrisburg, Pa. Circle 158 on information card.)

Access Floor Tiles.

Perma-Kleen decorative laminate flooring by Wilsonart is available in 14 tile choices including solid colors and abstract patterns, as well as more than 70 custom designs. It can be bonded to aluminum, oil-free steel, wood, or particle board access floor components. Tiles are 24-inch-square and available in three thicknesses. (Wilsonart, Temple, Tex. Circle 157 on information card.)

Architectural Panels and Enclosures.

Sheet metal panels and enclosures are custom designed for commercial and institutional installations. The series includes prefinished covers for perimeter heating, venting, and air conditioning equipment, aluminum linear bar grills, window sills, and interior column enclosures. (Linear-Flo Systems Co., Skokie, Ill. Circle 153 on information card.)

Electric Drafting Eraser.

Koh-I-Noor 2800 erasing system is designed to remove both graphite and ink from drawing paper and coated drafting film. It features a white Lexon plastic casing with a hollow shaft for seven-inch eraser strips and a finger tip control switch on the unit barrel. The motor is air cooled with a seven-foot cord that requires no grounding plug. The hanging ring can be positioned for either right or left handed accessibility. (Koh-I-Noor Rapidograph, Inc., Bloomsbury, N.J. Circle 155 on information card.)

Solid Wood Tambour.

Tambours from Customwood are available in a variety of solid hardwood designs bonded to 12-pound canvas backing. T-molding profiles are suitable for flat surfaces, facing curves, and irregular surfaces. (Customwood, Albuquerque, N.M. Circle 154 on information card.)

Drainage Panels.

GeoTech drainage panels constructed of adhesive-bonded expanded polystyrene beads are designed to protect foundation water systems and reduce interior water condensation in below-grade structure foundations, and retaining walls. (GeoTech Systems Corp., McLean, Va. Circle 140 on information card.) □

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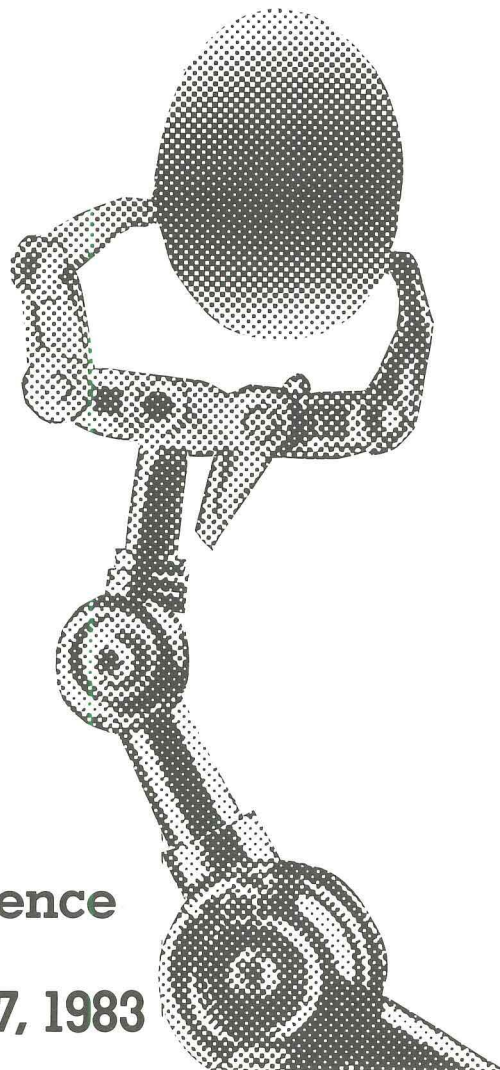
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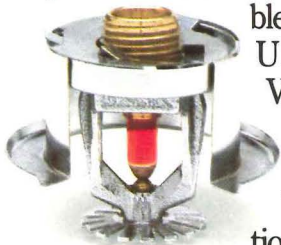
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