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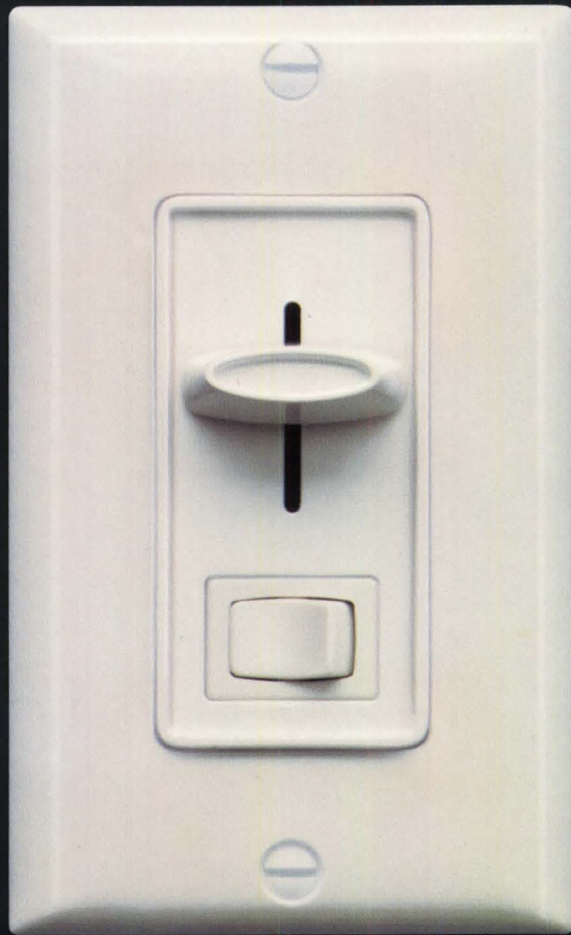
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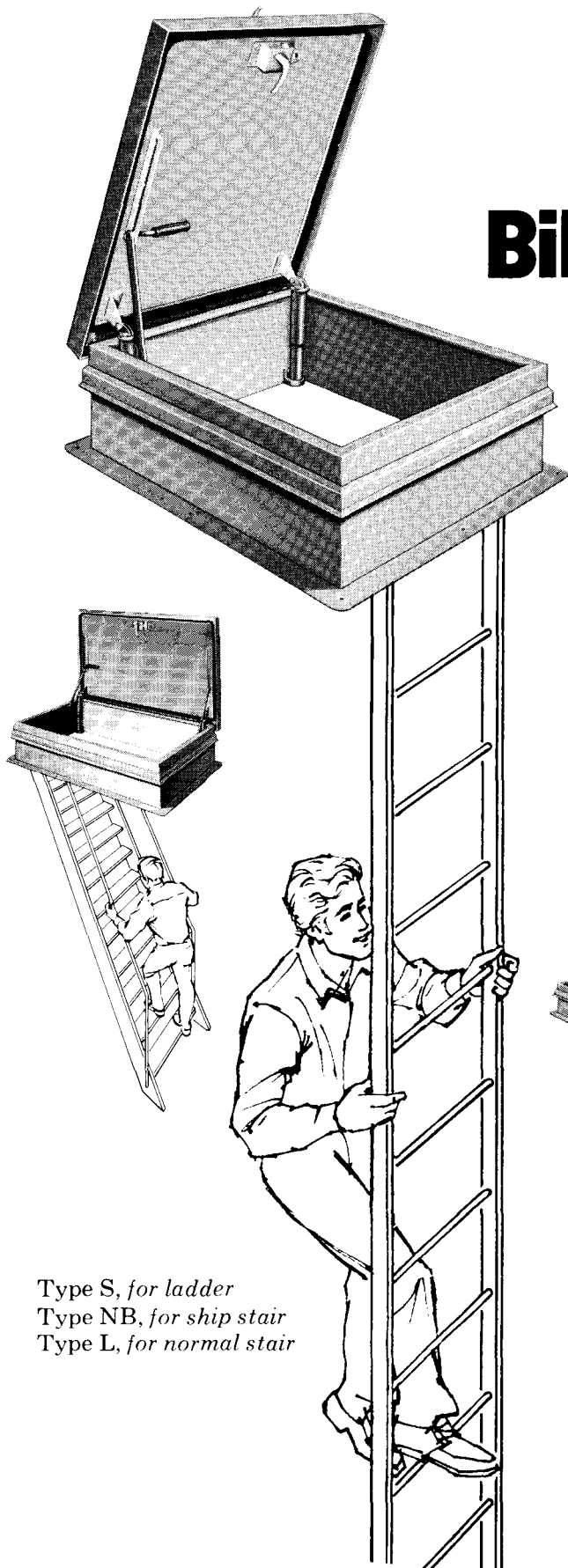
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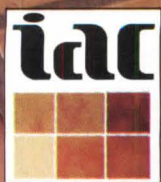
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**Cover:** One of two all-glass elevators in San Antonio's Museum of Art designed by Peter Chermayeff, AIA (see page 68). Photograph © Nick Wheeler 1981.

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## EVENTS

**Oct. 29:** Seminar on Differing Perspectives: The Views of Four Design Giants, Toronto. (Sponsored by AIA interiors committee in conjunction with the Canadian furniture exhibition.) Contact Richard Van Os Keuls at Institute headquarters, (202) 626-7429.

**Nov. 3:** Workshops on Advanced Systems Graphics and Project Management and How to Computerize Your Design Office—Step by Step, Berkeley, Calif. (Repeat workshops Nov. 18, New Orleans.) Contact: Guidelines, Dept. Y1, P.O. Box 456, Orinda, Calif. 94563.

**Nov. 3-4:** Seminar on Fire Safety of Structural Wood Systems, University of Wisconsin, Madison.

**Nov. 3-5:** "Revitalization of the American City," Fourth Annual Meeting of the National Institute of Building Sciences' Consultative Council, Baltimore. Contact: NIBS, Suite 700, 1015 15th St. N.W., Washington, D.C. 20005.

**Nov. 4:** Seminar on Repair and Restoration, San Francisco/Oakland, Calif. (Repeat seminars, Nov. 18, Kansas City, Mo.; Dec. 2, San Juan, Puerto Rico.) Contact: Education Department, American Concrete Institute, P.O. Box 19150, Detroit, Mich. 48219.

**Nov. 4-5:** Construction Contracts and Specification Institute, University of Wisconsin, Madison.

**Nov. 4-5:** Project Management Seminar, University of Alabama, Birmingham.

**Nov. 5:** Seminar on Negotiating Higher Fees, Las Vegas. (Repeat seminars Nov. 9, Washington, D.C.; Nov. 10, Chicago; Nov. 12, San Francisco; Nov. 17, Atlanta.) Contact: PSMJ Seminars, 45 Van Brunt Ave., Dedham, Mass. 02026.

**Nov. 5-6:** Conference on Dutch Architecture Between the Wars, M.I.T., Cambridge, Mass.

**Nov. 5-6:** AIA Energy in Design: Practice Workshop, Omaha, Neb. (Repeat workshops Nov. 12-13, Pittsburgh; Nov. 19-20, Ames, Iowa.) Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.

**Nov. 5-6:** AIA Energy in Design: Techniques Workshop, Salt Lake City. Contact: Brenda Henderson at Institute headquarters.

**Nov. 6-7:** Seminar on Extending the Useful Life of Buildings Through Proper Maintenance & Repair, M.I.T., Cambridge, Mass.

**Nov. 7-9:** Interfaith Forum on Religion Art and Architecture Regional Conference, Duke University. Contact: IFRAA, 1777 Church St. N.W., Washington, D.C. 20036.

**Nov. 7-10:** Solar Energy Association 8th Annual Conference and Exhibition, Atlanta. Contact: SEIA, 1001 Connecticut Ave. N.W., Washington, D.C. 20036.

**Nov. 7-10:** The 1982 Woodlands Conference on Sustainable Societies, The Woodlands, Tex. Contact: The 1982 Woodlands Conference, P.O. Box 9663, Arlington, Va. 22209.

**Nov. 8-9:** Workshop on Using Small Computers in the Professional Design Firm, Tampa. (Repeat workshop, Jan. 17-18, 1983, Kahuku, Hawaii.) Contact: Management Associates, Inc., 1145 Gaskins Road, Richmond, Va. 23233.

**Nov. 8-9:** Computer-Aided Space Design & Management Conference, New York City. Contact: Gralla Conferences, 1515 Broadway, New York, N.Y. 10036.

**Nov. 8-9:** Seminar on Passive Solar Design and Construction, University of Wisconsin, Madison.

**Nov. 9:** Seminar on Lessons from Failures of Concrete Buildings, Syracuse, N.Y. (Repeat seminars Nov. 22, Detroit; Dec. 2, Chicago; Feb. 22, 1983, Milwaukee.) Contact: Education Department, American Concrete Institute, P.O. Box 19150, Detroit, Mich. 48219.

**Nov. 9-13:** Clinic for Marketing Coordinators, Washington, D.C. Contact: The Coxe Group Inc., 2 Girard Plaza, Philadelphia, Pa. 19102.

**Nov. 10-11:** Jail Architecture Seminar, Atlanta. (Repeat seminar, Nov. 17-18, Boulder, Colo.) Contact: Voorhis Associates, 5796 51st St., Boulder, Colo. 80301.

**Nov. 11-13:** Stained Glass International/1982, New York City. Contact: Inter-glassmetal Corporation, 110 E. 42nd St., New York, N.Y. 10017.

**Nov. 16-17:** Seminar on New Concepts in Office Building Design and Construction, Ottawa, Canada. Contact: A. J. Fifer Associates Ltd., Box 9104, Ottawa, Ontario K1G 3T8 Canada.

**Nov. 16-17:** Seminar on Light and Color for Human Performance, University of Alabama, Birmingham.

**Nov. 18-19:** Institute on Preventing Building Design and Construction Failures, University of Wisconsin, Madison.

**Nov. 18-19:** Conference on How To Swallow Your Computer, Atlanta. Contact: Susan Johnson, Design Computata, 45 Van Brunt Ave., Dedham, Mass. 02026.

**Nov. 19-20:** AIA Energy in Design: Process Workshops in Anaheim, Calif., and Cincinnati. Contact Brenda Henderson at Institute headquarters.

**Nov. 19-21:** Third Energy-Conserving Greenhouse Conference and Exhibition, Hyannis, Mass. Contact: New England Solar Energy Association, P.O. Box 541, Brattleboro, Vt. 05301.

**Nov. 23-27:** Association of Student Chapters/AIA Annual Convention, Lincoln, Neb. Contact: ASC/AIA at Institute headquarters.

**May 22-25, 1983:** AIA National Convention, New Orleans.

## LETTERS

**World Architecture Issue:** Your recent publication on world architecture (mid-August issue) is a delight to behold and brought immediate praise from these quarters. It beautifully presented the projects and should be an inspiration to practitioners everywhere who push conceptual frontiers.

For those who refuse to accept canned theory or stylistic labels, the sheer variety and richness of the projects published illustrates how far the design community has come from the standardized visions of the '60s. Call it what you may, between energy consciousness and contextual sensitivity, the Aquarian Conspiracy is unfolding. *Ronald R. Morgan, AIA  
Charlotte, N.C.*

The coverage of recent world architecture was excellent except for its brevity. Perhaps it could be enlarged to the size of the annual review of American architecture. This would have allowed more comprehensive photographic coverage of Foster's IBM, Roger's Fleetguard, and ABK's Cummins building and the inclusion of Terry Farrell's industrial buildings at Castle Park and Wood Green, ABK's Portsmouth Polytechnic Library in the section on England, and the Dundas Street Police Station in Toronto by Shore Tilbe Henschel Irwin Peters in the Canadian section.

New sections covering Spain (Martorell Bohigas & Mackay's house at Canovelles and the Manuel de Falla Centre in Granada by José Garcia de Paredes and José M. Vinula), Germany (Von Gerkan, Marg & Partners office block in Munich) and Norway (Trondheim University by Henning Larsen) could also be added. Including more plan, section, and detail drawings would help clarify points raised in the text. A very auspicious beginning.

*Julian B. Sawyer Jr., AIA  
Virginia Beach, Va.*

**The Effect of Technology:** In the introduction to their series of articles concerning the information revolution (July, page 65), Messrs. Driscoll, Marzeki, and Wilson state: "We might be led to visualize the possibility of completely reorganizing the social and physical environment on

*continued on page 12*

**Amplification:** *Classic Modern Houses in Europe*, published by the Architectural Press of London and reviewed on page 146 of the mid-August issue, is available in North America for \$47.50 from Nichols Publishing Co., New York City.

**Correction:** Projects eligible for the 1982-83 AIA honor awards program are those completed since Jan. 1, 1976. Notification of entry must be postmarked Oct. 15.

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The final choice—to expand vertically with steel—offered compelling advantages.

To begin with, more parking space. The relatively light weight of steel framing meant that three parking levels (rather than two) could be added, while maintaining the existing floor plan and meeting budget and aesthetic requirements.

And steel offered major economies. Erection was faster—the steel frame was completed in just 36 working days! And while the original cost

estimate was \$6.2 million, the final cost was only \$5.4 million—a remarkable saving largely due to the use of structural steel.

The design of this parking structure is unusual: a semi-circle, surrounding a circular tower of ramps with access to each floor. Gross area per floor is about 125,000 square feet.

Steel beams are placed on radii 6° apart, and span 65 feet between col-



umns, which are placed on 4 circular lines and are 3 stories high, eliminating splices. Filler beams span between the radial beams at approximately 8 feet on centers. The larger radial beams and columns are ASTM A572—Grade 50 steel, and the filler beams are A36. Total weight of the structural steel was 2300 tons. Classified as an open-deck parking structure, no fireproofing for the steel was

required.

This imaginative expansion is another example of the design flexibility and economy of structural steel. For more information about the use of steel in this structure, contact a USS Construction Representative through your nearest U.S. Steel sales office. Or write for the USS building Report (ADUSS 27-7969-01) to P.O. Box 86 (C1718), Pittsburgh, PA 15230.

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*Owner:* City of Birmingham  
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*Architect:* Charles H. McCauley Associates, Inc.  
Birmingham, Alabama.  
*Structural Engineer:* Hudson, Ball & Marlin  
Birmingham, Alabama.  
*General Contractor:* Brasfield & Gorrie, Inc.  
Birmingham, Alabama.  
*Steel Fabricator:* AESCO Steel, Inc.  
Montgomery, Alabama.  
*Steel Erector:* Birmingham Steel Erectors, Inc.  
Birmingham, Alabama.



**United States Steel**

**Letters from page 8**

the basis of optimizing human capabilities rather than allowing life to be determined by the mindless forces of technology and industrialization." Here, as throughout the articles, I think the authors have fallen short in two essential points: first, in grasping the primary character of modern technology, and second, in recognizing the extent of technology's effect upon human life.

A thorough understanding of both points has been presented by sociologist Jacques Ellul in his excellent book, *The Technological Society*, from which the following quotations are taken:

First point: In brief, technology is the manifestation of the technical phenom-

enon defined as the search for "... the most efficient method... the best means in the absolute sense, on the basis of numerical calculation."

Second point: "Technique has penetrated the deepest recesses of the human being. The machine tends not only to create a new human environment, but also to modify man's very essence. The milieu in which he lives is no longer his. . . . He has been liberated little by little from physical constraints, but he is all the more the slave of abstract ones. He acts through intermediaries and consequently has lost contact with reality. . . . His capacity to become a mechanic has replaced his knowledge of his material; this development has occasioned profound mental and psychic

transformations which cannot yet be assessed."

In other words, technology is something besides a mindless force, and its effects upon people are more extensive than electronic isolation.

The optimization of human capabilities, as prescribed by Driscoll et al., actually involves applied techniques of humanization "... to render unnoticeable the disadvantages that other techniques have created." This means, among other things, giving a superficially human image to a fundamentally inhuman environment. The end achieved thereby is not the liberation of people from technology, but rather the further integration of our lives with the technological system.

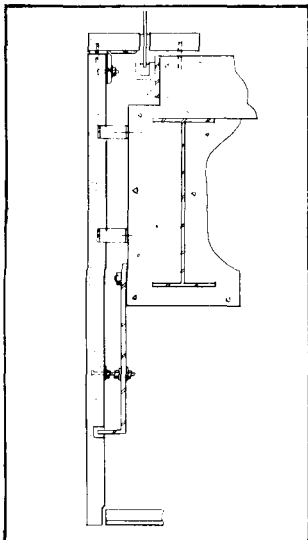
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**Two Trinities:** Regarding the first sentence in the News article of the mid-August issue (page 17), did the AIA members attending the 1976 convention travel to Trinity Church or was Richardson's building moved to Philadelphia?

*Arthur E. Mancl, AIA  
Eugene, Ore.*

Richardson's Trinity stayed in Boston, the conventioners remained in Philadelphia, and our faces are red. Reference was to John Notman's 1859 Church of the Holy Trinity in Philadelphia.—*Ed.*

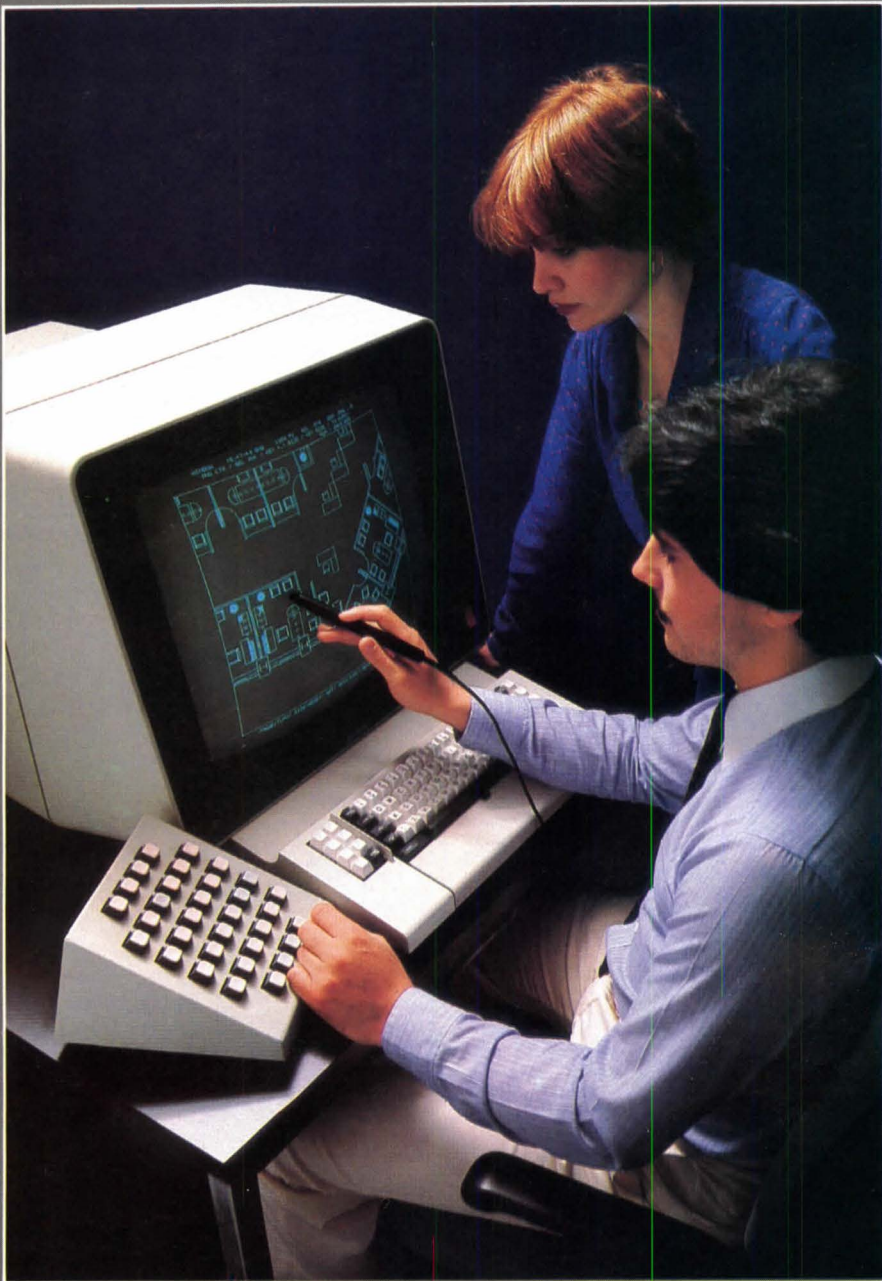
**Sandblasting Brick:** One of the winners of AIA component awards (Marketing Corporation of America corporate headquarters, Westport, Conn., Bruce Campbell Graham Associates, architect) shown on page 305 of the mid-May JOURNAL, is described as including "sandblasting the brick walls." I question why a process so destructive of a building material's integrity should be applauded. Such approval perpetuates layman acceptance of a cleaning process that will seriously damage their structure in most instances.

Even if this renovation used interior sandblasting, which creates fewer long-term problems than exterior sandblasting, your coverage should clearly reflect this distinction so that the casual reader will not see yet another approving reference to sandblasting.

*Pat Calser  
Chicago*

*Bruce Campbell Graham, AIA, replies:* Our first effort in cleaning the exterior walls of the old building was with a chemical cleaning process that has to be washed off with great quantities of water. The chemical process was not able to clean the building and remove stains adequately, and we were concerned that, with the quantities of water used, runoff of the chemical and the red paint residue (the old building had been painted with many coats of red paint) might cause contamination of the adjacent Saugatuck River. □

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Madrid—Taipei

A Dravo Company

**Gibbs & Hill, Inc.**  
DEDICATED TO EXCELLENCE

Circle 59 on information card

**We can prove  
what they can  
only promise.**

Today, the elevator industry is abuzz with startling claims of remarkable control system performance. It's understandable. We were excited, too, when we introduced our computer supervisory system with those same performance characteristics back in 1975.

Schindler Haughton's 1092MC micro processor continuously monitors critical status factors throughout your elevator system. Using this information, it evaluates all possible service combinations for the entire building, and selects the one that will provide all users with the fastest possible response time.

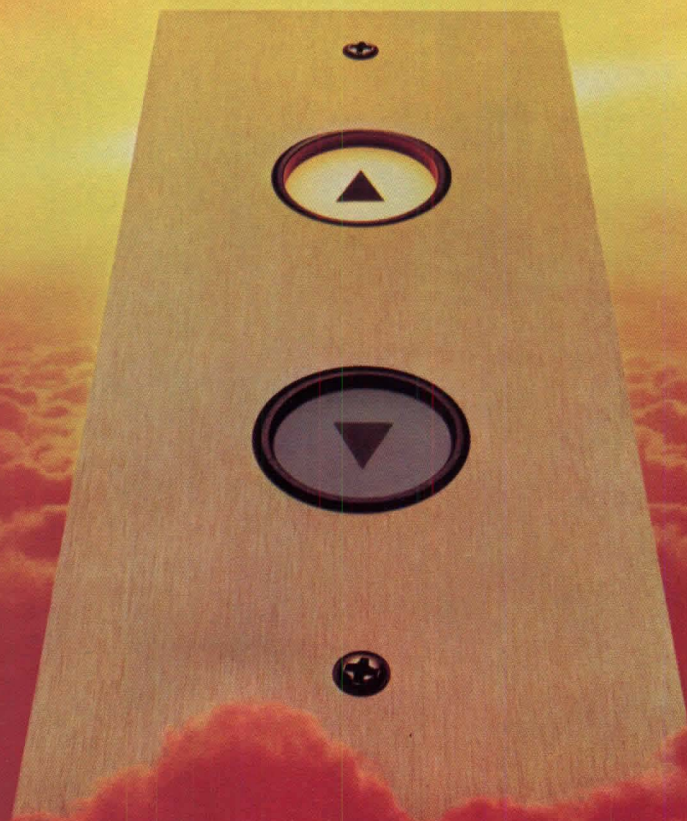
Our Accu-Flite™ velocity control monitors the hoistway position of

each elevator car to within 1/10 inch. It has been generally recognized as the industry standard for years.

And Schindler Haughton's static drive unit, introduced almost a decade ago, has proven its reliability while saving on energy and space requirements.

This kind of improved service is nothing new to Schindler Haughton customers. In scores of major buildings around the country, we've proved our control system can deliver the kind of performance other companies can only promise.

**We're #2 In the world and  
going one better.**



**Schindler Haughton**

ELEVATOR CORPORATION

Toledo, Ohio 43695



Circle 60 on information card



## Practice

# Four Years After Ethics Change A Few Firms Try Advertising

The handbill at right was distributed by a tiny, young Washington architectural firm. The advertisement below is part of a quarter-million dollar campaign by a large Houston firm.

They reflect the fact that architects are taking the first tentative steps toward use of advertising since the ethical ban against it was lifted by the Institute in 1978. It is still an isolated phenomenon, however, with the use of advertising still being shunned in many parts of the country, according to a spot survey of AIA components.

Why advertise? Janet Goodman, Morris/Aubry marketing manager, says because S. I. Morris, who founded the firm in 1938, wanted to: "Everybody else here didn't know what to think about that, including me."

The ads attack what is considered a prime problem for the 250-architect firm that does office buildings, medical facilities, and interiors work: name recognition among lenders. "The Houston developers know who we are. They hire us, but when they go for \$50 million, say, the lenders tell them 'Get some architect somebody has heard of,'" Goodman says.

Produced by the agency was a five-ad, \$30,000 package, with each ad featuring a Morris/Aubry principal superimposed next to one of the firm's buildings. The targets are the financial centers in the Northeast and Midwest, with placement in the major business magazines, plus *Newsweek*, *Time*, and *Sports Illustrated*. The \$225,000, one-year campaign, just ending, totaled 120 placements.

Morris/Aubry is after the insurance executives and bankers, while Architectural Advance is looking directly for clients. The Washington firm of two to four architects, all under 30, posts Xerox copies of eye-catching ads in the Georgetown and Capitol Hill sections, as well as in the suburbs. Architect John Reyner, who does his own copy, sees a similarity between his ads and Morris/Aubry's—grabber graphics and a succinct message. But Reyner adds gentle humor. One Christmas-time ad featured a photo of a Christo-wrapped church with copy read-

ing, "This year make your gift a building."

Reyner estimates that he gets five calls per effort. "Out of that, maybe two are other architects expressing interest, approval, or curiosity. The others mostly want to find out what kind of work I do. Some ask, 'Hey, are you for real?' but that is unusual." He has gotten some results, mostly interior renovation work, he says.

Reyner compares architectural design to ad design: "Some architects will come across with a concept so bold that even if a quarter of it gets through to people, it is still potent. In marketing architecture, you need clear, strong ideas. The smooth, soft-

*continued on page 17*

NOT ALL  
ARCHITECTS  
ARE LITTLE  
DICTATORS.

ARCHITECTURAL  
ADVANCE

(202)

234 - 3270

WE WORK  
WITH  
YOUR IDEAS.



"Creativity  
Isn't Enough." S. I. Morris

"As architects, we're expected to be good designers. We're not always expected to be good businessmen.

"The fact is, we have to be both.

"At Morris/Aubry Architects, we believe the key to the business of good architecture is communication. Communication between the architect and the client; between the architect and the builder; and between the architect and the engineer.

"Because we listen, we're better able to make the kind of design statement our clients want. And because we understand our clients, we recognize that the design not only has to work, but be within budget and on time.

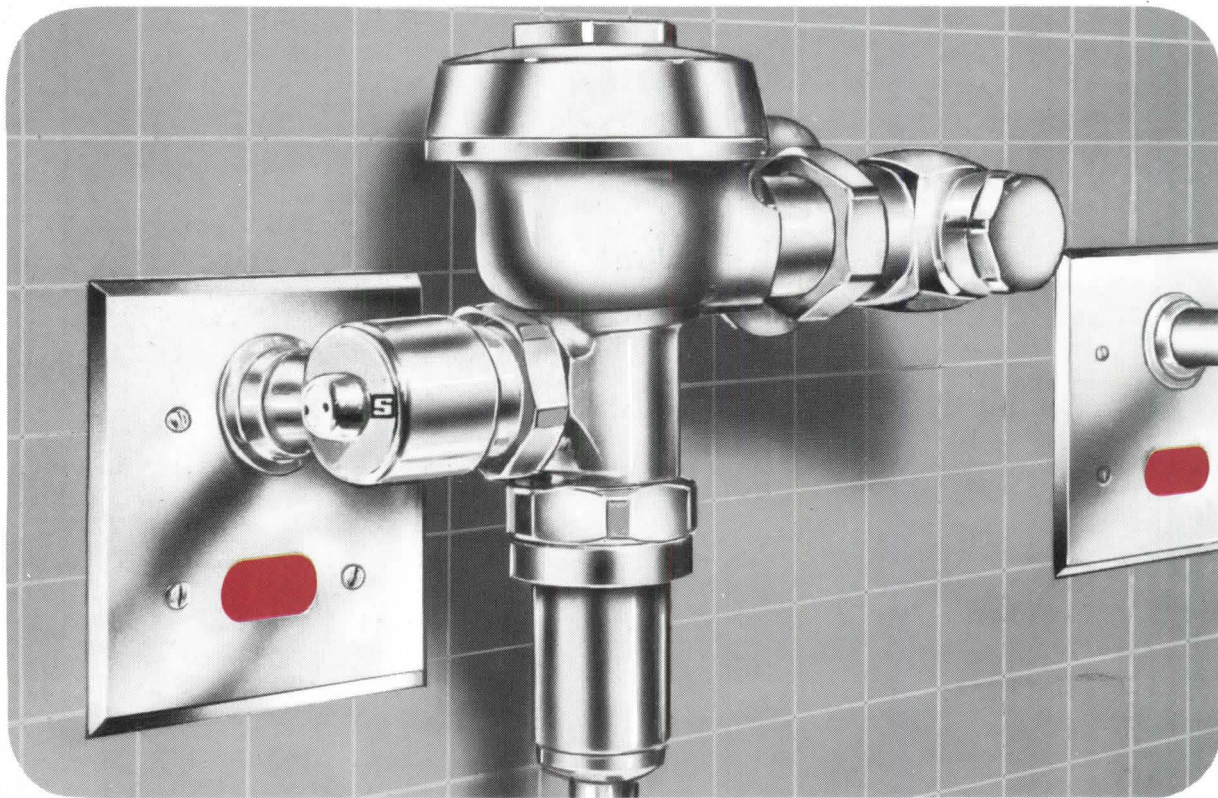
"Creativity and business. They can't be separated in architecture. At Morris/Aubry they aren't."

MORRIS • AUBRY ARCHITECTS

3465 West Alabama P.O. Box 22715 Houston, Texas 77027  
713/622-1180 Telex: 774 185

Brown & Root, Inc.  
Houston, Texas

# It knows how to save water. Because it "sees" when to flush.



## The Sloan OPTIMA™ **sensor-operated** Automatic Flushing System. No handles. No timer. Flushed by an invisible beam of light.

It's Sloan's great idea for cutting water consumption, while increasing sanitary protection. And the key to it all is the Sloan **OPTIMA** Electronic Sensor.

It "sees" when to flush with an invisible, continuous light beam. When a user approaches the fixture, he reflects the beam back into the **OPTIMA's** scanner. The electronics take over and when the user steps away, the flush valve is tripped by a solenoid.

The **OPTIMA** offers the ultimate in sanitation because the user can't "forget" to flush. And since fixtures flush only when they

are used, precious water is conserved.

The **OPTIMA** is designed for easy, attractive installation. It works with the Sloan Solenoid-Operated Flush Valve that matches your application. This advanced Sloan **OPTIMA** System gives you a trouble-free, water-wise answer to high-volume flushing problems in hospitals, sport complexes, municipal and office buildings, and transportation terminals.

For more information, write for our new brochure.

**Sloan Flush Valves. Anything else is a waste of money.**



**SLOAN VALVE COMPANY**

10500 SEYMOUR FRANKLIN PARK, IL 60131

Circle 61 on information card



The World of Tomorrow — Here Today.

Introducing the clean look of HEWI, the bold, pure color of nylon.

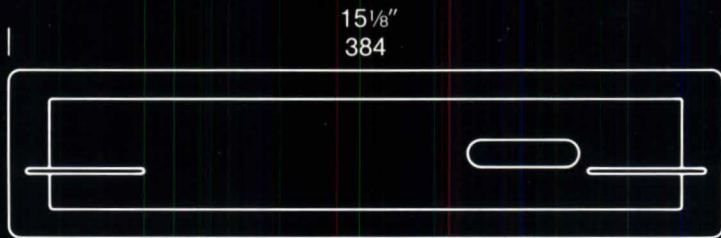
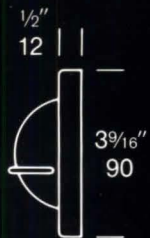
Any way you look at them, HEWI products make good sense. They are offered in a satisfying array of colors . . . resistant to oils, greases, solvents and cleaning solutions . . . easily and securely installed with concealed fastenings . . . and available from stock.

Pull handles  
Lever handles  
Hinges  
Door stops  
Handrails and grab bars  
Balustrades  
Handicapped program  
Bathroom accessories  
Shelf brackets and hooks  
Cabinet and furniture hardware  
Write or call today for complete information on our full line of products.

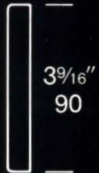
# HEWI

Circle No. 168 on information card.

## Entrance Hardware



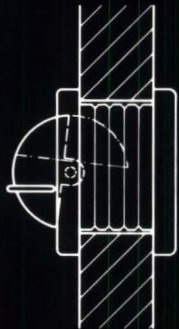
Mail Slot with Lid



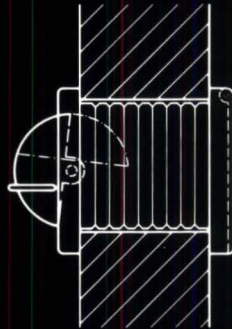
Mail Slot Cover for Inside



Mail Slot with Lid

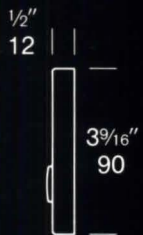


with Sleeve

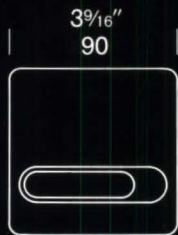


Mail Slot Unit

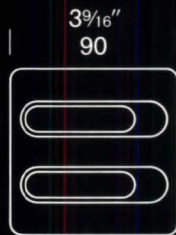
**HEWI Mail Slot with Lid**  
 High quality nylon – resistant to the elements. Opening dimensions: 325 mm (12<sup>13/16</sup>”) by 30 mm (1<sup>3/16</sup>”). Concealed fastening and theft-proof installation. Self-closing lid. Water tight and vibration free. Also available with sleeve or as complete unit. Sleeve adapts easily by separating at perforation. Design Winfried Scholl



Door Bell Button

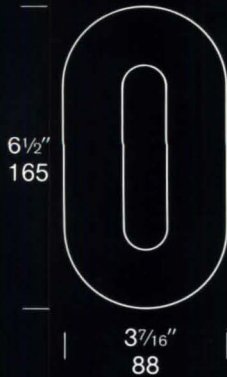


single push

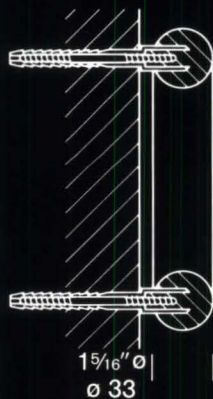


double push

**HEWI Door Bell Button**  
 High quality nylon – resistant to the elements. With one or two push buttons; with or without light. Concealed fastening and theft-proof installation. Design Winfried Scholl



Numerals



**HEWI Numerals**  
 Full round 33 mm (1<sup>5/16</sup>”) diameter. Solid material. High quality nylon – resistant to the elements. Concealed fastening and theft-proof installation. Template supplied for accurate alignment. Available are: Numerals 0 to 9; lower case letters a, b, c, d and symbol for dash. Design Winfried Scholl

**Practice from page 15**

talking cocktail party approach doesn't work, especially in this economy."

Ellerbe in the Twin Cities area employs 750 people and probably spends more on mylar in a day than Reyner spends for advertising in a year. Joe Huttie, Ellerbe's director of corporate communications, hasn't seen Reyner's efforts, but in general he opposes in-house work. "Architects don't have much sensitivity when it comes to advertising," he says. They are overly concerned with peer respect, tend to try one-shots or two-shots, and think potential clients know more about a firm than in fact they do, according to Huttie.

"If you asked 10 chief executive officers of various companies who I. M. Pei is—the best known in the country—maybe three of them might know. Where does that leave Ellerbe as to corporate identity, even though we are the nation's ninth or tenth largest?"

Architects also have problems with the money it takes, he says. "Even though a firm spends millions a year on marketing and promotion, \$500,000 sounds like a lot to put into advertising when you haven't done that before." And some practitioners have what Huttie calls an emotional resistance, a feeling that advertising is "crass or peddling your wares."

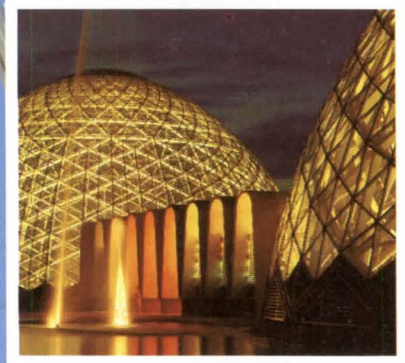
One way Ellerbe eased into advertising was by underwriting costs of the local public television channel in return for a few seconds of exposure of the corporate logo during prime time. In Philadelphia, a firm has gone a step further. When the city's public channel became authorized to sell advertising time to make up for federal funding cuts, the Vitetta Group was the first to sign up. Alan Hoffmann, Vitetta marketing manager, says he thinks it also was the first instance of an architect advertising on television.

The 30-second spot ran 12 times during two weeks, with eight of the showings in prime time. "It was very soft sell," says Hoffmann, a happy birthday, Philadelphia, message as part of the city's tricentennial celebration, showing some of the firm's new and renovated buildings, including work on city hall and the Pennsylvania Academy of Fine Arts. "Not only were there implied restraints of the architectural community, but public TV is restricted in what it can show and wants to show. *continued on page 20*

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<i>Viet Memorial Modifications</i>	22
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<i>17 members cited by president</i>	102

Circle 62 on information card

# DESIGNER'S CHOICE:



## LAMINATED SAFETY GLASS

DESIGN IT . . . WITH LAMINATED GLASS!

**SAFETY**—of glass in the support frame. It protects against "fallout" with glass-to-PVB adhesion!

**SOLAR CONTROL**—made in a variety of thicknesses and colors — 3 bronze tones, grey tones...dozens of hues and reflective PVB assemblies to attain the exact light transmission desired!

**SECURITY**—strong enough to withstand conventional high-powered rifles, resists blows from repeated attacks!

**SOUND CONTROL**—reduces unwanted noise up to 90% through entire frequency range...for airports, hotels, offices, schools, restaurants, clinics and homes...enter the quiet world...lamine it!



20 MINUTE FILM of laminated glass applications available at no cost for group showings "Laminated Safety Glass / The Designer's Choice"

Write today for film reservation.

Making Glass that WORKS for You

**LAMINATORS SAFETY GLASS ASSOCIATION**

3310 Harrison, Topeka, Kansas 66611

Photo: Super Sky Products, Inc.







**With carpet  
of DuPont Antron<sup>®</sup>,  
the design possibilities  
are practically  
endless...  
and endlessly  
practical.**

Whether you're creating an elaborate design in modular tiles as in this renovation of the Albuquerque Convention Center... or a simple statement with solid color in broadloom... you have so much more flexibility with commercial carpet of DuPont Antron\* nylon. That's because DuPont Antron\* is available in more colors, more styles and more textures than any other commercial carpet fiber.

And Antron\* offers the assurance of outstanding performance, proven over the years in a wide variety of installations. Through special fiber engineering, Antron\* provides superior soil resistance and pile height retention so carpet of DuPont Antron\* retains its original beauty for years with less frequent maintenance.

It's no wonder Antron\* is specified more than any other carpet fiber.

Specify carpet of DuPont Antron\* for the look you want to capture, and the look you want to keep.

Carpet designed by  
Richard G. Worthen, ASID

\*DuPont registered trademark.  
DuPont makes fibers, not carpets.

**DUPONT ANTRON<sup>\*</sup>**  
**COMMERCIAL CARPET FIBERS**  
**ENGINEERED FOR PERFORMANCE.**



REG. U.S. PAT. & TM. OFF.

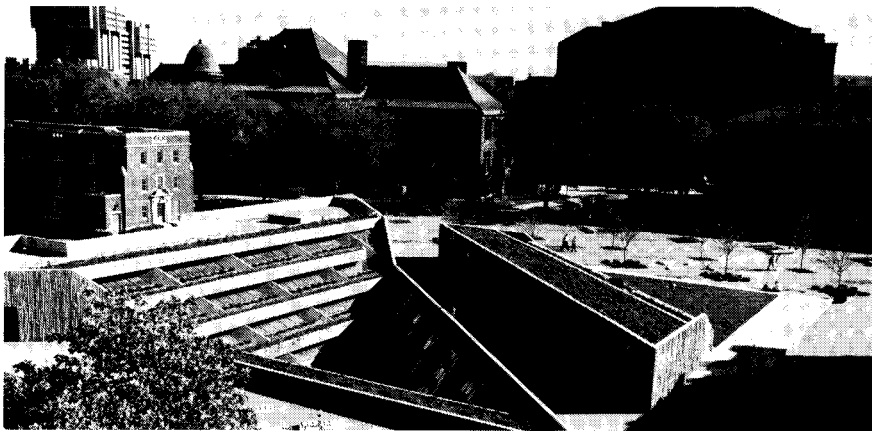
*Circle 73 on information card*

# HIGH-PRIORITY QUESTION:

How can you cut energy costs and preserve open space with today's buildings?

# IN-DEPTH ANSWER:

Build a new generation of reinforced concrete buildings—underground.



A good example: Williamson Hall on the Minneapolis Campus of the University of Minnesota. It's a site-cast reinforced concrete structure, 95% of which is below grade level.

The Hall houses a Bookstore with a main sales floor two levels below grade and an interior courtyard one level below grade. A clerestory window looks into the sales area at grade level.

There is also an Admissions and Records Facility in the Hall. A sunken courtyard is covered by glass set at 45°, with the upper floor treated as a mezzanine, so light reaches the lower floor. Large planters form a screen above the courtyard to let the sun penetrate in winter, while blocking it in summer.

Energy savings are considerable, because the structure can virtually heat itself. Its large thermal mass serves as an energy storage system. With underground walls that are naturally good insulators and mild soil temperatures, heat loss is exceptionally low. On non-work days, heating/

cooling systems can even be shut down and the building temperature allowed to drift slowly.

On an average January day (14° F), the occupied building will need 55% or less energy than an equivalent above-ground building. However, with a newly-installed solar collection system, energy savings will increase to about 80% to 100% during the heating season and 45% during the cooling season.

The designers of Williamson Hall were also able to preserve valuable open space and provide views of existing historic buildings. Only about 25% of the Hall's total plan area extends above grade.

When the questions are how to conserve energy or preserve open space, the answer is obvious. Go underground with reinforced concrete.

Architect: **Meyers and Bennett Architect/BRW, Edina, Minnesota.**  
Structural Engineer: **Meyer, Borgman and Johnson, Inc., Minneapolis, Minnesota.**  
General Contractor: **Lovering Associates, Inc., St. Paul, Minnesota.**  
Owner: **University of Minnesota, Minneapolis Campus.**

**CONCRETE REINFORCING STEEL INSTITUTE**   
933 N. Plum Grove Road, Room 210   
Schaumburg, Illinois 60195  
(312) 490-1700

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

## THE ANSWER'S IN REINFORCED CONCRETE.

### Practice from page 17

"It was well received. No job leads, but we weren't looking for those."

But not every firm that has tried it is continuing to advertise. Hastings & Chivetta, for instance, bought pages in specialty magazines related to one of their markets, collegiate athletic work, and in *St. Louis Commerce* to reach potential office building clients. The latter ad showed the Wainwright Building, on which the firm collaborated with Mitchell/Giurgola for the renovation/addition, completed last year. The Wainwright ad cost between \$800 and \$900 for preparation, and \$600 for each of eight placements.

H&C Vice President Jim Flynn, AIA, says the decision to discontinue was purely economic. "We determined that for the same money we can write an article, get it published, make reprints and mail them out, and have a far more 'rifled' impact than we were getting for fairly significant expenditures for a firm our size in a straight advertising campaign."

Hellmuth, Obata & Kassabaum, also in St. Louis, is one of the many firms that refuse to advertise. HOK Associate Katherine Hoester says the late George Kassabaum was "staunchly against advertising, and I don't really see that policy changing in our company." She is happy with that decision because, "when people from the symphony program and the like call me, I can just say we have a corporate policy that precludes advertising."

## First Frank Lloyd Wright Award Goes to Alden Dow of Michigan

Alden Dow, FAIA, is the recipient of the first Frank Lloyd Wright creativity award. The award, which will be given to artists, scientists, scholars, and inventors, as well as architects, recognizes a person "whose creative achievements have changed the world, and whose concerned efforts have helped others to better realize their creative potential."

In presenting the award, Olgivanna Lloyd Wright, Wright's widow, said that Dow was chosen because of "the celebrated creativity of his architecture and the effect it has on his community," Midland, Mich. He was also chosen because of the "creative brilliance apparent in his landscape design, especially evident in the Dow Gardens." And finally, he was selected because of having established the Alden B. Dow Creativity Center at Northwood Institute in Midland.

Born in Midland in 1904, Dow is the son of the founder of the Dow Chemical Co. He attended the University of Michigan to obtain a degree in engineering in anticipation of joining his father's firm. However, after three years he changed to

*continued on page 22*





## How to accomplish a full day's work between nine and noon.

You don't need to tamper with your timepiece. What you do need are MASTERSPEC® 2 diskettes — compatible with virtually every type of computer or word processor.

With the MASTERSPEC 2 specification system, you cut down on cut-and-paste confusion and raw research. You eliminate costly duplication and overlaps. You avoid problems with contractors' substitutions, improve your legal liability and protect your professional reputation. Overall, MASTERSPEC 2 can cut your specification time in half.

And when you take the option of a diskette library, the time savings are even greater. MASTERSPEC 2 diskettes, along with your automated equipment, can cut the production side of specifying by 75%.

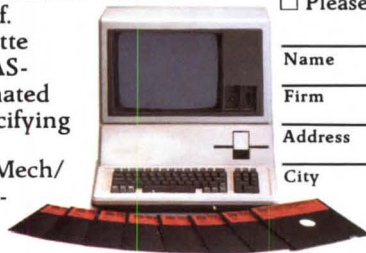
Available in both Arch/Struc/Civil and Mech/Elec editions, MASTERSPEC 2 contains comprehensive information on everything from furring strips to girders. It makes decisions easier by naming products and manufacturers. And since it's

updated quarterly, you're always current on the latest technology and regulations.

Fill out your coupon and mail it today. Or call Leonard Bain, AIA, toll-free at 800/424-5080 for more information. He'll show you how to beat the clock, not work around it.

### Cut specification time to the bone.

- I'm interested. Send the information on MASTERSPEC 2 diskettes.  
 Please send me a brochure on MASTERSPEC 2.



Name	Title
Firm	Number of employees
Address	Phone number
City	State Zip AIA

**M2 MASTERSPEC 2**

Mail to: PSAE Div., AIA/SC, 1735 New York Ave., NW, Washington, DC 20006

Circle 65 on information card

**Practice** from page 20

the study of architecture at Columbia University, from which he graduated in 1931.

He first worked with an architectural firm in Saginaw, Mich. A turning point in his young career came in the summer of 1933 when he joined Wright at Taliesin in Spring Green, Wis. In the fall of that year he returned to Michigan, and two years later opened his own Midland architectural firm, which is today known as Dow, Howell, Gilmore Associates. He now participates as a consultant.

During his career Dow has designed

more than 60 houses, in Midland as well as in other parts of the U.S. He also has designed elementary schools, college campuses, arts and music academies, and laboratories.

While the influence of Wright and Japanese art and architecture is evident in Dow's work, he has advanced a highly personal concept of architecture. In *Progressive Architecture* (February 1955) Dow explained his philosophy of architecture: "The real objective of architecture should be to inspire constructive creativeness in those that use our buildings. This means that our buildings must aim for

something more than pure utility. Just as important, and at times even more so, is compatibility. By this, I mean that a building, in addition to serving its fundamental purpose, must also be compatible with its surroundings, the ground it's built on, the planting, the people that pass by, the automobile, and finally, the individual person."

Dow advocates a concept of "composed order," which he called a progressive harmony between "facts" and "feelings." His criteria for judging the quality of his own work as well as others are honesty, humility, and enthusiasm.

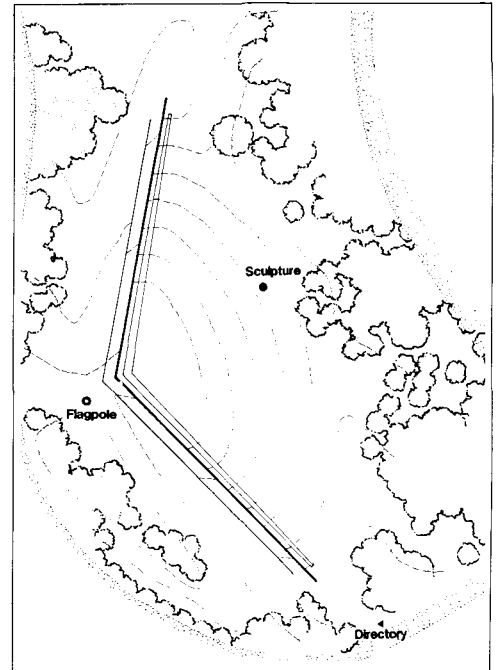
*Government*

# Proposed Viet Sculpture Shown As Architects Fight Additions

Sponsors of the Vietnam memorial, now nearing completion on the Mall in Washington, last month unveiled a model (below) of an eight-foot-high, bronze sculpture proposed for placement within the V of the memorial, 150 feet from the apex of the black granite walls. Also proposed is a 50-foot-high flagpole positioned 40 feet behind the apex.

The model depicts three armed, standing soldiers, one black and two white. Says the sculptor, Frederick Hart: "One senses the figures as passing by the tree-

line and caught by the presence of the wall, turning to gaze upon it almost as a vision. . . . The contrast between the innocence of their youth and the weapons of war underscores the poignancy of their sacrifice. . . . I see the wall as a kind of ocean, a sea of sacrifice that is overwhelming and nearly incomprehensible in its sweep of names. I place these figures upon the shore of that sea gazing upon it, standing vigil before it, reflecting the human face of it, the human heart." Hart says the sculpture "does not intrude or obstruct . . .



does not attempt to compete or dominate. . . . The tension between the two elements [wall and sculpture] creates a resonance that echoes from one to the other."

The designer of the memorial strongly objects. Maya Ying Lin, whose work was chosen last year in an open competition, wrote to the Vietnam Veterans Memorial Fund on the day Hart's model was shown that the "enhancements" violate the concept of her design. She asked, ". . . as each person enters the memorial, seeing his face reflected amongst the names, can the human element escape him? Surely seeing himself and the surroundings reflected within the memorial is a more moving and personal experience than any one artist's figurative or allegorical interpretation could engender. . . .

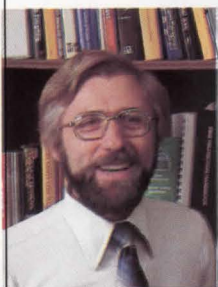
"The additions, which treat the original work of art as no more than an architectural backdrop, reflect an insensitivity to the design's subtle spacial eloquence. The verticality of the flagpole (which from any angle within the boundaries of the wall will appear to rise out of the apex) is totally out of character with the sweeping horizontality of the memorial. Fur-

*continued on page 27*

# Gas: It's the Heat to Beat.



## "A Switch to Gas Saved Thousands on My Hospital Bill."



In order to cut energy costs to a minimum, Gerald Foster, Director of Plant Administration for Loudoun Memorial Hospital

in Leesburg, Virginia, switched to gas. The operation was a success. It has already saved the hospital over \$100,000 in fuel bills.

Conversion of two oil-burning boilers to dual-fuel function cost the hospital \$22,000. But, according to Foster, it paid for itself in 63 days. The actual \$100,078 savings was based on the prevailing price of oil versus what was actually spent for natural gas over a twelve-month period.

**"We only expected to save \$60,000," said Foster, "but we've already gone way beyond that."**

Although the cost of all energy will go up over the next few years, Foster's decision to switch to gas will save the hospital hundreds of thousands of dollars over the life of the boilers. Because, as the price of natural gas goes up, it will still remain a better buy than oil or electricity. "And in the meantime," says Foster, "we're way ahead of the game."

Dependable gas energy is and will remain our nation's most efficient major energy system. It can reduce our dependence on foreign oil. And new technologies will keep gas plentiful well into the 21st century. No wonder

America depends on gas. It's the best energy value for today, and tomorrow.

Gas is the fuel of the future.

AMERICAN GAS ASSOCIATION © 1982

## Gas: The future belongs to the efficient.

Circle 66 on information card

AIA JOURNAL/OCTOBER 1982 23

# DOVER ELEVATORS Cover North America.

You'll find Dover Elevators everywhere you look.

That's because, in addition to the 122 Dover Elevator Company offices, Dover elevators are sold, installed, and serviced by 24 independent distributors who operate under their own names.

These distributors have been handling Dover Oildraulic® and traction elevators for many years. They have built valuable reputations for customer service unequalled in their areas.

The Dover distributors are provided the same factory training, the same constantly updated technical assistance, and, of course, the same quality equipment we produce for our Dover Elevator Company offices.

Whether it's Dover Elevator Company or one of our independent distributors, we are devoted to giving you the best elevator service anywhere. If you can't find Dover in your phone book, look for one of our distributors. Or write Dover Corporation, Elevator Division, Marketing Service, Dept. 662, P.O. Box 2177, Memphis, TN 38101.

**DOVER**<sup>®</sup>  
**The elevator  
innovators.**

Sound  
Elevator Co.

Hob-Suns  
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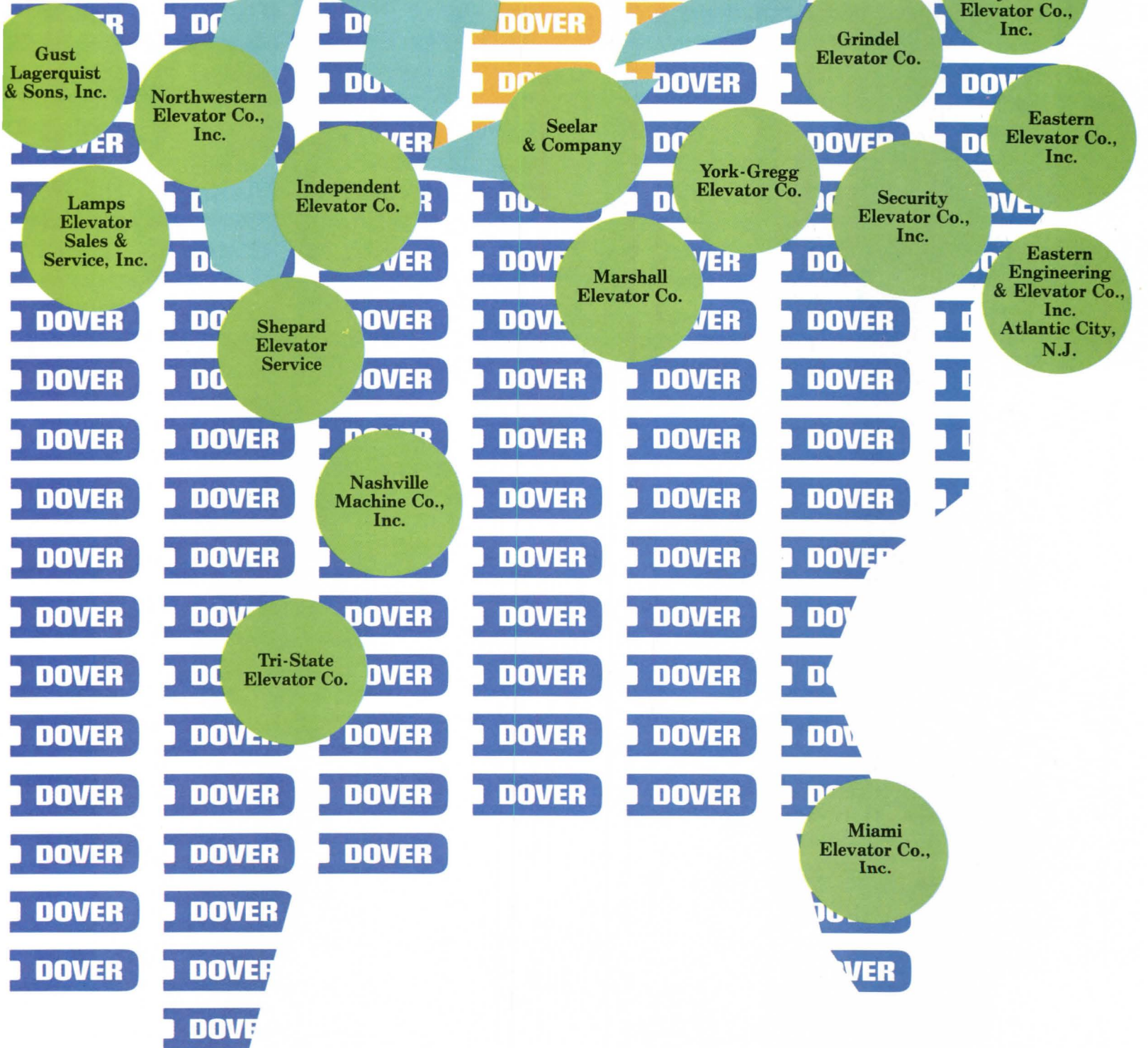
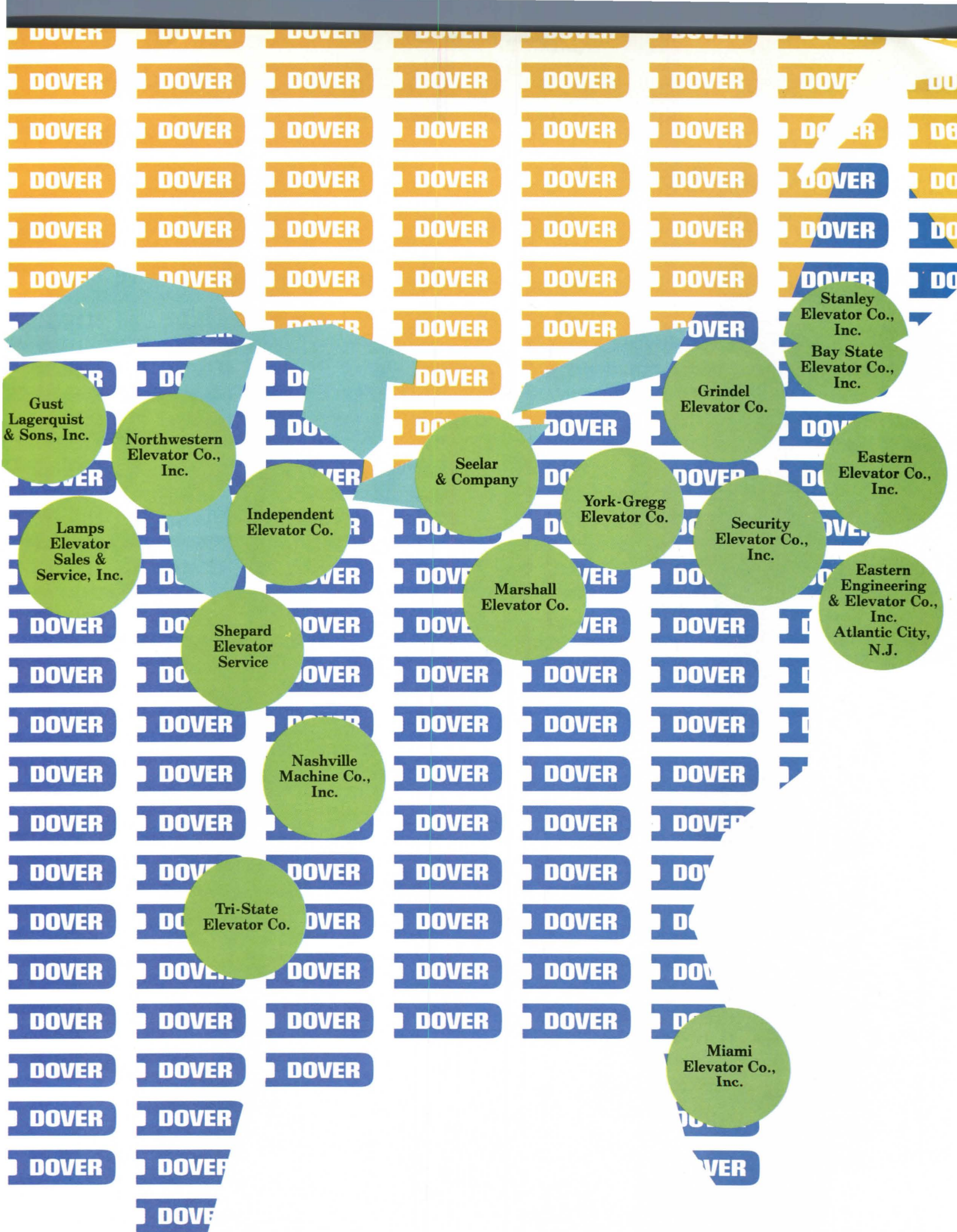
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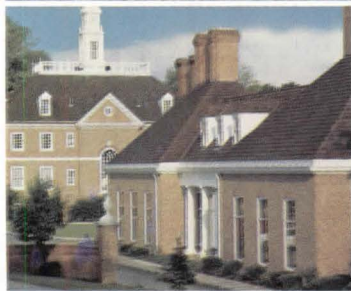


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**Government** from page 22

thermore the visual axis connecting sculpture and flag splits the memorial at its focal point, the point where it joins in concept. This intrusion rips apart this meeting of names, beginning and end, and destroys the meaning of the design."

The sculpture and flag and their placements must be approved by three federal agencies: the Interior Department, National Capital Planning Commission, and Fine Arts Commission. A crucial vote comes Oct. 13 from the Fine Arts Commission, whose executive secretary, Charles Atherton, AIA, says some 200 letters have been received from architects across the country, the great majority of them opposing the additions. (Institute President Robert Lawrence, FAIA, denounced the modifications and urged members to write to the commission.) Conveyed in the letters are intensely personal convictions tempered by esthetic and professional considerations.

From Eugene Carl LaSalle, AIA, of Wilmington: "... The simple walls of Ms. Lin's design so reverently pointing to the Washington Monument and the Lincoln Memorial will include the name of my older son, Lawrence Lee LaSalle. ... He was born three days before the Hiroshima bomb went off and 21 years later was killed in action up by the DMZ.

"When Larry was young and a beauti-

fully searching and inquisitive lad, he and I looked out in awestruck delight, all over Washington, from the top of the Washington Monument. Our patriotism was further enhanced when we stood nearly alone, that rainy afternoon, in the Lincoln Memorial as I read out loud for us, in those echoing chambers, Mr. Lincoln's statement, ending, 'It is for us, the living, rather to be here dedicated. ...'

"Please keep *our* flag and the 'fighters' out of *this* memorial. Please let the names alone stand as a memorial for the thoughts and prayers of the living who visit that particular spot of 'hallowed' ground."

Norman DeHaan, AIA, Chicago, wrote: "Washington is full of built compromises, and it's only in recent years, with the exception of legislative offices, that we've managed to look like something other than a mishmash of early Third Reich and late Mussolini modern."

James M. Stevenson, AIA, of Henderson, N.C., who entered the competition himself, wrote that he has no doubts that Lin's design "was the very best expression in searching for the right memorial. ... [The proposed additions] would destroy the total continuity of space generated by the dark spears shooting toward the two neighboring monuments and on past into eternity, yet meeting again where the name of the last fallen veteran meets the name of the first."

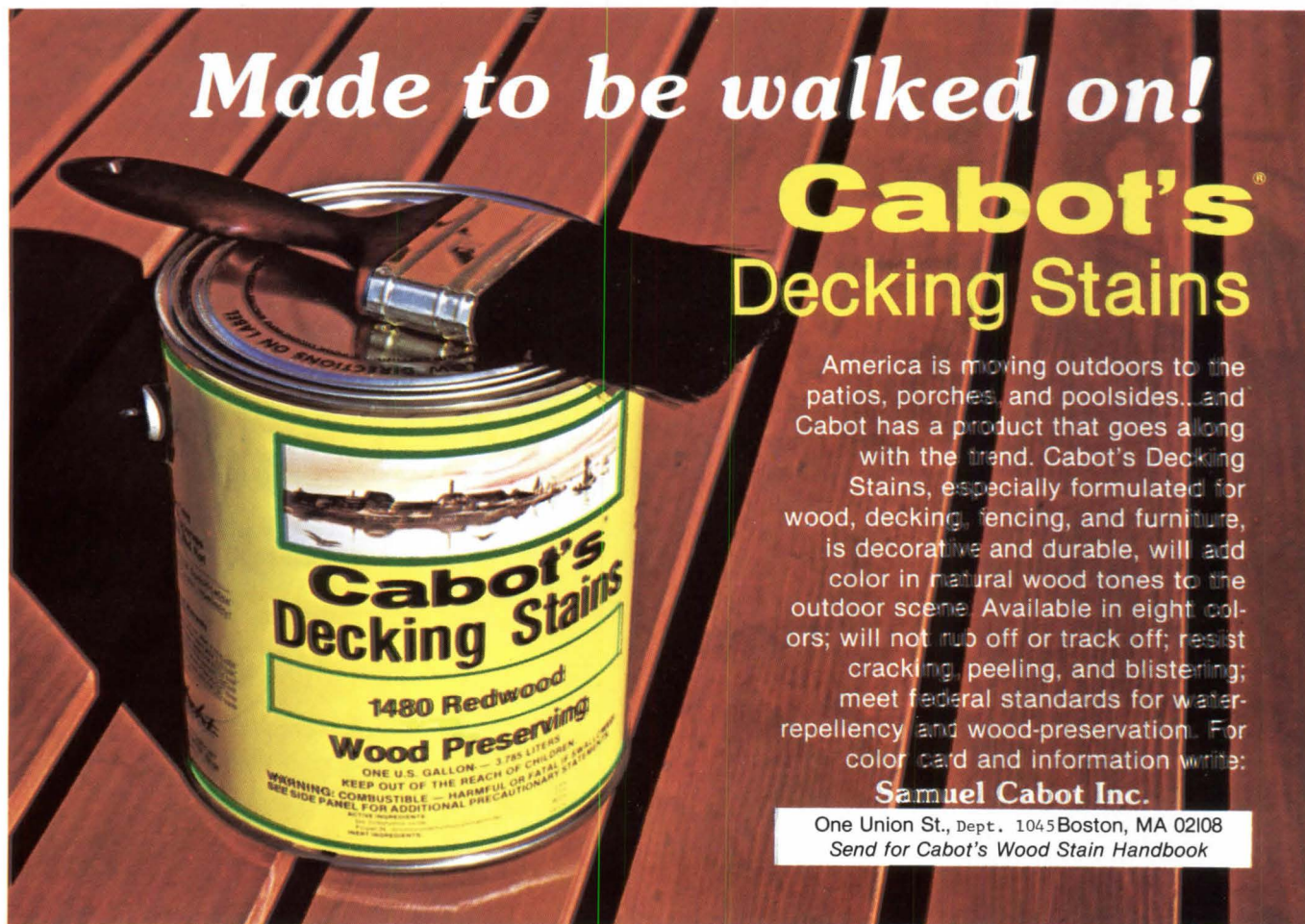
From Philip Atchison, AIA, of Denver: "The two most moving war memorials which I have seen, the Monument Aux Deportés in Paris and the Fosse Ardeatine outside Rome, depend for their effect on abstract spatial composition. Indeed, the statue of three figures outside the Fosse Ardeatine is so poor as to be instantly forgotten when one enters the cave and tomb. ... I respectfully ask you to leave the Lin design alone."

David L. Warren, AIA, Fargo, N.D., wrote that he is "appalled" by the modifications, "not because the additions are so meaningless—which they are. But because they show total lack of respect for design, what I do for a living. To add a few soldiers and a flag is a slap in the face for the design professions by the political trades. It is also perhaps a final blow to the credibility of competitions in this country if the winner can find the winning entry to be doctored by some other artist with a different message and a different goal."

And from Eli Rabineau, AIA, Scarsdale: "The proposed sculpture of three figures is pedestrian to the point of banality."

Atherton says copies of each of the 200 letters have been sent to the seven members of the commission, who include John Chase, FAIA, of Houston, Walter Netsch, FAIA, of Chicago, and landscape architect Edward D. Stone Jr. of New York City.

*Government continued on page 28*



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## Continued Decline of Cities Is Foreseen During This Decade

Urban decline is widespread and the causes of it—population loss, rising unemployment and crime rates, and stagnant city revenues—will continue during this decade. So concludes an extensive investigation of the health of U.S. cities sponsored by the Brookings Institution, a Washington, D.C., research organization.

The study suggests that a number of cities are increasingly unable to adequately provide such services as police protection, education, and waste disposal, especially older cities in the Northeast and Midwest. Among them are Boston, Philadelphia, and St. Louis, which are high on the report's "distress and decline" list.

The authors note that solutions to urban problems would require politically unpopular actions, such as federal aid that targets individuals rather than employers, reduction of tax advantages for individual homeowners, and prohibition of local rent controls, to name a few.

In shaping their conclusions, the authors—Katharine L. Bradbury of the Federal Reserve Bank of Boston, Anthony Downs of Brookings, and Prof. Kenneth A. Small of Princeton University—analyzed data gathered between 1960 and '75 on the largest 121 cities in the U.S. (those with populations over 100,000 in 1970) and the metropolitan areas in which they are located. In their analysis city "distress" measures unemployment rate, violent crime rate, percent of popula-

tion at or below the poverty level, percent of housing built before 1940, and the difference in tax rates between the city and its suburbs. City "decline" measures changes in unemployment, crime rate, city debt burden, and per capita income.

Forty-four out of the 121 cities grew; 43 were stagnant (32 of these in growing metropolitan areas); and 34 severely declined (19 of these in growing areas). On the decline list Atlanta ranks with Detroit, Newark, and Gary, Ind., and Boston is at the very bottom below Cleveland and Paterson, N.J. Among cities that are still growing, Miami is the most distressed, while Las Vegas was least capable of providing services needed by its residents. At the top of the list the prospering cities are Hampton and Virginia Beach, Va., Torrance and Fremont, Calif., and Parma, Ohio.

The authors also found that cities in trouble are in metropolitan areas that are also experiencing decline or distress, although the cities are sinking farther and faster. And these cities are generally in more difficulty than those in healthy metropolitan areas.

What promotes urban prosperity (or, adversely, what are declining cities lacking)? The authors suggest conditions for growth are increasing metropolitan employment opportunities; warm January temperatures (confirming the frost belt to sun belt movement); low city/metropolitan disparities concerning percentage of older housing in the total inventory, percentage of blacks in the total population, and local tax rates; extension of the city's public school district beyond the city limits; high percentage of Hispanics in the city or metropolitan area; and a small total number of municipalities in the metropolitan area.

As for the future, the authors maintain that a net movement of population from metropolitan to nonmetropolitan areas will continue, although cities will continue to experience a slight increase in population (due to increased fertility rates and immigration from foreign countries). Most of this growth, they say, will take place in the South and West, where the suburbs will grow faster than the cities.

Urban decline will continue. "Big city population decreases set in motion certain self-reinforcing forces likely to perpetuate it," the authors suggest. Among these are the disproportionate withdrawal of high- and middle-income households from the cities, rising local taxes, deteriorating public services, city-suburban disparities in the percent of older housing, losses of jobs, and physical deterioration.

However, the authors maintain, "cities will not disappear. . . . Eventually, vacant areas created by building abandonment will become sufficiently inexpensive and

*continued on page 30*



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## Government from page 28

isolated from surrounding blight to entice developers to build new, lower-density structures on them. . . . Some rebuilding and renovation have already begun in cities still losing population. Nevertheless, in severely declining cities, it will take many years—even decades—for population losses to be transformed into stability.”

As for government policies to help ailing cities, the authors give top priority to programs that aid residents of concentrated poverty areas within big cities. They also suggest:

- removing anticity biases from federal policies, which, they say, favor new construction in the suburbs over renovation, maintenance, or new construction in older cities. Some examples would be a more “evenhanded” treatment of funding for highways, transit systems, and sewer and water systems; of depreciation of new and old structures for tax purposes; of location of federal jobs; and of tax benefits for housing.
- helping cities adapt to smaller populations.
- effective forms of providing federal aid to cities. Among the existing forms of federal aid that the authors cite as beneficial are revenue sharing and block grants rather than categorical funding programs.
- development of a new “menu” to pro-

vide local governments with more “consumer sovereignty.” They suggest that cities should have greater freedom to allocate federal funds among programs.

- increased tax-base sharing at the metropolitan level.

## Lawyer Group Says Brooks Bill Too Narrowly Applied by U.S.

The American Bar Association has charged that in advising federal agencies on A/E procurement the Office of Federal Procurement Policy (OFPP) is advancing an “exceedingly narrow interpretation” of the procedure prescribed by the Brooks bill.

The ABA report says that on January 18, 1982, the OFPP sent a memorandum to executive department and agency heads advising that the Brooks bill procedure “should be confined to services normally involved in or incident to the preparation or submission of designs, plans, drawings, or specifications for construction, alteration, or renovation.”

Shortly after this memo was released, GSA issued a proposed rule to change the definition of “architect and engineer services” to those associated with the construction, alteration, or repair of real property.

The Brooks bill describes architectural and engineering services as “those professional services of an architectural or engineering nature as well as incidental services that members of these professions and those in their employ may logically or justifiably perform.”

More explicitly, the federal procurement regulations state that these services include “studies, investigations, surveys, evaluations, consultations, planning, programming, conceptual designs, plans and specifications, cost estimates, inspections, shop drawing reviews, sample recommendations, preparation of operating and maintenance manuals, and other related services.”

By restricting the Brooks bill to “construction, alteration, or repair,” A/E procurement for studies, surveys, reports, etc., could be competitively bid, which, says ABA, may affect the quality of the services bid and throw suspicion on the professional qualification of the bidders. The report also states that the scope of much A/E work is so difficult to define as to make competitive bids impractical.

Competitive bidding also came under fire from the National Academy of Science’s standing committee on procurement policy. Commenting on a recommendation by the congressional committee

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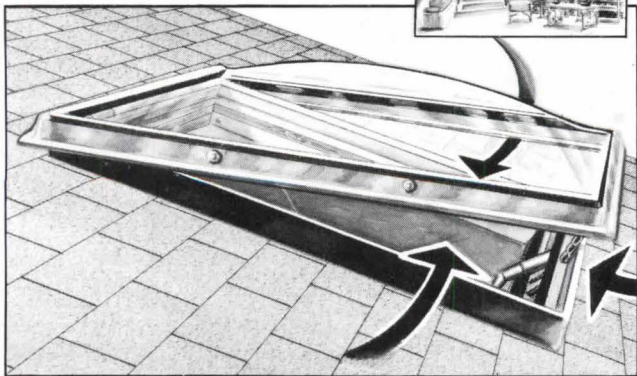
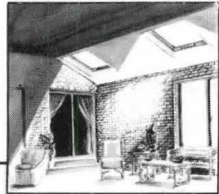


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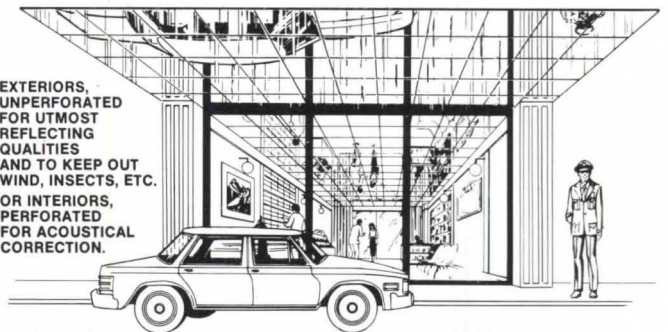


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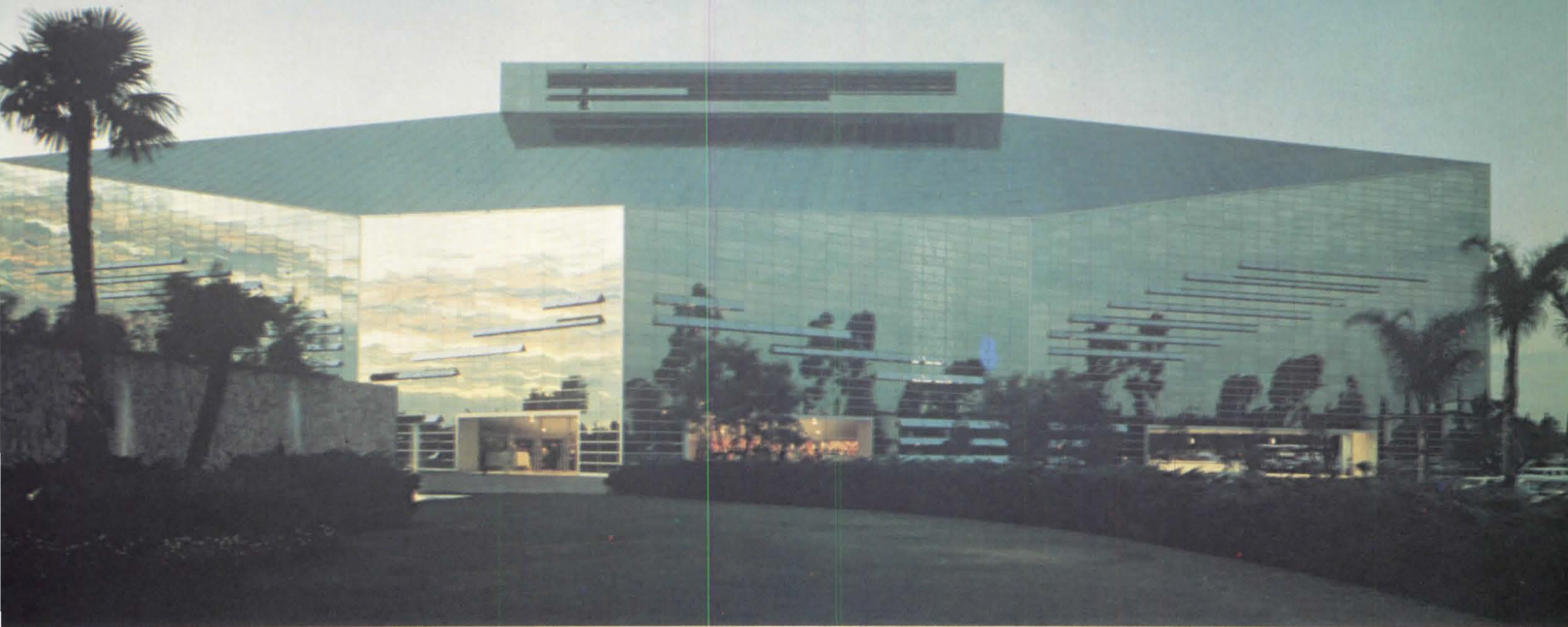
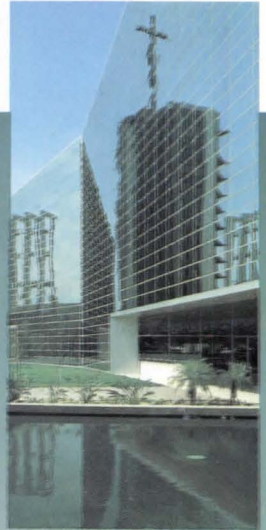
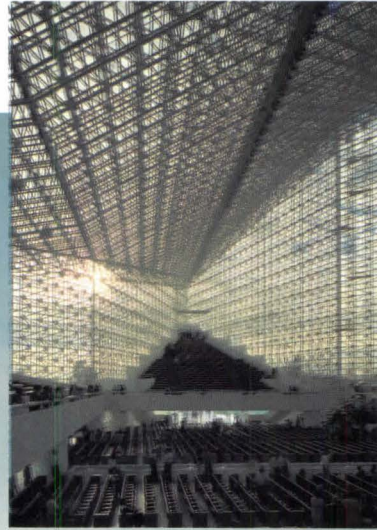
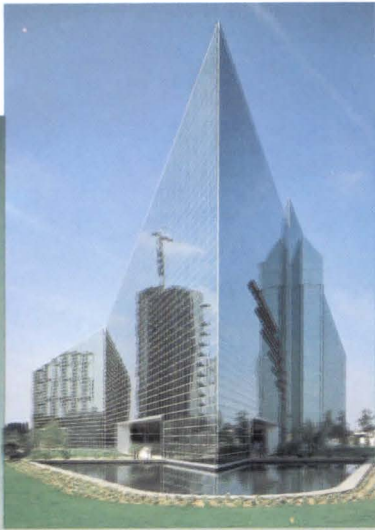
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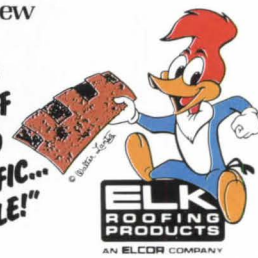


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## Government from page 30

tee on government procurement that fee be a consideration in procuring A/E services, the NAS warned that this practice "inevitably would become the overriding consideration in most A/E selections . . ."

The report also pointed out that "competitive bids are meaningless unless all the competitors are bidding on the same work. . . . The government would have to define specifically what services are expected . . . before fee bids could be prepared."

Recently, the American Consulting Engineers Council and two of its member firms attempted to sue the Coast Guard in a competitive bidding case but was rebuffed by a federal district court.

The Coast Guard solicited bids for a technical energy survey of 146 New England buildings. While the survey did not require A/E involvement, the ACEC and the two firms argued that "a registered professional engineer's seal on completed studies and retrofit recommendations" was required. The Coast Guard countered by saying that the contract "was for reports only," and did not involve construction or related projects.

The court ruled that ACEC did not have "representative standing to bring this suit," because the two firms had refused to bid. ACEC maintains that the judge's decision to throw the case out "implied that a firm or association that believed a bid procurement request violated federal law would then have to break that law by submitting a bid in order to challenge the process in court."

Meanwhile, a decision to allow contracting federal agencies to determine whether projects requiring engineering services should be limited to only licensed A/E firms has been upheld by the comptroller general on May 6, 1982. The decision denied an appeal by the Association of Soil and Foundation Engineers, which charged the Federal Highway Administration with failure to use Brooks bill procedures.

## Investment Tax Credits Halved; Accelerated Depreciation Ended

The Tax Equity and Fiscal Responsibility Act of 1982, passed by Congress in August, is designed to raise \$21 billion next year and a total of \$99 billion over the next three years. Provisions with potential impact on the construction industry and architectural profession are changes in the investment tax credits program and the repeal in 1985 and '86 of the Accelerated Costs Recovery System.

Changes in the investment tax credit involve depreciation of investments. Currently, cost recovery deductions are allowed for 100 percent of the cost of a depreciable asset, including property for

which the regular, energy, and historic structure rehabilitation investment tax credits are allowed. Under the new act, effective in 1983, the amount that can be depreciated will be reduced by one-half of the amount of available credits.

This would mean then, for example, that if the tax credit is 10 percent, a business could no longer depreciate 100 percent of the cost of the project, but only 95 percent (100 percent less one half of the 10 percent credit). Full depreciation could be used, however, if the tax credit is reduced by two percentage points.

Also, beginning in 1983, the amount of tax liability that could be offset by investment tax credits will be reduced. Taxpayers will be allowed to apply their investment tax credits against the first \$25,000 of tax liability plus 85 percent of the amount greater than \$25,000. Currently 90 percent is allowed. It is estimated that these provisions will save the government \$5.1 billion over three years.

These new tax credit provisions have been attacked by critics who charge that investments in energy efficiency in buildings and the rehabilitation of historic structures will decrease. In a letter to the members of the Senate Finance Committee and the House Ways and Means Committee before the tax act was approved by Congress, AIA President Robert M. Lawrence, FAIA, said that the adjustments would be of "damaging economic and cultural impact on investment in energy efficient technology and certified historic structures."

Lawrence also suggested that the "revenues gained by reducing the value of the [tax credit] are comparatively minor when considering the setback it will cause to the purposes of reducing energy independence and preserving our national heritage." He said the changes will "cause hundreds of nationally significant or potentially certified structures to be sacrificed due to the reduced incentives" and that the "existing . . . provisions for energy frequently are a deciding factor in decisions to invest in energy efficient technology."

Repealed by the new tax bill are provisions of the Accelerated Cost Recovery System for 1985 and '86. As established by the '81 tax act, most equipment can be depreciated over five years at 150 percent declining balance for 1981-84, 175 percent in '85, and 200 percent in '86. By repealing the accelerated depreciation for 1985 and '86, the savings to the government are estimated to be \$1.5 billion in '85 and \$10 billion in '86.

This action was also criticized by Lawrence. He called it a "retreat from the commitment to productive capital investment. . . . Clearly the ACRS, among other incentives in the act, has given the business community confidence for investment

*continued on page 36*

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## Government from page 33

planning on major capital projects. Redemption of this commitment is crucial if we are to have the substantial increases in capital investment necessary to sustain a long-term economic recovery, especially in the construction industry."

Also of concern to AIA is the provision for withholding tax on interest and dividends, which Lawrence called "contrary to the need to encourage savings and capital formation through private incentives and the elimination of government regulation." Beginning July 1, 1983, financial institutions and other businesses will be responsible for withholding 10 percent of interest and dividends earned by individuals. This is expected to raise \$12 billion over the three years.

Other provisions of the tax act that affect the industry are:

- a requirement that corporations capitalize construction period interest and taxes for nonresidential real property. These capitalized costs would be amortized over a 10-year period.
- curtailment of industrial development bonds for financing new construction.
- a reduction in the maximum dollar limit on annual additions to private employee benefit plans from \$45,475 to \$30,000. The maximum dollar limit payable on the annual pension benefit is decreased from \$136,425 to \$90,000.

## Congress Warned of Neglect To Public Works Projects

The house subcommittee on economic development recently heard testimony from officials of the Associated General Contractors, among others, who warned that public works across the nation are dangerously being ignored. "The years of neglect of our infrastructure is now evident and the problem is worsening," said H. C. Heldenfels, AGC president.

The testimony was part of hearings being conducted by the subcommittee in assessing the needs of the nation's capital investment and developing strategies for managing and budgeting capital improvement.

AGC officials said that one in eight of the nation's dams is a hazard, one of every two miles of highway needs repair, one of every two bridges is deficient, half of the nation's railbeds need repair, half of the sewage treatment plants are working to capacity, and one in every three locks needs repair.

"The nation is just not protecting its investment," said Heldenfels, who added that since 1965, "the percentage of the Gross National Product devoted to spending by all levels of government on public works has dropped from 4.1 percent to 2.3 percent—a 44 percent decline."

Construction currently accounts for

\$230 billion of the G.N.P., directly employs 3.8 million people, and indirectly an additional 16 million people in construction supply industries, architecture, and engineering, Heldenfels said. The estimated worth of the nation's public works is \$1.3 trillion, and these are estimated to need between \$400 billion and \$3 trillion worth of repair over the next two decades. In comparison, the total public construction expenditures was \$53.6 billion in 1981.

AGC claims that four jobs in the overall economy are created for every new on-site construction job. For an expenditure of \$1 billion, AGC estimates that 63,000 new jobs are created.

Heldenfels warned, however, that "rebuilding our nation's deteriorated public works should not be undertaken as a jobs program—it should be undertaken to assure the continued growth of our nation."

## Accelerating Mortgage Payments Proposed by Senator Mathias

An amendment to the National Housing Act that would provide low mortgage interest rates to first-time home buyers has been introduced by Senator Charles McC. Mathias Jr. (R.-Md.). The bill would provide mortgages as low as 7 percent under FHA's 30-year mortgage program.

The mortgage and loan interest reduction program is designed to defer part of the cost of the mortgage to later years of the term as the homeowner's income increases, or with the resale of the home. The reduced interest payments would accumulate as a second lien against the property for up to 12 years, or upon resale or refinancing, whichever comes first.

The homeowner would repay this lien in payments that would increase by 5 percent each year. This allows lower interest rates when the home buyer needs them, and higher rates to be ultimately paid as the homeowner's income increases, Senator Mathias said.

Under the program the maximum annual household income would be limited to \$30,000. The reduced mortgage programs, which would be part of HUD's section 203 program, would be available for the purchase of both new and existing homes, for town houses, condominiums, and mobile homes.

This new amendment comes on the heels of President Reagan's veto last June of an \$8.9 billion supplemental appropriations bill that included \$3 billion for mortgage subsidies (see Aug., page 15). Reagan rejected that bill, claiming that it would do little to help the housing industry and worsen the overall fiscal position of the federal government.

*News continued on page 102*



Frank Lloyd Wright 1867-1959 Fallingwater Mill Run PA

Architecture USA 20c



Mies van der Rohe 1886-1969 Illinois Inst Tech Chicago

Architecture USA 20c



Walter Gropius 1883-1969 Gropius House Lincoln MA

Architecture USA 20c



Eero Saarinen 1910-1961 Dulles Airport Washington DC

Architecture USA 20c

**Four new architectural stamps:** The fourth and final round of U.S. postage stamps in the American architecture series features Frank Lloyd Wright's Fallingwater, Mill Run, Pa., Crown Hall at Illinois Institute of Technology, Chicago, by Ludwig Mies van der Rohe; the Gropius house, Lincoln, Mass., by Walter Gropius (in collaboration with Marcel Breuer); and Eero Saarinen's Dulles International Airport, Chantilly, Va. The four commemoratives are the designs of Walter D. Richards of New Canaan, Conn., who also designed the previous 12 architectural stamps.



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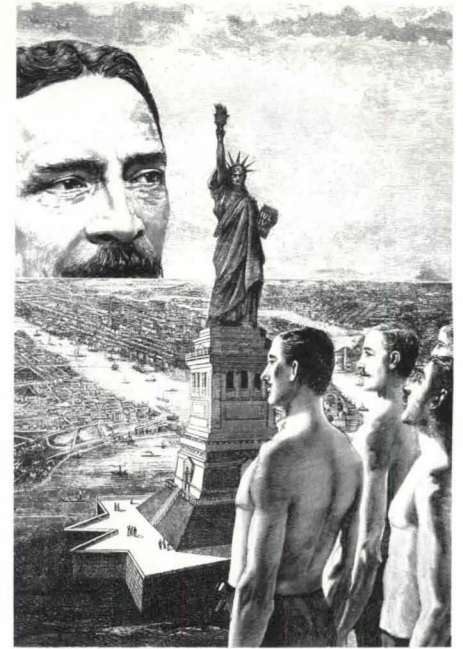
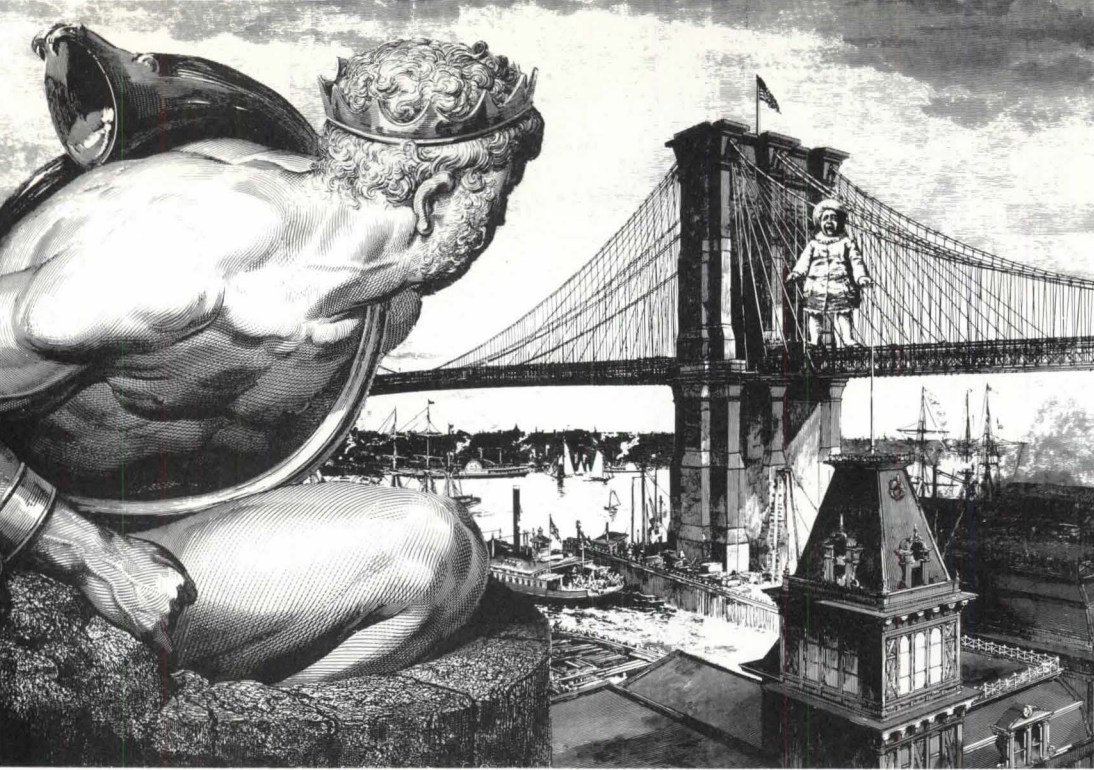
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*The Arts*

## The Dream Juxtapositions of Marc Yankus

Like frozen moments of a dream sequence, these surrealistic montages by New York City artist Marc Yankus provoke surprise and fascination. Yankus was educated at the School of Visual Arts in New York. His work in collage was motivated, he claims, as far back as his kindergarten days nearly 20 years ago, where his passion for scissors and glue pots first was sparked. An exhibit of the work of Joseph Cornell while Yankus was a student encouraged him to begin his own collection of esoteric engravings, and a bout with

hepatitis left the bedridden artist to his own devices: to cut and paste.

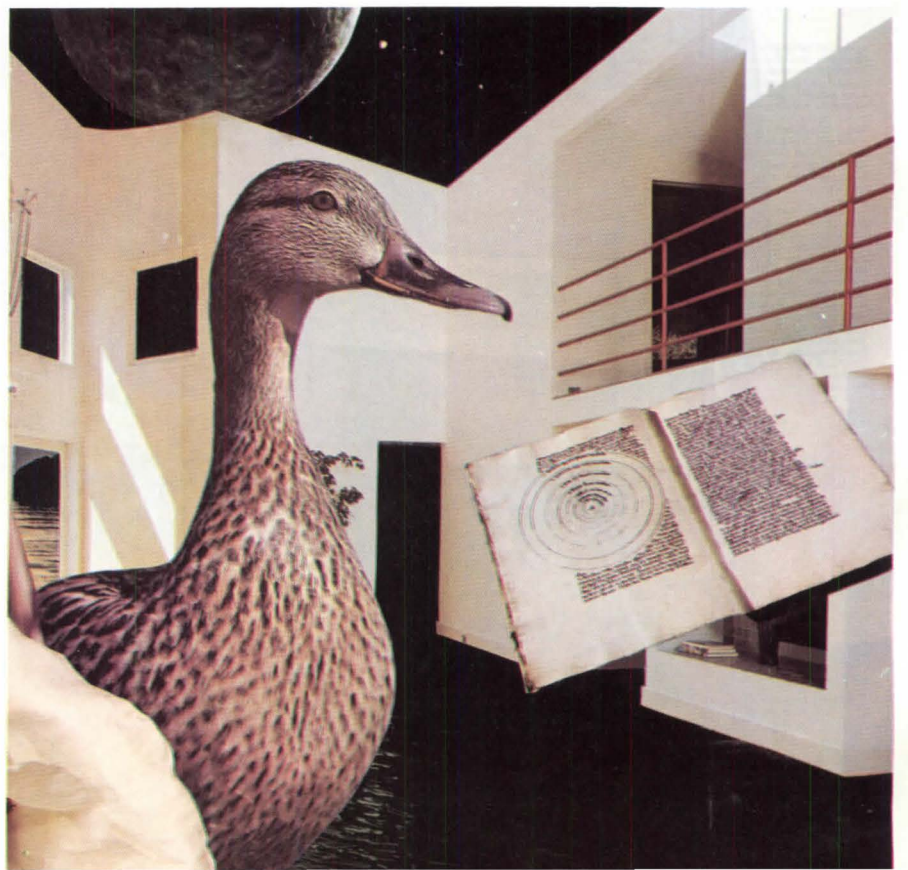
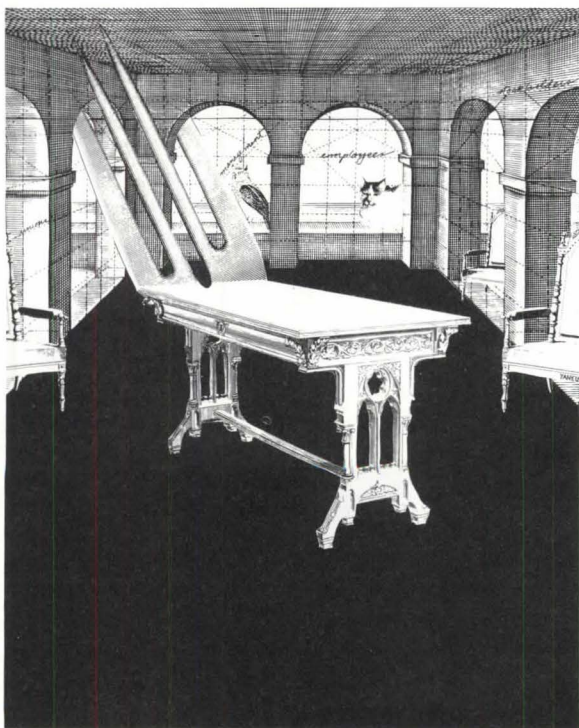
Other influences seem to emerge in Yankus' work: the surrealistic juxtaposition found in Dali's paintings, and the combination of found objects popular in the vernacular arts. *The Hundred Headless Woman*, the late-1920s collage novel of Max Ernst, also comes to mind.

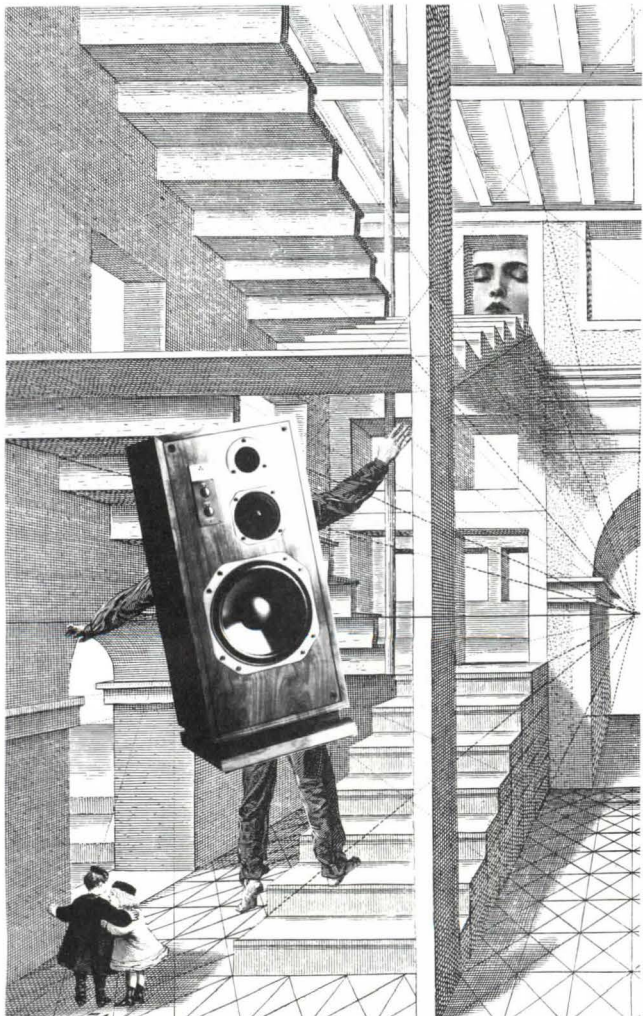
Yankus' creations have been exhibited in the Art Directors Club Valentine Group Show in 1982, and at the Key Gallery in New York since 1980. His work has re-

cently been chosen for the Brooklyn Museum's 1983 Brooklyn Bridge Anniversary Show, celebrating the 100th anniversary of the completion of the Brooklyn Bridge.

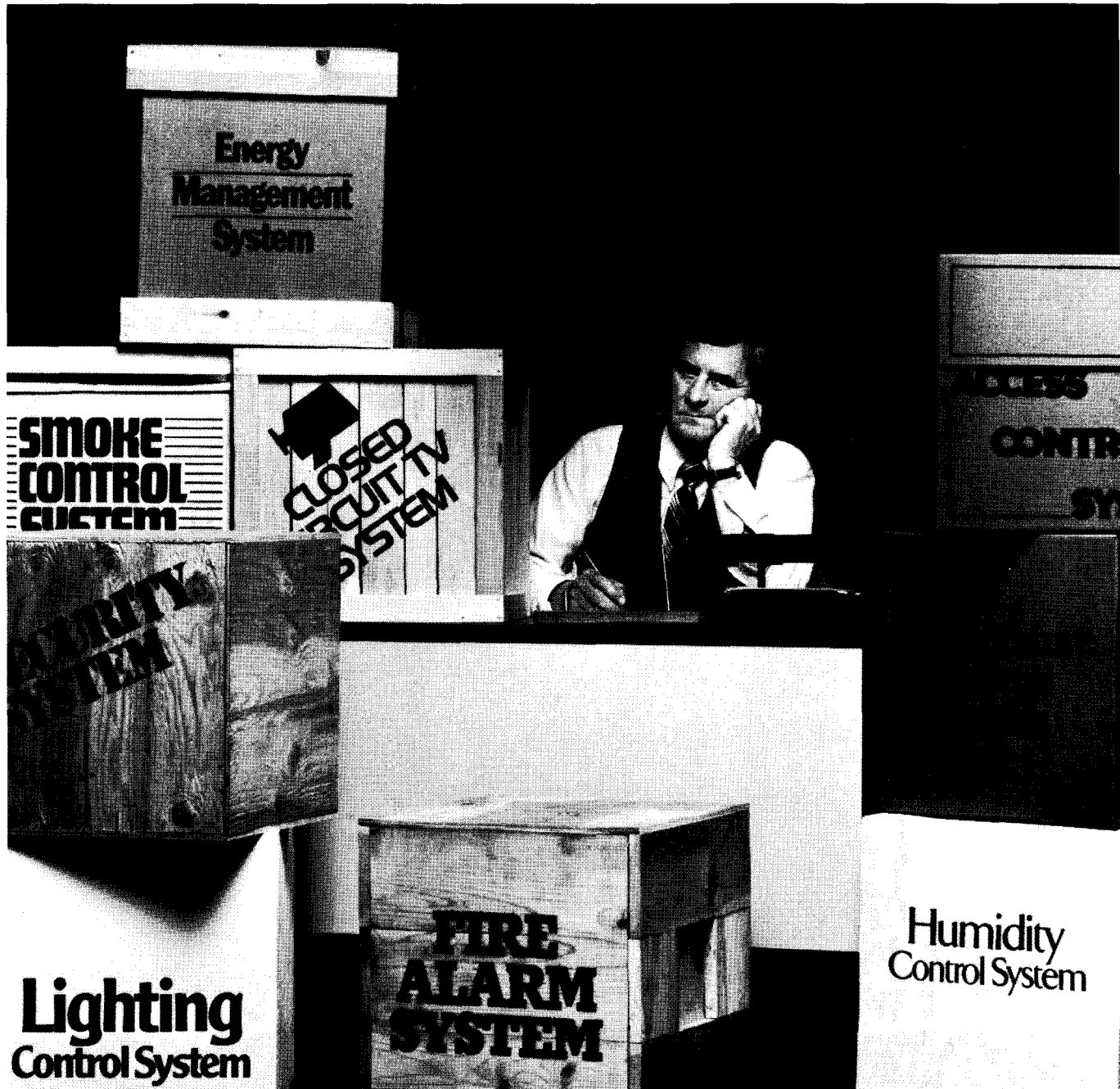
MICHAEL J. CROSBIE

*Starting upper left and moving clockwise: Tiffany & Company window display; self-promotion, 1982; self-promotion, 1981; Asimov's Magazine, August 1982; Audio Magazine, August 1980; self-promotion, 1981; Bell Telephone Magazine, December 1981.*





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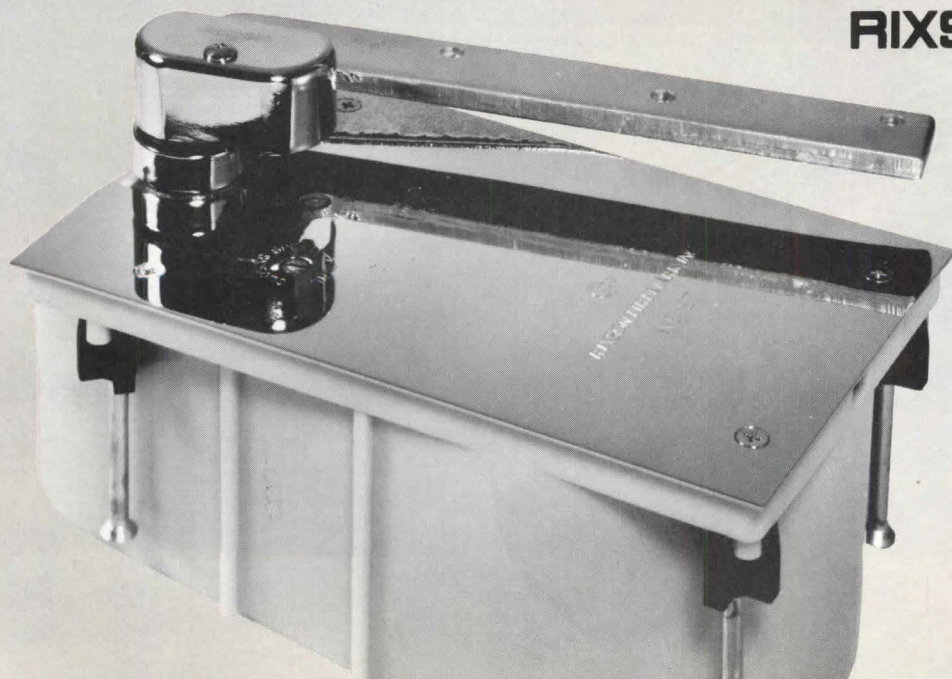
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## BENCHMARKS

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## *The Architecture Of Movement*

The term architecture is used broadly here, covering any kind of intentional design. Likewise, movement refers to a range of activities from planning a mass transit system to walking across a room. The issue deals with the touching of the two subjects.

It begins with a discussion of the “new realism” as applied to transportation planning; then goes on to two developments, in two centuries, which weave together varieties of activities and modes of movement; next comes an examination of means and devices for getting people from ground to air; following that the same for getting people from floor to floor in buildings—and finally a historical and comparative analysis of the architect’s map of movement, the plan. *D.C.*



Timothy Hursley, Hursley/Lark/Hursley

# Moving Designs

On these and the following pages are some notable, or at least photogenic, instances of design that touch upon the movement of people in one way or another.

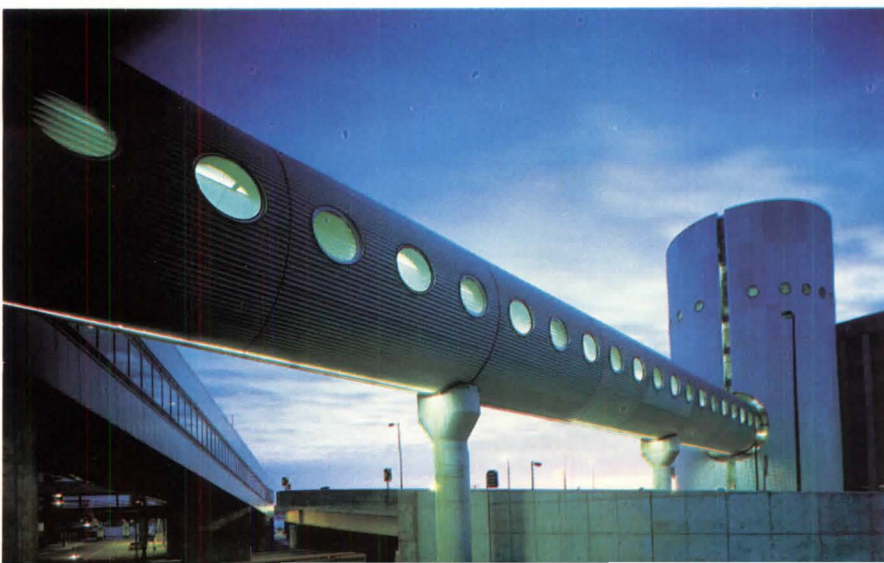
Pedestrian walkways have been around for some time, and one of the newest is found in Detroit (1). The Joe Louis Pedestrian Bridge system, which would feel quite at home in a Jules Verne novel, links a 20,000-seat arena with a 3,000-car parking garage. Designed and engineered by Smith, Hinchmann & Grylls Associates of Detroit, the walkway looks especially futuristic when lighted at night (2). Spanning across a major freeway (3), it creates a gateway to the city's civic center area, establishing a point of entry for visitors. With future plans calling for apartments, condominiums, and a hotel, the walkway can be extended to tie together all of the existing and proposed facilities.

2



Timothy Hursley, Hursley/Lark/Hursley

3



Timothy Hursley, Hursley/Lark/Hursley





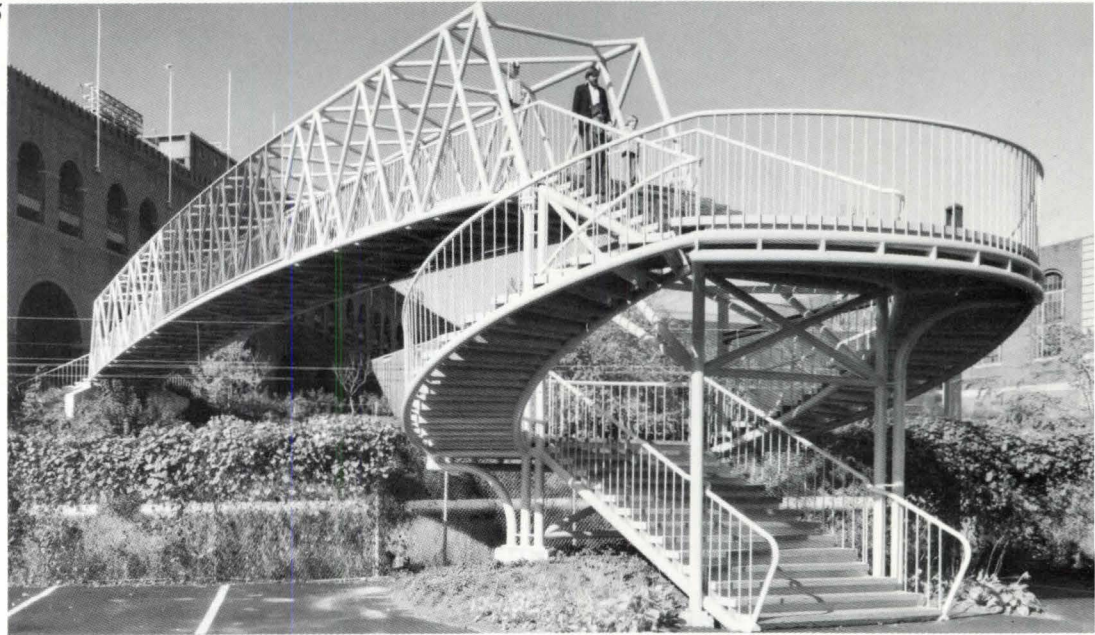
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The monocycle (4) is an interesting if cumbersome example of a 19th century "velocipede"—a device propelled by the rider. Peter McCleary's footbridge (5 and 6) at the University of Pennsylvania, Philadelphia, offers a more inviting and graceful way to get around. He chose this site because it offered "possibilities for the bridge and its boundaries to become 'places' and not just 'sites' and 'edges.'"

For those who prefer faster means, Heery-FABRAP, Architects, Engineers & Planners made an existing wall a handsome historicist portal to the Five Points station of Atlanta's new rapid rail public transportation system (7).

Robert Gray

5

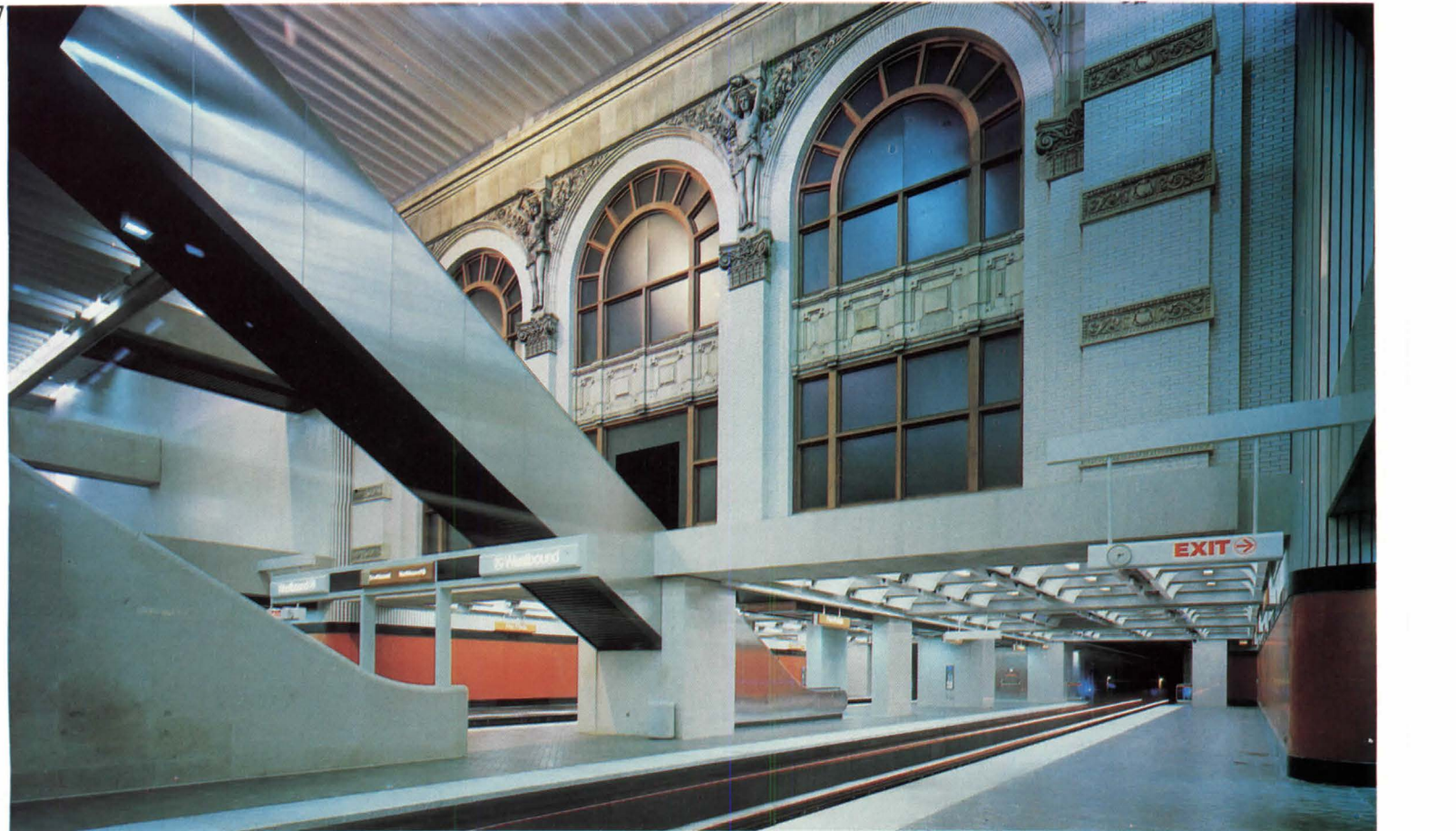


Robert Gray

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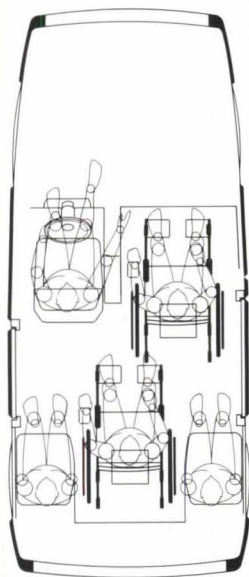
7





© 1981 Walt Disney Productions

1



2

**T**he Disney World Monorail (1) is a classic symbol of futuristic travel, and the McFarland Paratransit taxicab (2), by McFarland Design, Inc., of Santa Barbara, is a totally new design, using a standard chassis and motor with off-the-shelf components. With a standard capacity of six, its seats can be folded to accommodate two wheelchairs. Instead of lifts, the low-slung vehicle has a rear ramp and a 62-inch interior. It can also vary its curb height by three inches.

Labeled as the "first U.S. center city people mover," the Morgantown Personal Rapid Transit System (3) links the three campuses of West Virginia University. The system was designed by PRC Harris of Stamford, Conn. Meanwhile, the city of Portland, Ore., has painted a menagerie (4) on the shuttle bus to the city's zoo.



3

6

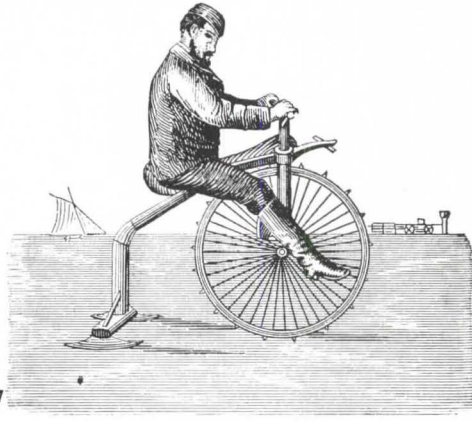
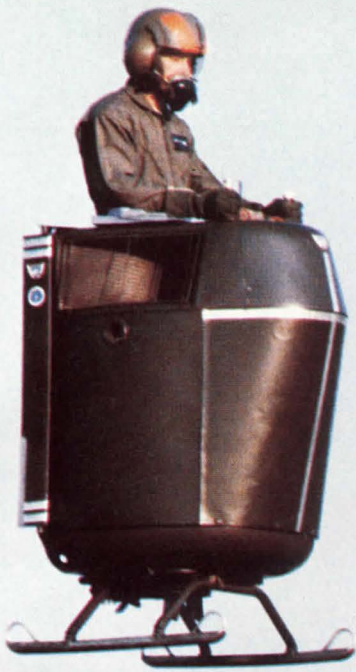


4



Lucy Capehart

Courtesy Williams International



7

For the ultimate in personal travel (5), Williams International offers the Williams Aerial Systems Platform, or WASP. For that most basic form of transportation, walking, the urban design section of the New York City transportation department designed the 165th Street mall (6) located in Jamaica, Queens.

The 19th century "ice velocipede" (7) allowed one to pedal across the frozen plain. California's 2,550-foot Archie Stevennot bridge (8) symbolizes the combination of art and technology to facilitate human transportation.

MICHAEL J. CROSBIE



8



# Post-Utopian Thinking About Movement

By Marguerite N. Villecco



'The Cosmopolis of the Future' by Harry M. Pettit

“We must invent and rebuild *ex novo* our Modern City like an immense and tumultuous shipyard, active, mobile, and everywhere dynamic, and the modern building like a gigantic machine. Elevators must no longer hide away like solitary worms in the stairwells; the stairs—now useless—must be abolished, and the elevators must swarm up the facades like serpents of glass and iron. . . . The street will no longer lie like a doormat at the level of the thresholds, but will plunge stories deep into the earth, gathering up the traffic of the metropolis, connected for necessary transfers, to metal catwalks and high-speed conveyor belts.” *Antonio Sant’ Elia, 1914*

Born of the Industrial Revolution, the concept of the modern city as we entered the 20th century was a macho machine enhanced by the beauty of speed. The future was filled with bigger and better machines, described with such relish by futurists of the time that their uses seemed less critical than their image of power and progress. Tomorrow was a mandate for mobility.

As we approach the 21st century, the images have changed. Today, our most powerful symbol of technological prowess is the microchip, accelerating not only our physical, but our mental capacities as well. We have built the roads, rails, and runways of imagination. But naivete wanes and experience warns; the celebration is more cautious.

The highways made room for the millions of cars, but cloverleaves, not portals, provide entrance to cities. Urbanites squint through the smog and pave over one-third of their land. Streets clog and pedestrians stride past cars and trucks slowed to crawling. Both above and below ground, rail transit has faltered. Airplanes grew in size and speed until the sonic boom—and ground capacity—set limits.

Many new systems were built midcentury, sustained by theories of urban design and planning viewing transportation as the generator of form. Cities across the land bid for new airports, heliports, bridges, highways, people movers, subways, tramways.

With the '70s came doubts and environmental impact statements. Many of the dreams had failed to materialize or had brought with them consequences unplanned. America made its moon landing on time, but San Francisco's BART rapid transit system fell years behind schedule and then endured almost a decade of problems and mishaps. Washington, D.C.'s Metro also suffered delays and loss of its primary purpose as a model for other cities to follow.

BART was designed with the most advanced automation and computer systems to assure efficient and smooth operation. Its cost was estimated at \$1 billion, but the final price was almost double that at \$1.7 billion. Ridership started low, but climbed from 5 million to nearly 60 million today, but the numbers grew more slowly than predicted as BART gained a reputation for unreliability, countered only *slightly* by improvements in the system. Metro's construction was also long and costly and operating costs have soared. Metro was intended to dignify the nation's capital and assert a position of urban leadership, and Washington predicted massive switches to Metro ridership. But the ideal was inhibited by ornery fare machines, increased commuter fares, and political controversy.

**Ms. Villecco**, a writer and consultant in Washington, D.C., is currently at Harvard University on a Loeb fellowship.

Neither system is likely to inspire others in its image. The resources to build similar systems in other cities aren't there nor, more importantly, is the commitment. The democratic ideal of mass transportation is not universally welcomed. BART is a middle-class phenomenon, largely bypassing poorer neighborhoods. Citing overdevelopment and crowding, Georgetown, the wealthiest section in Washington, rejected the subway and the District poor and suburbanites who might come with it. Rail systems have proven inflexible as planning tools. While they have sometimes inspired predicted development, they have rarely transformed areas of the city in greatest need. And, once built, their paths are set for the millenium.

The car, despite fuel variations and smog, remains the transit of choice for most. Viewed as the ultimate enemy by planners of recent decades, the car seems to be resisted less and accommodated more in plans for the future. The highway building spree has stopped, but so has the building of pedestrian malls that excluded the cars. Shopping centers have burgeoned, diminishing cities, but people flock to their parking lots in ever increasing numbers. People are buying fewer cars and running them longer, but the love affair persists.

Cars, in fact, inspired the design of a whole generation of cities, largely in the U.S. West and Southwest. Where land was cheap and transportation fast, cities could spread and did. In Los Angeles, a drive of 90 miles in an evening is not uncommon and, even driving straight, could leave you within city limits. But where the world is designed for cars, they are assumed and supported. The image is proud, leading Reyner Banham to proclaim as early as 1966, "The unique value of Los Angeles—what excites, intrigues, and sometimes repels me—is that it offers radical alternatives to almost every urban concept in unquestioned currency."

For some, giving in to the car marks a defeat of ideals and economies and social planning held dear for decades. For others, the car remains a triumph.

But now the attention is on infrastructure. Our systems are aging and preoccupation with the new, the larger, and the faster has led to deterioration of what we have. New York's aqueducts, through which the city's water moves, haven't even been inspected for half a century for fear they may collapse; the Interstate Highway System needs massive repair; thousands of bridges are adjudged unsafe. The unglamorous side of movement needs attention and resources; we need to slow to maintain.

**M**ovement, however, is symbol as well as performance. Processionals are ritual, while subways are transportation. The process is the focus in one, destination in the other. Here, too, the difference between Washington's Pennsylvania Avenue, the ceremonial route between the White House and the Capitol, and the freeways surrounding Los Angeles, which 80 percent of those commuting negotiate alone. And here, too, the difference between ocean liners of the past, with crystal, sterling silver, and more servants than passengers, and the airlines of the present, where a passenger will pay a premium to sit cramped and boxed for three hours to London.

The concepts of ritual and destination are evident in buildings and our movement to, through, and within them. The embellished entries of the Beaux-Arts, with lobbies mimicking palaces, contrast sharply with the minimal doorways of the more recent past.

A building proclaimed its accessibility in the past; current doorways demand scrutiny for passage. The Japanese house created a ritual of movement from public to private space, carefully sequencing sensory experiences to distinguish place and orientation.

Perhaps Wright's Guggenheim Museum is the clearest example of movement as form. While it has been reported that Wright first conceived of the design as a museum for automobiles, the concept of movement is focused on the pedestrian. The building makes movement a conscious process, urging and pulling for the descent, sometimes, many feel, to the detriment of the art. One is conscious of stopping, requiring a decision that moving does not. The opposite is true of most buildings.

The grand processional of the modern era is the suburban shopping center, where the social promenade, seeing and being seen, as well as the goods, attract. For many, the center is mecca, the source of entertainment and the fashionable meeting place. Occasionally these monuments to auto transit become new towns, drawing residential as well as commercial development. People not only want to go there; many want to live there, where the action is.

Urban revitalization focuses on movement as a draw and attraction as well as a service. Moving by a city is easy now, so easy that many persons never see it, but pass on ring roads surrounding it. Moving in a city is cumbersome; the motivation must be clear. Hence the renewed commitment to places within a city: parks as well as buildings; events as well as structures.

Pedestrians are gaining prestige. New towns and developments publicize with pride their relegation of the auto to the edges. But the idealization of the pedestrian has yet to displace other concepts of transportation, except in the city center, where time, not distance, makes walking desirable.

Frequently, distance is measured in time. Los Angeles is not 90 miles across; it is hours. The urban walk is not one mile, it is 10 minutes. Movement inevitably links the concepts of time and space.

The multiuse urban center is the clearest symbol of time-space constructs. The Embarcadero Center in San Francisco and Rockefeller Center are our modern day versions of Antonio Sant' Elia's urban fantasies of the 1920s, but with images of industrialized macho tempered by human sensibilities honed by experience. The modern versions are more discrete; the transportation systems are efficient, but the high-tech image is subdued, belying Sant' Elia's exuberance. Ships on the waterfront are visually highlighted, but cars, trains, and buses are tucked away as much as possible.

The movement of goods as well as people is central to the concept of city. Buildings are designed to receive trucks as well as persons, and, in some cases, the entries are grander. Sidewalks filled with loading docks or hatches to the subterranean resist human intercourse, but support the city function.

The concept of urban sustainability grows, in part, from a concern with movement of goods. The city has long been a node, or central depot for goods grown or made elsewhere; it is less and less the source. Industry in the city is increasingly unwelcome, as services predominate.

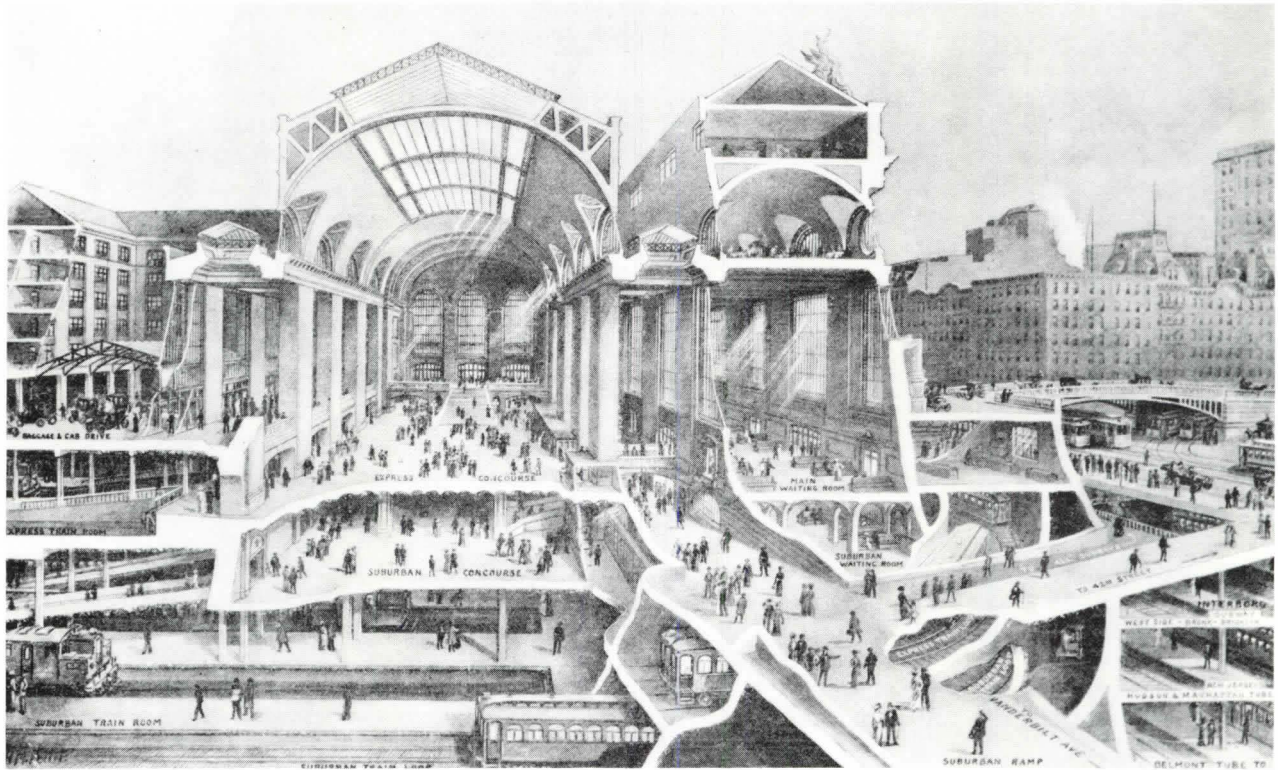
Perhaps the most significant patterns of future movement may be the movement of thought. What is moved is important. We value speed not only in the movement of goods and people, but

*continued on page 104*



# 'Heart of the Country's Greatest City'

*The many significances of Grand Central. By Andrea Oppenheimer Dean*



Otto E. Nelson Photography

Courtesy of Scientific American

"Let us now praise Grand Central Station." So begins *Grand Central Terminal, City Within the City*, a book that grew out of a small but splendid exhibition mounted this summer by the Municipal Art Society of New York. Not that Grand Central hasn't long been the object of fulsome praise. Thomas Wolfe glorified it in verse ("Few buildings are vast enough to hold the sound of time . . ."), songs have been written about it, and a radio drama program inspired by it began each Saturday morning in the '50s and '60s with the incantation, "Grand Central Station, heart of the country's greatest city . . . crossroads of a million private lives, gigantic stage on which are played a thousand dramas daily."

It stands, larger than life, as emblem of the age of America's most explosive growth, those years at the turn of the century governed by an optimism and audacity hardly imaginable today. The station was colossal (301x722 feet with 42 tracks on its ground level and 25 below covering 48 acres); construction involved blasting through 1.6 million cubic yards of rock plus 1.2 million cubic yards of earth; the terminal was an engineering marvel for its double-decker track plan; and Warren & Wetmore, Reed & Stem's 1913 multilevel, multiuse terminal was an architectural benchmark, especially as an urban design concept with far-reaching effects on the future shape of Manhattan's growth. Grand Central was also the forerunner of recent transportation megastructures from Montreal's underground system to the new Atlanta airport. As Douglas Haskell wrote in his farewell issue of *Architectural Forum*, in September 1965, "At urban scale, a railroad tycoon, the younger Vanderbilt, achieved the first, and thus far the only, demonstration at precinct scale, of the Futurist City."

It is, indeed, a miracle on 42nd Street—or, *was*, sadly, since like other great stations it has declined into seedy neglect since the eclipse of rail by air travel. Still, the Supreme Court's confirmation of it as a landmark in 1978 not only ensured its preservation, but marked "a turning point in how Americans value

their architectural heritage," as editor-in-charge Deborah Nevins writes in the foreword of *Grand Central Terminal*. The final chapter consists of a plan by Hugh Hardy, FAIA, to bring the station back to life as a stately gateway to New York. Elliot Willensky, AIA, Elaine Abelson, Milton Newman, and David Bonderman contributed the remaining chapters.

The story of Grand Central began with an earlier station, completed in 1871 on 42nd Street's north side, straddling what was then called "The Fourth Avenue" and is now Vanderbilt. It was called "the depot," and together with its 1913 replacement it determined the shape of New York City's large scale growth in the 20th century and created what we now know as midtown.

The depot consisted of an elaborately embellished great arched shed plus a lavish "headhouse" for passengers. The last was "L" in plan, its short leg extending along 42nd Street, the other filling three blocks north on Vanderbilt Avenue. With its outsized mansard roofs, it resembled the Louvre in Paris, and one historian has suggested that "the commodore as an empire builder was undoubtedly vain enough to feel that there was nothing incongruous in transplanting a palace to serve as his personal headquarters."

This palace concealed the 652-foot-long, 200-foot-wide semi-circular train shed with its belching locomotives not only from the immediate visibility of 42nd Street and Vanderbilt Avenue, but also from the genteel Murray Hill community to the south, and to the west from Madison and Fifth (where the Vanderbilts had several residences). But on the east, which with its working class tenements was emphatically "the wrong side of the tracks," the shed was clearly visible.

As Elliot Willensky writes, the depot created "an immense intrusion in the neat gridiron plan of avenues and streets that had been established back in 1811 to channel Manhattan's growth. . . . By cutting off the cross streets above 42nd Street and stopping the north-south flow of the thoroughfare which would be

## A fruitful competition and helpful relatives.

renamed Park Avenue, the depot's vast acreage interrupted the natural evolution of the crazy quilt created by Manhattan's real estate speculation." Equally important, the depot drew other transit nodes to its location, means of connecting the station with parts of town not yet served by railroads or their commuter routes.

By the end of the 1870s, public transit was revolutionized by the introduction of elevated trains running along latticed iron structures, and electric trolleys soon replaced horsecar lines. Between 1898 and 1900, the depot's three stories were expanded to six, its Louvre-like mansards were replaced by neo-baroque cupolas, and its name was briefly changed to Grand Central Station. It was now handling three times as many trains as when it opened in 1871, and their soot and smoke and heat made the partly covered Park Avenue tunnel noxious and dangerous. The railroad's chief engineer, William Wilgus, a man of little formal schooling but much talent, set about looking for ways to make the station both safe and comfortable. In so doing he devised the most ingenious aspects of the future terminal.

In a conversation in 1899 with Frank L. Sprague, inventor of electric traction, Wilgus conceived the idea of electrifying the suburban trains and placing them on a lower level ending in a loop under the station. His plan was approved by the railroad in 1900. The next year he added to it pedestrian access to the new IRT subway and expanded trackage, and by the end of 1902 Wilgus' scheme called for total electrification of all trains entering the terminal, the enlargement of the railroad's trackage and yard, and replacement of the station itself by a 16- to 20-story skyscraper that would contain a hotel, offices, and possibly a department store and theater. It also called for an elevated drive that would allow traffic to continue uninterrupted along Park Avenue.

Early the same year, 1902, a tragic accident in the train tunnel beneath Park Avenue persuaded the railroad to convert all its trains to electricity. On the morning of Jan. 8, with smoke and plumes of water vapor condensing in the cold air to drastically reduce visibility, a New York Central train ran a red signal and smashed into a stopped New Haven train, killing 15 people. Just

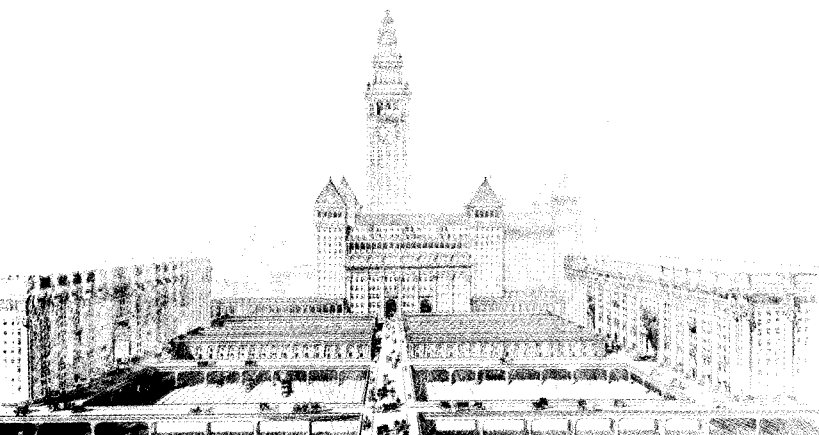
one year later the state legislature placed a ban on steam locomotives using the Park Avenue tunnel. At about the same time, in 1903, Wilgus recommended that all terminal facilities below 56th Street be rebuilt and added to his plan a concept that would profoundly affect future growth of the city. It called for private development of air rights over the railroad's expanded trackage under Park Avenue to create what would be called Terminal City, a complex of mixed-use buildings made possible by steel construction that eliminated the need for continuous building foundation walls by allowing loads to be transferred to a series of steel columns straddling the tracks.

Just months later, still in 1903, the railroad adopted the Wilgus plan, proclaimed itself ready to expand its property to cover a strip of land from 42nd Street to 50th between Madison and Lexington, plus a tongue of land most of the width of Park Avenue from 51st to 58th. It also decided to hold a limited competition for the design of a new terminal. Four firms were invited to submit designs: McKim, Mead & White, D. H. Burnham & Co., Samuel Huckel Jr. of Philadelphia (who had worked for Wilgus on the 1900 renovation of the station), and Reed & Stem of St. Paul (which was at the time doing work for Grand Central).

McKim, Mead & White's scheme, a 60-story tower emerging from a 14-story terminal building, would have been the tallest building in the world and solved the problems of urban circulation by allowing Park Avenue and the cross streets to run right through the building. Daniel Burnham's submission has been lost, but it is assumed that like the others, it employed the classical vocabulary of the time. All three of the existing competition entries connected the north and south sections of Park Avenue, contained some kind of office structure, and either attached a hotel to the terminal or planned for one west of it between 43rd and 44th streets.

Charles Reed's entry, as Deborah Nevins puts it, "was clearly an imaginative and highly resolved solution to the terminal's requirements." Reed's sister was Wilgus' wife. "But it was surely not on this basis alone that his firm won the competition," she writes. The Reed design had two novel concepts: One was a wide, elevated roadway circling the terminal, "a circumferential plaza," as he called it; the other was his use of gently sloping ramps instead of stairways in the terminal. A third innovative aspect of Reed's design was submitted after his competition entry; whether it was part of his original plan is not known. It consisted of a "court of honor," made up of neoclassical buildings of uniform scale flanking either side of Park Avenue just north of the terminal. The hope was that the National Academy of Design and the Metropolitan Opera would install themselves here to eventually create a center for the arts. The plan was never implemented, of course, but the buildings that did spring up on the site, though designed by different firms, were mostly inspired by classical and Renaissance models and did create an architecturally distinct area.

"Reed & Stem's joy at winning the competition would be fleeting," writes Nevins. In early 1904, shortly after announcement that its entry had won, Reed & Stem was persuaded to associate with the New York City firm of Warren & Wetmore,



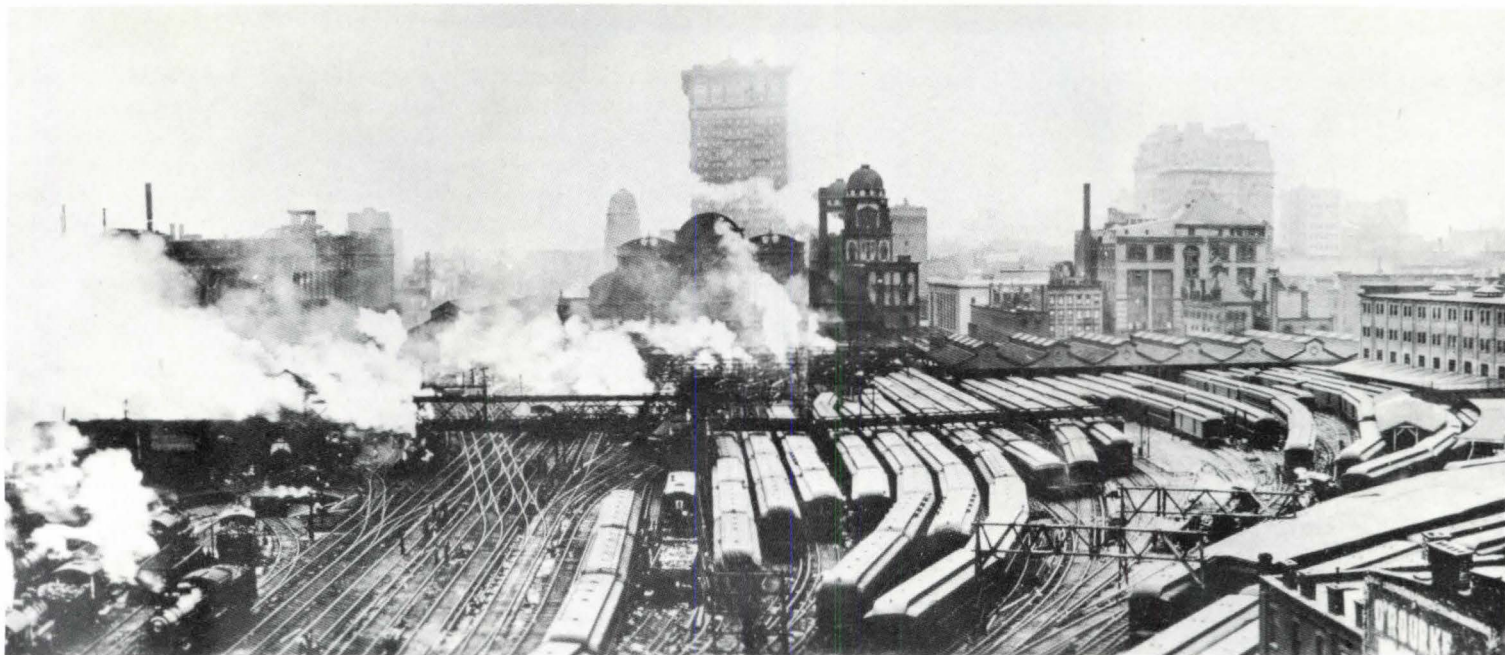
Courtesy of The New-York Historical Society, New York City

*McKim, Mead & White's competition entry's Park Avenue facade (above); Reed & Stem's design for a 'court of honor' on Park Avenue north of the terminal (right). Across page, Grand Central Depot, circa 1907, looking south on Park Avenue.*



Courtesy of New York Public Library, Local History Collection





mainly, it was thought, because Whitney Warren was a cousin and close friend of William K. Vanderbilt, the commodore's grandson and then board chairman of the New York Central.

A major contribution made to Grand Central lore by the Municipal Art Society's exhibit and book is the record they give of Warren & Wetmore's changing schemes for Grand Central. It began with their submission of a design in 1903-04 that was far more monumental and quite different from Reed & Stem's, except for its "circumferential plaza." Published for the first time in *Grand Central Terminal*, it had a French Beaux-Arts facade divided into three parts; the lower section of the main facade had three arched openings meshed with the window wall of the middle section to form what would become, in the final design, a wall of three arched windows. Its section, multilobed dome, and plaza ringed with sculpture recalled Parisian design of the 1890s. The designs were substantially changed again, first in 1905, then in 1907, until the final scheme of 1909, which reinstated all the elements of Reed & Stem's original proposal.

By the time construction started in 1909, Wilgus had resigned over a disagreement with the railroad, and when Charles Reed died in November 1911, Whitney Warren, it was rumored, began a move to take over the entire project as soon as Reed was decently buried. Less than a month after the funeral, a new agreement was, in fact, drawn up, without consulting Allen Stem, naming Warren & Wetmore as architect in charge of the terminal. Stem eventually sued Warren & Wetmore for its share of the architectural fees, and won, but Warren alone is generally credited with the final design, though it was a synthesis of the ideas of Wilgus, Reed & Stem, and Warren & Wetmore. It included Wilgus' double-level trackage and air rights development concepts, Reed & Stem's ramps and circumferential drive, and Warren & Wetmore's form and detailing of the building.

The exterior was Beaux-Arts eclectic executed in Stony Creek granite and Bedford limestone. The building's principal facade on 42nd Street has three great arched windows flanked by Doric columns and is topped with a huge mythological statuary group by the French sculptor Jules-Alexis Coutan. Though it looks like stone construction, the structure is supported by a variety of steel construction techniques.

Although less than unanimously pleased with the exterior, critics of the time generally praised the interior, and especially its lofty main concourse, 275x120 feet with a 125-foot-wide vaulted ceiling on which was painted a mural of the stars and planets in gold on cerulean blue tempera.

Unlike most stations, Grand Central concentrated in the main concourse such functions as ticket windows, information, and

bag and parcel checking, which left its main waiting room as a tranquil space off 42nd Street. Below it is a separate concourse for the lower level suburban terminal, and a station for long distance trains is linked to the main concourse by an underground passageway on the upper level on the west side of Vanderbilt. Incoming and outgoing baggage rooms were installed at street level in the terminal office building just north of the concourse, and baggage elevators provided access to two platforms on the upper level. Particular attention was paid to the separation of inbound from outbound traffic, and Reed's concept of sloping ramps connected the terminal's levels. Two ramps from the corner entrances on 42nd, and a third from the subway platforms led to the suburban concourse. A shallower one went from 42nd to the main waiting room, three-and-a-half feet below street level, and then to the main concourse. Similar ramps led from both the upper and lower level concourses to the platforms. The underground passageways, in keeping with Wilgus' idea of providing as much revenue-producing space as possible, were lined with shops, as were ground floor areas under the elevated roadway encircling the building. Additional retail space was provided within the six-story main terminal building. In all there were some 140 shops within the terminal. As Whitney Warren wrote, "The up-to-date station resembles a bazaar."

And so, Grand Central acquires the questionable distinction of being progenitor to the "mall" of America, though its circulation system, unlike that of the typical mall, was a model of clarity. As Nevins writes, "Moving through the Grand Central provides a lesson in the success of the Beaux-Arts method. The plan and circulation patterns of the building not only get us where we want to go with ease but emphasize the most compelling space within—the main concourse."

The terminal also provided access to four levels of IRT subway tracks, which were already in place in 1913. Two years later, the New York & Long Island Railroad, known as the Steinway Tunnels and extending under the East River to Queens, was added to the IRT, with its Manhattan terminal on Grand Central's lowest level. Connections to the Lexington Avenue subway were opened in 1918, and still other links to Manhattan's urban transportation system were added with street level lines at 42nd and lower Park Avenue. In addition, a branch from the Third Avenue lines of the Manhattan elevated was terminated at 42nd right in front of Grand Central. In Manhattan, almost all roads eventually led to Grand Central.

The new terminal had expanded its real estate from 23 acres in 1900 to almost 48 in 1913, some 30 city blocks. This sprawling acreage "devoted to yards and trackage, now smoke-free,



## 'More than just a very big railroad station.'

called out opportunity to developers," as Elliot Willensky writes.

In the years between the terminal's opening and America's entry into the First World War, the Biltmore Hotel, the Yale Club, and two large office buildings rose across Vanderbilt Avenue from the terminal. The Ritz Carlton went up in 1910 on Madison's west side between 46th and 47th. In 1917 Brooks Brothers and Abercrombie & Fitch took their place south of the Ritz. Park Avenue south of the station was kept residential, but the 1912 completion of the Architects Building at 101 Park brought other offices to the neighborhood. To accommodate the diagonal path that the east side IRT was to take from Park to Lexington, two structures were demolished on 42nd and were replaced in 1919 by the Commodore Hotel, which also was tied into the terminal's workings.

In the '20s, 42nd Street became known as "Little Wall Street," as the Bowery Savings Bank and the 27-story Pershing Square building went up, and the Manhattan Hotel of 1896, at Madison and 42nd, was converted into an uptown branch of the National City Bank. The five-story terminal building marked the northern edge of the office boom.

The most dramatic development of the '20s, however, was north of Grand Central. With conversion to electricity, upper Park Avenue was transformed from a sooty, shabby right-of-way for the railroads' New York traffic into a prestigious thoroughfare. From 45th Street north Park Avenue was expanded into a broad boulevard, and by the end of the '20s, a number of new office buildings and luxury hotels were in place. The Margery and Park Lane hotels were constructed on Park, the Roosevelt, Barclay, and Chatham went up just off the avenue. In 1929, construction began for the Waldorf-Astoria on the block bounded by 49th and 50th, Lexington and Park. Capping the development of upper Park Avenue was the 34-story New York Central Building of 1929, on Park between 45th and 46th.

With the frantic speculation of the '20s, more and more office space was added along and below 42nd Street, on smaller and smaller lots, while skyscrapers rose along the side streets. In 1921, there were four skyscrapers on 42nd; 10 years later there were more than 50.

As elsewhere, during the '30s and '40s—decades of economic depression and then war—development all but stopped. Then in 1947, when the first postwar office building was completed at 57th and Park, Park Avenue again underwent redevelopment, and many genteel structures built just 20 years earlier were razed to make way for gigantic, mostly undistinguished slabs. "The result of all this was an almost complete remake of Park Avenue from 46th to 59th streets," writes Willensky. In 1957 the Montana Apartments were replaced by the Seagram Building; in

*Park Avenue, in 1928, looking north from 38th Street (above). The avenue retained its turn-of-the-century look until after World War II. Across page, looking north at Grand Central and its environs in 1981.*

1960, the 12-story Marguery came down to make room for the 52-story Union Carbide Building; in 1964, the 12-story apartments at 277 Park were torn down for the 50-story Chemical Bank. What was once a fashionable residential neighborhood became a bustling business area.

With the advent of widespread air travel after World War II, Grand Central's ascendent position as transportation hub began to deteriorate. By 1954, there was a plan to demolish the terminal and create Grand Central City, a six-million-square-foot development. It was never built, but in 1963 the 63-story Pan Am Building emerged where the five-story Grand Central Terminal building had been, dwarfing the terminal from the south and concealing it from the north. Pan Am did have one beneficial effect, as Willensky points out: "Through its escalator connections with the terminal's main concourse, Pan Am removed the once impenetrable barrier to street-level public movement through the complex. Finally, Grand Central had become part of an effective north-south pedestrian link."

The terminal today is a mere shade of its former self. Instead of two stations in one carrying 63 million passengers on 550 trains a day, it is "merely one train station servicing 500,000 pedestrians who use an unparalleled resource with all the ceremony of eating fast food," writes Hugh Hardy in the final chapter of *Grand Central Terminal*. Its main business of long distance travel has all but disappeared, department and clothing stores have departed its section of the city, its access routes no longer match pedestrian flow, it has developed leaks, its great windows are grimy, its waiting room has been stripped of oak benches to discourage loiterers, and its once grand concourse has become a repository for billboard displays. Various proposals under consideration by the Metropolitan Transit Authority (MTA) would intensify the terminal's role in mass transit. There are proposals, for instance, for bringing Long Island commuters directly to the terminal, and if funds for this become available, even the terminal's "vast reaches will be too small to shelter passengers in the event of malfunctions or accidents," writes Hardy. He suggests construction of a new two-level concourse at the rail head. In addition, he recommends adding the missing links between the terminal and subway lines, and making the existing connections more directly accessible.

Most important, Hardy asks, how can the main concourse be returned to a semblance of its former, ceremonious self? "To begin with," he writes, "the terminal must be perceived as more than just a very big railroad station." He believes that with the entrepreneurial skills available in New York, it would seem natural to use the terminal's central location and spacious architecture as a vehicle for a broad range of retail activities based on the idea that New York is a national and international marketplace.

"For this to succeed," he writes, "it would be necessary to untangle rush-hour crowds from retail activities so the two would benefit, not conflict with one another." He also suggests that "found" space could yield locations for shops that could be integrated into the circulation systems. As example, he points to areas in the corners of the terminal, which are windowless and unsuitable for offices but quite appropriate for use as shops, communications areas, or performance spaces. "Because New York is as much the seat of communication and information exchange as any part of the nation, it seems reasonable to assume that Grand Central could again assert itself as a gateway."

He suggests that such a plan be designed and implemented by a nonprofit citizens' group that could then enlist and oversee the efforts of both private and public sectors, with the MTA maintaining and operating the terminal as a railroad station, and a private developer organizing retail activities, and "guaranteeing an annual percentage of the profits to maintain the terminal."

In closing, he says, "It is an extraordinarily generous and optimistic structure, and any consideration of its future should be no less brave if future generations are to experience its joys as we now know them." □





Aero Portraits

# Evaluation: Rockefeller Center West?

*John Portman's San Francisco colossus is complete, for now. By Donald Canty*

Growing up in Oakland, a trip across the then-new Bay Bridge to San Francisco always carried excitement. The city had a kind of electricity to it, a slightly soiled cosmopolitanism. Nowhere was this truer than along the Embarcadero beneath the bridge where the great ships from around the world tied up, and, beyond the Ferry Building, at the gritty and multiethnic produce market that then occupied the city's oldest precinct.

The area hadn't changed that much by 1960, when the photo above was taken. True, not as many of the great ships were using the port, and the city, in the throes of urban renewal, was planning to move the produce market and replace it with a multiuse development glowingly called Golden Gateway. The project was the subject of one of the most celebrated design-development competitions of the era. But work had not yet started in 1960, and the area retained most of the lowrise warehouses and less respectable establishments that had been there since the city's youth.

Since then the area has exploded, as witnessed by the more current photos at right. By 1965 the first element of the residential portion of the Golden Gateway project had been completed, and the following year an illustrious group of investors signed on to develop the commercial portion, to be known as Embarcadero Center. They were David Rockefeller, Trammel Crow of Dallas, and John C. Portman, FAIA, of Atlanta. (Prudential Insurance Co. joined the development partnership in 1971, by which time Crow had left it.) Embarcadero Center was completed this spring. In the years between, it and the residential

towers and town houses of Golden Gateway had been surrounded by a dense forest of private development.

Some of this development was stimulated by the public investment, some by a continuing high demand for office space in downtown San Francisco, and some by transportation. The foot of Market Street, abutting Embarcadero Center, always had been a major transportation terminus since the days when the Ferry Building was the city's prime portal of commutation. A decade ago a powerful new mode was added in the form of the BART subway system, and the boom on lower Market became an explosion.

Embarcadero Center is in the middle of it all, reached by BART, municipal trolleys, a cable car, and no less than 15 bus lines. Even the long dormant ferry traffic is enjoying a modest revival, now serving Marin County rather than the East Bay. Embarcadero Center thus had to be a major manifestation of the architecture of movement.

When first unveiled the project was dubbed "the Rockefeller Center of the West," partly because of the name of one of its sponsors, and partly because it was the largest single chunk of downtown development in any American city since the Rockefeller Center of the East: area 8.5 acres; cost \$375 million; population 18,000; 2.75 million square feet of office space, 325,000 square feet of retail, underground parking for 2,300 cars.

The Portman design, however, looked to some San Franciscans a good deal more like Peachtree Center in Atlanta than



Frank Wing Photograph

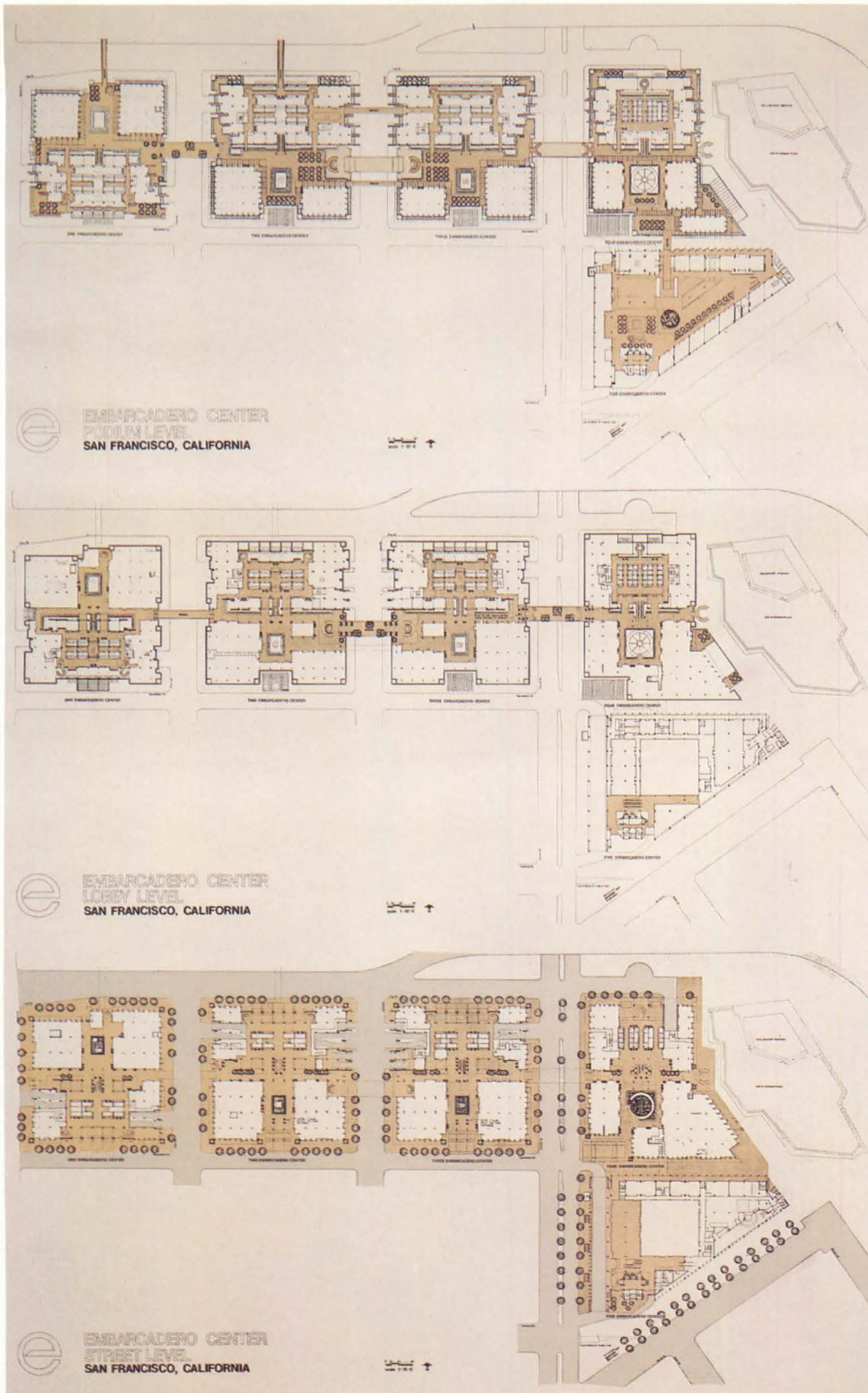
Rockefeller Center anywhere. It was a procession of slender towers, their form and precast cladding taken directly from Peachtree, along the narrow east-west axis of the site, flanked on the east end by a Hyatt Regency hotel, whose facade leaned back as if in fear of collision.

Construction proceeded in five stages: the 45-story One Embarcadero Center, the westernmost tower, completed in 1971; the 20-story hotel, with angular 17-story atrium, in 1973; 35-story Two Embarcadero Center in 1974; its twin Three Embarcadero Center in 1976; the 45-story Four Embarcadero Center in May of this year.

Some local trepidation continued during the process as what seemed like millions of identical vertical window panels were put in place on the relentlessly bland towers. But increasingly as the project grew, and emphatically with completion, came the realization that Embarcadero Center had a heart—and where that heart was located.

It is in the project's public spaces, open and enclosed. Each of the four towers was built on a three-story pedestrian gallery of shops and restaurants, and all were linked by bridges across intervening streets. Embarcadero Center thus creates a layered podium in which people can walk for five blocks without once encountering a vehicle. The podium, moreover, is linked to adjacent development by still more bridges, giving the lower Market area a lively, multilevel core that really is reminiscent of Rockefeller Center (but in a more benign climate).





## A five-block, three-level pedestrian preserve.

There are no less than 200,000 square feet of very pleasantly landscaped open space in Embarcadero Center's various levels, successfully exploiting this city's special light and air. There is a variety of paths through and around the podium, including a ramp spiraling down around a sculpted "tulip" of Portman's own doing (shown above right at midlevel). Among the most pleasant of the open spaces are the wide bridges (example across page top), reached by curving stairways, gradually stepped, bearing planters and anchored outdoor furniture. They read more as hanging plazas than as bridges.

There are more than 150 stores, restaurants, and shops in the podium, and in days of walking the three levels not a single vacant retail space was to be seen. The best restaurants are at

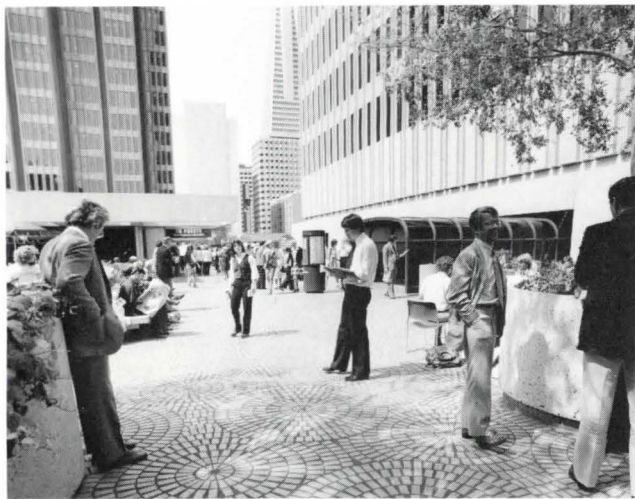
top-level nodes; less ambitious and specialty food outlets are along the paths of the thousands of daily commuters—some of whom work in the center, many others who use it as a pleasant path to work. Between the center and the Ferry Building is Justin Herman Plaza, and the center faces it with food outlets for the crowds who gather there on weekends for frequent free performances. Many of the shops and restaurants are open Sundays.

Portman and the center's management have made a point of facing the streets in and around it with life-giving uses wherever possible. (Most of the center's men's stores are at street level, someone having postulated that men are more likely to buy on impulse, women to plan their shopping more purposefully, and therefore to head for higher levels.) The mix of activities has been designed as carefully as the spaces.

The beckoning street-side shops and food service help make



Photographs by Joshua Freiwald



the center a friendly giant in the neighborhood. Together with the many points of entry and the bridges to adjoining blocks they ameliorate the kind of internalized, inward-looking character of some other Portman megaprojects.

The hotel is attached at the level of its lobby floor to the top level of the podium. The atrium lobby, one of the most dramatic of those that Portman and Hyatt have done (see Oct. '77, page 37) functions as a kind of enclosed ancillary plaza to the center, and the podium functions as an extension of the hotel's public areas and facilities. The relationship between the two is similar to that between the Marquette Inn and the Crystal Court in IDS Center, Minneapolis, except that here the hotel is less dependent upon its neighbor.

In August, only three months after celebration of the center's "completion," a highly interesting form of expansion was an-

nounced. An entity called Embarcadero Center West, with Portman and David Rockefeller among its principals, was high bidder for acquisition of the stately, neoclassical Federal Reserve Bank building and two adjoining properties just across Battery Street from the One Embarcadero Center tower. When the bank moves in late 1983 to new quarters under construction a few blocks away, Embarcadero Center West will remodel the old building, add new construction, and link it all to the center's podium, probably with bridges over Battery.

Embarcadero Center West proclaimed itself as having "a declared willingness to preserve significant architectural features of the bank building, particularly the familiar, stately facade, handsome interior banking hall, and lobby with its Jules Guerin murals." The expansion thus will give the center a dimension of history that it does not now possess.







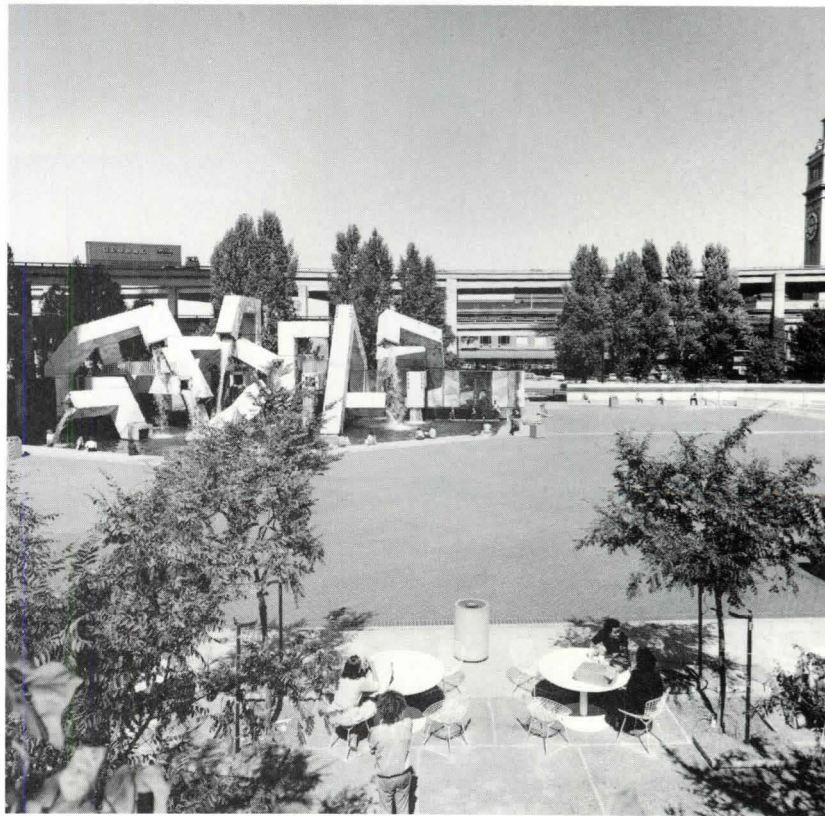
Photographs by Joshua Freiwald

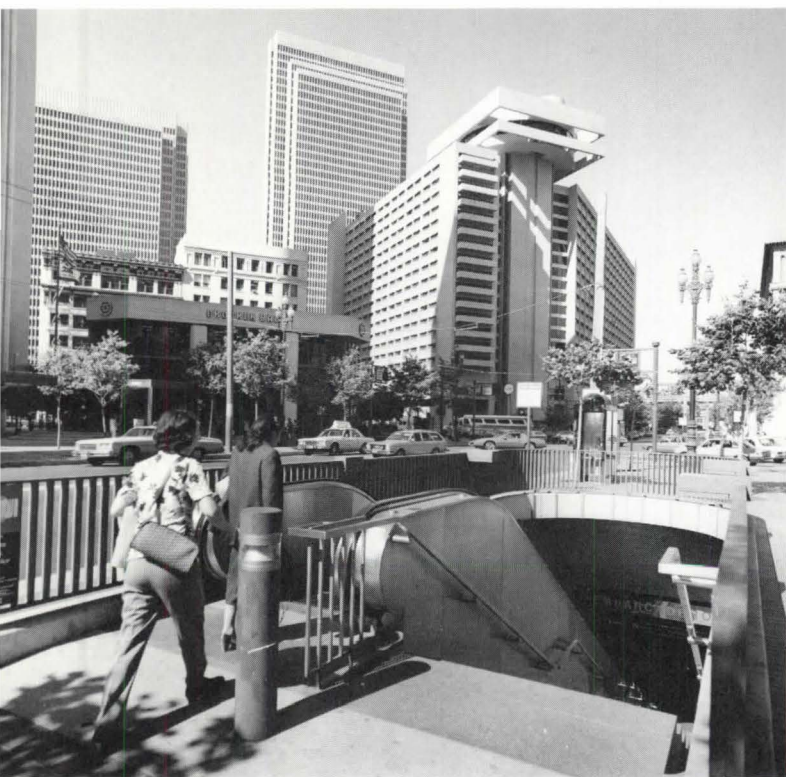
## Public art and Piranesi-like volumes.

The entire lower Market-Embarcadero area is becoming a kind of living sculpture garden. The Golden Gateway project required that developers spend 1 percent of the project cost for art, and it is on all sides. Justin Herman Plaza (shown at right), just east of Embarcadero Center, bears the largest piece of all, and the one that stirred the largest public controversy, Arman Vaillancourt's blocky walk-through fountain.

The decidedly non-sculptural object behind it is the Embarcadero Freeway, subject of an earlier and more intense controversy. So intense were the feelings of San Franciscans when they saw the impact of the freeway's first segment slashing across the Ferry Building that it was stopped in mid construction and left truncated at one end. There have been perennial efforts ever since to tear down what was built.

For their part in the what they term the Golden Gateway "collection," Embarcadero Center's developers have spent some \$3 million on artworks such as Willi Gutmann's 82-foot high stainless steel "two columns with wedge" (above). Most of the center's art is outdoors but some is inside, such as the two hangings of Sheila Hicks (left), made of smooth wrapped warps of wool, linen, and cotton, which penetrate all three levels of the podium beneath Four Embarcadero Center. The spaces here, and beneath the other towers as well, are Piranesian in their loftiness and intricacy. They, and the office building lobbies, are reached by elevators descending from the top deck of the podium beneath handsome glass and metal canopies.

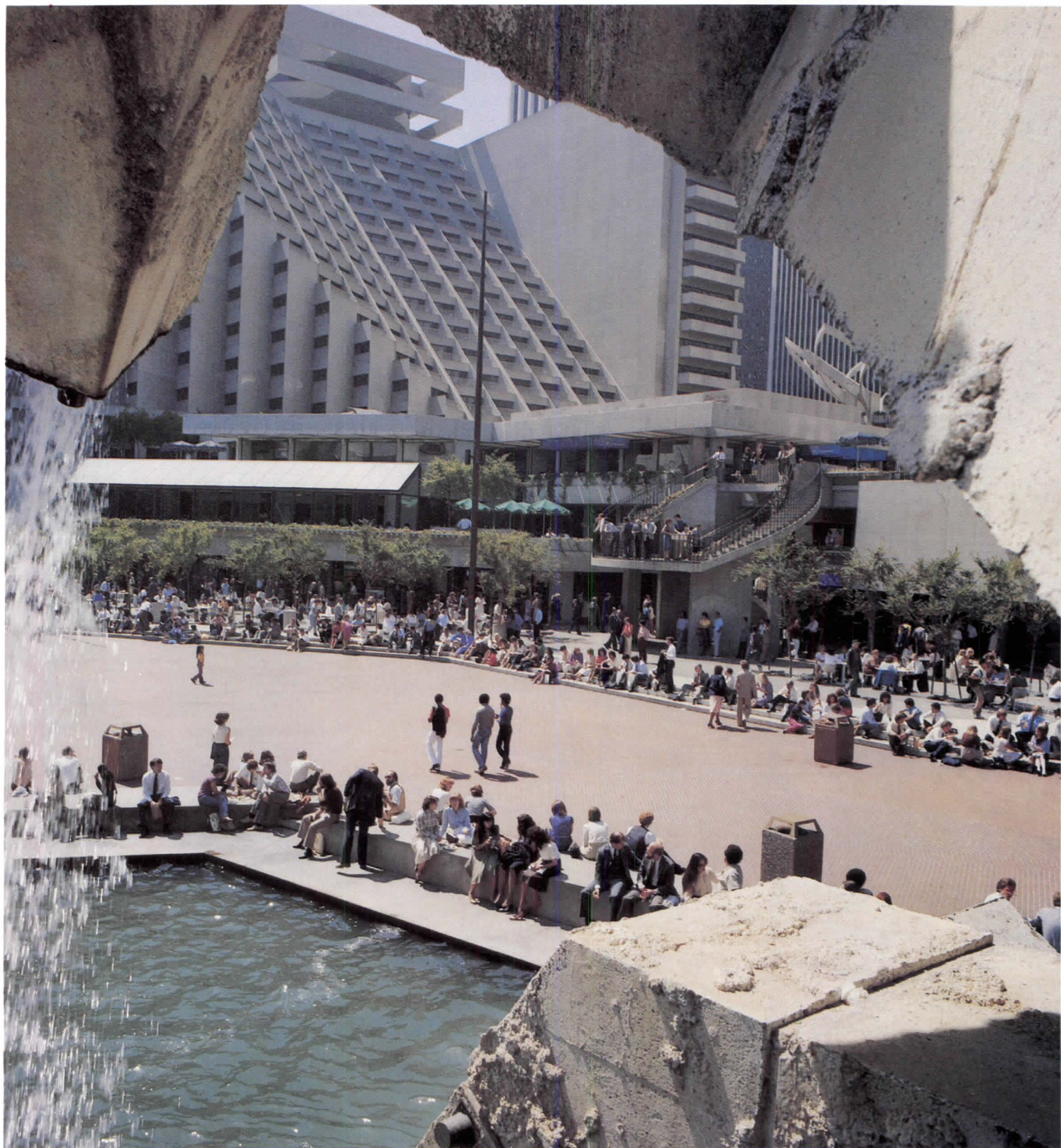




### From afar, east-west sliver, north-south wall.

Embarcadero Center makes its presence felt in the city in a variety of ways. It provides Herman Plaza with a welcome wall (right). It contrasts dramatically with smaller residual buildings of the neighborhood's past (left). It peers out over Market Street with an almost extra-terrestrial stare (above left). The photo is taken from the entrance to one of the BART stations that serves the center. The station is not as close to the center as more integrated planning might have brought it. For all of its adjacency to transportation, in fact, the center doesn't exploit it much architecturally.

As a whole (above) the center is a curious composition with its mixed pairs of 45- and 35-story towers (nothing really takes charge as the RCA building does at Rockefeller Center), its slenderness and extreme linearity. When seen from east or west (from Nob Hill, for example) the center is remarkably unobtrusive for its size. When seen diagonally or from the sides (from Telegraph Hill, for instance) it is a wall across some wonderful views. In terms of its qualitative contribution to the cityscape it falls somewhere between the Bank of America building (the very tall dark building above and to the left of Embarcadero Center in the photo) and Transamerica's elongated pyramid. □



Photographs by Joshua Fretwald



# Moving People From Ground to Air

*Tampa marked a turning point in airport planning.  
By Peter Thomas Rohrbach*



A new addition to Tampa Airport in Florida will be completed this fall, but there is nothing unusual in that. Airport additions have been an ever present part of the American scene for 30 years, as commercial air travel and the size of aircraft have continued to grow. What is noteworthy is that the Tampa addition had been anticipated in the original design of more than a decade ago and that it represents another step in the development of what the Federal Aviation Administration calls "one of the most successful and workable airport complexes in the history of commercial air travel."

That same view is shared by Calvin Trillin, the peripatetic critic of American mores, who says that Tampa is simply "the best airport in America." Trillin's opinion is important because it is a traveler's opinion, and what is so special about Tampa is that it makes air travel easier for the passenger.

Whether or not one goes all the way with Trillin, Tampa has undisputable significance as an early signal of a turning point in airport design. From postwar years through the 1960s airport designs were based on a single-terminal concept that lumps together all services—from ticketing to boarding—in one building. In its place, the designers of Tampa divided services into two separate areas—one called "landside" and the other "airside"—linked by a rapid people-moving system.

In the design process that led to the opening of the airport in 1971, the planners became aware of a growing problem in airport development throughout the '60s: sprawl. There was more and more air traffic, planes were getting bigger and bigger, and the concourses for reaching the planes were growing longer

**Mr. Rohrbach** is the author of 14 books and a frequent writer on transportation matters. He is the author of the forthcoming book *Stagecoach East* (Smithsonian Institution Press, 1983).



and longer. The bigger planes demanded more curb footage: Where two of the old DC-3 planes could be accommodated, for example, only one of the newer DC-7s would fit, and a DC-8 required a gate position with a turning diameter of 225 feet, more than twice what the DC-3 had needed—and the jumbo jets clearly were on their way.

The single terminal concept originated in the 1940s, when a typical terminal was simply a rectangular building with planes parked on three sides. This concept was stretched out over the years by extending “finger” concourses into the aircraft parking area. Sometimes this was done by adding the fingers to existing buildings, as accomplished over the years at Washington’s National Airport; sometimes whole new airports were based on this “stretch” design, as at C. F. Murphy Associates’ O’Hare International in Chicago. The scheme worked marvelously well for getting those big planes as close as possible to the terminal, loading passengers, and taking off again. But there was an inevitable victim in the stretched terminal: the passenger who had to walk those long concourses, sometimes burdened with luggage and small children, to reach the plane. This could become even more irksome when transferring from one airline to another, requiring a trek down one concourse to the main terminal, then back out another concourse. In effect, the passenger was subsidizing the air travel industry with his feet.

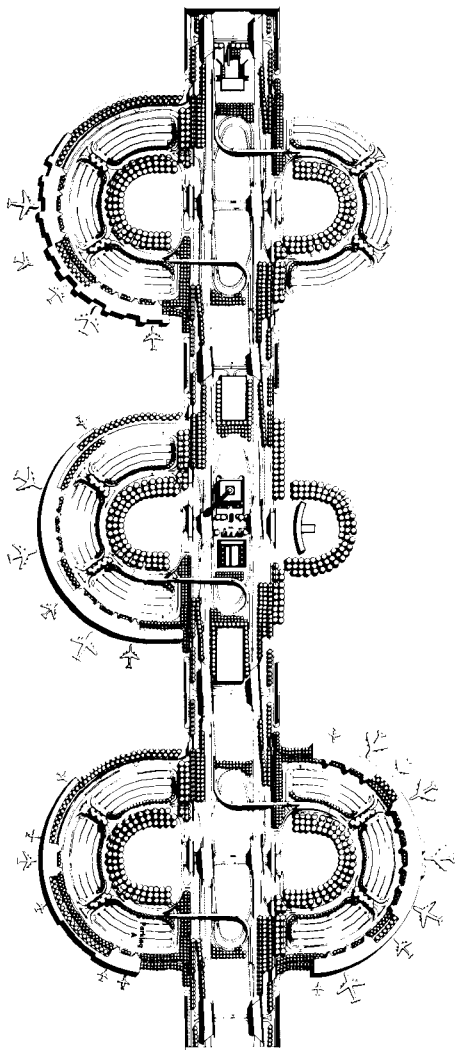
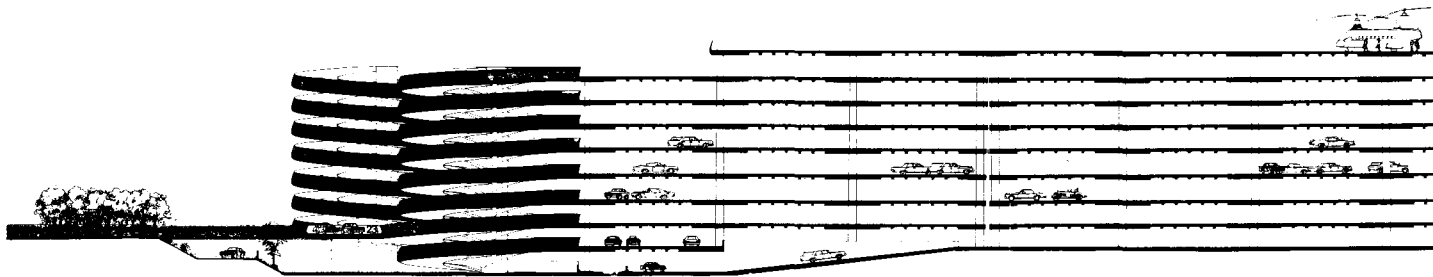
That was the typical situation when, in the 1960s, Hillsborough County in western Florida decided to replace its old single level “stretch” terminal with a new facility. As a first step, the county commissioned a study of contemporary terminals. Leigh Fisher Associates of San Francisco was hired as planning

consultant, and the J. E. Greiner Co. of Tampa as consulting engineer. For six months these firms studied American terminals, and they produced a two-volume study that was highly critical of current design. It said the passenger had become a “beast of burden” and claimed there was “no longer a need for one homogenous terminal building and its terminal fingers.” Perhaps the most crucial and demanding suggestion from the study was that the distance a passenger would have to walk from leaving ground transportation until actually boarding the plane should be no more than 700 feet. It then advanced the landside/airside concept.

The county accepted the study’s conclusions, and in 1965 retained the Jacksonville firm of Reynolds, Smith & Hills as architect. The firm’s design was for one six-story building providing ground facilities for passengers, such as ticketing and baggage handling, restaurants, gift shops, and a commercial hotel—the landside part of the concept. Radiating from this, but entirely separate at 1,000 feet from the main building, were four smaller buildings where passengers would board their planes—the airside part.

The key to the success of such a concept, obviously, was moving passengers quickly and easily from landside to airside. One major airport—Eero Saarinen’s magnificent design for Dulles—already had tried to cope with the sprawl problem in a somewhat similar way. The spectacular main building contained all the traditional passenger services, but the planes themselves were parked far out on the runways, and the passengers were ferried to them by mobile lounges. The Tampa designers rejected that concept. For one thing, they felt that the departing passenger was forced to go through an unnecessary further step in boarding a lounge, getting seated, getting up, and being seated again on the plane. For another, the passenger had to

*Across page, Tampa’s shuttle provides transportation between terminal, top, and gates, bottom.*



## Variations on the landside-airside theme.

board the lounge exactly when summoned or miss the plane. Furthermore, the initial and maintenance costs for a fleet of manned ground vehicles was high.

What the Tampa designers wanted was a computerized elevated shuttle system traveling so quickly that the passenger would not have to be seated. More than 30 manufacturers of conveying equipment were invited to offer proposals, and the one that was accepted, designed by Westinghouse Electric Corporation, resembled the type of vehicle already in use in some urban mass transport systems. The shuttle cars for Tampa would be large, electrically propelled vehicles with pneumatic rubber tires riding on concrete surfaced roadway beams. They would ride on top of an elevated trackway, rather than being suspended from a beam.

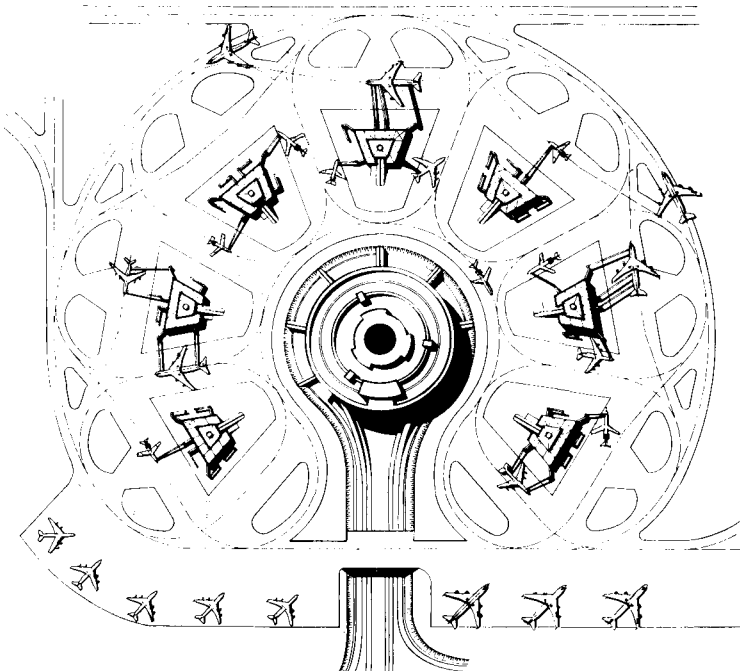
As built, Tampa has 16 of these elevated shuttle cars, four for each of the airside areas, and they carry about 100 passengers each. They make the 1,000-foot trip from landside to airside in 40 seconds, traveling at about 32 miles per hour. They are operated automatically by a computerized system, and they are in constant motion between landside and airside, making a 30-second stop at each end. Because the trip is smooth and rapid, there is no need for seats.

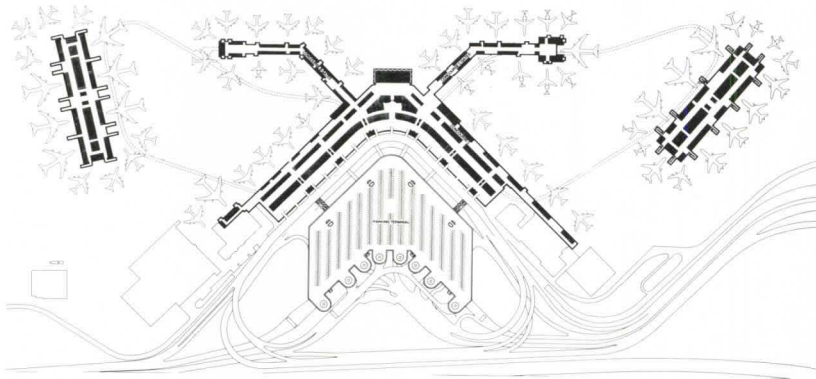
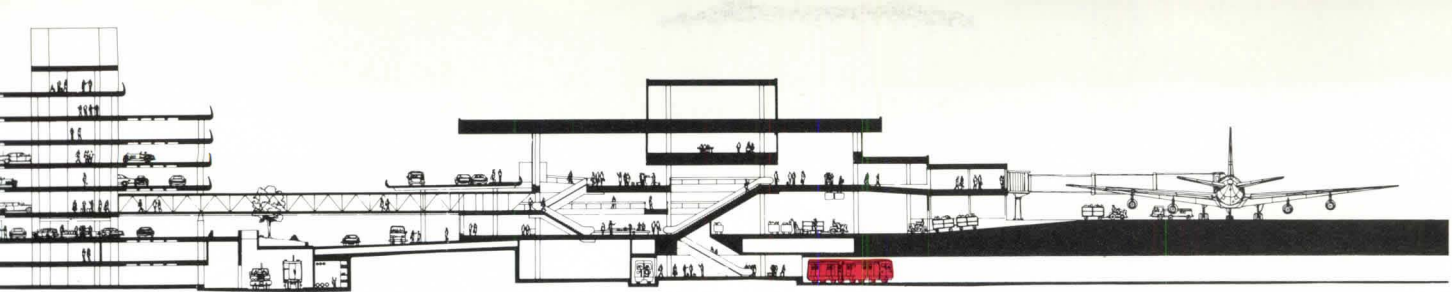
Thus, the departing passenger at Tampa gets out of his ground vehicle, walks a short distance to the ticket area, walks a few more feet to the shuttle, and is whisked to his plane. The critical question is: How far does he now have to walk in this arrangement? The answer is very satisfying. The typical enplaning passenger walks a total of 645 feet between his vehicular parking and his airplane, and the typical deplaning passenger walks a total of 505 feet. (The difference in distance is due to the fact that departing passengers go through the ticket area, while arriving passengers go through the baggage area.) That is no small relief for the passenger who, even today, can hike distances of up to 1,485 feet at New York's LaGuardia and up to 1,735 feet at O'Hare.

The largest part of the Tampa complex is the six-story landside building, with more than a million square feet. On the first level is the baggage area, and on the second is the ticketing area. The third contains the four shuttle loading stations plus restaurants and shops. The top three levels are for parking, and when the facility opened in 1971 there was space for 1,800 automobiles. The new construction now being added will place three more floors on top of the existing six, providing parking for a total of 4,000 cars.

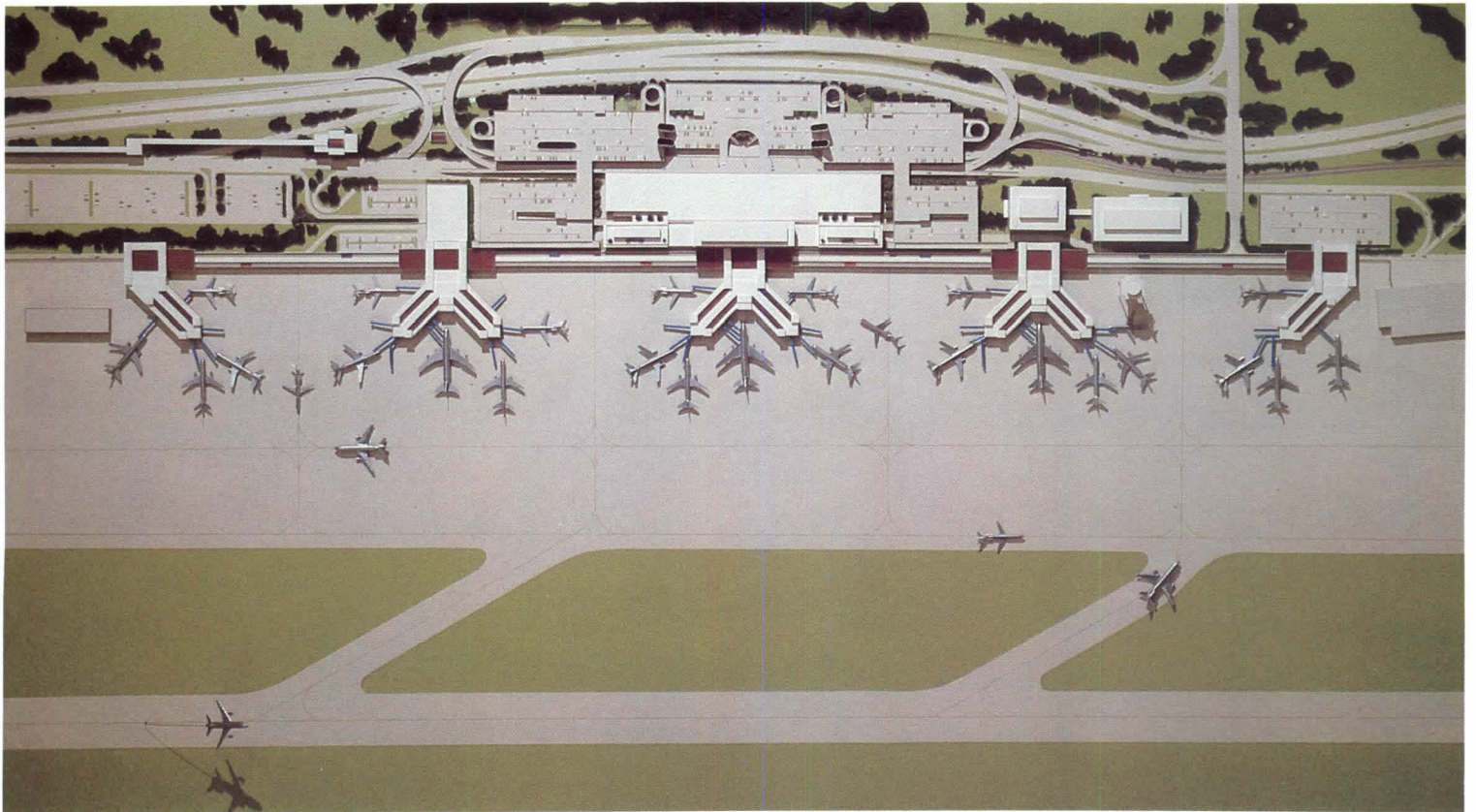
There are also provisions for adding further airside areas and shuttle cars, to be constructed as needed. In 1981, 7.6 million passengers used Tampa Airport, and it is estimated that by the year 2000 some 20 to 25 million passengers a year will use the facility. The original airport of 1971 plus the expansions planned at that time are capable of handling that traffic.

Landside/airside airport design is beginning to appear at other modern airports, often with variations on the Tampa design. The Dallas/Fort Worth Regional Airport by Hellmuth, Obata & Kassabaum and Brodsky, Hopf & Adler (initial design by Tippetts-Abbett-McCarthy-Stratton) has a double row of separate terminal buildings connected by automated shuttle cars, although it lacks a central building to combine all ground serv-





*Across page, bottom, site plan of Paris' Aéroport 1. Across page, center, plan of Dallas/Fort Worth Regional Airport. Left and above, plan and section of Seattle/Tacoma International, showing in red the automated subway that links the terminal with the aircraft gates. Below, site model of Switzerland's Geneva Intercontinental Airport, by Reynolds, Smith & Hills, which uses a linear version of Tampa's shuttle.*



ices. The Charles De Gaulle airport near Paris has a sophisticated separation of enplaning and deplaning pedestrian traffic, and its passengers are moved to the encircling airside buildings on moving belts that tunnel under the runway.

The Richardson Associates' Seattle-Tacoma International Airport is a modification of an older facility, but its new sections also depend on a transit tunnel looping below grade. The new William B. Hartsfield International Airport in Atlanta (designed by Stevens & Wilkinson; Smith, Hinchman & Grylls; and Minority Airport Architects & Planners of Atlanta) has an unusual design determinant—three quarters of the passengers there are only changing planes—and solves it with a combination of under-the-runway transportation systems that connect the well-equipped airside buildings (restaurants, bars, gift shops, newsstands): The traveler can choose to walk, to ride a moving sidewalk, or to step into one of the speedy shuttle cars that arrive every two minutes at each stop.

Reynolds, Smith & Hills, the architect for Tampa, continues to use the landside/airside concept in its subsequent work. James A. Meehan, the firm's vice president for airport planning, who has been involved in all the firm's 23 airport projects during the last 20 years, says that "landside/airside is simply the state of the art in airport architecture." He adds that all the firm's designs since the pioneer effort at Tampa continue to use the Westinghouse type shuttle car. Meehan thinks that moving sidewalks are too slow—they move at about 90 feet per minute—while the shuttle can travel 1,000 feet in 40 seconds.

What all this means is that terminal sprawl has been brought to a welcome halt at the best of the new airports, and that the stretch-finger concept has become a thing of the past. And for the thankful traveler who uses these airports the long walk is over. And, by the way, if Calvin Trillin says that Tampa is the country's best airport, what do you think he considers the worst? You guessed it: O'Hare. □

# Moving People Up and Down

By Kevin W. Green

It all began in 1852 when a master mechanic from Yonkers, N.Y., invented a safety brake that would prevent a rope-hoisted lift from falling in the event of an accident.

Elisha Graves Otis demonstrated his "safety hoister" in 1854 in the Crystal Palace exhibition building in New York City by ascending to a dangerous height and ordering the rope cut. The crowd gasped, the platform stayed put, and within three years the world's first passenger elevator, designed by Otis, had been installed in the New York store of E. V. Haughwout & Co., forever altering the future—and the upward aspirations—of architectural design.

In the years since Otis developed his safe elevator, surprisingly little has changed in the way we move people up and down in our increasingly lofty buildings. In fact, says Clyde Richards, Westinghouse Elevators' manager of construction marketing, "We've been hoisting and lowering the elevator the same way since Otis designed it."

But hoisting and lowering are only the most basic aspects of vertical people movement. Elevator control—which embraces everything from the powering, positioning, and dispatching of elevator cars to passenger safety and operating efficiency—has undergone an impressive development that Richards calls "a combination of gradual improvements and quantum leaps" since Otis risked his skin for his new invention. Elevators have long been promoted as "the safest form of public transportation." Today, using solid-state drive and microprocessor technology based on the remarkable capacities of tiny silicon chips, elevators are safer, faster, more responsive, and more energy efficient than ever before. They're also looking a lot different. And they're talking. All of which figure highly in the fact that the elevator industry is riding what is far and away the biggest sales boom in its 130-year history.

To start with a little technical background, elevators have nearly always been manufactured in three common types: hydraulic, geared traction, and gearless traction. Hydraulic elevators, generally slow but cost-effective and appropriate for low-rise applications, are mounted on hydraulically powered pistons that telescope upward from the basement or rise from a pit as deep as the elevator shaft is high.

Traction elevators, both geared and gearless, are the cable-hung variety. In either system, the elevator car is hoisted by several cables (each of which, for safety's sake, is alone capable of hauling car and passengers). The hoisting power is generated by an electric motor sited at the top of the elevator shaft, and the lifting load is eased by a counterweight that descends as the car rises, balancing out the full weight of the car and about half the weight of the passenger load. The pressure, or traction, of the cables on the grooved drive sheaves (pulleys) at the top of the shaft further relieves the electric motor of the need to lift the full weight of its load.

Geared traction elevators are propelled by a high-speed electric motor driving a worm-and-gear reduction unit. They're capable of lifting up to 30,000 pounds but will only travel at speeds of up to 350 feet per minute. That leaves gearless traction elevators, which use large, slow-speed electric motors and travel at speeds of 400 feet per minute and substantially faster, with the distinction of serving almost all those buildings higher than 10 to 12 stories.

Practically from the start, elevators have relied on direct current (DC) electricity for their power because it makes possible precise speed control and smooth elevator operation. For nearly a century after Otis went public with his hoister, the Ward-Leonard system of using an alternating current (AC) motor in combination with a DC generator remained the only feasible power matrix for elevators. By the early 1960s, the elevator industry's manufacturers had discovered that they could obtain variable voltage DC power by using the then-emerging technol-



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ogy of thyristor-controlled, solid-state systems in lieu of the cumbersome motor/generator sets. Among other things, the new solid-state circuitry promised reductions in maintenance (fewer moving parts), energy use (motor/generator combinations draw power heavily at start-up, require excessive ventilation, and consume energy even when cars are standing still), and structural construction costs (by getting rid of the hefty motor/generator sets altogether).

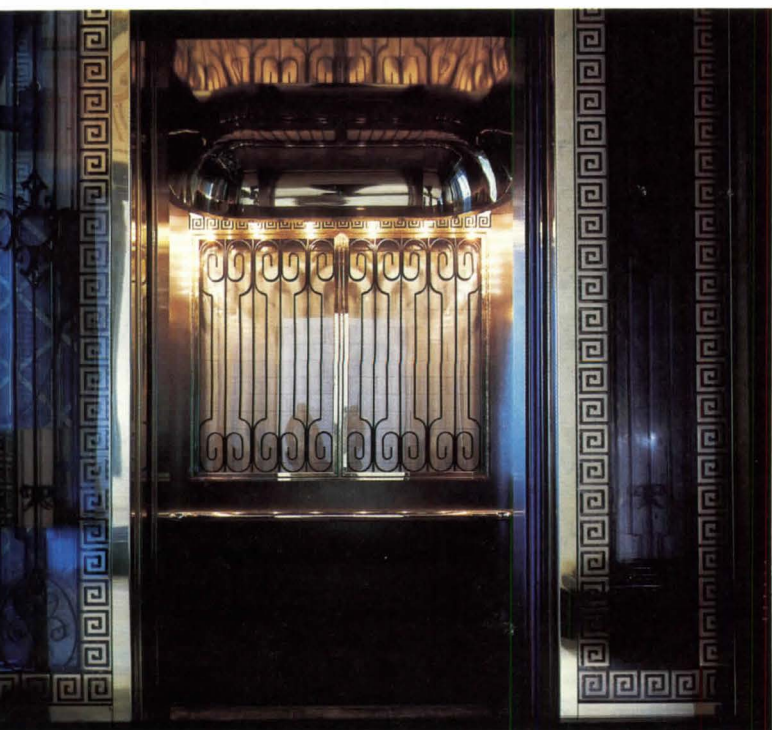
Manufacturers toyed with solid-state drive technology, the heart of which is a shoebox-sized silicon-controlled rectifier (SCR) that converts AC electricity to DC power only when elevators are in motion, until the oil embargo and recessionary proclivities of the '70s. Those provided manufacturers with the necessary impetus to design solid-state drive into most of their elevator systems. The result: Today's SCR-driven elevator systems have reduced the size and weight of their drive machinery by half or more over their decade-old predecessors.

The elevator industry's move into solid-state drive technology pales when compared to the industry's subsequent shift into silicon chip-based microprocessor elevator control—a shift that might accurately be called one relatively small step for the engineers, but a quantum leap in terms of improving the quality of elevator performance.

The effect of the tiny, programmable silicon chip has been revolutionary on elevator operation, which deals with the movement and position of a car in relation to passenger, and elevator group supervision, which involves the responses of a bank of elevators to overall building demand. Dispatching, as these call-and-response processes are collectively known, has been virtually reshaped by the microprocessor.

When the first automatic dispatching systems put manual, car-riding elevator operators out of work 40 years ago, dispatching operated on a zoning system, which Clyde Richards likens to "a Ferris wheel, with all the elevators in a building following each other up and down," catching passengers more or less at random. The zoning system was supplanted by the demand system, in which cars rest until summoned by a "hall call" from a button-pushing passenger. The demand system holds sway today, and highrise elevator passengers know the wait can be an-

*Across page and below, recent renovation/restoration work added bronze doors (with bronze filigree openwork) to a Mississippi State Capitol elevator, and reopened interior windows.*



Photographs by Timothy Hursley, Hursley/Lark/Hursley

noyingly long as the system's relay devices languidly dispatch a car to meet its caller. In the new microprocessor-controlled systems, those relays are replaced with a microprocessor that "constantly scans the entire building and provides much faster elevator response," according to Dover Elevators' Robert Snowden. The instantaneous communication of a microprocessor-based elevator control system carries a higher first cost but, says Snowden, "There are fewer moving parts, less maintenance, and fewer elevators are required to do the job. They're more expensive on a per-elevator basis, but less expensive systemwide because they use fewer elevators."

In 1979, Otis Elevators put on the marketplace what was probably the most advanced of the microprocessor-based control systems, the Elevonic 101, which it called "a completely software-based system that controls every aspect of elevator operation: velocity, position, direction, passenger travel and waiting time, car assignment, energy usage, and system diagnostics." It also cut passenger waiting time, and since then most of the nation's major elevator manufacturers have entered the high-rise market with microprocessor-based control systems.

But only Otis, with its successor to the 101, the Elevonic 401, and Westinghouse, with its new ESS system, have taken what will likely be the major microprocessor-based development step of the century. Otis and Westinghouse have taught their elevators to talk.

ESS stands for "electronic speech synthesis," a technology made both feasible and reliable by the microprocessor. In existence for only about five years, synthesized speech has already found its way into experimental automobile dashboards, automated bank teller machines, children's toys, and calculators. This year, Coca-Cola installed 3,000 vending machines around the country capable of speaking to customers in English, Spanish, and Japanese, and singing the company's current jingle, "Coke Is It."

Elevator manufacturers actually took a stab at automated speech 20 years ago when several companies installed tape-recorded messages linked electromechanically to floor indicators. Though still available from some manufacturers on a custom basis, the tape concept was generally deemed unreliable and barely marketable. With the advent of the programmable silicon chip, onto which speech can be implanted and from which it can be recalled, automated speech has become both reliable and cost-effective. And while not all manufacturers are convinced it has a place in people-moving—one industry executive calls it "a toy, a novelty"—Otis and Westinghouse say that talking elevators will be a boon for the vision-impaired, a comfort to people who are phobic about elevators, a calming influence whose instructions will soothe the passengers during an emergency, and a time-saver whose floor announcements will speed the departure of daydreaming passengers.

Both Westinghouse and Otis say marketplace interest in their talking elevators has been strong. But one wonders whether talking elevators will stand as the signal achievement of the century for an industry that, despite the fact that microprocessors have opened up a bold new world of potential, is still hoisting and lifting the same way Elisha Otis did. As it turns out, the real question is whether the elevator industry has any other directions left in which to advance.

Take safety. The "safest form of public transportation" is significantly safer now than it was when a major earthquake rocked California's San Fernando Valley in 1971. Today, at least in seismic terms, John Ford of Westinghouse Elevator's San Francisco office doesn't think elevators can be made much safer than they are already.

"The San Fernando quake got everyone shook up," Ford says. "In some buildings in the valley and even a few in Los Angeles, counterweights came out of their guide rails and hit cars." Damage and injuries were slight, but the earthquake prompted a major code revision resulting in 1975's inch-thick Elevator Safety

## An elevator that is also a work of art.

Orders, Title 8, in the California Administrative Code. The new code was made retroactive, so every elevator in the state underwent a required retrofitting. Because the threat of a loose counterweight striking a car is the only real danger in a seismic episode (short of building collapse), "counterweights were embedded in the rails," says Ford. "The rails were attached to shaft walls with heavier and more frequent brackets. Cableguards were installed. Generators and control machinery were fastened more securely."

The new code also called for the installation of seismic switches designed to trip at the slightest hint of an earthquake. "The switches are generally set around 3.5 on the Richter scale," Ford says. "When the switch trips, the elevator stops at the nearest floor, the doors open to get the people out, then the car moves as far away from the counterweight as possible." Afterward, the main building switch has to be reset, as do manual switches on every car. "The idea," according to Ford, "is to have a man ride the car-top through the entire hoistway afterward to check for any signs of damage."

The problem now in California is coping with all the minor tremblers below 4 on the Richter scale—"dish-rattlers," Ford calls them—that roll through the coastal part of the state and tend to set off the seismic switches. "We had to reset a switch the other day, in a lowrise phone company building in Hayward," Ford says. "A cement truck set it off."

"It would take an overwhelming earthquake to damage cars or injure people now," Ford says. "Earthquakes start slowly, and with anything above a Richter 4, which is minor, every car should be at a floor with the people out. California hasn't seen an earthquake like that since 1906."

Asked about the unthinkable—a car shaken completely loose from its moorings by a 1906-scale event—Ford recalls the century's single plunging-car episode. It took place on a foggy weekend morning in 1945, when a misguided B-25 crashed into the 75th story of the Empire State Building, careened through the

*Below and across page, one of two all-glass elevators in San Antonio's Museum of Art, designed by Peter Chermayeff. Celebrating vertical movement, the elevators become kinetic sculptural pieces with light-studded cabs and chrome plated workings.*



elevator hoistway, severed all cables—including the braking governor—and sent a car plummeting earthward. "Only that kind of freak accident, cutting all of the cables, could have that result," Ford says reassuringly. For the record, 16 people were killed in that incident, but the elevator's operator and single passenger survived, probably because of the miles of steel cable that fell to the bottom of the shaft and cushioned the car's fall, in Ford's words, "like a big ball of yarn."

With a partial assist from microprocessors, elevator fire safety may also be nearly optimal today. "When a smoke detector is activated in a typical hotel," says Robert Snowden, "the elevator control system is automatically notified to ignore all hall calls and car calls. Each elevator drops to a designated fire floor and stays put. All that is required by code."

If the designated fire floor is itself on fire—and that floor is usually the lobby, which is precisely where the flames were during 1980's MGM Grand Hotel fire in Las Vegas—a microprocessor-based elevator control system can be programmed to recognize the situation and send cars instead to a secondary or even tertiary designated floor. A relay-controlled elevator won't respond to a false, fire-prompted hall call and deposit passengers in the midst of conflagration, but it can't choose a secondary floor if its primary destination is ablaze, either. That, only today's microprocessors can be programmed to do.

Westinghouse Elevator's Clyde Richards says that "most of the dollars for this industry's research and development go to safety." Yet the elevator industry can't make its systems much safer. Neither can it make them much faster. Gearless traction elevators have a top speed in excess of 2,000 feet per minute, the pace at which elevators are running in a Japanese test tower today. But that kind of upward velocity—nearly 38 mph—can cause discomfort, especially when an unpressurized express elevator is rising to the dizzying, oxygen-deprived heights of, say, the observation deck atop Chicago's Sears Tower, 103 stories and 1,350 feet high. Thus the Sears Tower's express elevators, advertised as the fastest (as well as the tallest) passenger elevators in operation today, move at a speed of 1,800 feet per minute. Human frailty renders that ceiling permanent.

One frontier does remain for the elevator industry, and to cross it would mean liberating elevators from the pistons and cables that have hoisted and lowered them since the mid-19th century. The stuff of dreams, at least for elevator visionaries, is an elevator capable of traveling horizontally and diagonally through space, as well as vertically.

"We've thought of some sort of pneumatic system like the one used to send orders and messages in department stores, with elevators traveling vertically, horizontally, and at angles. But controlling them would require some kind of 2001 invention," says Robert Snowden. "And we've thought of linear motors attached to the car and guide rail, instead of having a motor at the top of the shaft." That would give an elevator the independence to change its plane of movement from the vertical. "But they're not stable or safe enough. And you run into a vicious circle: By attaching the motor directly to the car you make the car heavier, which calls for a bigger motor, which makes the car heavier, which calls for a bigger motor. . . . It's a nice Buck Rogers concept, but I think we'll still have cables in the year 2000. We'll have more efficient motors and more efficient dispatching systems. But we'll still have cables."

Elevators have taken on a surprisingly different look in recent years, particularly since the advent of the Portmanesque, multi-storied hotel lobby spidered with glassy, wall-climbing elevators. Most manufacturers are anticipating innovations in elevator car design for the near future. Although basic technology won't change, they expect to see more glass-clad cars and hoistways because such see-through transport is an attraction (in both the gawking sense and as high-tech art, which is how the San Antonio Museum of Art classifies its new all-glass car and hoistway system) and, in the wall-climbing mode, a space saver. □



# The Plan as Determinant of Movement

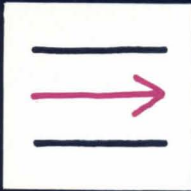
By Stanley Abercrombie, AIA

Warning: The following article tries hard to look scientific, but is, deep down, quite arbitrary; the same material could be re-organized in a myriad of ways. Nevertheless, in assembling this issue on the subject of movement, we were tempted to speculate on the relationship between movement type and building plan type.

Looking at plans is not remotely the same as looking at whole buildings. (In many cases, sections reveal more about building character than do plans.) But plans are basic and have been seen in many different times as the building element that generates all others. "The plan," Le Corbusier said, "bears within itself a primary and predetermined rhythm: The work is developed in extent and in height following the prescription of the plan."

More to the point in the context of this issue, it is the plan that determines movement. A change in section may attract us to a distant part of a building; even so, earthbound as we are, it is the plan that decides whether we can go there or not.

Is it possible, we wondered, to categorize plans according to the movement patterns they permit? And, if so, is it possible to characterize a group of buildings—the buildings of our own time, for example—according to the category they fit best? Assuming an uncommonly oracular mood, we have come to the following conclusions: Building plans can, indeed, be grouped according to the types of movement they allow, inspire, or demand. There are four main groups, diagrammed at left and right.



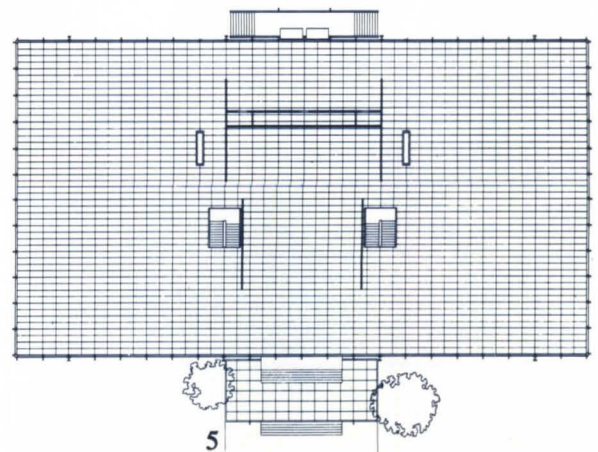
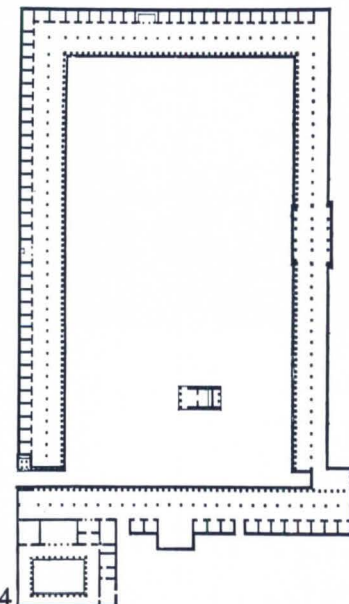
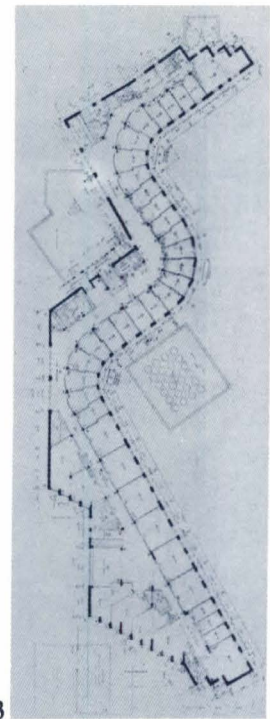
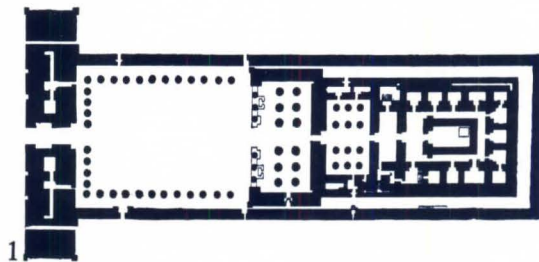
First, plans can *direct* linear progressions of movement.

These can be toward a goal or a focus of attention, such as toward the altar of a church or, as at the Egyptian temple at Edfu (1) toward progressively sacred precincts. In a traditional Chinese house (2) the progression, courtyard to courtyard, is purely social, from public to increasingly private spaces. Or the progression may be simply one of circulation and, as at Aalto's Baker House dormitory (3) needn't begin at an extreme or even be straight.



Second, building plans can *free* movement to find its own pattern.

This type plan, like the others, is ancient—examples might include a Greek agora (4) or a Roman forum—but it has come to be much used in our own time, as in Mies' Crown Hall (5). In such plans discrete rooms are avoided in favor of flow, and the behind-the-scenes utility spaces once buried in the *poché* of the Beaux-Arts plan are exposed for all to see. Gone, too, is the Renaissance hierarchy of spaces—major rooms that are subject to the most fastidious laws of proportion, and less important circulation or service spaces that can take any expedient



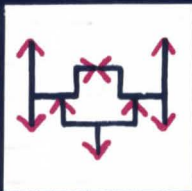
shape (an obvious exception being such buildings as Versailles, where spaces for circulation *were* the major spaces).

Another type of free plan is seen in the traditional Japanese house (6), free, in this case, because of its flexibility: Sliding screens determine enclosure. It is free as well in a temporal sense: What had been a dining room during the day might become a sleeping room at night.



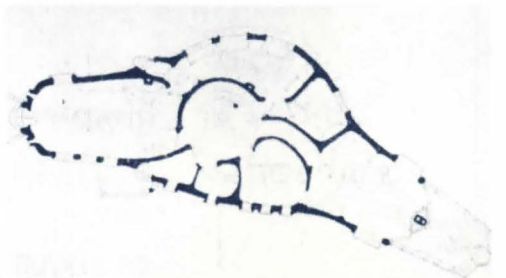
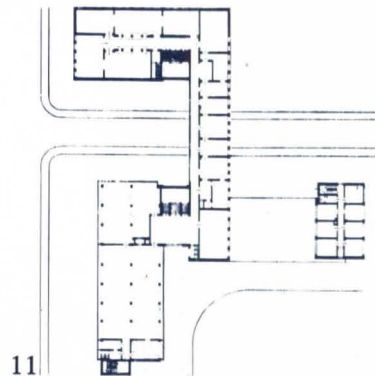
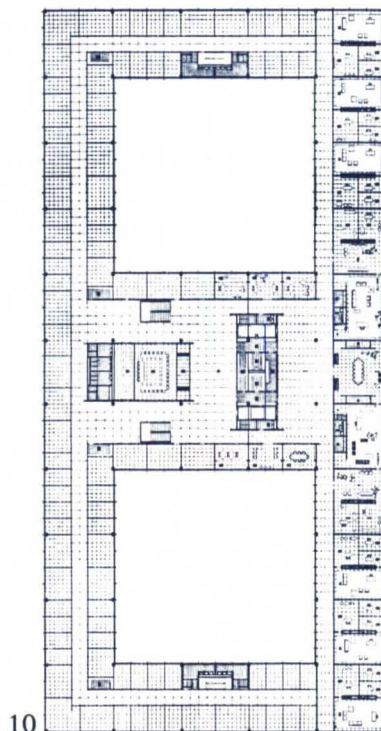
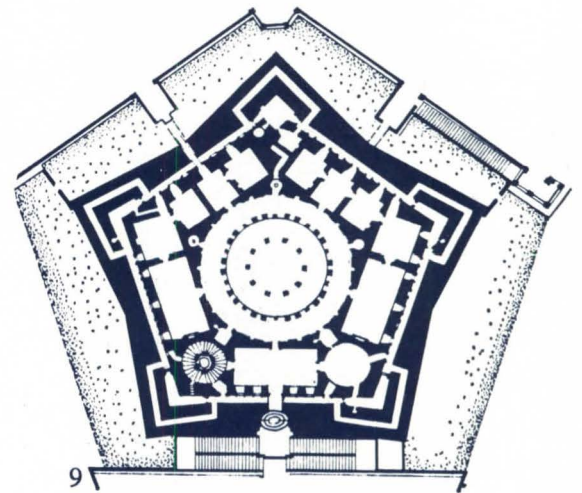
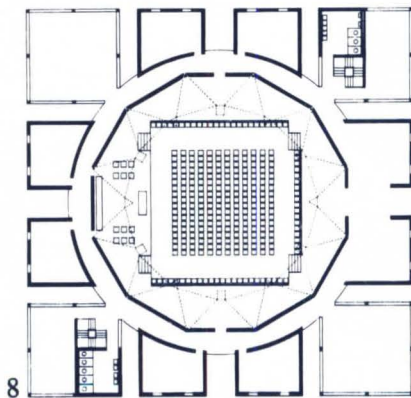
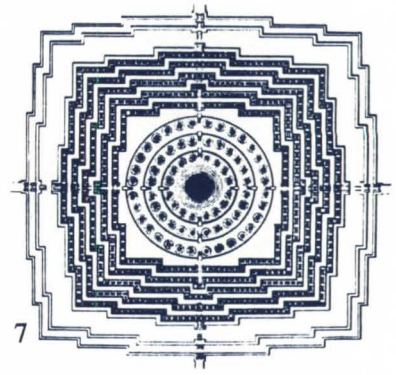
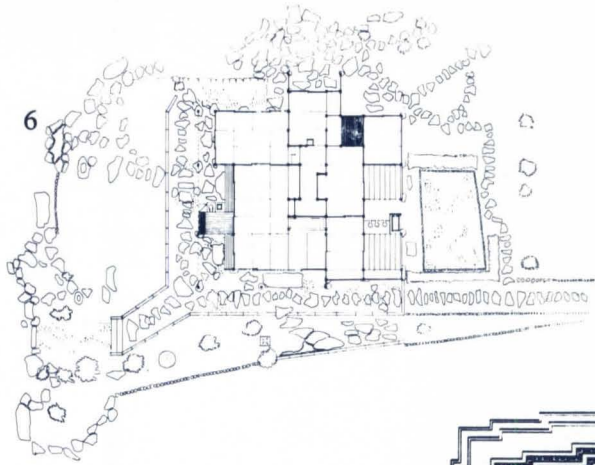
Third, buildings can *focus* movement on a central space, form, or activity.

Examples are the Stupa of Barabudur (7), its centralization stressing a vertical continuity between man and Heaven. Centralized religious buildings abound in many cultures, of course, such as the Roman Pantheon and Louis Kahn's preliminary design (8) for the Unitarian church, Rochester (its sanctuary not itself centralized, but all subsidiary elements clustered about it). And the plan type can be secular as well, as in Vignola's cortile-centered Palazzo Farnese, Caprarola (9). Other obvious uses are sports arenas and many types of theaters.

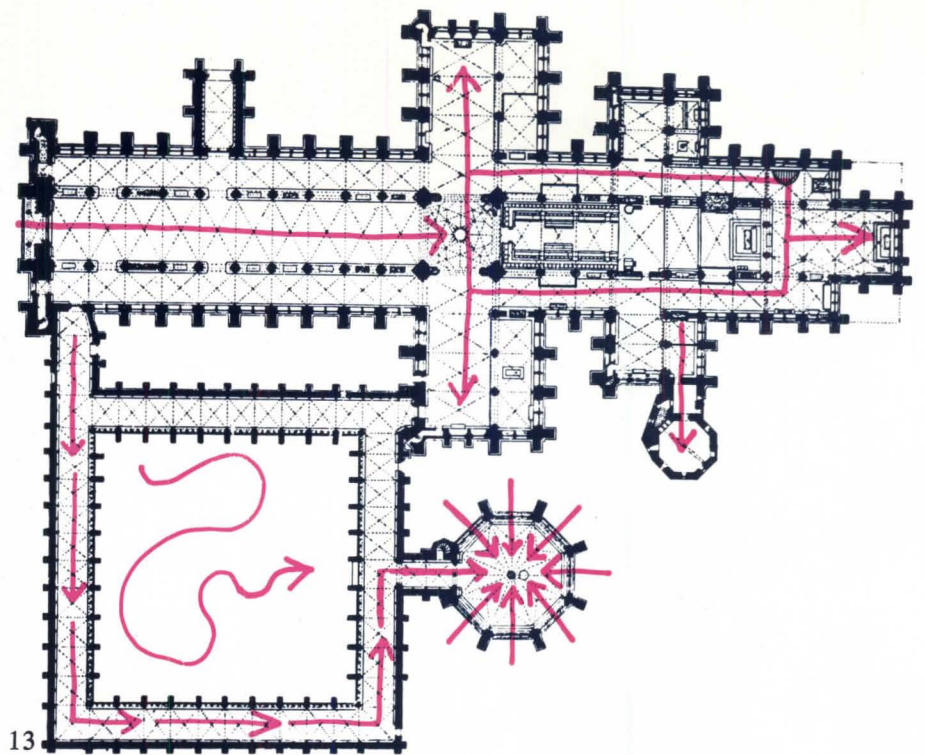


Fourth, building plans can *organize* movement in rigidly predetermined patterns.

These can be patterns of military rectangularity, as in Mies van der Rohe's project for the Krupp administration building, Essen (10), but they can be quite asymmetrical as well, such as Gropius' Bauhaus (11). Even forms as organic as Eibink and Snellebrand's 1920 villa project (12) can contain space divisions that firmly control movement.

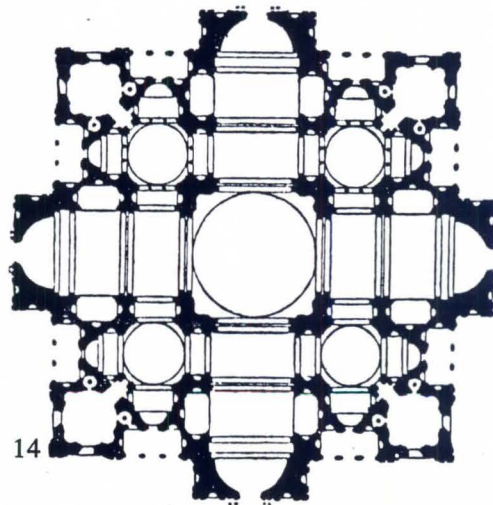


Some buildings, of course, are additive conglomerations of several of these plan types joined together. Salisbury Cathedral (13) is an example.

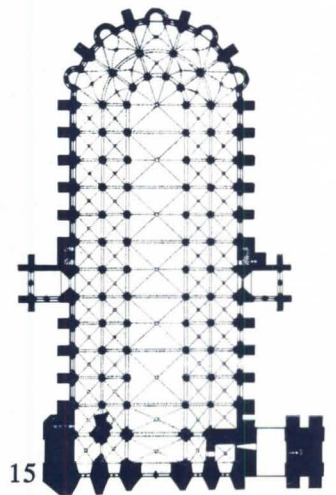


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Obviously, the four plan types can be combined. The best known example, perhaps, is the combination of a centralized church plan such as Bramante's plan for St. Peter's (14), with its *focus* of movement, with a plan such as that of Bourges (15) that *directs* movement, producing a hybrid plan like that of St. Peter's as it was actually built (16).

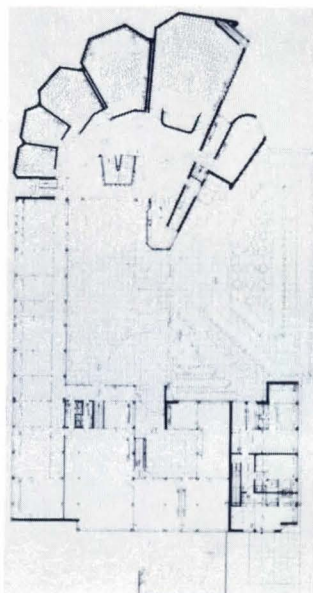


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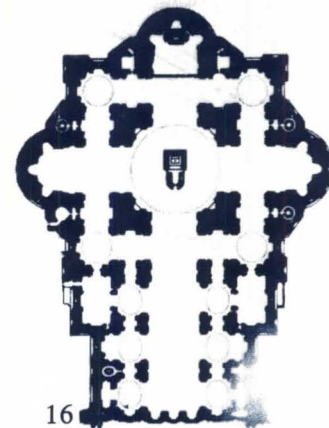


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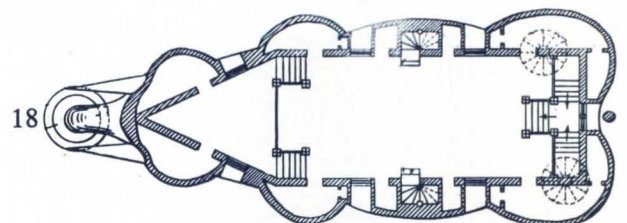
Plans of any type are subject to infinite modifications, being altered by the pressures of internal functional requirements, as at Aalto's Wolfsburg cultural center (17), or deformed by the requirements of a predetermined exterior form, as in buildings shaped like elephants (18).



17



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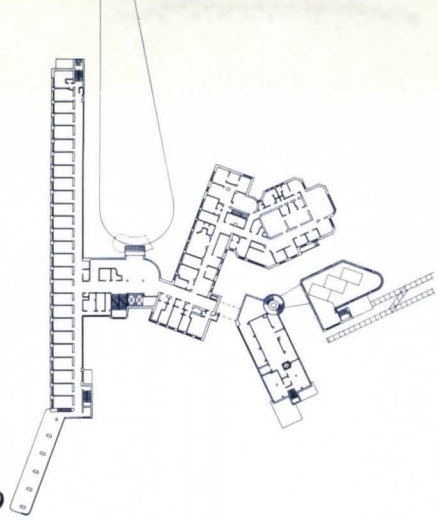
They may be modified according to sun angles, as elements of Aalto's Paimio sanatorium are tilted for optimal orientation (19), or they may be modified by the constraints of terrain, context, or (20) an irregular site.

Having noted their possible combinations and modifications, let us return to our four plan types—directing, free, focusing, and organizing. Is it possible to relate specific architectural styles to these types? Specifically, can we relate the work of our own time to one of these types?

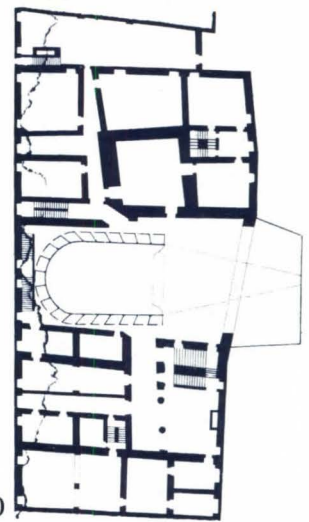
Certainly such a relationship has been clear at some periods of the past. When architecture was dominated by religious building in the middle ages, liturgical movement—procession toward the altar—demanded a directing plan type. In our own time, even in cases when the functional program remains much the same, as at Ronchamp (21), an element of freedom has entered the composition. There is still direction, but it is much less authoritarian.

The 19th and early 20th centuries in the West were dominated by Beaux-Arts plans, most of them highly organized in their directing of movement. A library plan by McKim, Mead & White (22) is an example. The prevalence of such organizing plan types continues almost to our own time, visible even in the early work of Le Corbusier, such as the Villa Schwob (23). Then came the modernist reaction with its free plan and, on occasion, fierce asymmetry, as in Philip Johnson's glass house (24). Further reaction brought plans that seemed more romantic, more naturalistic, more casual. Turning again to Aalto, his project for a cultural center at Leverkusen is a good example (25). Yet even today there are some strong holdovers from the Beaux-Arts: John Portman's Bonaventure hotel in Los Angeles (26), for one.

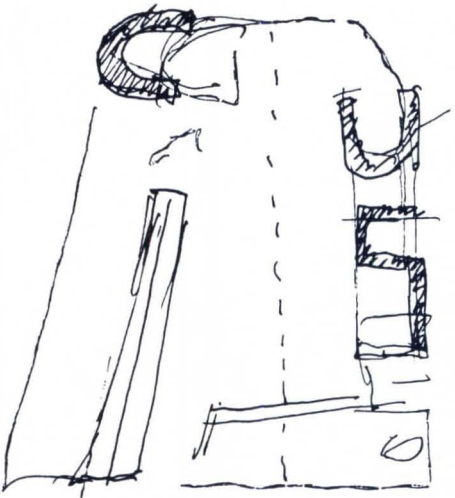
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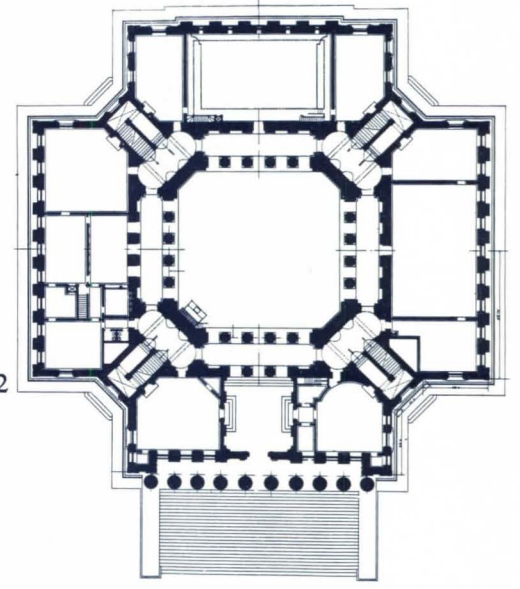
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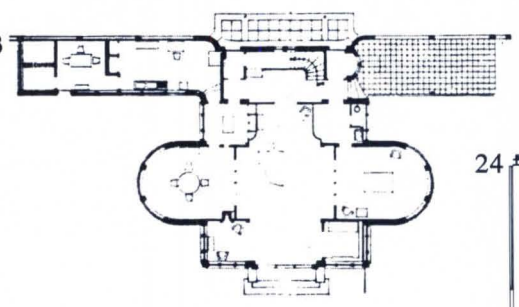
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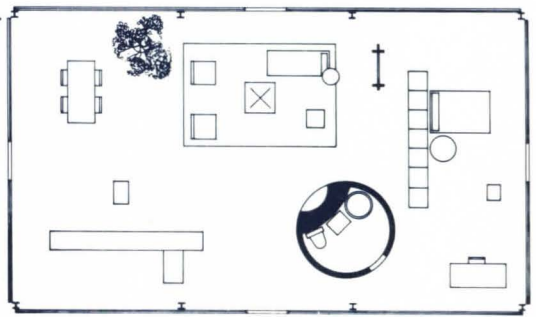
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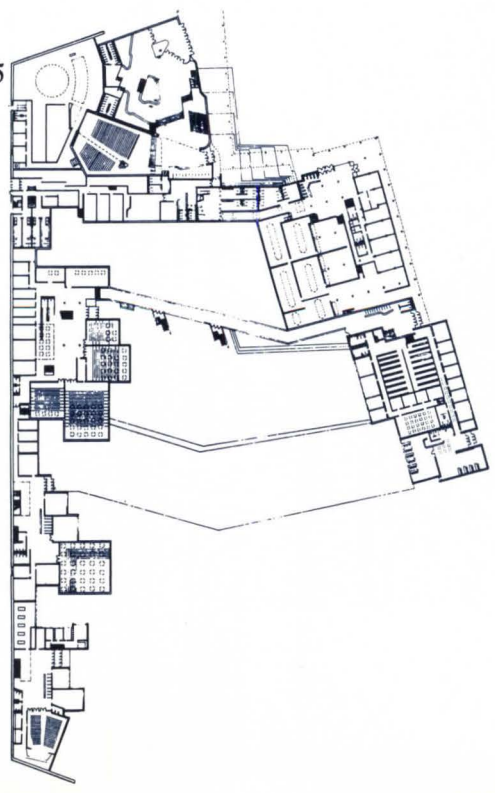
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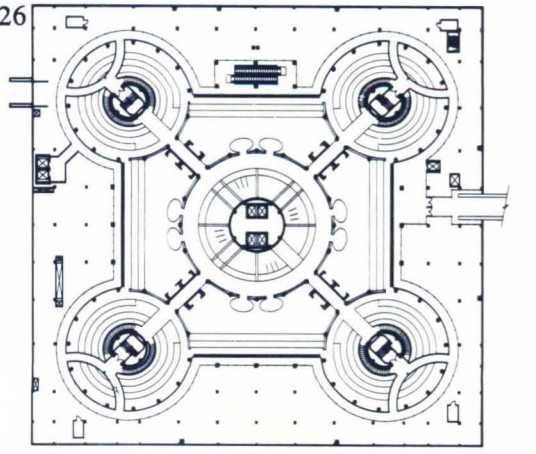
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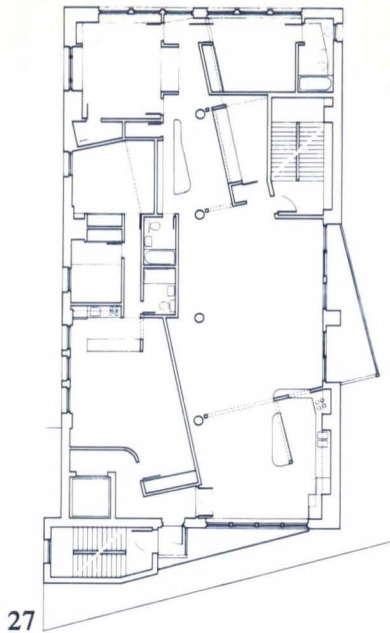
Portman aside, the new prevalence of the free plan seems to be the distinguishing feature of architecture of our time, both of early modernism and of whatever you like to call current work. If there is a trend of the moment in plan type, it is perhaps one away from purity and toward a preoccupation with exceptions, modifications, and variations. The architect of the day seems to like his big statements peppered with little surprises. One example is the frequent use of a minor change in orientation of walls, a slight angling of the building grid, seen in this loft plan by Jon Michael Schwarting (27). Another example is the unexpected use of a lyrical, flowing form in the context of a straightforward, generally rectilinear scheme. This apartment plan by Michael Rubin and Henry Smith-Miller is an example (28).

But how is current work related to our four plan types? As a representation of such work, we might consider this magazine's last mid-May Annual of American Architecture, in which some three dozen plans were published. Let us look at a few of them.

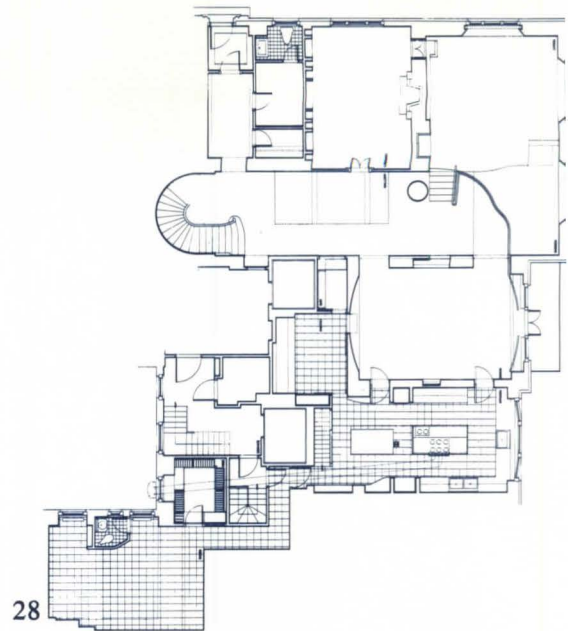
One of them, to be sure, is not a current work at all, but the strictly Beaux-Arts organizing plan of the Boston Museum of Fine Arts, with I. M. Pei's new addition tucked neatly along one side (29). But this sort of plan is represented also in the AIA honor award-winning house (30) by Taft Architects of Houston.

Clearly an example of a directing plan is Cambridge Seven's National Aquarium in Baltimore (31), even though the directed path is not linear but highly complex. As Nora Richter Greer's mid-May text said, visitors "once inside are held on a carefully choreographed one-directional route."

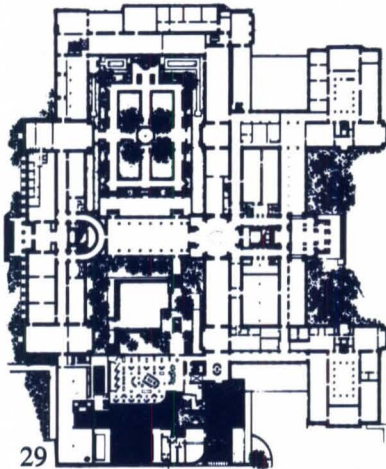
Sharing this plan type is Stanley Tigerman's Illinois Regional Library for the Blind and Physically Handicapped, also an honor award winner (32). The spine of the building is a curvaceous circulation counter running all along its longest side. "The ruling concept," the mid-May issue said, "is a linear plan that can be followed and memorized most easily without sight."



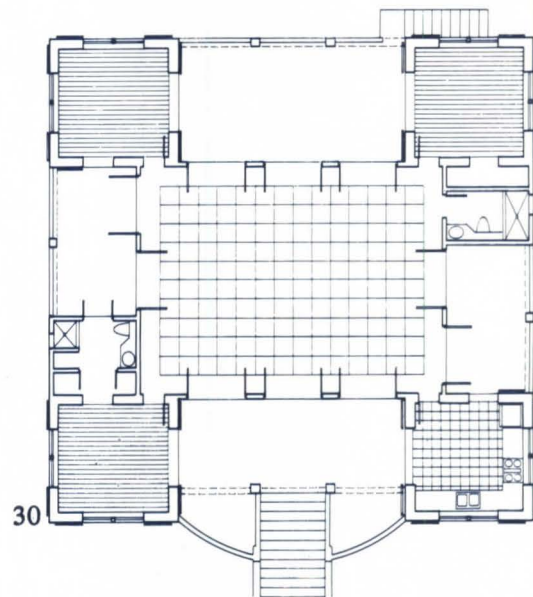
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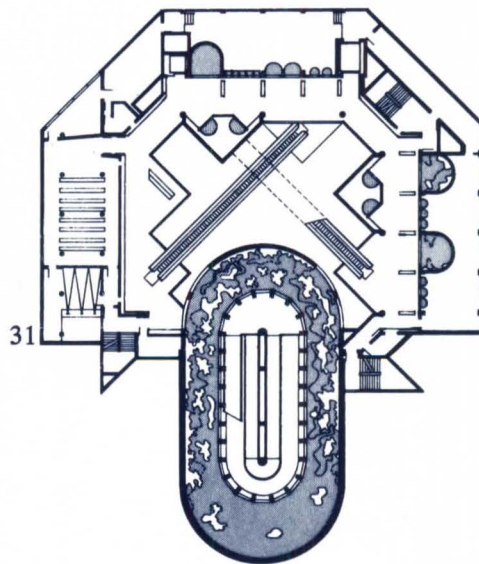
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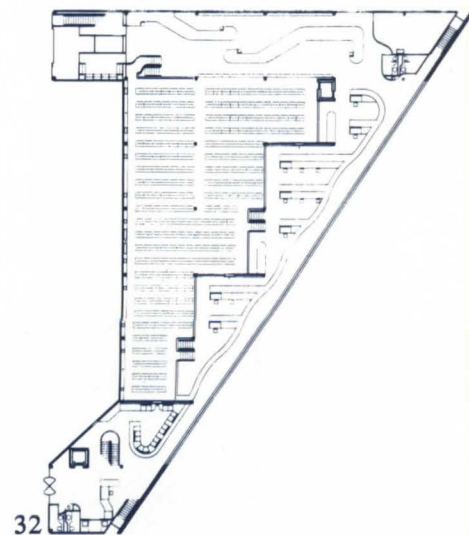
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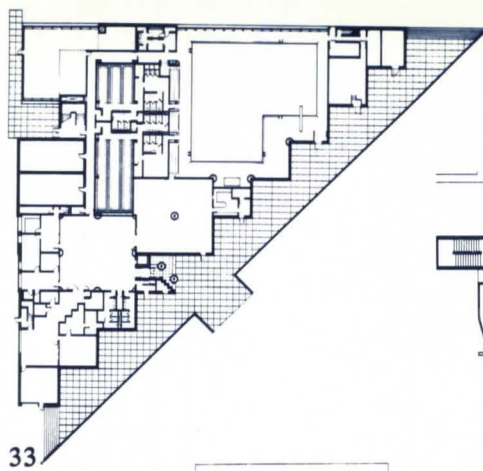
Similar at first glance, but actually a thoroughly organizing type of plan is that of William Kessler's Coleman Young Recreation Center (33). Although several of its spaces are flexible in their use, each space is firmly and clearly discrete. This applies as well to Richard Meier's Hartford Seminary (34). Some flowing lines charm the eye, but the movement through the building is strictly organized.

The large undivided working areas of the Herman Miller Seating Plant by CRS classify it clearly as a free plan (35). But this plan type is not limited to loft-type spaces. The plan of Kallmann, McKinnell & Woods' headquarters for the American Academy of Arts and Sciences (36) is highly complex, even, perhaps, convoluted, yet there are choices available everywhere, and the ground floor plan seems a model of the type that encourages free movement.

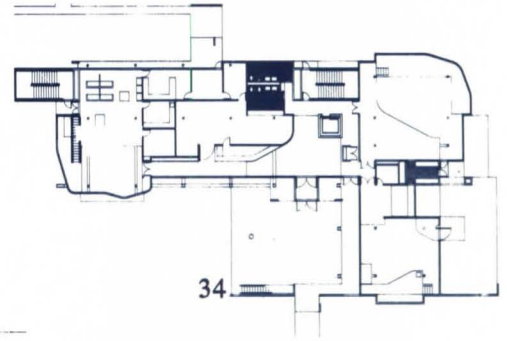
And there are, of course, a number of hybrids in the group. Hugh Newell Jacobsen's library at Gettysburg College (37) has a cluster of organizing office and work spaces, a large open stack area that is certainly free in plan, and, at one end, a pronounced focusing on an apsidal reading room.

Most complex of all, perhaps, is Mitchell/Giurgola's cluster of new construction around the remodeled (by Hastings & Chivetta) Wainwright building (38). There is some freedom of movement, (particularly through the interconnected courtyards), some organizing (in the overall plan of the block), some directing (along a poolside diagonal, for example), and some focusing (on the innermost courtyard and again on the adjacent exhibition area). This is a plan that does it all.

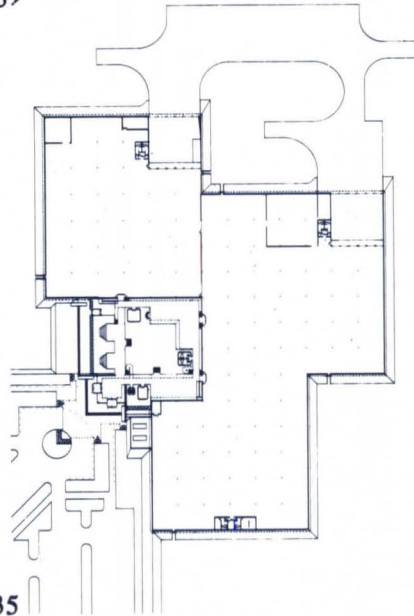
The apparent conclusion is that our own period is not one hewing to any particular plan type. If the four types we have sketched here are accepted as basic, then the fashions of the moment must be said to be relatively superficial. If any major trend is discernible, it is the continued influence of the free plan that soared into prominence following the pioneering examples of Wright, Mies, Le Corbusier, and others—an influence now slightly waning as many architects return to plans that organize movement in more regimented ways. □



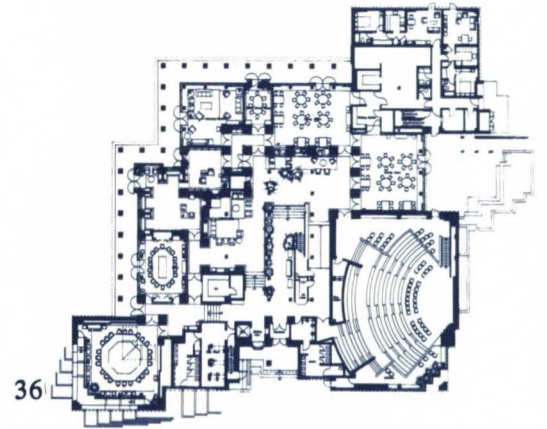
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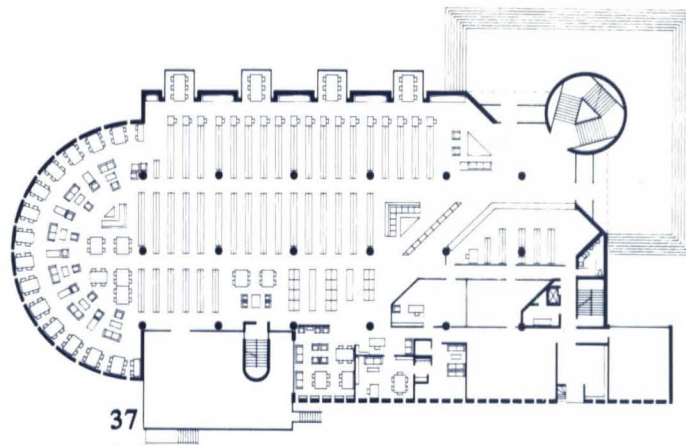
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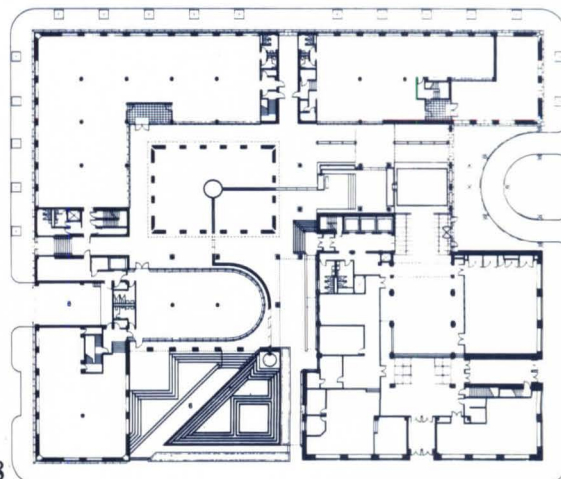
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38

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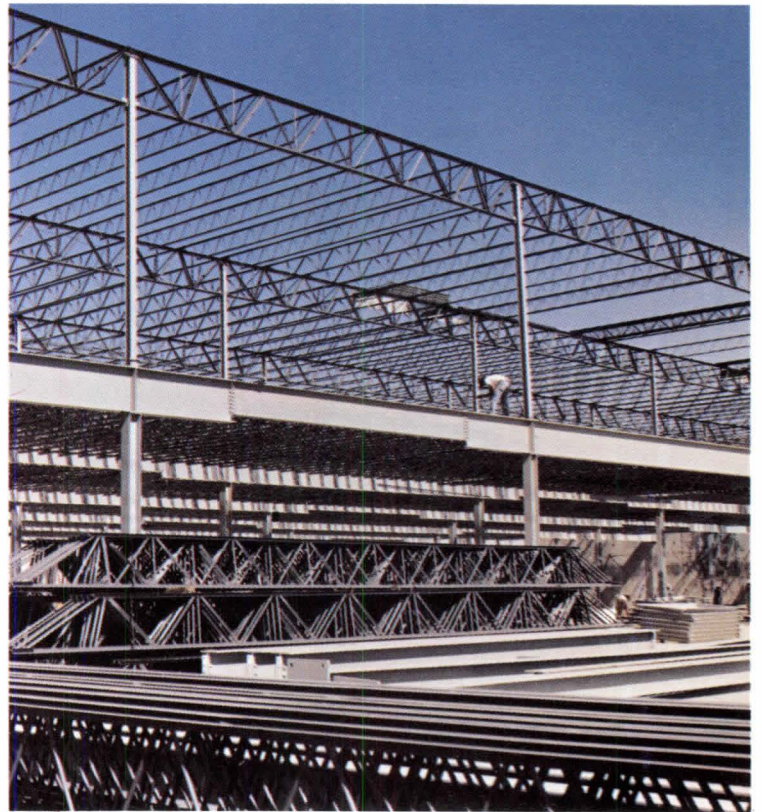
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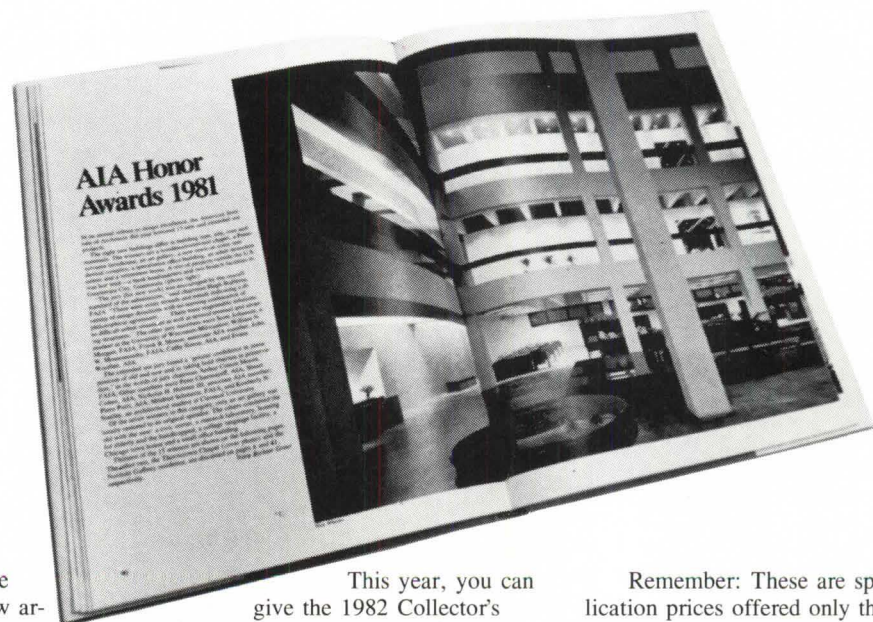
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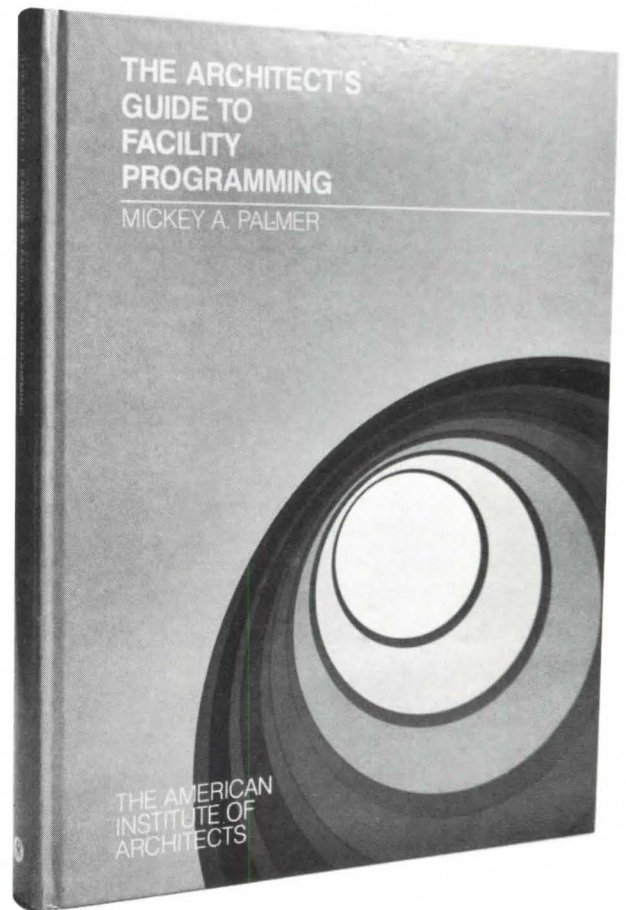
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# BOOKS

## Mumford: Beginnings of a Lifetime Education

### Sketches from Life: The Early Years.

Lewis Mumford. (Dial Press, \$19.95.)

To have established our national architecture in the mainstream of American civilization is Lewis Mumford's achievement that should most concern us here. This initial installment of his autobiography (which takes him to about age 38, in 1933) makes it clear that this proposition should be reversed. Mumford came to architecture through his larger interest in cities, and the philosophical breadth of his cultural perspectives was firmly in place before he really discovered architecture. All this is important because his concern with architecture has always been essentially social, urbanistic, and moralistic rather than stylistic. Such concerns are not in fashion today.

Rather early in his long association with *The New Yorker* magazine, writing which he valued the more because of his respect for that magazine's avowed association with the once much-loved city of his birth, Mumford wrote what can be considered the first of many autobiographical effusions. Unless one counts additional recapitulation, but includes collections of letters (Van Wyck Brooks and F. J. Osborn), these powerfully motivated reminiscences have been his exclusive publications since 1970. In numerous articles, introductions, and other writing, he has already told much that is contained in *Sketches from Life*. Yet, however one looks at it, and whatever interpretation one places on this extensively and minutely documented life, it is good to have it all together; for many it will be charged with new significance as well as filled with surprises, and for many others it will be new. We can now see the formation of one of the more important social critics and interpreters of American civilization. While great interest attaches to Mumford's creation of his *persona*, one wishes that in this volume he had elaborated on the writing of *The Golden Day*, *Sticks and Stones*, and *The Brown Decades*, the works of this period by which he has left his most distinctive contribution.

As it is, 400 pages will have been read before coming to that point in the life of this man to whom architects have given

their highest honors. The theme of this volume explores Mumford's early life as the child of the city. He did not know who his father was until after the years covered in this volume, but in the company of uncles and older relatives in a far-flung but close-knit German-American family he was encouraged to explore the city and, in the end, discovered architecture as part of the urban fabric. We have had other works that have thus approached urban childhood (notably Alfred Kazin's *A Walker in the City*), but this book most closely links the urban experience to Mumford's understanding of the social conditions of urban life, the role of cosmopolitan friends and literary and professional associates, the buildings of the city, the critical importance of the New York Public Library, the generous availability of its universities. Mumford emerges as a moral philosopher, self-created (more than self-educated), and we must accept that as it determined his approach to architecture and city planning.

In the critical years immediately following World War I, when Charles Harris Whitaker edited the *Journal of the American Institute of Architects*, Mumford became an early contributor. In this capacity he became acquainted with Clarence Stein and others who joined in the Regional Planning Association of America, a loosely formed group that never numbered more than a score, from which emerged such concepts as the early housing communities of Sunnyside and Radburn or the Appalachian wilderness trail. Perhaps as important were the 1939 film "The City," and Mumford's own running commentary on architectural and environmental subjects in *The Dial*, *The Freeman*, *The New Republic*, and *The New Yorker*.

The Regional Planning Association of America (one must use the full title to distinguish it from the Regional Plan Association of New York) served Mumford in much the same way that The Club did for that other notable biographical subject, Dr. Samuel Johnson. The parallel of Mumford's and Johnson's lives is striking—their deficient parenting, genteel poverty, invalidism, erratic and rebellious formal education, hunger for books,

friends, and experience; their Grub Street careers, emergence from journalism as distinguished essayists, commitment to major literary goals (Johnson's determination to save the English language, as Shakespeare knew it, through his great dictionary; Mumford's "discovery" of American civilization); failure as dramatist, but self-dramatizing proclivities; passion for letter writing and biographical minutiae, fascination with female intellectuals, and quest for academic honors. While Mumford has been fortunate in those who have recounted his career, by this book he must be considered his own Boswell.

As a fragment of some larger but still undefined work, the present volume does not lend itself to criticism. What one views here as omissions may be made good in succeeding volumes. Nonetheless, minor errors may do little harm, but are irritating. Is it Hanover or Hannover? Grunfeld or Grunefeld? But more seriously, is the *Journal of the American Institute of Architects* before 1918 fairly described as "unsullied by any contemporary innovations in building?" The description of public housing in terms of Pruitt Igoe is shallow, and even the St. Louis experience, if given a closer look, would show more than architectural arrogance, sociological ignorance, or bureaucratic bungling. It is impossible to imagine that Clarence S. Stein alone could have persuaded then-Governor Franklin D. Roosevelt to have keynoted the Round Table on Regionalism at the University of Virginia in 1931; but there is no mention of Louis Brownlow, the likely promoter of this venture of the Presidential candidate Roosevelt would become, who was then involved in the management of the City Housing Corporation.

Mumford includes a chapter on Frank Lloyd Wright, but there is little evidence that Mumford studied or even visited many of Wright's buildings, and his familiarity with Wright's ideas is pretty much a caricature of their main outlines. Mutually attracted they may have been, but mutual avoidance seems to have been the fact. Howard Odum's Institute for Research in Social Science was at Chapel



Hill, not Charlottesville. Catherine Bauer's "award" that allowed her to travel to Germany in 1932 (not 1930) came not from Vassar College but from New Jersey State Federation of Women's Clubs. Mumford's 1921 brief essay, "Machinery and the Modern Style," may have antedated Le Corbusier on a similar subject, but certainly not Frank Lloyd Wright's 1904 Hull House lecture on "The Art and Craft of the Machine," and numerous similar reflections by other writers. One more point, if hardly the last. Where is Mumford's insight into the important but still vague relationship between Clarence Stein and Henry Wright, of which he is the last surviving witness?

But Mumford has said it best: "This whole autobiography is about the ways and methods and goals and meanings and rewards of a lifetime education." This comment may have encouraged other reviewers to find comparisons with *The Education of Henry Adams*. Adams left out the 20 most interesting years of his life; Mumford included the 20 least interesting years of his.

When I last saw him a few years ago, Mumford had never learned to drive a car. Nor can I imagine that the author of *Technics and Civilization* and the 27 other books he lists in the front of *Sketches from Life* spends much time watching television. Therefore, I hope he will not be offended to learn that when my wife and I were taking turns reading and enjoying this volume, we referred to it as "the soap opera." The carefully phased episodes, the cliff-hanging conclusions, the characterizations, and much else makes that description appropriate. And reading it, one speeds along over new and old information in the hands of the born-again dramatist the young Mumford aspired to become. In the end, one reflects that perhaps Mumford is an 18th century character with his interests in utopias, techniques, and moral, if not religious, absolutism. Or, indeed, as he once remarked, in his enthusiasm for that century's forms of letter-writing. One might better find parallels in the belief that both Johnson and Mumford had in their powers as dramatists, never in fact to materialize on the stage.

Mumford's *New Yorker* column, "The Sky Line," made him the voice for progressive architecture. *The Culture of Cities* (1938) led the ideological advance of postwar reconstruction. This highly visible achievement of having established American architecture in the mainstream of our civilization is subordinated here to more personal detail. Perhaps that is inescapable in an autobiography, but it will disappoint many. FREDERICK GUTHEIM, HON. AIA

*Mr. Gutheim is a planner, author, and educator in Washington, D.C.*

**Pullman: Portrait of a Landmark Community.** A photographic essay by Fred Leavitt, with a view of historic Pullman by Nancy Miller. (Chicago: Historic Pullman Foundation.)

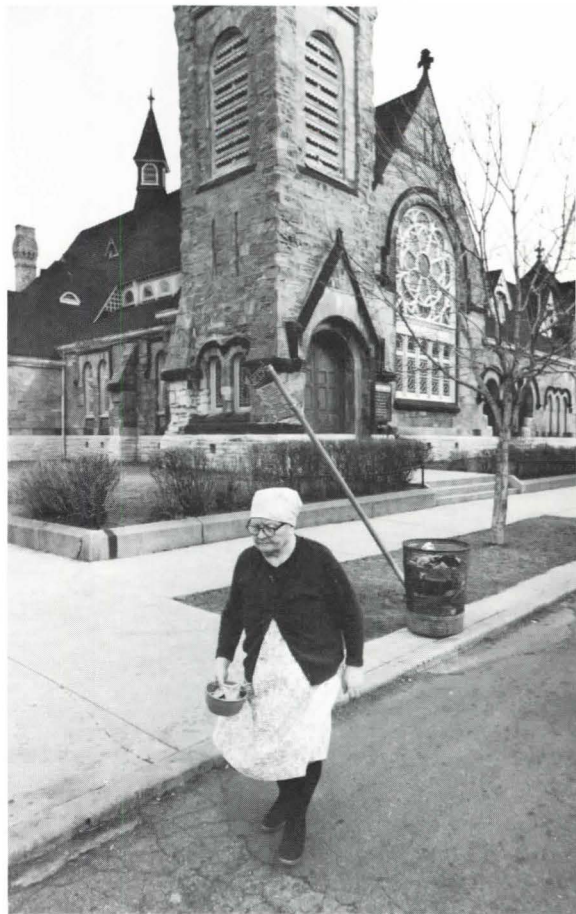
The Chicago Council on Fine Arts in conjunction with the city architect's office commissioned freelance photographer Fred Leavitt in 1980 to produce a photographic documentation of the community of Pullman for permanent exhibition in the area's new municipal building. The commission was the first to be awarded to a photographer under the council's "percent for art" program. Subsequently, the Historic Pullman Foundation concluded that the photographs deserved a larger audience and, therefore, published the photographs in book form to coincide with the celebration of Pullman's centennial.

The foundation has observed correctly that this book subject is not historic preservation and renovation, but rather "the study of a living neighborhood, which happens to be a historic landmark." Nearly all the photographs (examples this page and next) have people in them, attesting to the fact that it is the people who make a community a living organism.

This neighborhood in Chicago's South Side is described by Nancy Miller in an introductory essay that surveys the community's 100 years of "success and strife." The moving force behind the community's development was George Pullman, whose sleeping cars made railroad history. He bought 4,000 acres in south Chicago, determined to build a model town on the same site as the factory for the Pullman Palace Car Co. Under his direction, Salon S. Benan and Nathan F. Barrett, says Miller, became "the first architects in the nation to incorporate an esthetic ideal and

community amenities with the most up-to-date building technology." But strikes and other social upheavals brought trouble to this paradise. By court order the Pullman Co. was made to sell all property not used for manufacturing, and the town went on the auction block. By 1909, Pullman was just another industrial community.

In 1969, however, Pullman was designated a national historic landmark district, and in 1973 the Historic Pullman





Foundation was formed to buy and protect public buildings. "That the community of Pullman has survived strikes, wars, depression, and the real threat of the wrecker's ball to celebrate its centennial and is, in fact, actively undergoing the rebirth at this time, is due solely to the spirit and dedication of its people," says the editor's note.

**Eleanor Raymond, Architect.** Doris Cole. (Art Alliance Press, Associated University Presses, \$35.)

Eleanor Raymond, FAIA, is that rare architect whose interest and aim has been to design houses. Domestic architecture, in low repute among planners and sociologists, is avoided as often as possible by practicing architects whose costs make the average such commission a financial disaster. For Raymond, it has been a full life's work in residential commissions from the time she opened her Boston office in 1919 through her Smith house, Biddeford Pool, Me., in 1973.

Doris Cole, author of the first rudimentary history of women in architecture, *From Tipi to Skyscraper*, and creator of an exhibit on Raymond at the Institute of Contemporary Art in Boston (see Jan., page 53), has provided a 50-page text, with twice as many pages of photographs, seven of them tinted to give the effect of color photography. The colors of ceilings, walls, and floors are perhaps worth the effort in several cases, but on the whole black and white does justice to these pleasant New England houses. Although pre-eminently a designer of individual houses, Raymond has to her credit a cluster of seven structures, Hammond Compound, in Gloucester, Mass. This commission included three houses, a central commons

building, and service buildings, placed around a court with the vista of the ocean harbor on the other side. Raymond, in designing a cluster of buildings on the property, preserved the natural features of the rest of the site.

Technical innovations were characteristic of the period of Eleanor Raymond's practice. She experimented with plywood and with solar heating. Her own training after Wellesley, graduation from the Cambridge School of Architecture and Landscape Architecture for Women, and a master of architecture degree from Smith, makes it not surprising that the majority of her clients were women of some achievement and taste.

An interesting portion of this book describes the role of *House Beautiful* magazine under the editorship of Ethel Power, from 1920 to 1935. Doris Cole reports on Power's thorough architectural education at the Cambridge School and her involvement with the school and its graduates when she shared a house in Boston with Eleanor Raymond. *House Beautiful* published houses of quality, including floor plans, many photographs, and full discussion of construction methods and process, with an underlying commitment to the emphasis on the inter-relationships of architecture, landscape architecture, and interior design. *continued on page 90*

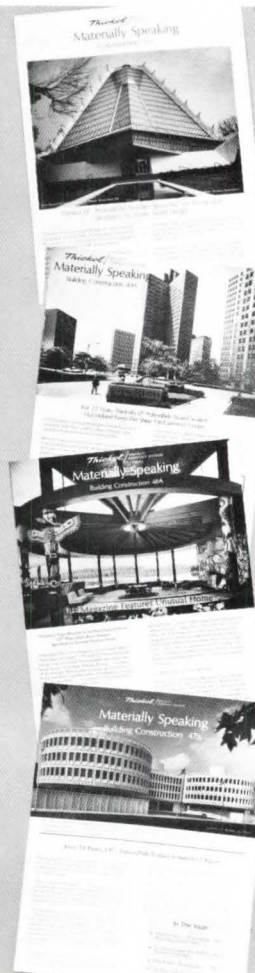
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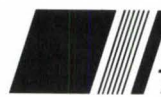
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## Books from page 86

The magazine was also influential in emphasizing workable floor plans over styled facades, and it developed typical house plans to sell. Ethel Power managed this latter function. She selected many Cambridge School graduates as *House Beautiful* architects, and she wrote *The Smaller American House* (Little, Brown, 1927). After the magazine changed hands, Power retired to Boston, where she documented Raymond's work meticulously, organizing all the material that is the basis of Doris Cole's book.

Raymond published a book of her own in 1931, *Early Domestic Architecture of Pennsylvania*, reprinted in 1973 by Pyne Press, Princeton. In showing her respect for simple vernacular American houses, the book gives us a key to the work she accomplished in half a century of practice. Thanks to Doris Cole, it has been brought to our attention.

SARA HOLMES BOUTELLE

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*Ms. Boutelle is director/founder of the Julia Morgan Association, Santa Cruz, Calif.*

**An Introduction to Urban Design.** Jonathan Barnett. (Harper & Row, \$20.95.)

In a previous book, *Urban Design as Public Policy*, based on his own experiences in the radical work of bringing the New York City government into the field of enlightened urban design, Jonathan Barnett described the urban designer as one who shows the answers to a great many questions no one is asking. In this new book he revises that description: "Today . . . people are asking the questions, but they don't always think of urban designers as having the answers."

This is the perfect book for explaining what answers urban designers may have. It is clear and basic—as the title says, an introduction—perhaps too simple for any but a beginning student of the discipline (and therefore potentially disappointing to those expecting as technically detailed a book as Barnett is capable of writing), but great for the general public with that growing load of questions. It is also, at times, just a bit simplistic, as when it cavalierly dismisses all CIAM's thinking on the urban scale.

Of his own and his colleagues' pioneering work with incentive zoning in New York City, Barnett is appealingly self-critical, describing the "penicillin syndrome," in which miracle cures, taken to excess, lose their effectiveness. He also expresses a healthy disdain for Utopian visions: "Cities are not designed by making pictures of the way they should look 20 years from now."

But, on the whole, Barnett is an optimist and positivist. "There is solid evidence," he says, "that a designed city is more than

a presumption." And he is a pragmatist as well: The book concentrates not on esthetic ends but on functional ones and on practical means for realizing them.

It is divided into four parts. The first surveys the changing political context for urban design, focusing on three emergent public concerns: for environmental conservation, for community participation (it "is here to stay" and "a major improvement in the way . . . planning decisions are made"), and for historic preservation. The second part surveys the tools for urban design work; this includes two chapters on Barnett's New York City work that condense and revise his earlier book. The third part, "The Elements of a Design and Development Strategy," is a summary of urban design methodology. And the last part is a brief attempt to define the urban design profession.

Finally, although few prospective readers of a book on this subject will need to be convinced, Barnett's text could also serve to make an eloquent case against the struthious disengagement from urban issues of the Reagan administration. "It ought to be self-evident, but somehow is not," Barnett says, "that cities cannot solve their problems without the aid of national housing, employment, welfare, and education policies. . . . Without a national policy context, those cities that are doing relatively well simply become a magnet to people from less fortunate places, and the gains are offset by new problems."

This is a book we needed, and Jonathan Barnett is the person we needed to write it. We hope it will be widely read.  
STANLEY ABERCROMBIE, AIA

**The Second Battle of New Orleans: A History of the Vieux Carré-Riverfront Expressway Controversy.** Richard O. Baumbach Jr. and William E. Borah. (University of Alabama Press, \$27.50 hardbound, \$12.95 paperbound.)

It would be hard, if not impossible, for many people to be objective about the subject of this book, the Vieux Carré, or French Quarter, of New Orleans. And it would be equally difficult to be objective about Robert Moses or his proposed 40-foot-high expressway that would have cut "The Quarter," as people call it down there, completely away from the Mississippi River, the very reason for this original New Orleans being located there in the first place. Later the plan was altered to extend the expressway upriver to the Orleans Parish-Jefferson Parish line and build a bridge at Napoleon Avenue. This would have cut off the entire uptown, another historic area of the city, from the river and placed a bridge at one of its major avenues.

This reviewer readily admits that he cannot be objective about any of these

questions, as a transplanted New Orleansian, who once happily lived and practiced architecture in the quarter, and as one who holds strong beliefs about the necessity for both expressways and preservation of our heritage.

The first Battle of New Orleans has sometimes been called "the Needless Battle," since it occurred 15 days after the signing of the Treaty of Ghent that ended the War of 1812. Maybe so, but the record shows that an unlikely army of Kentucky, Mississippi, and Tennessee volunteer riflemen, a few Indians, a battalion of blacks, pirate Jean Lafitte's gunners from the swamps of Barataria, and ordinary citizens of New Orleans joined with the regular troops of General Andrew Jackson to win a spectacular victory over a vastly superior British force under General Sir Edward Pakenham. Many historians believe that rather than being needless the battle saved New Orleans, ensured the ratification of the treaty, and contributed mightily to the election of Jackson to the Presidency.

As in the first, the Second Battle of New Orleans was fought by an unlikely army, composed of preservationists, environmentalists, architects, writers, editors, lawyers, and ordinary citizens. They too faced a vastly superior force, composed of influential businessmen, city, state, and federal government officials, civic groups, and freeway proponents. Among the leaders of the antiexpressway army were the two lawyers who wrote this book. Among the leaders of the proexpressway army, at least in the beginning, was the most incorrigible freeway builder of them all, Robert Moses, who originally proposed the project in 1946.

The first Battle of New Orleans was fought and won in one day. The second was actually a war that lasted 23 years, from the time of the first proposal until the cancellation of the project, in 1969, by then U.S. Secretary of Transportation John Volpe. Another unlikely army had achieved another spectacular victory. The threat to the unique character and authenticity of the historic Quarter had been defeated. Its access to the mother river was still intact. Its people—residents, workers, employers, and visitors alike—would not be faced with vastly increased traffic and great increases in noise and air pollution. And many believe that the victory in New Orleans has deeply affected the whole concept of freeway building everywhere.

The authors of this book have written a very detailed and well documented history of the controversy. It not only chronicles what happened but identifies important deficiencies in local, regional, and national planning, and scores the wasteful use of energy in the long, bitter fight. The book also brilliantly delineates the spirit

*continued on page 93*



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### Books from page 90

and determination of people who knew they had a cause that was just and right and worth the winning, and were willing to fight the long battle against almost insurmountable odds.

The authors are convinced that future projects of this sort must not be left to so-called highway, government, and business experts, but must have the participation of a broad spectrum of citizens.

The book is well illustrated, with a chronology of the controversy, a bibliography, an afterword that assesses the future of transportation planning by Diane L. Donley, a U.S. Department of Justice lawyer, and footnotes galore. There is plenty of information and plenty of ammunition, if it be needed for another battle. There are also lessons for those advocates of "progress" at any cost to the environment and the heritage, as well as for those advocates of preservation at any cost.

Perhaps future battles of this sort need be fought, like this one, only to protect the heritage that is of true environmental, architectural, or historical excellence.  
WILLIAM DUDLEY HUNT JR., FAIA

**Parks, Politics and the People.** Conrad L. Wirth. (University of Oklahoma Press, \$19.95.)

For 12 years, Connie Wirth served as director of the National Park Service. It was the culmination of a career that began when he was born in a park (in Hartford) and was brought to its official end by his retirement in 1964. He was notable as the creator of Mission 66, which brought the rehabilitation of the park system, including architecturally significant visitors' centers and other buildings, as well as the enormous expansion of the parks and spectacular increases in their attendance.

Before those years, Wirth was a leading figure in the Civilian Conservation Corps and other programs of the New Deal years, the instigator of important contributions to the park system by John D. and Laurance Rockefeller and Paul Mellon, and—far from least—an important contributor to the planning, park, and touristic development of Washington, D.C.

Whatever this book may lack in continuity and literary polish is more than made up for by its rich insights into the experience of public life and its store of illuminating anecdote. Such architects as Tom Vint, who created the park master plan concept, Charles Peterson, originator of the Historic American Buildings Survey, and such architectural designers as Ab Good, who created the Presidential retreat known now as Camp David, are described in a way that provides a sympathetic appreciation of their creative role and sets it in the context of public power and official responsibility.

Wirth has written both an autobiography and an administrative history of great frankness. From the first, one gains an insight into the depth of his dedication to the national parks—a commitment that is shared with his predecessor directors and is institutionalized in the professional structure of the National Park Service. From the second comes a remarkably detailed account of the legislative process and "where the money comes from," as well as sharply etched appraisals of key congressional members and the top echelons of the Department of the Interior. In writing both aspects, Wirth has not curbed strong personal opinions—and they are views that apply more broadly to the entire federal executive establishment. FREDERICK GUTHEIM, HON. AIA

**Toward Eden.** Arthur Palmer. (Creative Resource Systems, Inc., distributed by Environmental Book Distributing Co., 200 13th Ave., Ronkonkoma, N.Y. 11779, \$29.95, plus \$2 for handling.)

In the foreword to this book, Rene Dubos says, "This story, which deals with land use controls for rural towns is the saga of collaborations, conflicts, misunderstandings, which are inevitable in such a shift from purely economic to essentially ecological criteria of zoning." It is the story of Medford, N.J., lying 25 miles east of Philadelphia. Before World War II, its extensive acreage contained marshes, hills, forests, and farms. Then came the post-war boom, and "slurbia" threatened when it was realized that the town's land use regulations would require it to approve subdivision applications that would be devastating to the quality of life so prized by the community.

Arthur Palmer, a lawyer and land use planner, tells the fascinating story of what happened. In 1971, some of the key figures in the community decided to fight back at urban sprawl, and they contracted with Ian McHarg, planner at the University of Pennsylvania, to develop a land use plan. McHarg made an interdisciplinary survey, which included geology, hydrology, ecology, the law, and other disciplines. Palmer describes all the ins and outs—the public hearings and all the other conflicts in the adoption of a new master plan and new concepts in zoning. He says, "There was a virtual explosion of conflicting interests when the commercial community, land developers and speculators, and then the general public, became aware of the implications of success or failure of the effort to change the basis of land use controls from subjective economic criteria to objective scientific criteria." Finally, a modified master plan was adopted in 1978 and the relating zoning law in 1979.

While the story of how Medford worked  
*continued on page 94*

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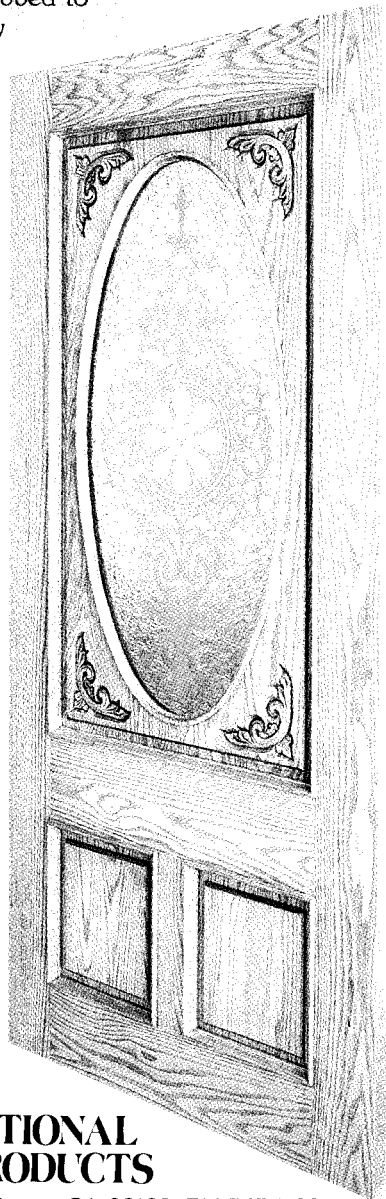
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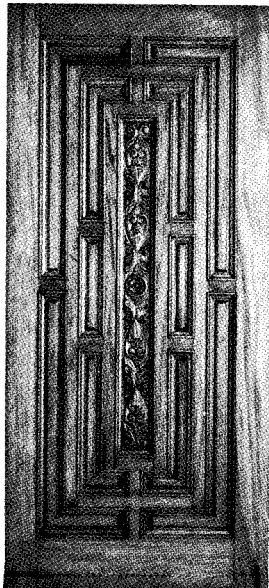
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### Books from page 93

to save itself is highly interesting, perhaps planners will be most concerned with the book's appendices. Included are the practical aspects of the story, such as the master plan map, excerpts from the master plan, the land development ordinance of 1979, McHarg's report to Medford.

Dubos observes in the foreword that seemingly desperate ecological situations can be reversed by "determined local people." He says that he writes "with such enthusiasm" about the Medford experience "because its local approach seems to me the most valid, as well as the most interesting, for the recovery of the humanized American land." This book is recommended for people who are concerned about that humanization of land and want to know how one small community has tried to initiate an ecologically sound plan for land use control.

**Natural Landscaping: Designing with Native Plant Communities.** John Dieckmann and Robert Schuster. (McGraw-Hill, \$24.95.)

If you want an alternative to a manicured garden or a formal public park, then this copiously illustrated book will intrigue you. The authors give detailed explanations of all the techniques required for the planting of native species in their own habitats and in close relationship with other plants, as is nature's way.

Not only are the results strikingly beautiful, whether in private or public landscapes, but there is the added bonus of reduction in cost of landscaping maintenance and the paying of proper respect for such limited resources as water. "Nature's way is not just in its few showy flowers," the authors contend. "More than that, it is a beauty of subtle colors, shapes and textures that belongs as much to the foliage of grasses and sedges, mosses and ferns, shrubs and trees as to flowers." They explain the botanical characteristics of plants, telling how to plant in "communities" according to mutual dependencies and interrelationships. Although the emphasis is upon nonaquatic plant communities native to Northeastern and Midwestern states and southern Canada, the book unfolds the subtle design possibilities in natural landscaping for any place in this country.

**Materials and Methods for Contemporary Construction.** Second edition. Caleb Hornbostel and William J. Hornung. (Prentice-Hall, \$24.95.)

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*continued on page 96*

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### Books from page 94

edition contains major revisions in 10 of the 32 chapters, as well as new chapters on plastics in construction and insulation and acoustical materials. Also, a special appendix concerns metrication. Each chapter gives an introduction to the subject under discussion, technical information, a review examination so that students may test themselves, assignments for additional practice, and supplementary information.

**Blazing a Trail.** Morris Ketchum Jr., FAIA. (Vantage Press, 516 W. 34th St., New York, N.Y. 10001, \$6.95.)

In this small book of 58 pages, Morris Ketchum Jr., FAIA, tells how he and Victor Gruen in 1934 decided to "blaze a

trail" in store planning. They abolished the building line of a storefront on Fifth Avenue in New York City, creating a recessed outdoor shopping lobby. This permitted store owners to have three times more display space than with a conventional storefront and also allowed shoppers a welcome retreat from pedestrian traffic. The design idea was soon adopted for stores everywhere. Ketchum also relates other innovations in store and shopping mall design.

He tells of many other trail-blazing episodes in his professional career. For example, he relates his trail blazing in the planning and design of zoos as zoological wildlife parks, such as his designs for the Bronx Zoo's World of Darkness building for nocturnal animals and the Lila Ache-

son Wallace World of Birds. He relates his trail blazing in embassy design, describing briefly the U.S. Embassy in Rabat, Morocco, a horizontal skyscraper that makes use of traditional materials and craftsmanship. He discusses his designs for educational buildings, among them his "inside-out" urban school in Brooklyn, where all the classrooms open on interior courts.

Ketchum also has a very brief chapter on his presidency of AIA, saying that when he succeeded Arthur Gould Odell Jr., FAIA, in 1965, he "hoped and believed that here was an opportunity to blaze a trail in the presidential advancement of our profession's basic objectives."

Ketchum concludes with what he calls "the climax of a lifetime spent in blazing a trail," when he received in 1979 New York City's highest civilian award, its "Certificate of Appreciation." He was cited for his "challenging ideas on urban beauty and preservation."

**Guide to U.S. Architecture: 1940-1980.** Esther McCoy and Barbara Goldstein. (Arts + Architecture Press, 1119 Colorado Boulevard, Santa Monica, Calif. 90401.)

The authors of this guidebook to contemporary architecture in this country do not claim that it is encyclopedic. They proclaim that they expect—and want—"outraged notices of omissions before the second edition." And well they may expect to get the notices, for there are only two projects cited for all of Georgia, one for South Carolina, one for Wyoming, one for Nevada, and so on. "Architecture is not distributed geographically," the authors say, and it's the major cities and the East and West Coasts that possess most of the architecture of quality. What the authors, both eminent writers, give us is a listing of what they consider to be "important" contemporary buildings across the country. The information, arranged geographically, is minimal, with only location, date, and name of architect provided, plus a small and unsatisfactory photograph of each entry.

**Design of Reinforced Concrete Structures.** Henry J. Cowan. (Prentice-Hall, \$23.95.)

Prolific writer Henry J. Cowan, who is associated with the University of Sydney in Australia, here addresses his attention to the principles of the structural design of reinforced concrete buildings. He does not go into "all the details of a very complex subject," he says, intending the text particularly for students who require a general knowledge, "without the mastery of all the intricacies of the concrete code." The code referred to is that of the American Concrete Institute published in 1977, which Cowan converts from traditional American units into SI units. □

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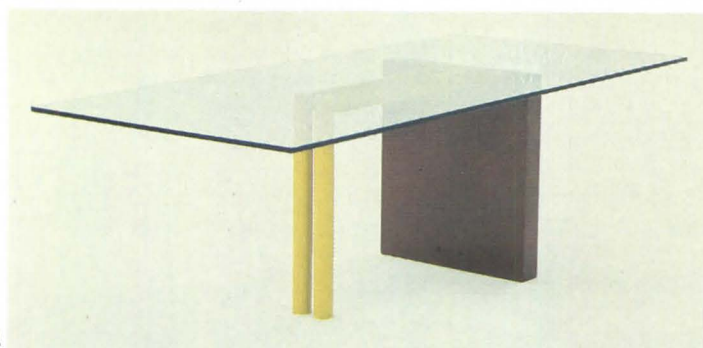


1

# *Furnishings*

*As resources for design and objects of design.*

*By Stanley Abercrombie, AIA*

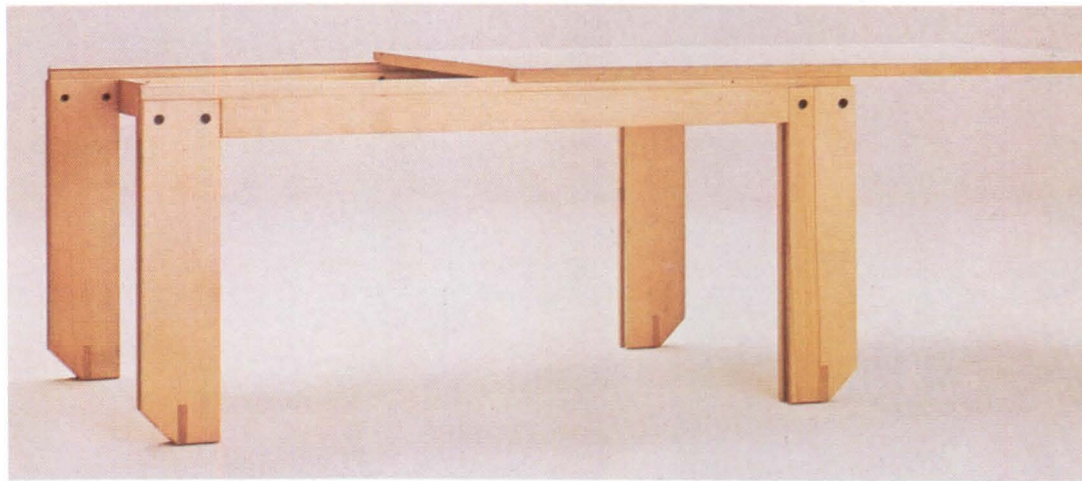
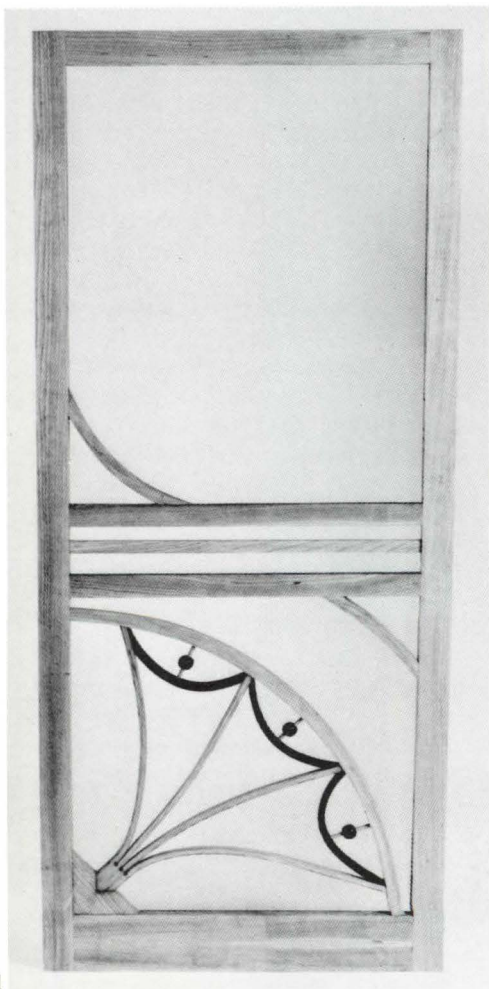
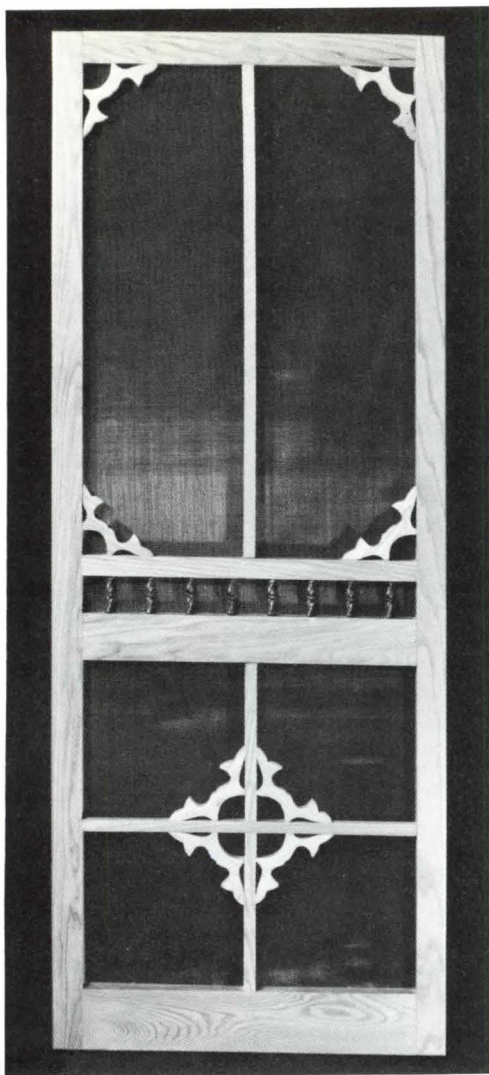


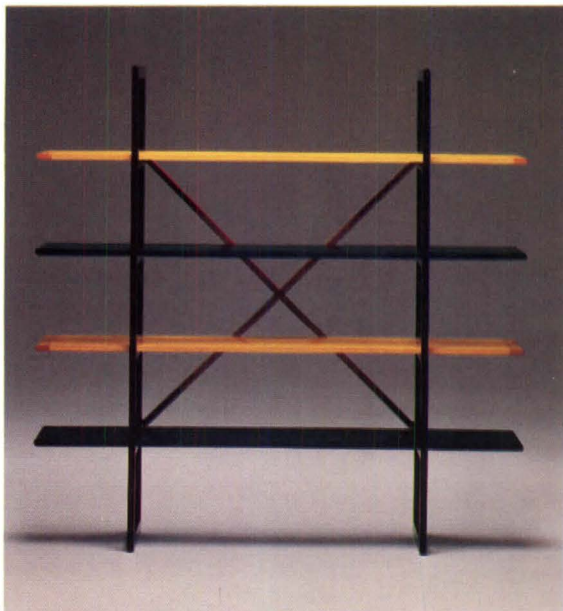
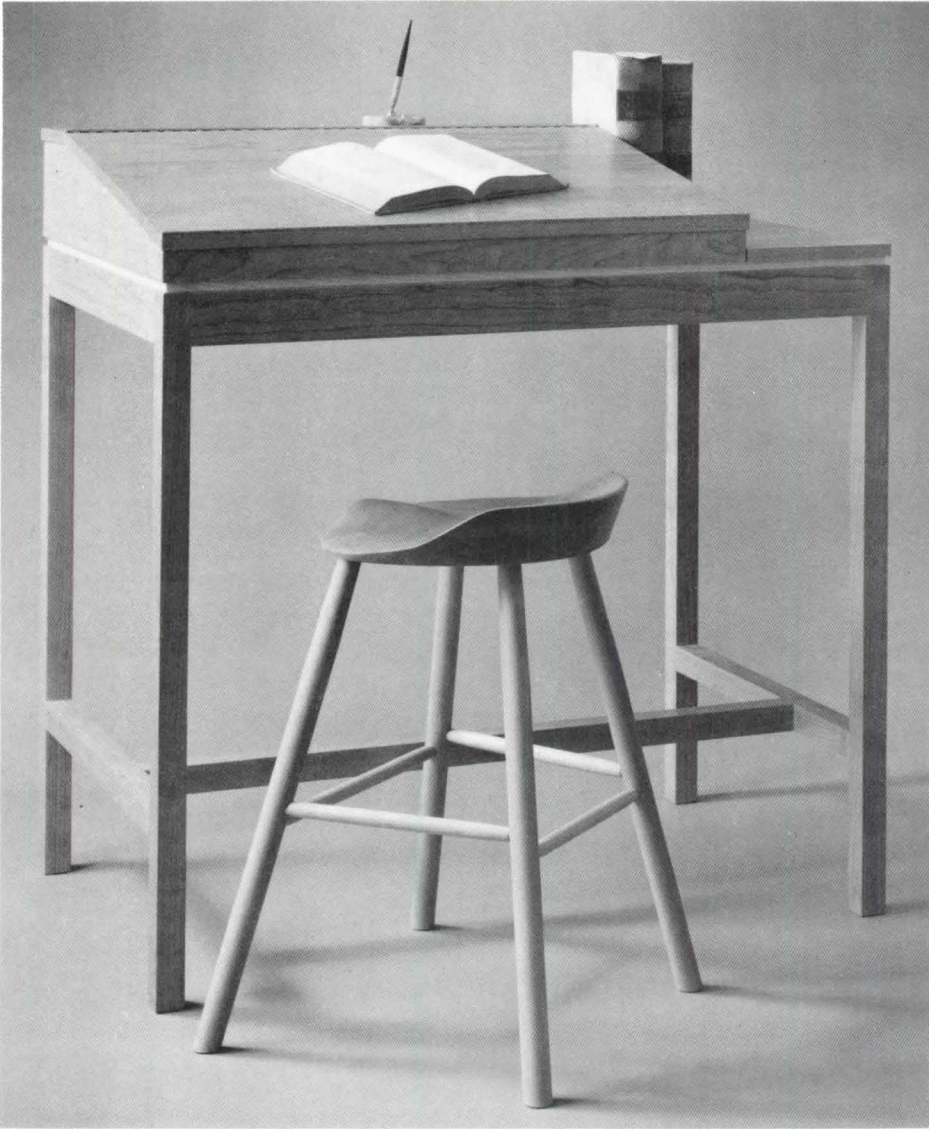
2

The Teli lamp (1) is a lighting fixture consisting mostly of a net of loosely woven heat-resistant polypropylene fabric that diffuses the light inside it and that is held taut by five chromed steel rods. It is designed by Archille and Pier Giacomo Castiglioni and is available here through Atelier International. There is a white ceiling plate and cord, and the fixture takes a single 100-watt frosted bulb. From Saporiti of Italy is the strikingly asymmetrical table named Irwin (2). It is available in several shapes and sizes, all with glass tops, and is the design of Franco Passarello.

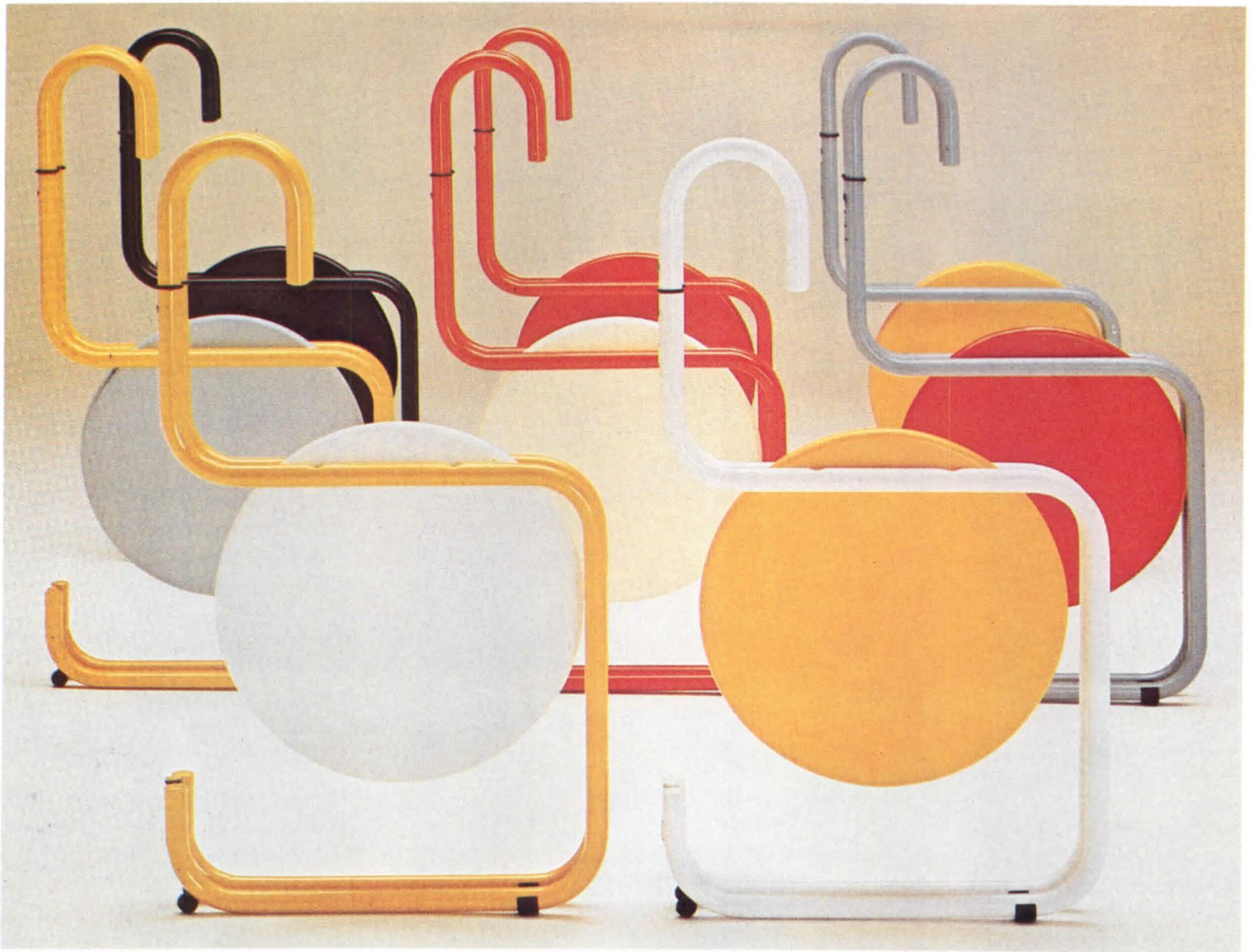
It may be stretching the definition of furnishings to include screened doors, we know, but we couldn't resist including these two examples (3 and 4) of original door designs by wood craftsman Tom Anderson. He has a catalog of representative designs, some of which include custom carving and bronze hardware, and he can be reached at Creative Openings, P.O. Box 2566, Bellingham, Wash. 98227. Another Northwest craftsman of interest is John Economaki, 2834 North 39th St., Portland, Ore. 97212, who designed and built this rocker (5).

The Inner table (6) has come all the way from Pallucco of Rome and has apparently arrived on tiptoe. Designed by Franco Cappuccilli and Michele Spera, it has a top that divides and slides on metal runners to reveal a shallow storage space and to accommodate the insertion of an additional leaf. It is available in natural beech with a white plastic laminate top or in black anilined ash. The legs are demountable.







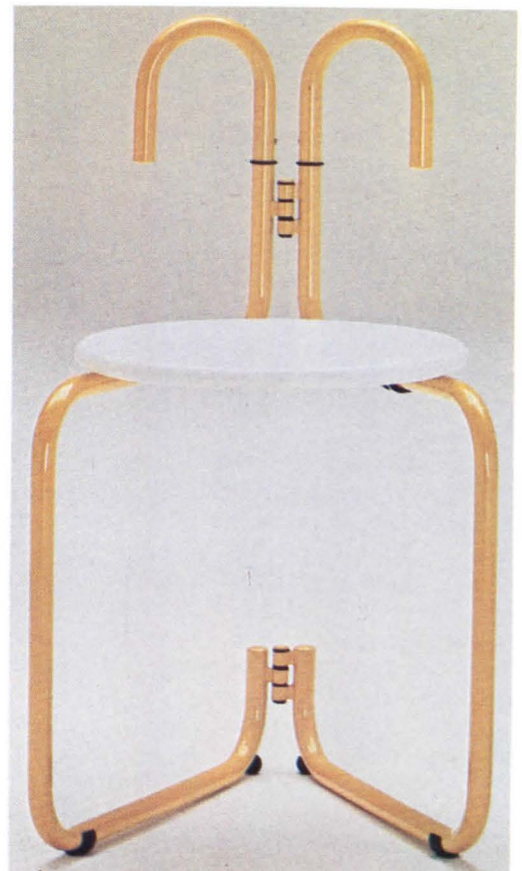


5

Among the Northeast's fine wood craftsmen is Thomas Moser, who provides items for both residential and contract markets from Thos. Moser Cabinet Makers, P.O. Box 128, New Gloucester, Maine 04260. This standing desk by Moser (1) is made in cherry, ash, or walnut, the studio stool in walnut or cherry with ash legs. Other items in the line include chests, conference tables, pedestals, chairs, beds, and case pieces.

In contrast, the 109 Bacchus high stool (2) from Stendig, in leather and chrome, clearly has a Bauhaus parentage. The spare serving cart (3) and bookshelf unit (4) are both from a collection for Magis of Treviso, Italy; the U.S. distributor is Design Selections International, 150 East 58th St., New York, N.Y. 10022.

Another product of Pallucco, this one designed by Luca Leonori, is the Binda folding chair (5), available in the color combinations shown. Its bent tubular frame has hinges welded on and is painted with polyurethane powders. The medium density fiberboard seat is lacquered with polyurethane and joined to the frame by a nylon pivot.



## Citations Given to 17 Members As Part of 125th Celebration

This fall AIA will present presidential citations to 17 members as part of its 125th anniversary celebration. This year's citations were created by AIA President Robert M. Lawrence, FAIA, to honor the "integral role" that members have played in the Institute's achievements. The late San Antonio, Tex., architect O'Neil Ford, FAIA, who was nominated for the citation before his death in July, will be honored posthumously (see Sept., page 11). Others that will receive citations are:

- Romeo Aybar, AIA, of Ridgefield, N.J., who was recently appointed by the Interior Department as a consultant to the planning commission of Ellis Island and the Statue of Liberty development and restoration master plan.
- Paul D. Bowers Jr., FAIA, founder and president of the Grand Rapids firm of WBDC Inc. While president of the Michigan Society of Architects/AIA in 1976-77 he developed a government affairs program and lobbied for a process of selecting professionals based on qualifications.
- James W. Christopher, FAIA, principal in charge of design for the Salt Lake City firm of Brixen & Christopher Architects, and recipient of 32 design awards during 19 years of practice.
- Ward Wyatt Deems, FAIA, a practicing architect in California since 1955, president of Deems/Lewis & Partners, San Diego, and winner of more than 24 design awards.
- Woodward Garber, AIA, a veteran Cincinnati architect who practiced in New York City with John Russell Pope, then returned to Cincinnati to join his father's firm. Garber is now semiretired from his practice.
- Charles P. Graves, AIA, of Lexington, Ky., who served as professor and dean of the University of Kentucky College of Architecture for 12 years. His firm has won four design awards from the Kentucky Society of Architects/AIA.
- Hugh McK. Jones Jr., FAIA, of Guilford, Conn., who was elected to the Connecticut Legislature in 1963-67 and worked to improve registration laws, public works contracts, and the natural environment.
- Arthur M. Keyes Jr., FAIA, who has "devoted extensive energy" to improving the architect's role in the building industry in the Washington, D.C., metropolitan area. In 1964 he was elected president of the Washington Building Congress.
- Paul Hayden Kirk, FAIA, who has practiced in Seattle since 1937. His firm has received more than 70 local, regional, and national awards.
- Clarence Kivett, FAIA, of Kansas City,

Kan., who heads a firm that has received over 200 design awards in the past 35 years—more than any other Kansas City practice.

- Laszlo Papp, FAIA, of White Plains, N.Y., who has influenced state legislation regarding historic preservation, energy tax credits, and standards of professional conduct.
- Richard W. E. Perrin, FAIA, a former member of the Milwaukee housing authority, who guided major slum clearance and housing relocation projects.
- Bernard Rothschild, FAIA, who practiced with Albert Kahn, Inc., Detroit. In 1946 he moved to Atlanta and later formed the firm of Finch Alexander Barnes Rothschild & Paschal Architects Inc., where he practiced until 1981.
- Martin David Suer, FAIA, who has been called "Mr. AIA of the Philadelphia Chapter." His chapter service has included committee member, director, officer, and president in 1968.
- John Austin Welch, AIA, dean emeritus of applied sciences at Tuskegee Institute. Welch has alternately practiced in Washington, D.C., and been active in education at both Tuskegee and Howard University, his alma mater.
- Philip Will Jr., FAIA, cofounder and chairman of the board of the Chicago firm of Perkins & Will, and a former national president of AIA in 1960-62.

## New Buildings' Value, Incomes Of Architects Decline in Parallel

As reported here in June (page 22) the real income for architects declined during the '70s, according to AIA's survey of firms. Now, an analysis by AIA of industry trends shows that the value of newly constructed public and private buildings, accounting for some 60 percent of U.S. architects' income, also dropped significantly in the 11 years between 1970 and '81.

Specifically, the real value (in '77 dollars) of all private, nonresidential buildings, except office buildings, declined by 22.9 percent, and investment in buildings in this category fell by 17.1 percent, in constant 1972 dollars. Meanwhile, the adjusted value of public building construction dropped by 33.5 percent.

The declines are more pervasive than was previously understood. Construction indicator downtrends were monitored by AIA during the '70s, but the trends were considered temporary.

There were wide variations in declines over the 11 years, according to the AIA analysis. For instance, in private construction, industrial buildings dropped in real value only 1 percent, while the value of private school buildings fell by a significant 47.6 percent. Investment in educational buildings declined by 46.4 percent,

while the construction value of public schools fell by 51.8 percent. Increases were shown in only two public sector categories: 46.8 percent boost for public industrial buildings and 9.2 percent for building conservation.

The analysis points to two correlative phenomena affecting the impact of construction downtrends on the profession. For one, the majority of fees earned by architects are for building types that have showed the greatest declines, based on the 1977 census of engineering, architectural, and surveying services, the most current industrywide data available. More recent, but incomplete, AIA data tend to support this distribution of work. Second, there was a marked increase in the number of architects. Estimates of the current number of registered architects exceed a Bureau of Labor Statistics projection made four years ago for the year 1985. That projection was for 61,000 architects, or five for every three available jobs.

## Wolverton Resigns as Treasurer; Michael Crosbie Joins Journal

In recent AIA staff changes William G. Wolverton, Hon. AIA, resigned from the post of assistant treasurer/controller and Michael J. Crosbie has joined the AIA JOURNAL as an associate editor.

Wolverton had been the Institute's controller for 26 years. Prior to that he was a public accountant. A former U.S. Marine, he earned a B.A. from Strayer College.

Crosbie recently earned a Ph.D. from the school of architecture, Catholic University, where he also earned a B.S. and Masters. His dissertation was on owner homebuilding and improvement in the U.S. While at Catholic he was a graduate assistant for first-year design studio and a contributor to *CRIT*, published by the Association of Student Chapters/AIA.

## DEATHS

**Donald F. Burr, FAIA:** Founder in 1953 of The Burr Associates, Tacoma, Wash., Mr. Burr specialized in the design of educational facilities and is probably best known nationally for his development of Project Simu-School, which provides new planning tools, many of which are based upon simulation techniques used by the military and private industry. Components of Simu-School are located in Chicago, Santa Clara County, Calif., and Dallas.

The designer of more than 60 educational facilities, Mr. Burr received numerous awards for design excellence. In the late '70s his attention turned to energy-conscious design. At the time of his death on July 14, Mr. Burr, 59, was

chairman of AIA's energy committee. He was chairman of the AIA task force on energy professional development in 1980 and of the AIA committee on architecture for education in 1972, and president of the Council of Educational Facility Planners in 1977.

**Roger Sturtevant:** The recipient of AIA's first medal in architectural photography in 1960, Mr. Sturtevant gained international recognition for his photography of buildings by Bay Area and other Western architects. Born in Alameda, Calif., his first significant architectural photography was in 1927 of William Wilson Wurster's Gregory farm structures. During his career he photographed hundreds of buildings, many by young architects who were not yet well known but later became leading practitioners of the "Bay Area style."

Of his work, Elisabeth Kendall Thompson, FAIA, former Western editor of *Architectural Record*, said, it was in "his intuitive insight of the motives and intentions of the architects' work and in his ability to translate this three-dimensional work to a two-dimensional print without losing any of the meaning of design that he told the story of the fresh and unselfconscious approach to design that drew visitors from all over the world to the Bay Area to see the work of this group

of architects." Mr. Sturtevant died on July 3 at the age of 79.

Thompson, along with Professor Richard Peters, University of California at Berkeley, and Charley Jensen, who heads the Oakland Museum Association's Council on Architecture, have organized a "Friends of Sturtevant Archive," and are seeking funding to support efforts to catalog the museum's vast collection of Mr. Sturtevant's photographs. Contributions can be sent in care of the Council on Architecture, Oakland Museum Association, 1000 Oak St., Oakland, Calif. 94607.

**Linn Smith, FAIA:** Recently retired as vice president of the Troy, Mich., firm of Ellis/Naeyaert/Genheimer Associates, Inc., Mr. Smith served as president of the Michigan Society of Architects, as an AIA director, and president of the National Architectural Accrediting Board. Among his awards were the gold medals of the Michigan Society of Architects and the Detroit Chapter/AIA. He died on Aug. 27 at the age of 64.

**Michael M. Harris, FAIA:** The principal designer of the Time-Life, Exxon, McGraw-Hill, and Celanese buildings in New York City, Mr. Harris had been associated since 1942 with architectural firms headed by Wallace Harrison, FAIA, and Max

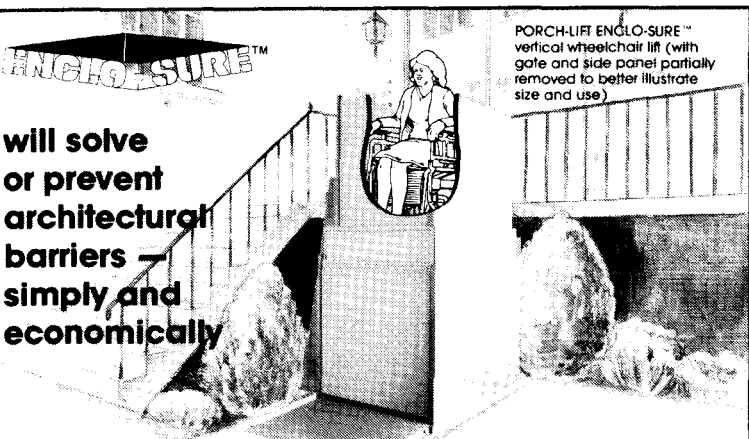
Abramovitz, FAIA. He also served as assistant director of planning for the United Nations headquarters building and partner-in-charge for the U.N. Library on 42nd Street. He was an adjunct professor at the Columbia school of architecture and director of education for the Beaux-Arts Institute of Design. He died on Aug. 20 at the age of 74.

**John Noble Richards, FAIA:** President of AIA in 1958 and 1959, he was the first to be elected two years consecutively. Mr. Richards twice received gold medal awards from the Architects Society of Ohio, was an honorary fellow in the Royal Architectural Institute of Canada, and in 1980 was elected as an associate of the National Academy of Design.

Born in Warren, Ohio, he began working in 1922 as a draftsman for Mills, Rhines, Bellman & Nordhoff. Two years later Mr. Richards enrolled in the school of architecture at the University of Pennsylvania. After receiving a bachelor's degree and working for a number of Philadelphia firms, he returned to Toledo in 1933 to work for the Mills firm. Mr. Richards became a partner in 1940, senior partner in 1954, and in 1962 the firm was changed to Richards, Bauer & Moorhead. He died Aug. 26 at the age of 78.

*Products on page 104*

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# Courtyard Housing in Los Angeles

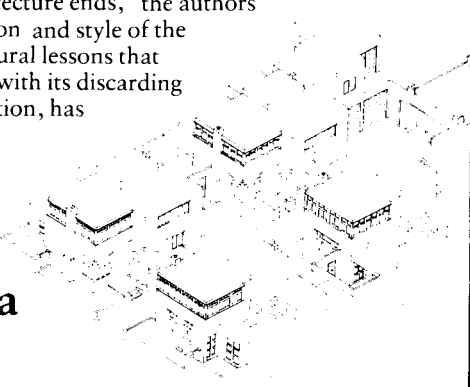
by Stefanos Polyzoides,  
Roger Sherwood, and James Tice  
Photography by Julius Shulman

The courtyard homes of Los Angeles range from the humble to the opulent, and satisfy both the physical need for housing and a more spiritual need for privacy. The authors' fascinating text and Shulman's marvelous photographs record this integral part of the city's building history in 356 photographs and drawings of California fantasies transformed into tangible realities. Arguing that "when people lose their emotional connection to the buildings they occupy, all architecture ends," the authors find in the organization and style of the courtyards architectural lessons that Modern Architecture, with its discarding of precedent and tradition, has overlooked.

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### **'Post-Utopian Thinking' from page 49**

in the movement of ideas. Transportation has been called an inefficient form of communication. Making communication more efficient may have more significance for urban design than all of the rivers, railroads, and highways of the past. If the mind can do the walking, need the body as well?

The movement of ideas is already facilitated by sophisticated technology. We think nothing of watching international tennis or assassinations live and get annoyed if the instantaneous reception isn't perfect. In the near future, we will have computers that not only extend the power of the human mind, but will have learned to think and reason like the best of us as we learn to program not only information but patterns of thinking and problem-solving as well.

Planners already are seeing houses of the future as alternatives to cities of the future. The giant home screen, with holography for real effect, complemented by the home computer that talks with emotion as well as reason, is offered as the hometown center. After decades of spreading across the land for work, play, and living, and of building roads to reach far by car, tomorrow's technology may signal retreat, to home and to hearth (and to family?). The human consequences are perhaps less clear than the technical promise, but the image inspires and awes. In the past, movement tended to service, while home provided respite; the reversal reorders and escapes comprehension.

Movement is in fact a steady state, a way of knowing we live. The contemporary dualism of space ships and the romantic revitalization of the Orient Express has not been resolved. But concepts and aspirations for movement, its accessibility and its mode, fashion images of self and place. We are moving quickly and exhilarate in the passage; only the destinations seem unclear. □

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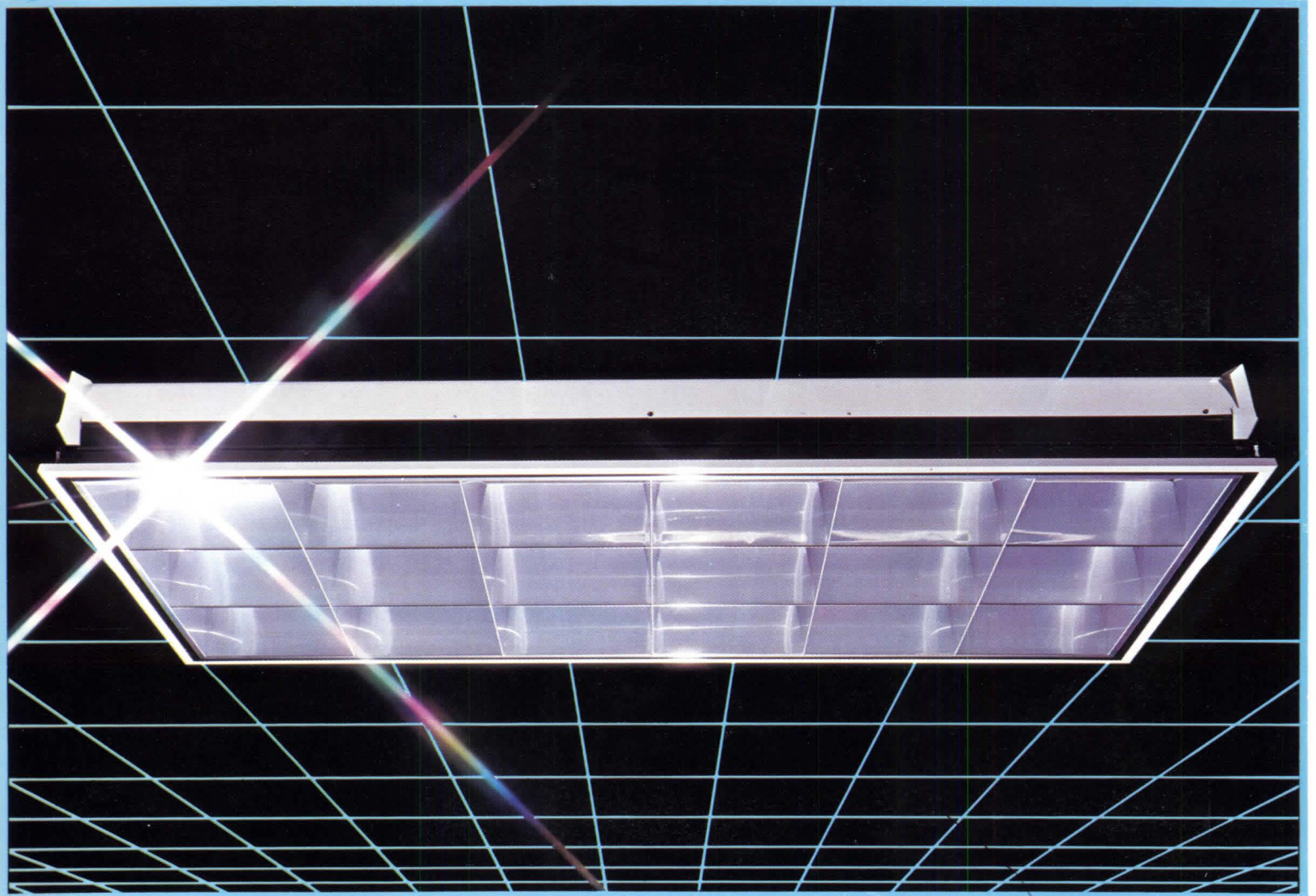
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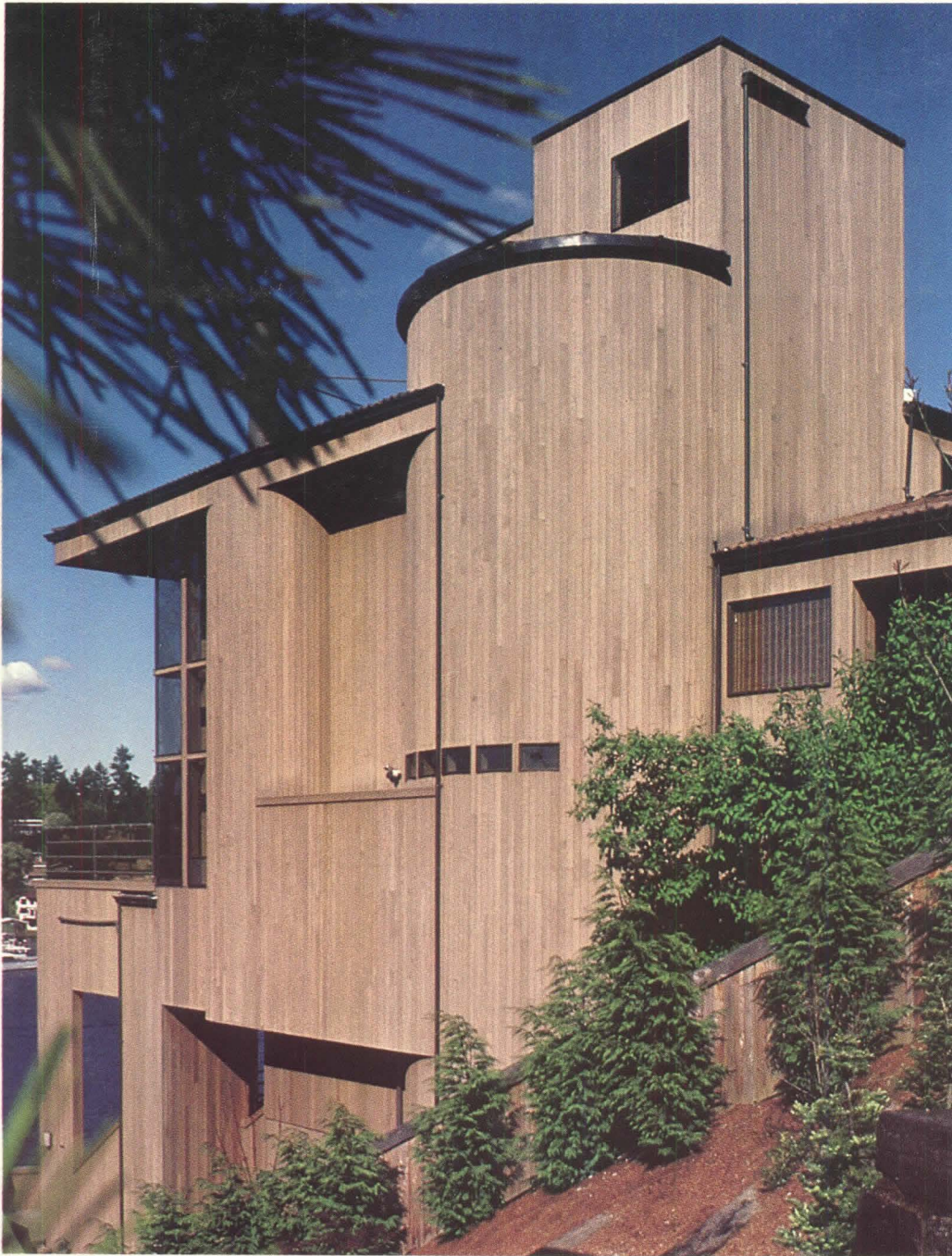
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