ARCHITECTURAL RECORD

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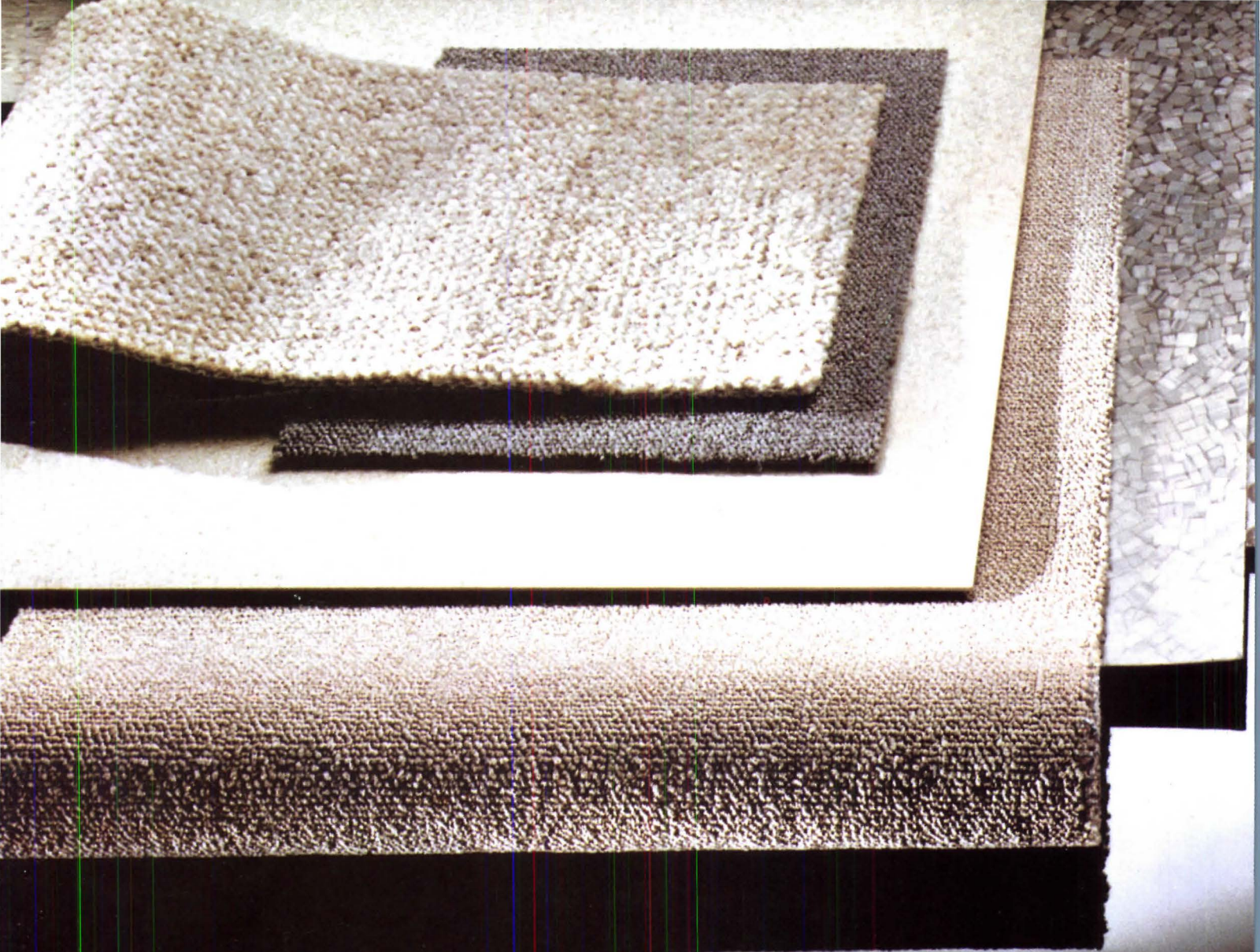
August 1986



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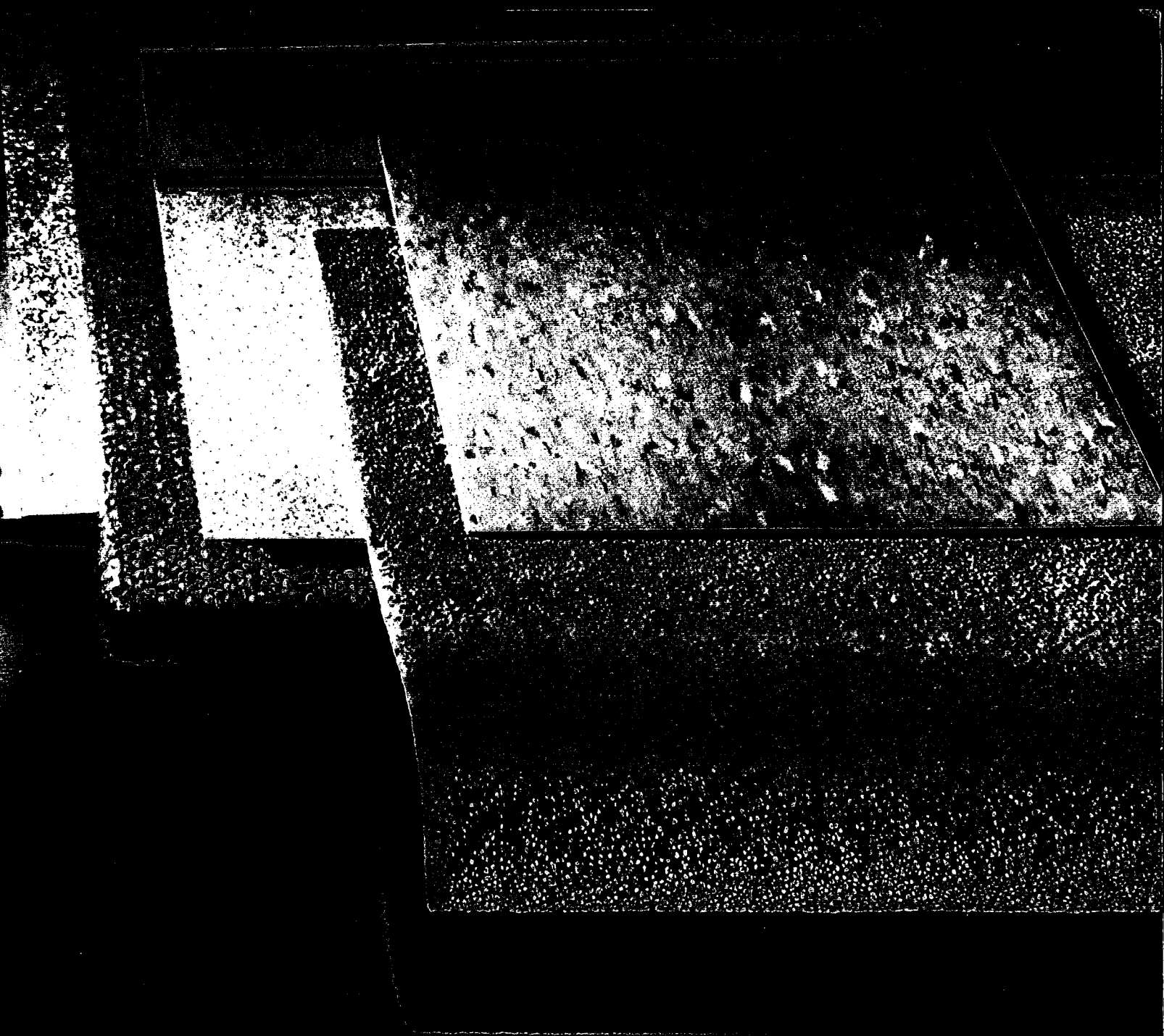

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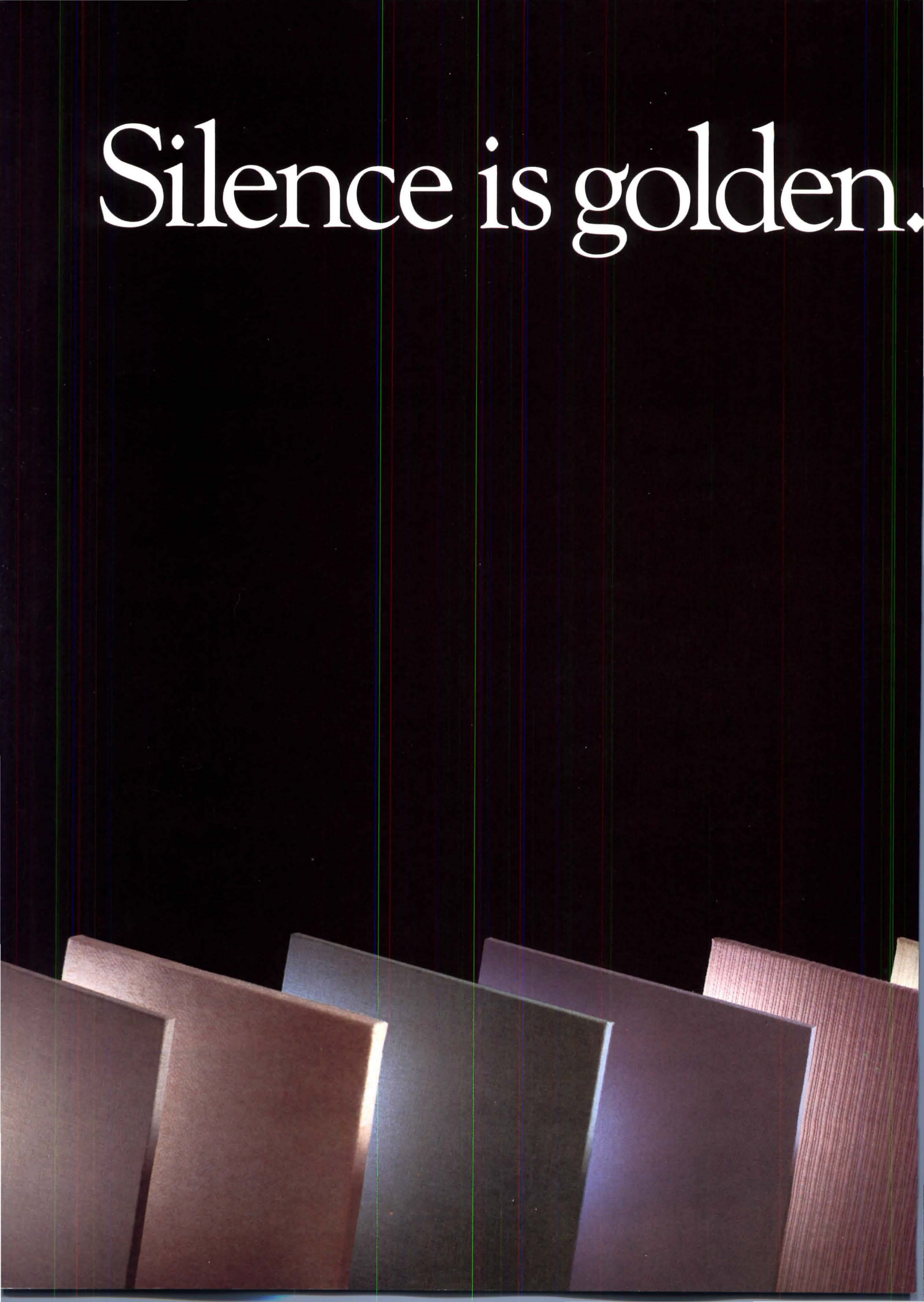

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Persimmon
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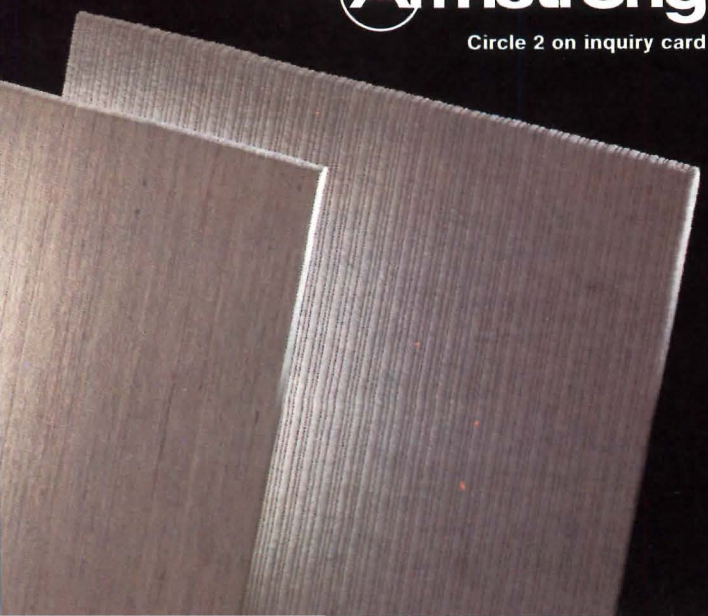

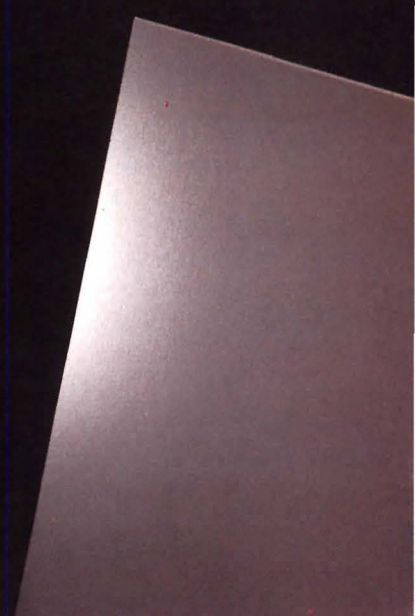

Letters

In reference to RECORD's article "Pride misplaced: Stern lessons in American architecture," by Roger Kimball [RECORD, May 1986, page 77]:

I, for one, would like to thank the Mobil Corporation and Robert Stern for their efforts in presenting some outstanding architecture to the American people through the public broadcasting system. Regardless of Stern's voice and possibly some weak segments, the program was over-all generally very interesting and informative.

Incidentally, who is Roger Kimball?

Charles E. Bullock, AIA
Architecture and Engineering Design Group, Inc.
Beaumont, Texas

Kimball is an architectural critic who writes frequently for ARCHITECTURAL RECORD *and other magazines. See also his book review on page 73 of the same issue.*—Editor

The Jerde Partnership's Horton Plaza, reviewed in the March 1986 ARCHITECTURAL RECORD [pages 128-135], has certainly created a significant urban force field through architecture-as-stage-set. It should be applauded not only for its commercial and urban redevelopment successes but for its reminder that architecture should express a rhythmic reality to be experienced through movement, not simply observed. In this way, perhaps what's most pleasing is its lyrical use of a Postmodern vocabulary, in contrast with the nearly funereal and heavily self-conscious applications that seem so prevalant today. It proves that serious architecture can also be fun.

Wesley R. Wilson, Architect
Juneau, Alaska

I'm not usually in the business of writing fan letters, but your Ellis Island piece [Editorial, RECORD, May 1986, page 15] was a knock-out. There have been so few people willing to come out and say what you said and then say it so eloquently.

Roberta Brandes Gratz
New York City

Your article on the A. R. E. [RECORD, February 1986, page 59], while offering a 10-question mini-test, regrettably misses the point. It is something like describing Chartres Cathedral as a pile of stone. Of course that is true, but it barely expresses what the essence of that structure is all about.

Candidates for the Pre-Design test do not answer 10 questions in 15 minutes. They answer 170 questions in three hours. And they do this as part of four continuous days of testing, during which they must answer a total of 875 questions, solve graphic site problems, and, in the final 12 hours, design a complex, multistory building and present it on four completely delineated sheets.

This is hardly a fun quiz; it is a critical and painful prerequisite to achieving formal acceptance in one's chosen profession.

Among the several hundred comments we receive each year from registration candidates, a great many describe the exam experience as agonizing, unfair, and unnecessarily exhausting. Why, they wonder, isn't the exam shorter? Why isn't it structured more equitably? Why isn't it offered more than once each year?

In short, why doesn't anybody listen to the thousands of young candidates who simply want a fair chance to prove their competence? Perhaps that question should be addressed in a future article.

Lester Wertheimer, AIA
Director
Architectural License Seminars
Los Angeles

RECORD intended February's mini-quiz as intellectual entertainment for practitioners, not as a professional examination. Perhaps, however, this month's mini-quiz on structures (page 53) will offer a bit more challenge.—Editor

Corrections

The advisory panel assisting the jurors of the International Association of Lighting Designers awards program (RECORD, May 1986, pages 68-69) should have included Jean Lugrin of Lugrin Design.

The stone restoration contractor for New York City's Bethesda Terrace (RECORD, May 1986, pages 130-137) is known both as Palau-Collins, Inc., and Pietra Dura, Inc.

The type of ceiling used in the University of Michigan Hospital (RECORD, June 1986, pages 120-121) was described in Manufacturer Sources (page 230) as "Planar ceiling (throughout); Donn Corp. (Paraline)." *Planar* is Alcan's registered trademark for ceilings; Donn Corp's trademark for ceilings is *Paraline*.

The artwork accompanying Richard Wiegand's article "Don't lapse into lingo" (RECORD, July 1986, page 47) was done by Frank Dwyer.

Calendar

MBA VBPA ABP

August 18-22
ACM SIGGRAPH 86, 13th Annual Conference on Computer Graphics and Interactive Techniques, sponsored by the Association for Computer Machinery's Special Interest Group on Computer Graphics; at Dallas Convention Center, Dallas. For information: Smith, Bucklin & Associates, Inc., 111 E. Wacker Dr., Chicago, Ill. 60601 (312/644-6610).

September 3-6
Annual meeting, Society for Marketing Professional Services; at the Fairmont Hotel, San Francisco. For information: SMPS, 801 N. Fairfax St., Alexandria, Va. 22314 (703/549-6117)

September 4-6
"Main Street: National Town Meeting," a conference on downtown revitalization co-sponsored by the National Main Street Center of the National Trust for Historic Preservation and the North Carolina Arts Council; in Winston-Salem, N. C. For information: The National Main Street Center, 1785 Massachusetts Ave., N. W., Washington, D. C. 20036 (202/673-4219).

September 9-11
IBC '86 Intelligent Building Conference, sponsored by Multi-Tenant Telecommunications Association and *Business Communications Review* magazine; at the Hyatt Regency, Atlanta. For information: MTTA, 2000 L St., N. W., Suite 200, Washington, D. C. 20036 (202/822-9351).

September 11-14
Second annual Inter-American Forum for Architecture, "Housing and the City," sponsored by the New Orleans Chapter, American Institute of Architects, and Tulane University; in New Orleans. For information: New Orleans Chapter, AIA, 330 Exchange Alley, New Orleans, La. 70130 (504/525-8320) or Norberto Nardi (504/525-5389).

September 21-26
CIB.86, the 10th triennial congress of the International Council for Building Research (CIB); in Washington, D. C.. For information: Noel J. Raufaste, Director CIB.86, Center for Building Technology, National Bureau of Standards, Gaithersburg, Md. 20890 (301/921-3106).

September 26-27
"Shaping for the Dynamic Church," a workshop for architects sponsored by the Church Architecture Department of the Baptist Sunday School Board; at Williamsburg, Va. For information: Church Architecture Department, Baptist Sunday School Board, 127 Ninth Ave. N., Nashville, Tenn. 37234 (615/251-2466).

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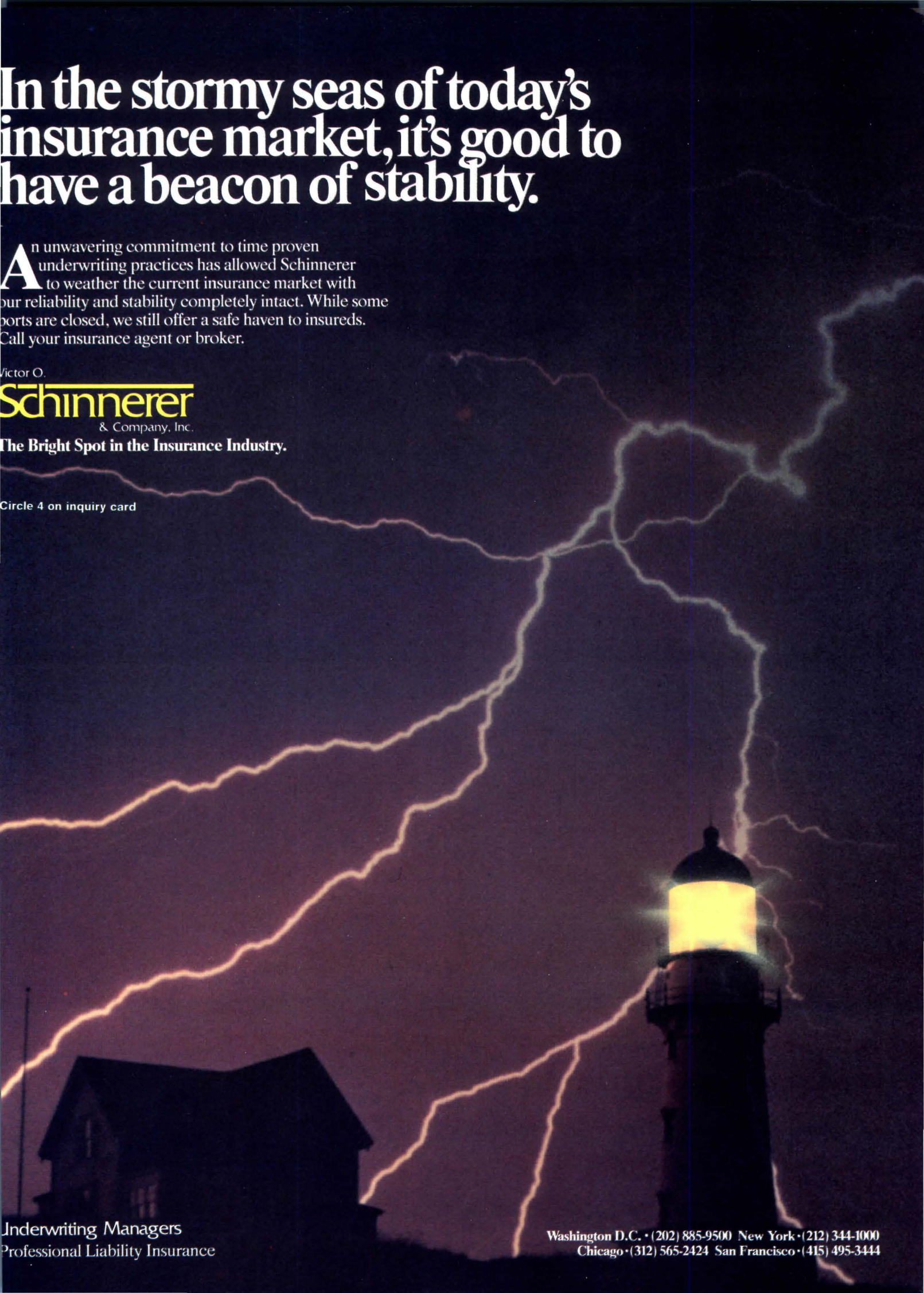
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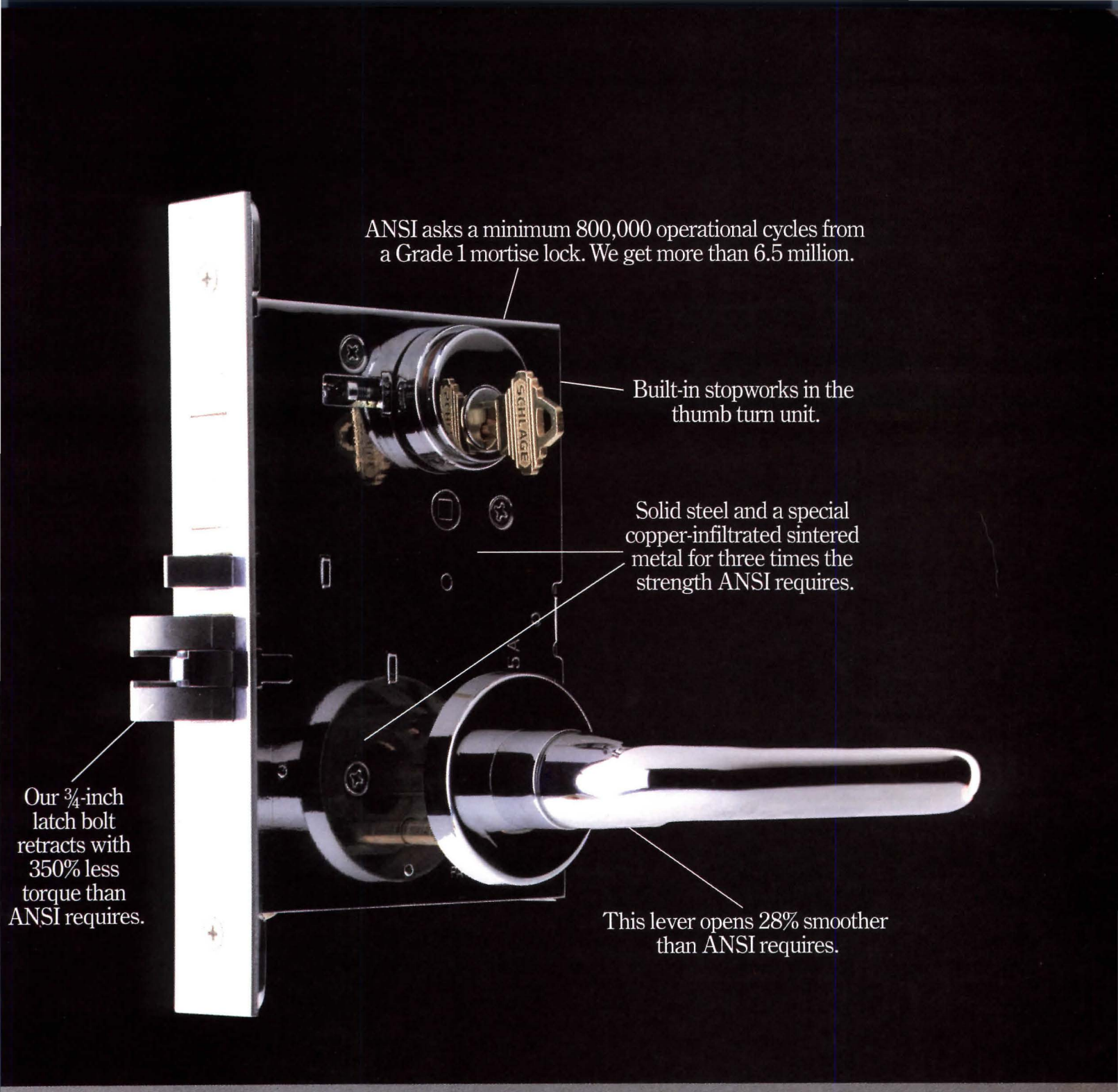
What they never taught you about grades in school



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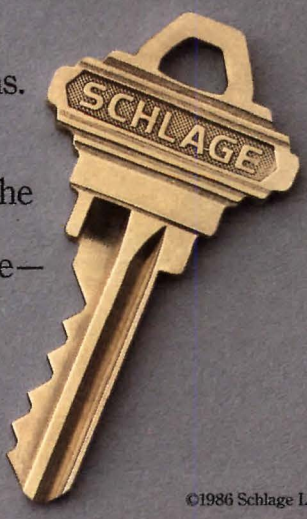

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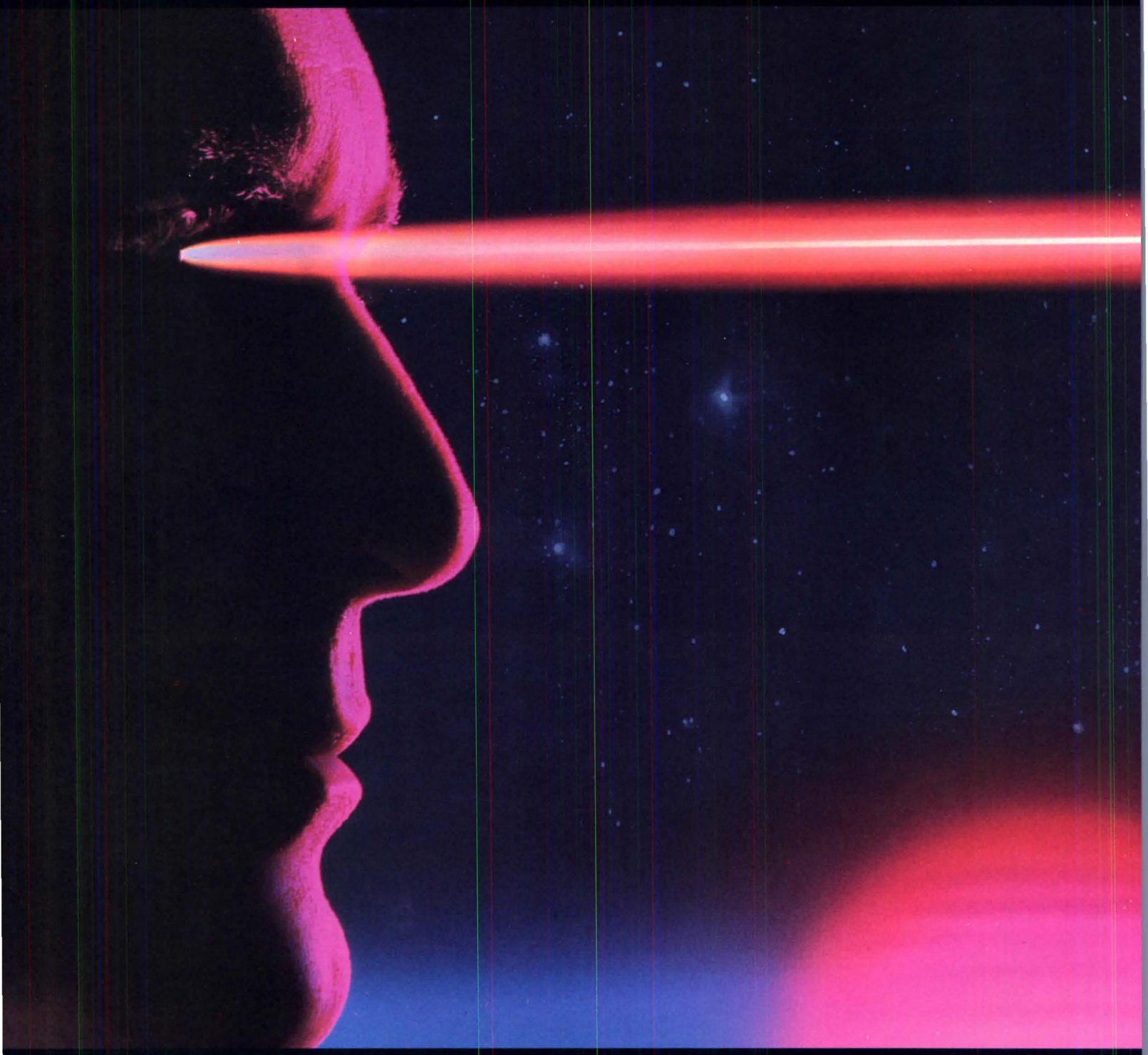

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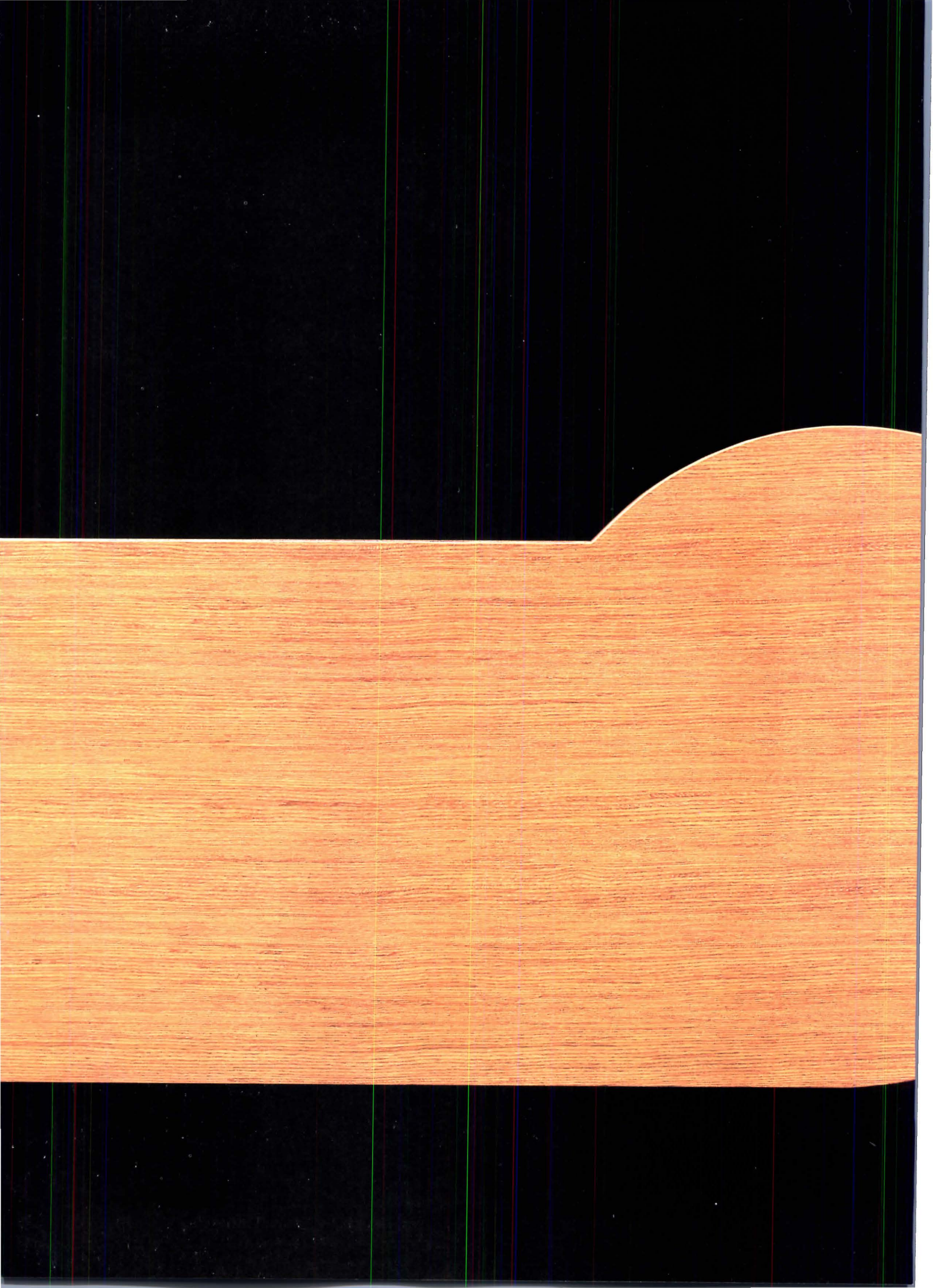

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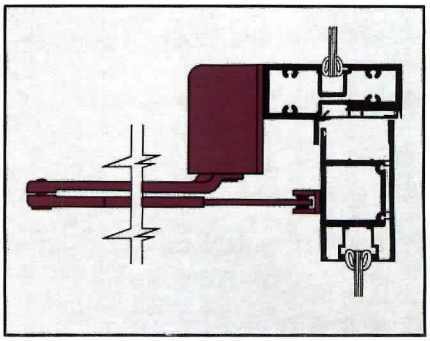

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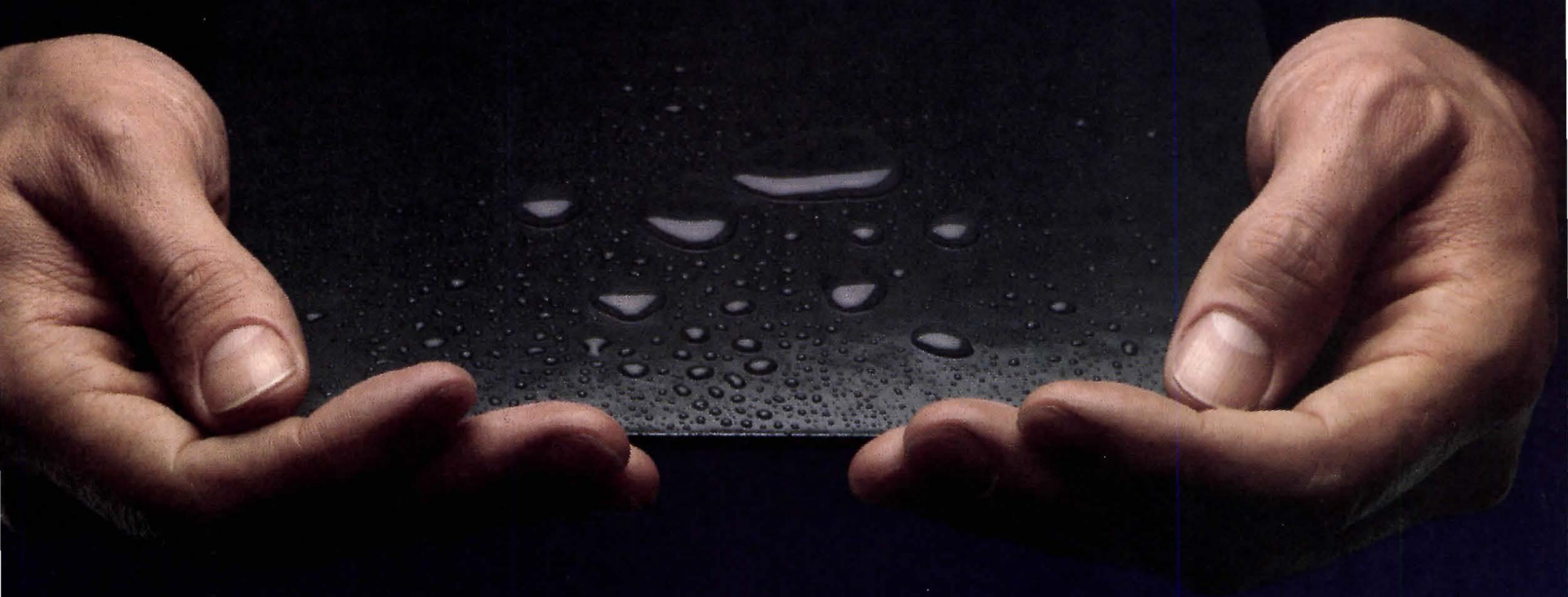

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A major shaper of the building was the site, wedged between a busy thoroughfare and the marsh below, and dotted with mature oaks. HGA designed the building around an existing house which was later razed to make room for the volleyball court. The site also had to accommodate an outdoor running track and a children's play area.

The indoor running track, which lends such character to the exterior, was actually added late in the program. A ribbon of Pella Awning Windows at eye level gives the relatively narrow track the feel of an outdoor space, especially with the windows open. As for maintenance, Pella Awning and Casement Windows at the Marsh are easily washed from indoors.

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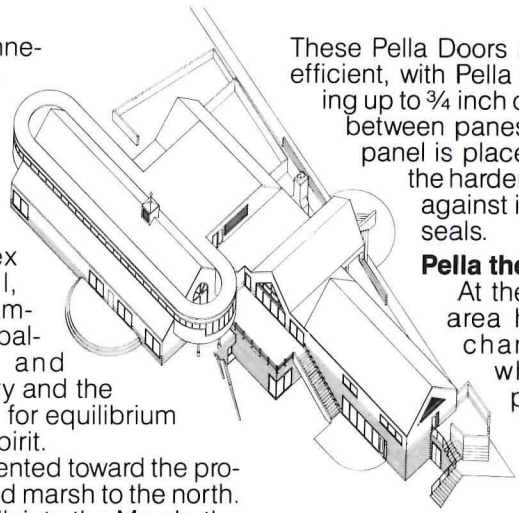

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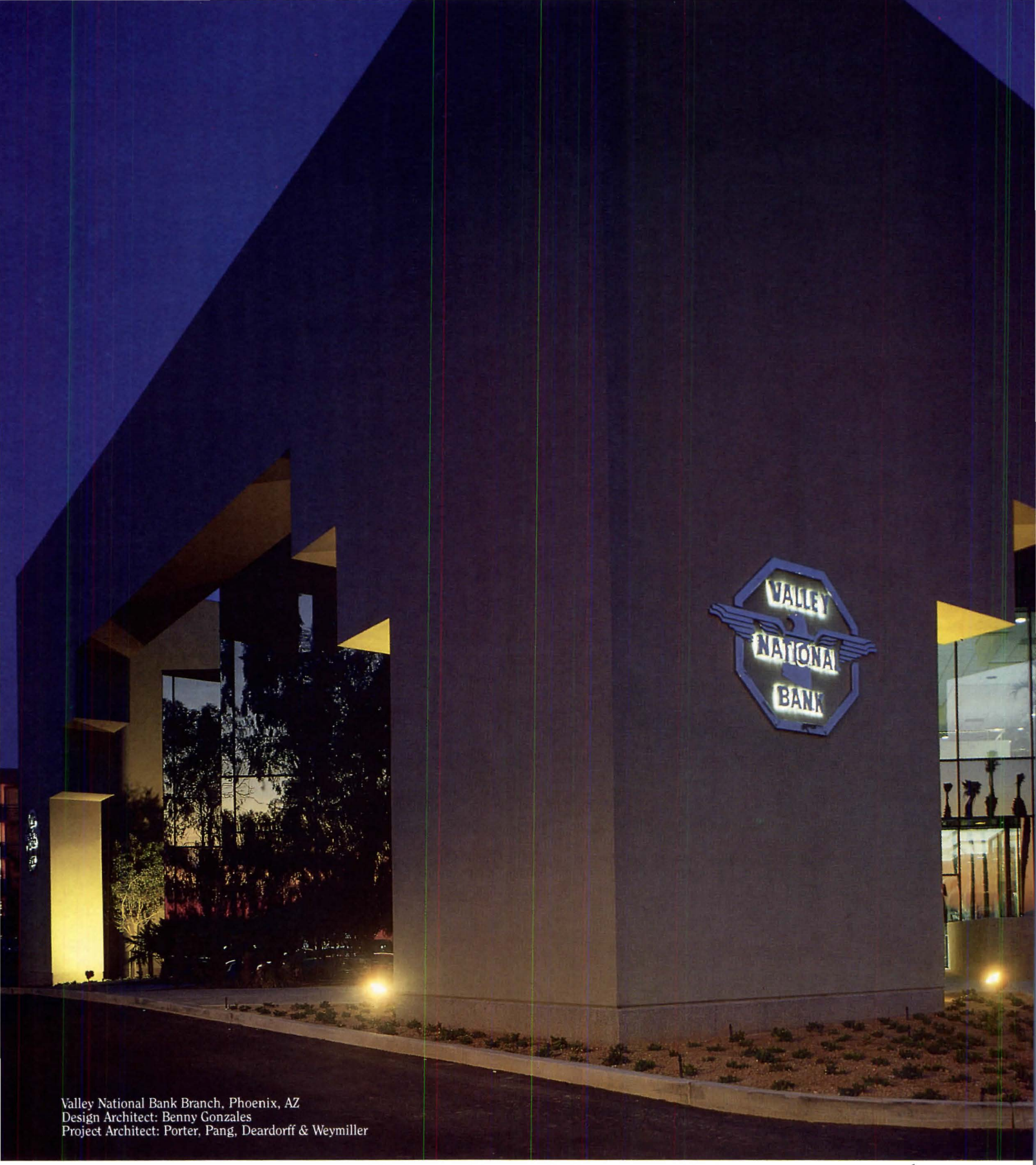

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Project Architect: Porter, Pang, Deardorff & Weymiller

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The Lund Center of Gustavus Adolphus College

To build a sports complex as large and expansive as the Lund Center at Gustavus Adolphus College in St. Peter, Minnesota required a structural system that could go the distance. Vulcraft super long span joists were clearly the front runner.

As a result of careful analysis, Vulcraft super long span joists were selected over the other two alternatives: conventional trusses and rigid frame construction. The open configuration of Vulcraft super long spans provided a number of advantages. While long enough to span a basketball court, indoor tennis courts, and a running track as well as spectator seating, Vulcraft super long spans provided a strong, lightweight, and easy to install system. The open configuration of the Vulcraft joists also permitted the heating and ventilation ducts and electrical systems to be run through the spans. This created an uninterrupted ceiling line for the automated divider screens which separated the different sections of this vast sports complex.

Since the college is dependent on private funding, the savings afforded by using Vulcraft joists helped make it possible for the college to initiate the project. Also, by using Vulcraft's economical 3" N 20 gage deck, joists could be spaced farther apart. So, fewer joists were needed and construction costs were further reduced.

When your job has to go the distance, let Vulcraft put you out front. For more information concerning Vulcraft steel joists, joist girders and steel deck; or, for copies of our joist and steel deck catalogs, contact the nearest Vulcraft plant listed below. Or, see Sweet's 5.2/Vu and 5.5/Vu.

P.O. Box 637, Brigham City, UT 84320 801/734-9433
P.O. Box F-2, Florence, SC 29502 803/662-0381
P.O. Box 169, Fort Payne, AL 35967 205/845-2460
P.O. Box 186, Grapeland, TX 75844 409/687-4665
P.O. Box 59, Norfolk, NE 68701 402/644-8500
P.O. Box 1000, St. Joe, IN 46785 219/337-5411

VULCRAFT

A Division of Nucor Corporation

Architects/Structural Engineers: Toltz, King, Duvall, Anderson & Associates, in association with Hastings & Chivetta Architects. Steel Fabricator: Ted Mannstedt and Son, Inc. General Contractor: Kraus-Anderson Construction Company, Minneapolis Division. Steel Erector: Vickerman Construction Company.

Circle 14 on inquiry card

Close Move Open

Another Hardheaded Dover Breakthrough On The Three Basic Elevator Functions.

The World's First Totally Integrated Microprocessor Control System For Hydraulic Elevators.

We're particular, actually stubborn, about refinements in state-of-the-art technology for hydraulic elevators. Remember, we invented them.

Other manufacturers have made a lot of noise with assorted bells and whistles. Dover has been quietly and patiently perfecting the greatest advance in hydraulic elevators since we invented them 51 years ago. DMC-I® — the first totally integrated microprocessor control system.

Our new DMC-I elevator closes the doors more reliably. Moves the car to the next floor more efficiently. Opens the doors more dependably. What else is an elevator for?

Other brands have offered add-on microprocessor functions on a onesy, twosy basis, like bandages. Only Dover has taken the years and millions of dollars necessary to perfect a total, built-in system. Because only Dover's volume as the industry leader made it feasible for us to invest such vast resources in its development.

Dover F.A.S.T. unit gives instant performance analysis.

DMC-I has a unique new hand-held F.A.S.T. unit that is literally a "window" into the microprocessor controls. It allows us to reprogram up to 40 elevator functions in minutes. It provides instant analysis of existing performance, permitting faster, more thorough preventive maintenance.

If you're buying or specifying elevators for low or mid-rise buildings, you need to see what DMC-I can do. Call your local Dover office or write Dover Elevator Systems, Inc., P.O. Box 2177, Memphis, TN 38101.

DOVER®
ELEVATORS
Making more elevators makes Dover No. 1

Walker's new Triple-Service Afterset cuts the initial cost of an infloor system by up to 20%.*

*Percentage shown is the average share of total roughing-in cost for cellular raceway, in Walker's experience.

A Walker infloor system for PLE (power, lighting, electronics, comm cations) distribution can be the ke providing the wiring capacity, flexi and aesthetic appeal which busine expect from today's "intelligent" bui Until now, approximately 20% of th initial cost of these systems was ta by a network of preset inserts (inst prior to the concrete pour to allow to services at specific points).

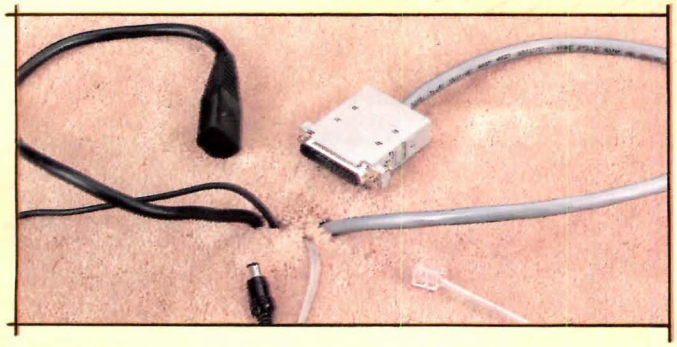
The development of our unique Service Afterset offers a way for b developers and owner-occupants save on initial costs and still maint the inherent advantages of both th

3-service access in a single recessed unit— a Walker exclusive.

Double-duplex capability.

Installs in core-drilled hole afte concrete is pou

Shown installed on Walkerdeck™ cellular deck for steel construction.



Activation can be completely hidden, with only wires showing.

cell and Walkerdeck systems.
ple-Service Afterset is installed
ncrete is poured, even after
s laid. **Cost savings are realized**
talling aftersets only when
here service activations are
d, instead of making the larger
nvestment for a complete system
ets. This option allows you to plan
uilding's PLEC distribution with
lete preset system, complete
t system, or a combination of both.
er afterset offers recessed
vice activation in a single unit.
er's Triple-Service Afterset is
ed to bring services out of the floor from a recessed activation which can be completely hidden under carpet or fitted with flange rings which are flush with carpet or tile. So installing or relocating service activations has no adverse effect on interior aesthetics. All three services (power, data, telephone) are accessed from the same unit—a major advantage when compared with other products which require separate above-floor fittings for each service.

If initial cost has stood in the way of giving your building the most capacity and the greatest flexibility any PLEC distribution system can offer, find out more about the new Walker Triple-Service Afterset. Our infloor systems are already matching the complex needs of the "intelligent" building. Now they can also offer a more attractive match with your bottom line.

Contact us: P.O. Box 1828, Parkersburg, WV 26102. (304) 485-1611.

Walker®
P.O. Box 1828, Parkersburg, WV 26102 (304) 485-1611
A DIVISION OF BUTLER MANUFACTURING COMPANY

Patent Pending © Walker 1986

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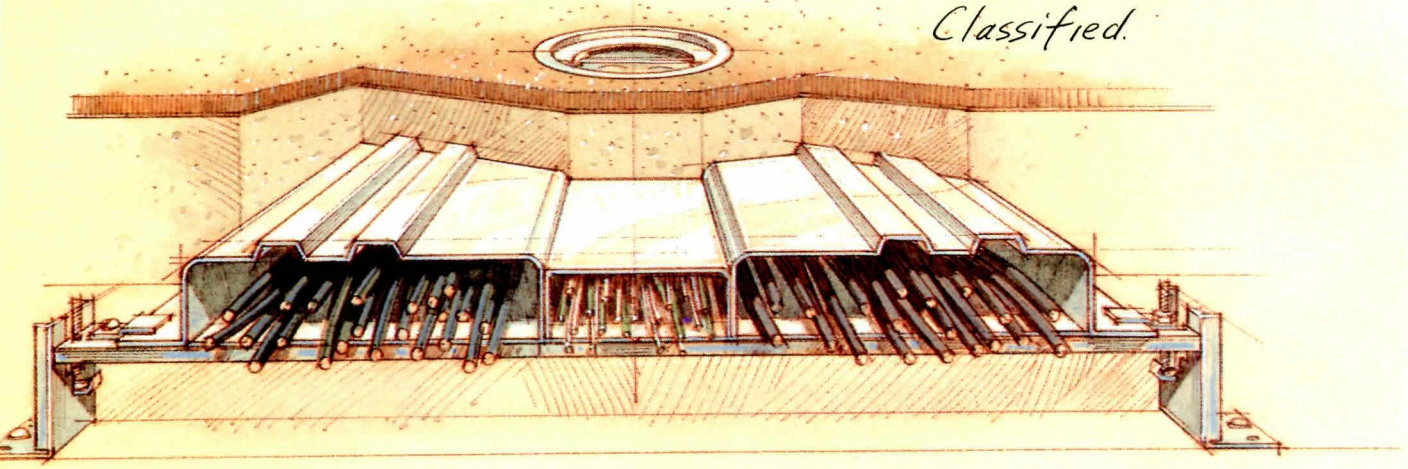
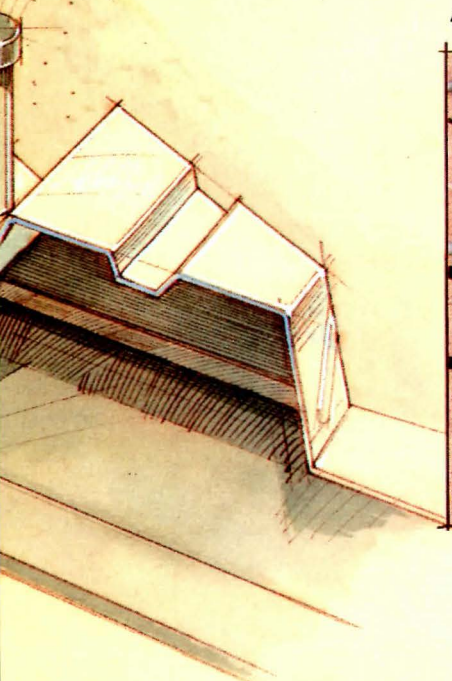
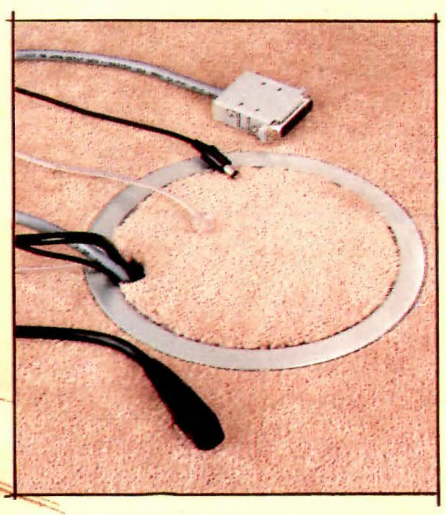
Also compatible with Walkercell™ cellular raceway for slab-on-grade or reinforced concrete construction.

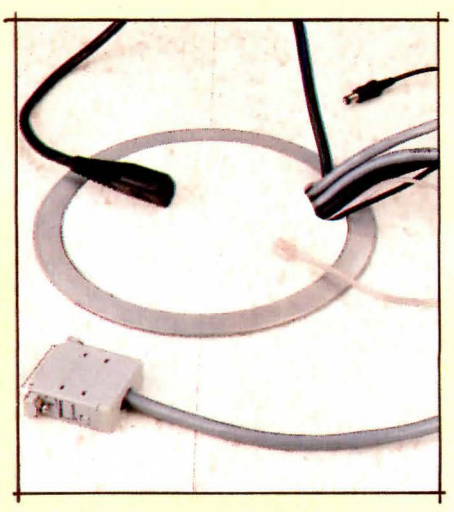
U.L. Listed and Classified.

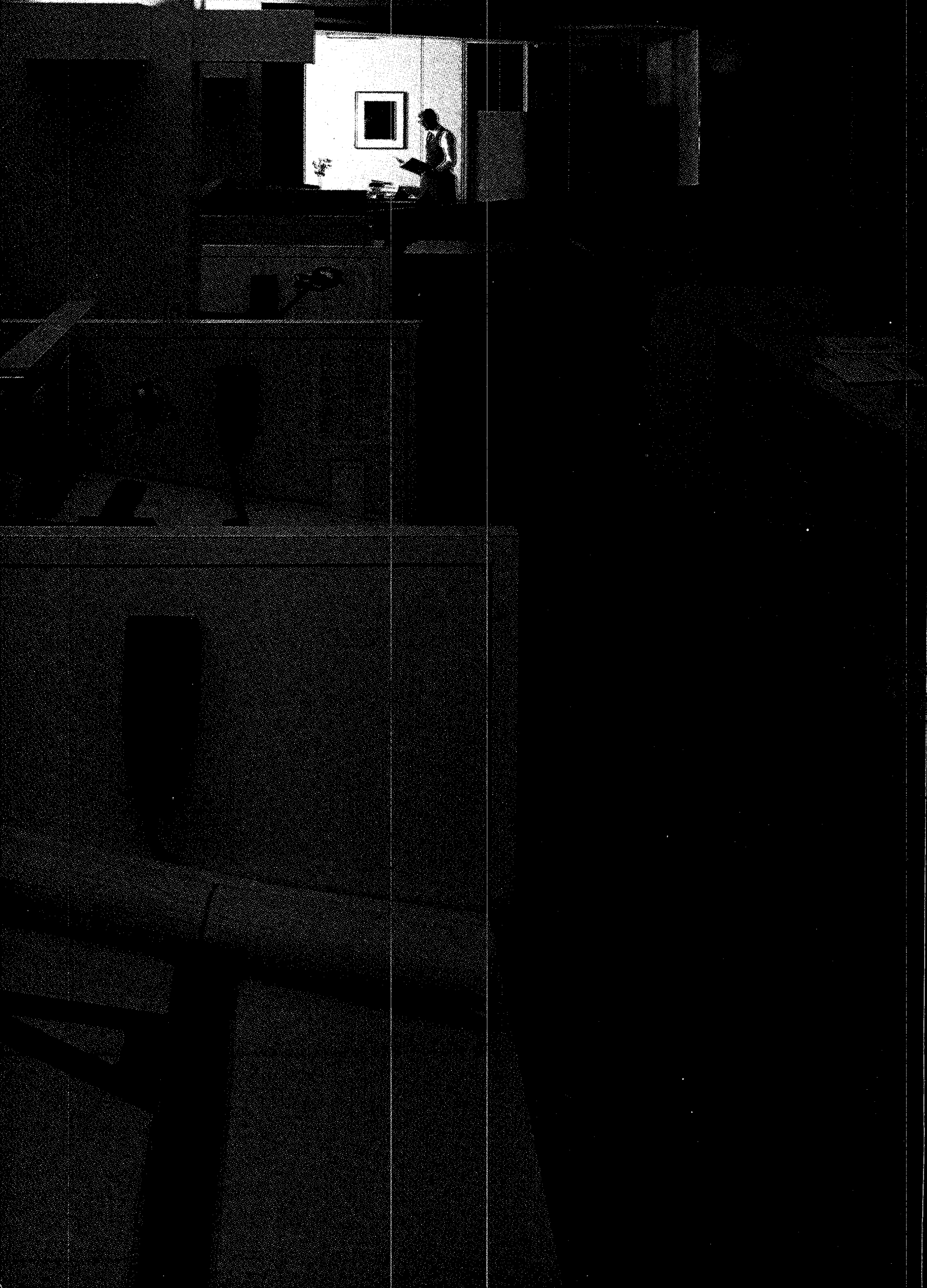


Flange ring may also be used, fitting flush with carpet or tile.









Specify Manville.

You won't have to burn the midnight oil making roofing systems decisions.

Manville supplies all three major roofing systems: built-up, modified bitumen and single-ply.

That's why Manville can eliminate a lot of after-hours work for you in the selection, design and specifications stage of your project. Manville can offer you impartial, objective recommendations resulting in the best possible roof for your building design. And this means you'll receive Manville quality in every component in the roofing system, from the deck up, including insulation, fasteners, accessories, and, of course, the membrane itself.

More than that, you can receive design and specification assistance from the industry's largest, most knowledgable staff of full-time roofing specialists. Experienced district engineers work with you on your project from start to finish, including inspections and on-site problem solving.

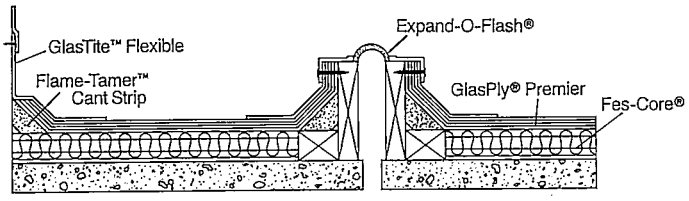
Manville gives you true single-source supply and backs it with single-source responsibility for the performance of the roofing system. Manville's unique guaranteed guarantee offers the roofing industry's broadest coverage.

Specify Manville and you'll save yourself a lot of time-consuming decision making. A helpful Manville roofing specialist is as close as your phone. Just call (303) 978-4900. For export, telex 454404 JOHNMANVL DVR.

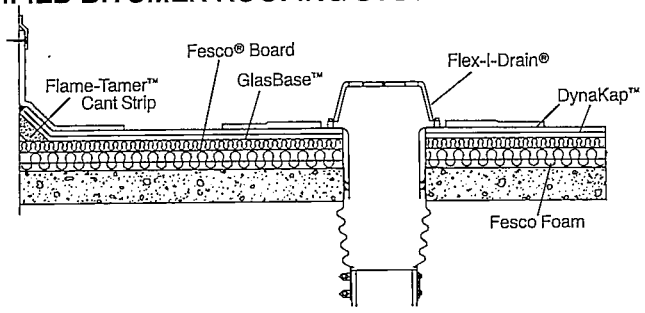
21,000 people with one goal: To be your best supplier.

Manville

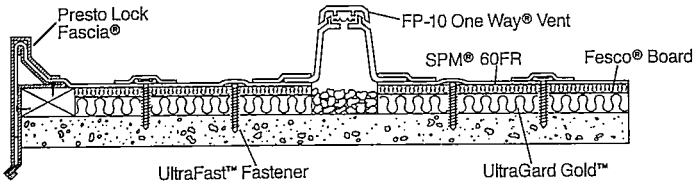
BUILT-UP ROOFING SYSTEM



MODIFIED BITUMEN ROOFING SYSTEM



SINGLE PLY ROOFING SYSTEM



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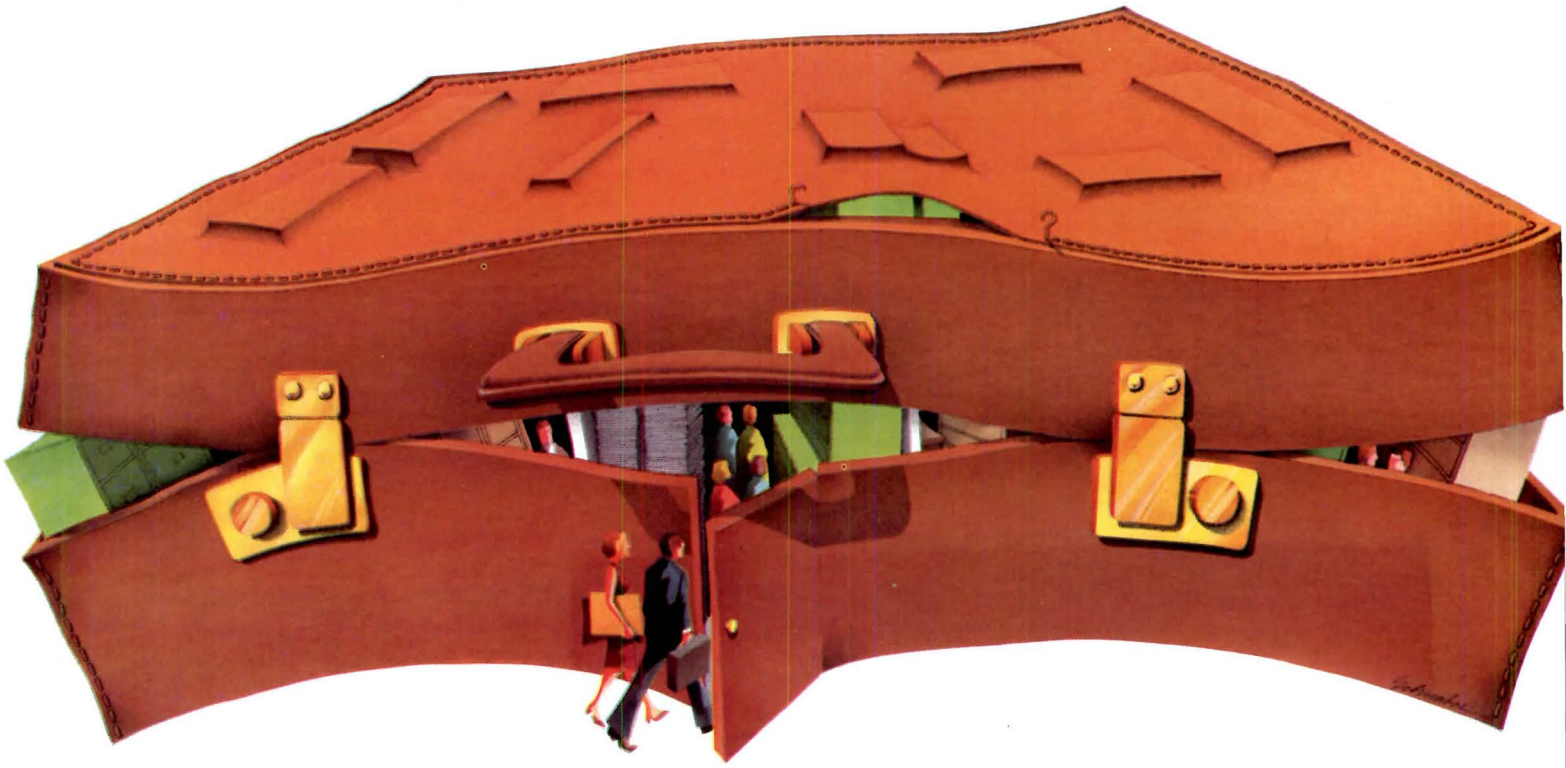

Avoid close encounters of the worst kind.

The space invaders are here.

Those new faces you've hired. The new equipment you've bought. The new service you've introduced.

They all require space. Lots of it.

Which is why so many businesses are leasing and purchasing Williams modular buildings.

Williams single and multiple story modular buildings help business save money by saving time. So cost effective, you'll have your building installed and your people inside before most conventionally constructed buildings get through the blueprint stage. Yet they can meet the strictest code compliances.

Best of all, they're adaptable. You can easily add or modify space as requirements change. In fact, clear span barrier-free accomodations are incorporated into most modular complexes. They're ideal for administrative offices, banks, clinics, sales offices, training centers and workshops.

Williams is your single source for planning, design, installation and flexible financing programs. So you can count on Williams to deliver on time, at the right price. That's more than a reputation. That's a fact.

Find out how to contain your space invaders. Call Williams today for the sales office nearest you.

Williams
Mobile offices and modular structures

Williams Mobile Offices, 8656 Pulaski Highway, Baltimore, MD 21237. Phone: 1-800-782-1500

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sto®

Denver Design Center
Architect: Murata Outland Assoc., Inc.

Design freedom you never thought possible with exterior insulation systems.

STO exterior insulation systems create a flexible, seamless thermal covering for the entire outside wall, with all of the curves, bends and corners you'd like to design. And—if it requires a precise color, STO has a range of 351 to accommodate your imagination.

With the most technologically advanced systems available, high insulating values from below grade to roofline, 7 fastening systems for virtually all substrates and complete technical assistance, there's no room for compromise—especially in your designs.

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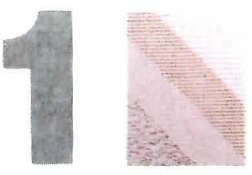
Quality Lane, Box 219
Rutland, Vermont 05701
Toll Free: (800) 851-5533

Exterior Insulation Systems



Circle 18 on inquiry card

Not just another pretty base.

Sure, our wall base line features new, contemporary colors to help you work with today's variety of decors. But the real beauty of VPI wall base is its engineering. Because it's flexible, it readily conforms to minor floor and wall irregularities. So it installs easily and fits tight around corners. The precision-designed top return-to-wall assures a close, gap-free fit. Extra thickness at the cove provides strength and support without sacrificing flexibility.

And VPI wall base really sticks! The unique ribbed back creates a mechanical key for positive adhesion. And specially formulated VPI Wall Base Adhesive ensures trouble-free performance when used according to label instructions.

You'll find the same quality engineering across the entire VPI wall base line... vinyl; rubber; and high gloss, high style Lusterglo.™

There's a lot more to VPI wall base than just good looks. Find out more, write to: VPI, 3123 South 9th Street, P.O. Box 451, Sheboygan, WI 53081. Or call, 414-458-4664.

VPI FLOOR PRODUCTS

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The shape of things to come

NEW YORK CITY

- A&D Building, 150 East 58th St.
- DAC Building, 305 East 63rd St.
- D&D Building, 979 Third Ave.
- 655 Madison Ave.

All Designer's Saturday showrooms will be open from 9:00am-5:00pm.

AllSteel, Incorporated
110 East 59th St., 2nd floor, 212/752-2610

- **American Seating Company**
  36th floor, 212/935-7090
- **Arconas Corporation**
  7th floor, 212/753-4960
- **Artemide Incorporated**
  10th floor, 212/980- 0710
- **Beylerian Limited**
  15th floor, 212/755-6300
- **Brueton Industries, Inc.**
  2nd floor, 212/838-1630
- **Brunschwig & Fils, Incorporated**
  11th floor, 212/838-7878

Condi
315 East 62nd St., 6th floor, 212/935-1846

- **Corry Jamestown Corporation**
  10th floor, 212/421-7280
- **Croydon Furniture Systems**
  3rd floor, 212/752-8005

Davis Furniture Industries
306 East 61st St., 2nd floor, 212/753-8906

- **Donghia Textiles/Furniture**
  12th floor, 212/935-3713
- **Dunbar Furniture Corporation**
  6th floor, 212/644-3333
- **Dux Interiors**
  Main floor, 212/752-3897
- **GF Furniture Systems**
  4th floor, 212/980-0111

Harter Corporation
4 West 58th St., 4th floor, 212/355-4933

- **Haworth, Incorporated**
  12th floor, 212/826-6796

Hiebert, Incorporated
155 East 56th St., 6th floor, 212/751-8787

- **ICF** International Contract Furnishings
  7th floor, 212/750-0900

iil incorporated
654 Madison Ave., 6th floor, 212/759-3243

- **Intrex Furniture**
  4th floor, 212/758-0922
- **Kimball Office Furniture Co./Artec**
  6th floor, 212/753-6161
- **The Kittinger Company**
  8th floor, 212/751-2780
- **Knoll International**
  2nd floor, 212/207-2200 and 105 Wooster St., 212/219-6500
- **Krueger, Incorporated**
  2nd floor, 212/751-2050

Jack Lenor Larsen
232 East 59th St., Main floor, 212/674-3993

- **Lehigh-Leopold/Cole LBF**
  38th floor, 212/593-0900
- **Madison Systems/Madison Furniture**
  3rd floor, 212/888-9050
- **Maharam**
  12th floor, 212/753-5440

Herman Miller Incorporated
600 Madison Ave., 2nd floor, 212/838-8280

Modern Mode Incorporated
306 East 61st St., 4th floor, 212/355-0785

Nienkämper, Incorporated
386 West Broadway, 2nd floor, 212/431-3202

Pace Collection Incorporated
321 East 62nd St., Main floor, 212/838-0331 and Madison Ave. at 72nd St., 212/535-9616

- **Reff Corporation**
  10th floor, 212/759-3680

Shaw-Walker
666 Third Ave., 24th floor, 212/697-8700

Steelcase, Inc./Stow & Davis
245 Park Ave., 24th floor, 212/370-1707 and 950 Third Ave., 18th floor, 212/370-1707

Stendig International, Inc.
410 East 62nd St., 6th floor, 212/838-6050

Stroheim & Romann, Inc.
155 East 56th St., Main floor, 212/691-0700

SunarHauserman
730 Fifth Ave., 6th floor, 212/246-5200

- **Vecta Contract**
  5th floor, 212/832-7011
- **Zographos Designs Limited**
  3rd floor, 212/421-6650

IDCNY

Centers One & Two, 30-20 Thomson Avenue, Long Island City

All Designer's Saturday showrooms will be open from 9:00am-5:00pm.

Shuttle bus service to and from 919 Third Ave. at 56th St. in New York City.

Alma Desk Company
Center Two, 4th floor, 718/706-7474

Artemide Incorporated
Center One, 5th floor

Atelier International, Ltd.
Center Two, 7th floor, 212/644-0400

Brayton International
Center Two, 5th floor, 212/371-6131

Cumberland/I.M. Rosen & Co., Inc.
Center Two, 4th floor, 718/361-8190

Davis Furniture Industries
Center Two, 6th floor, 212/753-8906

Domore Corporation
Center One, 5th floor, 212/759-5551

Fixtures Furniture
Center Two, 6th floor, 718/937-5474

The Gunlocke Company
Center One, 3rd floor, 212/832-2202

Hardwood House
Center Two, 6th floor, 718/784-8858

Helikon Furniture Company, Inc.
Center Two, 4th floor, 718/786-2299

Howe Furniture Corporation
Center Two, 2nd floor, 718/706-7080

ICF Incorporated
Center Two, 7th floor, 212/750-0900

JG Furniture Systems, Inc.
Center One, 5th floor, 212/621-4213

Kinetics
Center Two, 6th floor, 718/482-8109

Jack Lenor Larsen
Center Two, 7th floor

Metropolitan Furniture Corp.
Center Two, 5th floor, 212/308-9365

Mueller Furniture Corp.
Center Two, 4th floor, 616/451-2738

Myrtle Desk
Center Two, 2nd floor, 718/706-6600

Westinghouse Furniture Systems
Center One, 5th floor, 212/715-0570

DESIGNER'S SATURDAY® 1986

◆ *For almost two decades, Designer's Saturday has been evolving into the ultimate furnishings market. Today its influence is unequaled.* ◆ *As the centerpiece for the fall markets, Designer's Saturday joins the major design buildings, provides a forum for professional design groups and heralds the introduction of products and design.* ◆ *Its 57 member firms – the nation's premier furniture, lighting and textile manufacturers – help to shape design trends, create new products to accommodate advanced technology, and influence marketing directions.* ◆ *More than a Saturday, Designer's Saturday is three days of valuable seminars and important receptions. All designed to stimulate the interchange of ideas, all set in the dynamic atmosphere that only New York can provide.* ◆ *Help unwrap Designer's Saturday 1986 and see the shape of things to come.*

TUESDAY OCTOBER 7

Pre-Designer's Saturday Event:
Evening
Resources Council, Design New York Market. Opening Reception, 6:00 pm to 8:00 pm, Tavern on the Green, Central Park West at 67th Street. Admission tickets required. Contact: Resources Council, 212/752-9040.

THURSDAY OCTOBER 9

Facilities Management
Day
Designer's Saturday showrooms open 9:00 am to 5:00 pm. Lunch served at 12:00 noon. Four one-hour presentations held at participating showrooms, beginning at 9:00 am, 10:30 am, 1:30 pm and 3:00 pm. A schedule of seminars will appear in the September issue of this magazine. Admission tickets not required.

Evening
Cocktail Reception, 5:30 pm to 7:30 pm, for facilities managers and designers will be held in The Equitable Tower Employee Dining Room, 50th Floor, 787 Seventh Avenue at 52nd Street. Paul Goldberger, architecture critic of The New York Times, describes this room designed by Kohn Pedersen Fox Conway as "...surely the grandest dining space ever put on top of a skyscraper." Whitney Museum branches open in the lobby. Admission tickets, $40. Clip and return card.

FRIDAY OCTOBER 10

Morning
IBD/Contract Magazine Product Design Awards Breakfast, 8:00 am to 10:30 am, Plaza Hotel, Grand Ballroom, Fifth Avenue at 58th Street. Admission tickets, $50. Contact: IBD National Office, 312/467-1950.

Day
Designer's Saturday showrooms open 9:00 am to 5:00 pm. Lunch served at 12:00 noon.

Evening in Manhattan
Designer's Saturday showroom receptions, 5:00 pm to 7:00 pm. Cocktails and hors d'oeuvres will be served. Check the September issue of this magazine for showrooms hosting receptions.

Evening at IDCNY
Atria at Centers One and Two. Dine, drink and dance the night away, 7:00 pm till whenever. View "40 Under 40," an exhibit featuring nonstop multi-images of the work of 40 impressive young architects and designers. Showrooms will remain open. Continuous shuttle-bus service to and from 919 Third Avenue at 56th Street.

SATURDAY OCTOBER 11

Day
Designer's Saturday showrooms open 9:00 am to 5:00 pm. Lunch served at 12:00 noon.

Evening
Designer's Saturday Gala Reception, 7:00 pm to 9:00 pm. The Metropolitan Museum of Art, Fifth Avenue at 82nd Street. Buffet and bar in The Temple of Dendur. Refreshments and entertainment in The American Wing Courtyard features a Country Rock group from New York's famous Lone Star Cafe. Preview "Treasures of the Holy Land: Ancient Art from the Israel Museum," the largest, most important collection of ancient Israeli art ever to travel abroad. Gift shops will be open. Admission tickets, $20 (a tax-deductible contribution to the Museum) purchasable at member showrooms or at the Museum on Saturday evening.

Facilities Management Day
Cocktail Reception
Thursday, October 9, 1986

☐ *Yes, I will attend. Admission, $40 per person.*

☐ *No, I cannot attend, but please put me on your mailing list.*

Please make checks payable to ***Designer's Saturday, Inc.*** *and return with this card by September 25th to: Designer's Saturday, Inc., 911 Third Avenue, New York, NY 10021. Due to limited capacity, tickets will be mailed on a first-come, first-served basis.*

Number of Tickets ***Amount Enclosed***
$

Name

Title

Firm

Address

City/State/Zip

Phone

Hotel: 1st Choice

Hotel: 2nd Choice

Single ***Double***

TRAVEL

For special discounted travel for Designer's Saturday attendees, call the participating airlines directly. For lodging arrangements, or special air and hotel packages for European visitors, contact:
Dunwell Travel, 79 Madison Avenue,
New York, NY 10016
212/532-3434 or 800/428-6677
Telex # 4953361

Airlines

Fly coach to Designer's Saturday on Eastern or American Airlines and save 35% to 60%.
Save 5% on American Airlines Discount Fare.

Reservations:
American Airlines: 800/433-1790
Account # S 11753
Eastern Airlines: 800/282-0244
(in Florida, 800/468-7022)
Account # EZ 10BP5

Hotels

Barbizon Golden Tulip
63rd Street at Lexington Avenue
Single $90-105, Double $125-165

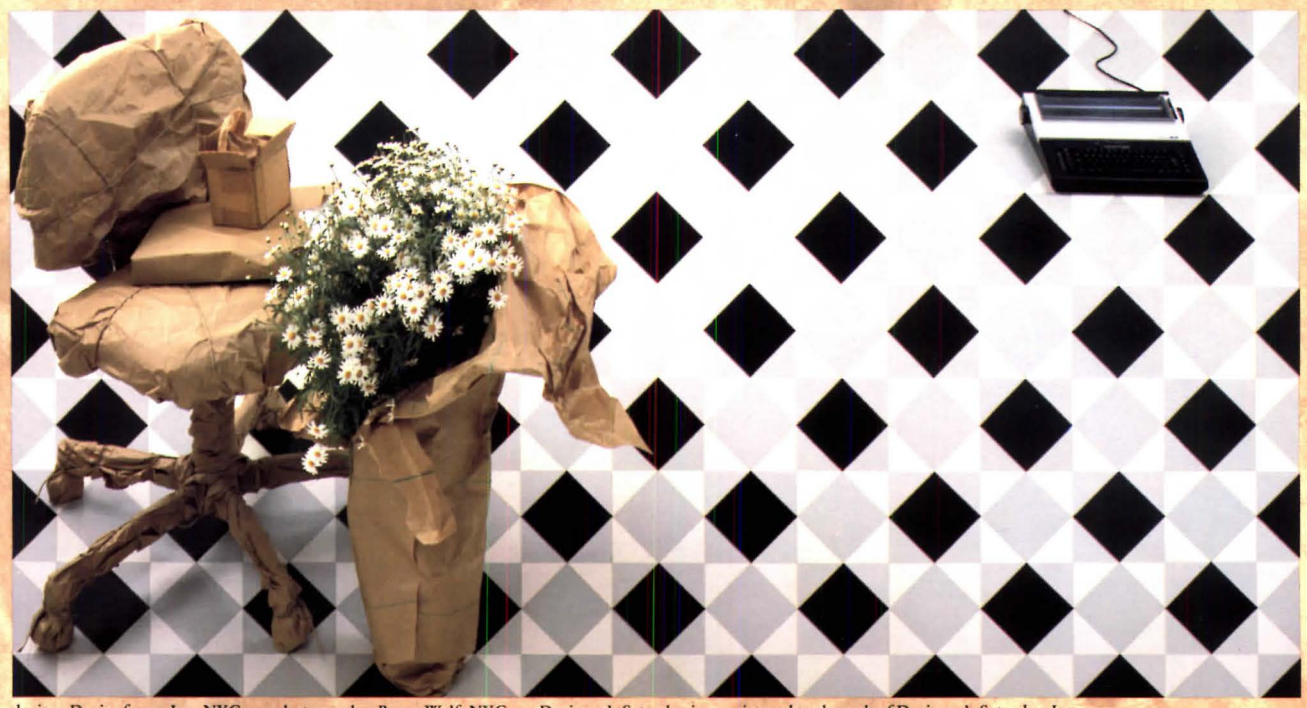
Drake
56th Street at Park Avenue
Monday-Thursday: Single $155, Double $175
Friday-Sunday: Single $155, Double $155

Halloran House
48th Street at Lexington Avenue
Single $125, Double $125

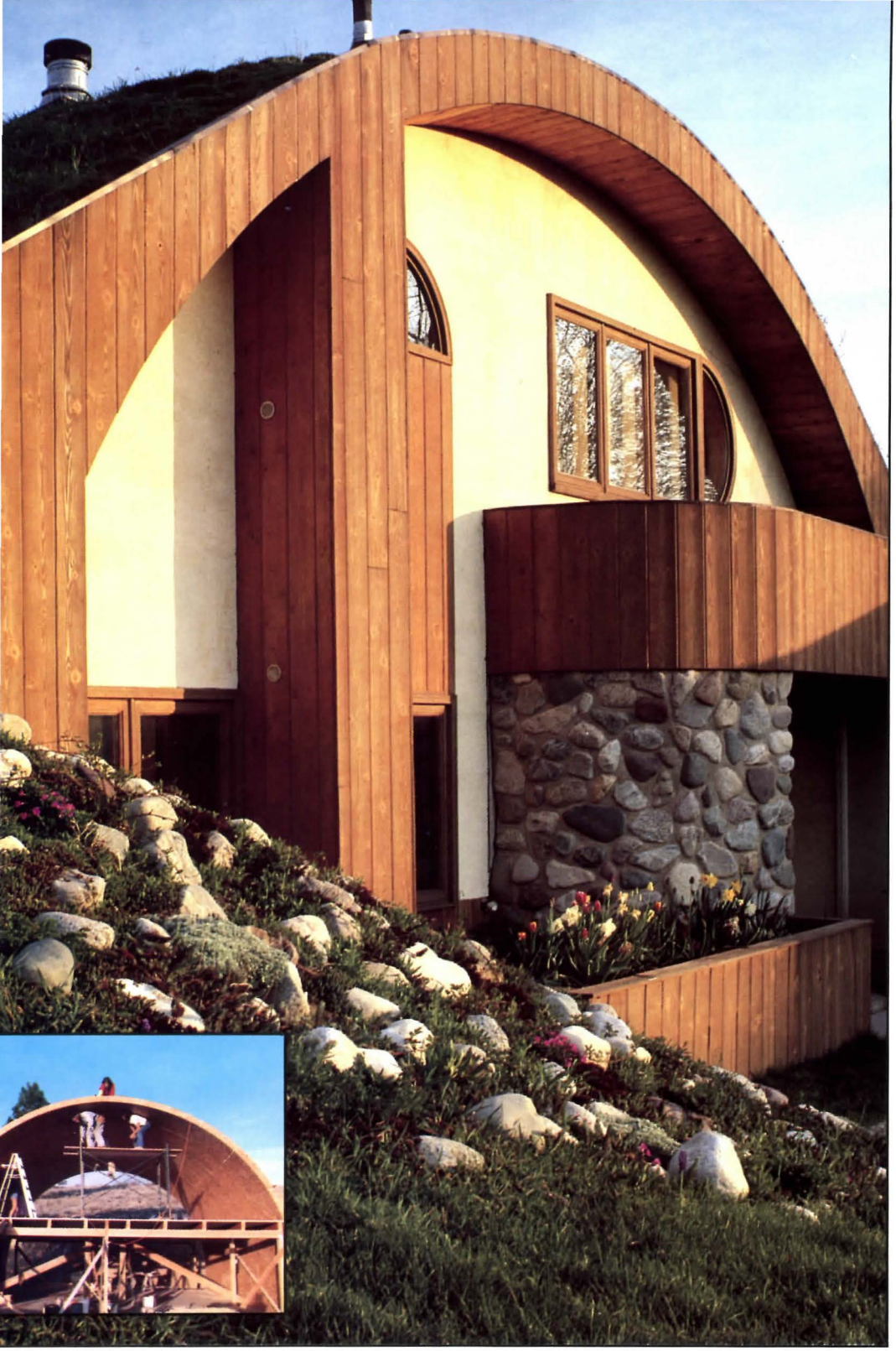
Madison Towers
38th Street at Madison Avenue
Single $85, Double $95

Morgans
38th Street at Madison Avenue
Single $170, Double $190
(Continental breakfast included)

St. Regis
55th Street at Fifth Avenue
Monday-Thursday: Single $175, Double $205
Friday-Sunday: Single $145, Double $175



design: Designframe Inc, NYC photography: Bruce Wolf, NYC



This earth covered arch home was designed by John Loveless and Jeremy Berg, IBS, Grand Haven, Michigan. The 38-foot span of arch is self-supporting and constructed of foam core panels made with Weyerhaeuser Structurwood skins.

Weyerhaeuser Structurwood® We're Creative So You Can Be

AD 146

et your imagination go — specify Structurwood by Weyerhaeuser. Your creativity d not be stifled by the constraints of itional materials.

tructurwood is an engineered strand duct, but similarities to ordinary wood ducts ends there. Structurwood will not , buckle or delaminate. You can specify knesses anywhere in the range of ¼" to — in inches, metric or decimals. Structurwood is manufactured in panels up to 24'.

he uses for Structurwood are endless. can create a graceful arch, a subtle be or specify Structurwood to insure you et your precise performance criteria for e traditional uses, like floors, walls, roofs supporting beams.

hink of the possibilities! For instance, a sandwich of Structurwood and any number of foam insulators creates a pre-insulated panel. We engineer factors such as flake orientation, density and modulus of elasticity to meet your specific end needs. Consider this, Structurwood has better stiffness to weight ratio than even some non-wood materials, for instance aluminum or steel. Our design engineering team works closely with you to meet your specific span, load and thickness requirements.

Weyerhaeuser innovation, commitment to quality, and the flexibility to engineer a panel to your needs makes Structurwood a uniquely versatile construction material.

Structurwood from Weyerhaeuser. We're making wood do more.

For more information on how we can help you design a panel to fit your specification call 1-800-328-4646, ext. 158 (In Minnesota call 1-800-752-4242, ext. 158) or mail coupon to Weyerhaeuser Response Center, 701 Decatur Avenue North, Suite 205, Minneapolis, Minnesota 55427-4340.

Name _____
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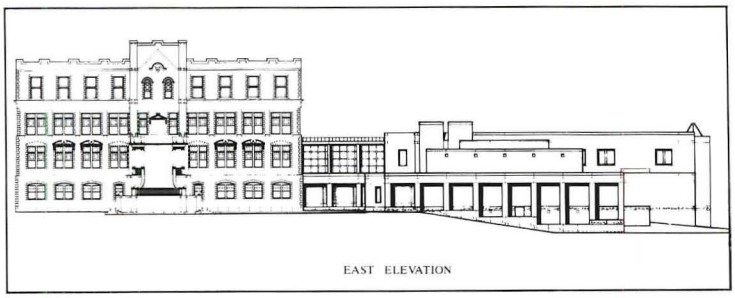
Weyerhaeuser

Advanced studies institute expands



Construction is under way on a $5-million addition to the Wang Institute of Graduate Studies in Tyngsboro, Mass., under the direction of Boston architects Earl R. Flansburgh & Associates, Inc. The addition will more than double the size of the existing 42,000-square-foot building.

Dr. An Wang, who founded the Institute in 1979, said the new facility is "designed to accommodate our growth and enhance our academic curriculum. This building is a reflection of our progress toward achieving our goal of academic excellence and of the stability that we have achieved in just a few years."

The Wang Institute is one of only a few schools in the U. S. which grants advanced degrees in software. It also offers a post-doctoral fellowship in Chinese studies.

According to architect Flansburgh, the project is designed to allow for expansion in the future. "This building is not only a classroom, auditorium, and office structure," he says, "it is the anchor of an extraordinary educational institution."

Additions to the Institute's main building will house an auditorium, classrooms, an expanded library, computer and dining areas.

Rethinking downtown Hartford

In an effort to enliven the sagging features of downtown Hartford, Aetna Life & Casualty and two Hartford developers have asked Cesar Pelli & Associates to come up with a design scheme for Pratt Street.

The first phase of the plan calls for a $35-million renovation of the street, once the home of Connecticut's most elegant shops, but since fallen on hard times. When the Civic Center Mall opened in 1974, many upscale shops moved there, even though Pratt Street is a stone's throw from the mall.

Pelli's scheme includes a pedestrian mall on Pratt Street, linking it with the Civic Center on the west end and Main Street shops on the east end. For most of the day, the street would be closed to traffic. It would be paved over in rough-faced granite, brick, and marble and decorated with benches and turn-of-century lighting to attract boutiques, restaurants, and shoppers.

Other plans include restoring historic buildings on Pratt Street, adding four floors to the four-story Standard Building, at the corner of Pratt and Trumbull streets; and a pedestrian bridge over Trumbull to join the building to the Civic Center Mall, and a new six-story 200,000-square-foot office building to go up behind Pratt Street.

News briefs

The University of Maryland recently received the largest collection of historic preservation materials in the United States from the National Trust Library. The collection, which will be housed in the architecture library at the College, contains 11,000 books, 500 periodical titles, extensive vertical file items, and microfiche newspaper clippings. Outside circulation will be strictly limited.

Once again, a bill calling for the exemption of all noncommercial, religiously owned property from landmarks laws is before the New York State Legislature. To prevent its passage, New York's Municipal Art Society is leading a vigorous campaign, mustering groups to write letters of protest to the New York State Senate.

Another bill to go before the New York State Legislature is a $1.45-billion Environmental Quality Bond Act put forth by Governor Mario Cuomo for a vote in November. The bill proposes to clean up hazardous-waste sites, acquire environmentally sensitive land and municipal parks. In addition, it will provide matching grants to government and not-for-profit owners for the preservation, restoration, and rehabilitation of historic properties.

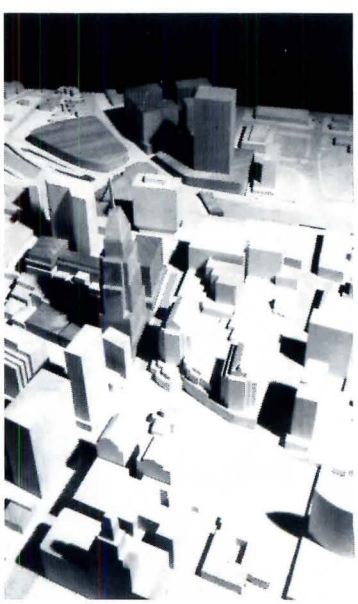
Renovation set for historic cast-iron structure

Considered the oldest cast-iron building in New York City, 254-260 Canal Street is undergoing an extensive renovation. The 130-year-old Italian palazzo-style building, located one block east of SoHo, is regarded as the earliest surviving work of James Bogardus, the renowned pioneer of 19th-century cast-iron architecture in the U. S.

Formerly a factory loft space, the landmark structure will be converted into the new Chinatown Commerce Center, offering modern office and light-manufacturing space to nearby Chinatown professionals and others in the SoHo and Tribeca communities.

Jack L. Gordon Architects, designers of the renovation, will restore the building's elaborate cast-iron facade, working closely with the Friends of Cast-Iron Architecture and the Landmarks Preservation Commission.

International pact signed by computer graphics organizations

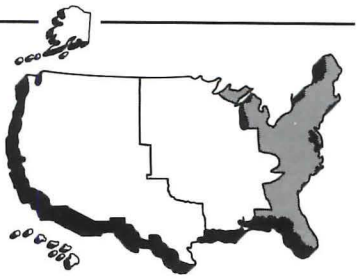


An agreement to support developments in the international computer graphics market has been signed by the National Computer Graphics Association of Fairfax, Va., and the Nippon Computer Graphics Association.

"This cooperative agreement is aimed at the mutual advancement of computer graphics technology, here and in Japan," says Thomas C. Cain, president of the Virginia NCGA and a vice president of ComputerVision. "By entering into this agreement," says Cain, "NCGA is able to dramatically increase the scope of benefits that we provide to our members."

The pact allows the groups to pursue establishing an informal network between U. S. and Japanese manufacturers, assist NCGA corporate members to reach Japanese markets, and create a window on Japanese technology.

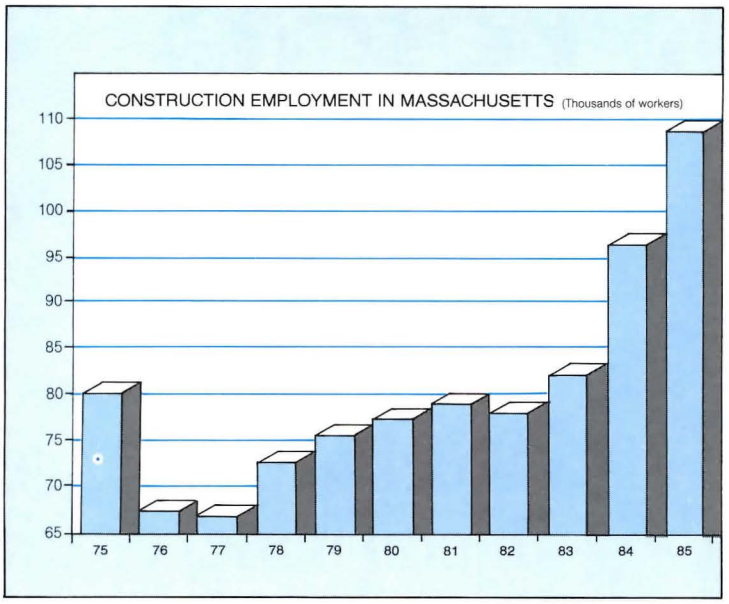
Eastern economic report: High-tech comeback near



Back in the mid-1970s, when energy prices melted Snow Belt economies, the Yankee battle cry became "The North will rise again." And so it did. Prime examples: New York, where growth is fueled by finance and other services, and Massachusetts, which plugged into high-tech for high growth.

Massachusetts in particular transformed itself from an old-line industrial state into an on-line computer/software/electronics center in record time. Employment and income soared. Housing starts shot up from 17,500 in 1975 to 39,500 in 1985, according to estimates by Data Resources, Inc. Meanwhile, Boston became a hub for the U. S. office-building boom of the 1980s. Reflecting all this activity, construction employment in Massachusetts hit 107,000 last year, up 30 percent just since 1983 and up more than 50 percent since 1986.

But a slump in computer and electronics sales hit the U. S. in 1985 and continues in 1986. High-tech layoffs have become commonplace along Boston's Route 128, an ill omen for housing construction in the short run and for commercial and industrial construction later on. As elsewhere in the country, Boston's office boom will also be tempered by tax law revisions that target real estate limited partnerships. Near term, in other words, the Massachusetts economy will lose some of its luster; as a result, construction will decline.



New York in the past decade did less restructuring of its economy. But it had the right economic base for the times—a period marked by gyrating interest rates, heightened by public awareness of investing, and ultimately by booming bond and stock markets beginning in the summer of 1982. New York City has enjoyed the most extensive office building boom in the nation, but tax reform will hurt the office market. But both cities have lower office vacancy rates than any other area in the U. S. New York is now generating strong housing markets in the metropolitan area. The computer industry in the Bay State eventually will rebound, making the area fertile ground again for builders, developers, and architects.

Calendar

August 4-6
"Simplified Financial Management," "Making Projects Profitable," and "Going Bare," three seminars sponsored by Practice Management Associates, Ltd.; at Hyatt Regency, Cambridge, Mass. For information: Betsy Miller, Practice Management Associates, 10 Midland Avenue, Newton, Mass. 02158 (617/965-0055).

August 11-13
The seminars sponsored by Practice Management Associates listed in the August 4-6 item above will be held at the Ramada Renaissance in Atlanta, Ga. For information: Betsy Miller (617/965-0055).

September 4-6
"Main Street: National Town Meeting," the first conference cosponsored by the National Trust's Main Street Center and the North Carolina Arts Council; at Stouffer Winston Plaza Hotel, 425 North Cherry Street, Winston-Salem, N. C. 27101. For information: Vicki Onderdonk, National Main Street Center, The National Trust, 1785 Massachusetts Ave. N. W., Washington, D. C. 20036 (202/673-4219).

Master plan for North Carolina state capital

State and city officials in Raleigh, N. C., have approved a 20-year master plan by local architects Paton-Zucchino & Associates that calls for the creation of a cohesive, 25-block-square government district in the state capital with added office space and open space.

Robert M. Lappas, a Paton-Zucchino landscape architect, says the master plan incorporates four types of new structures into the area: monumental office buildings along a more formal main boulevard, general state office buildings off the boulevard, a low-rise mix of new and relocated structures to complete the historic area near the governor's mansion, and a visitors' center pavilion.

The first phase calls for the construction of two office buildings, one a six-story structure with 215,000 square feet, the other five stories tall with 175,000 square feet.

Atlanta mayor expresses reservations on preservation

On the heels of Atlanta mayor Andrew Young's refusal to support a City Council Plan for a 90-day moratorium on demolition permits for historic structures, both the Atlanta Preservation Center and the Atlanta Design Commission have regrouped "to pursue the development of a comprehensive preservation plan."

Says Eileen Segrest, APC executive director, "Preservationists will have to keep the business and political communities' feet to the fire."

At issue is the fear that three older buildings on the city's famed Peachtree Street would be demolished in favor of a church parking lot and a $50-million, 19-story office building. Mayor Young says the proposed moratorium would keep developers out of town, adding that Atlanta "has no character, but is building character in new developments."

Atlanta architect Peter Drey, who lives at Peachtree Terrace Apartments, one of the doomed projects, says, "The development community is very divided, and not at all in favor of seeing Peachtree Terrace go. What makes midtown attractive to the developers is a mix of old architecture and new, a mix of residential and commercial uses, and a walkable environment."

Five finalists named in Brooklyn Museum master-plan competition

Five finalists have been selected from a field of 103 architects to design a master plan for the Brooklyn Museum. Each will now draw up a plan for the restoration and renovation of the museum's interior and an expansion scheme to double its space.

The selected architectural teams are Atkin, Voith & Associates with Rothzeid Kaiserman Thompson & Bee; Arata Isozaki & Associates with James Stewart Polshek & Partners; Kohn Pedersen Fox Associates; Skidmore, Owings & Merrill; and Voorsanger and Mills Associates. All the architectural teams are located in New York with the exception of Isozaki, who is based in Tokyo, but will work in New York with Polshek, and Atkin Voith & Associates, a Philadelphia firm, that will work with the Rothzeid team in New York.

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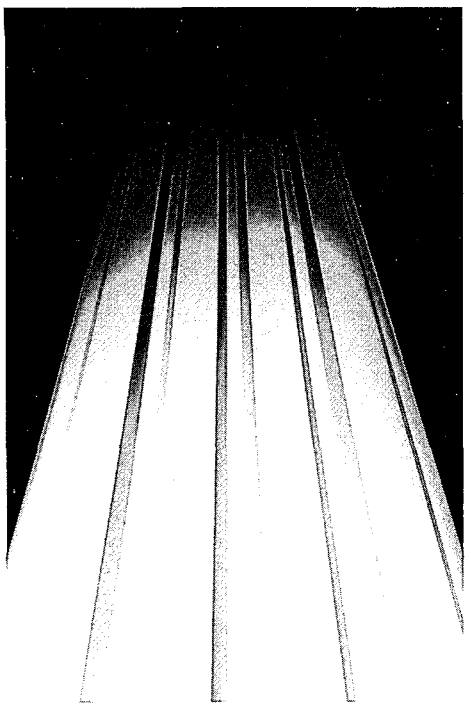

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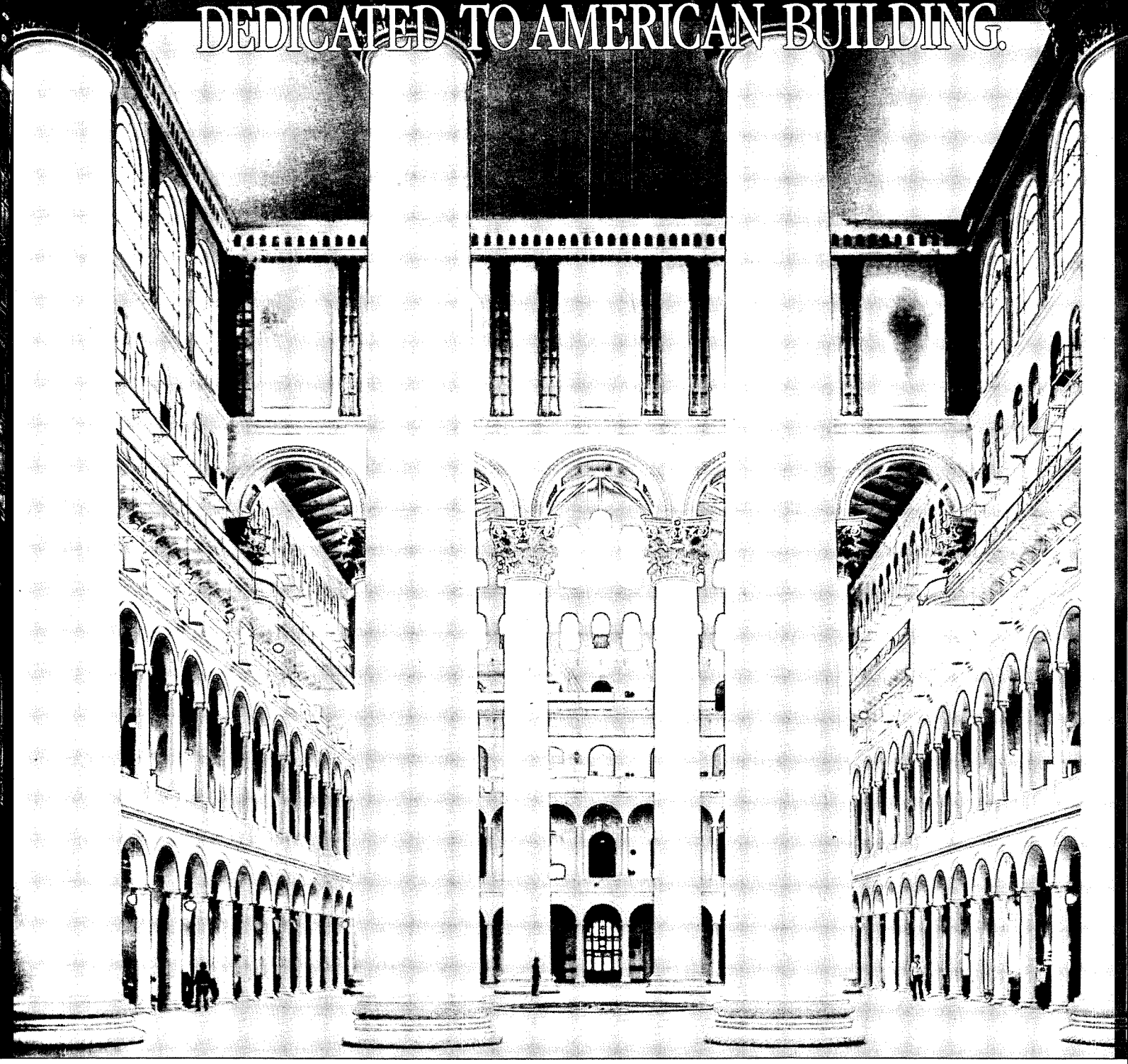

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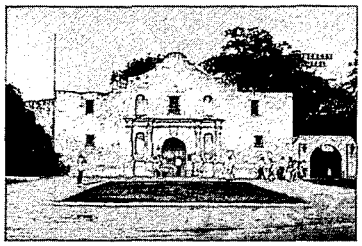
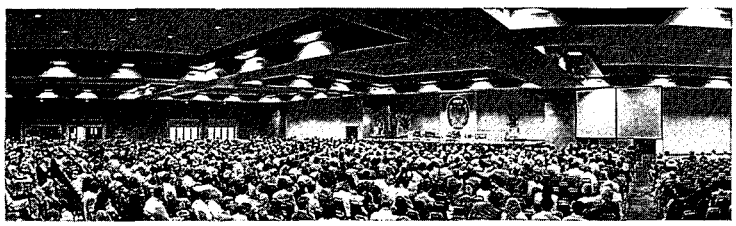


Paul Sachner

While the Institute's conventions have traditionally offered members opportunities to steer the course of its policies through changing professional waters, few have offered a chance of the magnitude members got and seized in San Antonio on June 10. Not far from the Alamo, in a city struggling with more recent assaults (page 35) another historic battle has been won. A mandatory Code of Ethics and Professional Conduct (below) was voted into being. The former code had been terminated in 1979, and in 1980 had been replaced with a code that was voluntary, nonbinding and unenforced. As editor Mildred F. Schmertz pointed out in her March, 1986 editorial, the mandatory code "recognizes the importance of how the public perceives the responsibility of the profession for the acts and conduct of its members, with implications for the profession's continued efforts to explain the value of using an architect."

Long in the making and controversial right up to the vote, the new code is designed to better stand the legal and practical tests of time than the voluntary code it replaces or the earlier mandatory standards which had come under antitrust scrutiny. Not known at the time of the convention vote was the method by which the code would be enforced. According to ethics task-force chairman Harry Harmon, a national judicial council will be created before the January 1 implementation date. Component chapters and individual members will refer charges of violations to this council for possible 1) admonition, 2) censure, 3) suspension of membership for a limited period, and 4) termination of membership. All such actions, except, admonition, will be made public. *C. K. H.*



Here is how the new code of ethics will affect you

Specifically, the code covers members' behavior in their general obligations, their obligations to the public, to their clients, to the profession, and to their colleagues. General obligations include the improvement of members' skills, reasonable care in applying those skills, and not accepting work which a member is incapable of performing. Here, as in other sections of the code, a driving purpose is to uplift the public's perception of architects and what they do, and to show that they can indeed police their own behavior without outside intervention.

Similarly, obligations to the public include not knowingly breaking laws or otherwise becoming involved in dubious behavior, reporting such behavior on the part of others, civic activism, nondiscrimination, and the protection of our natural and cultural heritage—this last, as it affects older buildings, a revolutionary concept in a profession that has depended on a growing spiral of new ones.

Obligations to clients include not altering the concept of a project without a client's consent, impartial interpretation of documents (and only when asked by both owner and contractor to do so), avoiding conflicts of interest with clients (such as owning land adjacent to his that might influence your design), confidentiality, and not promising more than can be done.

Obligations to the profession include ethical procedures in being licensed and obtaining AIA membership, not signing drawings for which the architect has had no direct responsibility, and enforcing this code on those for whom the architect has direct responsibility. Other obligations to the profession include providing employees with suitable working environments and fair compensation (a provision bound to raise some problems with the many disgruntled) and allowing employees to take examples of their work when they leave a firm when those examples do not violate confidentiality.

As some 6,500 registrants descended on San Antonio for the 118th AIA national convention in early June, the record rainfall that had plagued the Texas metropolis during the previous week subsided, replaced by the kind of hot, humid weather that had even natives seeking refuge inside the air-conditioned confines of the city's convention center. But for those undaunted by the steamy climate, a trip to the Southwest was an opportunity to combine convention business with visits to San Antonio's famous Paseo del Rio (or River Walk) and the Alamo, the most celebrated building in Texas. Preservationists headed a bit further afield to the King William historic district, a stylistically eclectic residential enclave on the edge of downtown, or to San Antonio's four Spanish missions.

Back in town, architects chose from 100 "learning programs," including 20 professional development seminars and 44 individualized consultations. Pulitzer Prize-winning author Tracy Kidder led a session that brought together the protagonists of his best-selling book *House*, while Arthur Erickson, this year's recipient of the AIA Gold Medal, held informal discussions of his work. The seemingly perennial issues of architects' compensation and the problem of obtaining liability insurance were topics of considerable discussion, while the architect's role in finding new ways to house the nation's homeless was the focus of two seminars. RECORD's report on some of the convention's more significant events follows.

Theme speakers examined a mixed bag of contemporary issues

Consistent with the format established in past years, convention organizers devised a loosely knit "theme" program comprising talks by five invited speakers. The overall theme of the San Antonio meeting—"The American Architect"—provided a rather unfocused rhetorical framework that resulted in a decidedly uneven group of presentations. The most engaging speaker among the five clearly was Brendan Gill, long-time drama critic at *The New Yorker* and an active spokesman on architectural matters. In his keynote address Gill portrayed the current architectural profession as a double-edged sword. On one hand, he observed, architects are enjoying unprecedented public visibility. "Until recently, the profession was not one to be entered to become rich, much less famous," he said. "It is only within the last decade that architecture has become fashionable. Now, architecture—or rather architects—are all the rage." More negatively, Gill bemoaned the profession's "state of intellectual befuddlement unequalled at any moment in history. In what direction," he asked, "can the young student of architecture be invited to go? Are not the allurements of Postmodernism being seen for what they always were—parody in the name of paying homage to a touchingly sincere past? Is it possible that a Miesian revival may soon be looked for—a revival that, unlike Postmodernism, will escape the taint of a half-concealed and at heart sour and unnourishing jest?"

Moving from Gill's thoughtful ruminations to the determinedly pragmatic considerations of running America's 10th largest city, San Antonio mayor Henry Cisneros explained how his administration is attempting to balance the city's legendary human scale and historic charm with rather bold plans for future development. Cisneros linked San Antonio with cities like Indianapolis and Baltimore that are now using the "pro-active, business-type planning strategies" necessary in a "post-Washington" era of federal cutbacks. Calling San Antonio a model for the new "entrepreneurial city," the mayor ticked off a mind-boggling array of current and forthcoming downtown building projects that involve the participation of both public and private sectors. Cisneros noted that in the major demographic and economic shifts affecting America's urban centers, "some cities will be victimized and others will prosper." The direction that he intends to lead San Antonio was made clear.

William Hammond, a veteran of General Electric's Applied Creative Thinking Program, delivered an intriguing talk that progressed from a general overview of the learning and thought processes in post-industrial America to a more specific discussion of the architect's mind. After defining the four quadrants of learning—sensing, watching, thinking, and doing—Hammond went on to present the results of research on the thought processes of architects, pointing out that most successful firms balance people strong in the first two quadrants (creative or design-oriented personalities) with those who exhibit qualities of the third and fourth quadrants (technical types or doers). Achieving that balance, according to Hammond, is simply a matter of hiring the right mix of people.

The final two theme presentations were less provocative. In an address marred by gratuitous swipes at the forecasting abilities of competing magazines, Robert Bleiberg, publisher and editorial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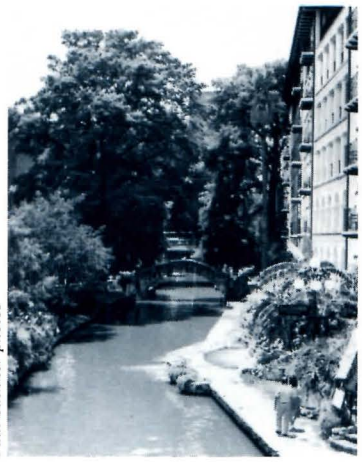
director of *Barron's*, gave a largely sanguine economic outlook for what he called "the amazing '80s," predicting lowering interest rates, continued low inflation, and diminished expectations by union labor. While Bleiberg recognized certain weaknesses in the current economy—namely, rising corporate layoffs, softness in the automobile and heavy manufacturing industries, and a decline in advertising—he felt that the boom in the sales of homes, growth in technology industries, and a stable rate of unemployment would result in sustained economic growth through the end of the decade.
If there was an arrogant tone in Bleiberg's talk that was at times annoying, the convention-closing address by Susan Stamberg was downright bewildering. Stamberg, the voice of the nightly news program "All Things Considered" on National Public Radio, elected to give a travelogue of sorts (without slides) on her recent extended trip to Asia. Focusing on Thailand, Stamberg contrasted the squalor of Bangkok with the humane qualities of its indigenous architecture and, in the most superficial manner, suggested that American architects avoid the standardization of European Modernism and instead turn to Asia for inspiration.

Journalism symposium reviewed the state of architectural criticism
Perhaps the most successful of all the programs in San Antonio was a morning-long symposium on architectural criticism, sponsored by the AIA Committee on Design, that brought together five leading newspaper critics and the editors-in-chief of the country's three major architectural trade journals. Robert Campbell of *The Boston Globe*, David Dillon of *The Dallas Morning News*, Thomas Hine of the *Philadelphia Inquirer*, Michael Sorkin of New York's *Village Voice*, and Manuela Hoelterhoff of *The Wall Street Journal* all spoke compellingly of the critic's work, depicting a surprisingly no-holds-barred world of nonintervention by their publishers. Campbell observed that the role of the critic is "to create heros and monuments for a post-Nietzschean society, to carry the word back and forth between architects and the public, and to raise the consciousness of anyone regarding what makes a city good or bad." Dillon noted that there is no such thing as unbiased criticism: it is the critic's job, he said, to be a subjective advocate on building projects and issues. Dillon added that while his primary obligation is to his home city of Dallas, he views himself as a national critic reporting on important architectural events throughout the country. Hine of Philadelphia agreed, noting that there is a significant difference between a *regional* critic and a *provincial* one.

Suzanne Stephens moderated a panel of magazine editors comprising Donald Canty of *Architecture*, John Dixon of *Progressive Architecture*, and Mildred Schmertz of RECORD. Stephens's questions provoked a spirited debate that centered on the issue of exclusivity rights for published projects—a policy traditionally practiced by all three magazines that Canty claims his publication is abandoning—and on the whole question of criticism of published projects. (Schmertz observed that "architects love criticism, as long as it is of the other guy's work.") Although the three editors contended that they are increasing the amount of non-objective reporting in their magazines, comments from the audience revealed skepticism and a desire for all the journals to assume a livelier critical stance.



Paul Sachner photos

Two views of San Antonio: While the River Walk is an attraction for residents and tourists alike, much of the city struggles with the scars of "urban renewal" that have left it—between distinctive older buildings and some scaleless new ones—littered with parking lots.

Historian Spiro Kostof warned architects that "preservation is never innocent of values"
In a breakfast address to architects and preservationists, Kostof claimed that the practice of saving historic structures "is becoming a tool of tidying up. We like our memory compact, upbeat, and designed, " he stated, adding that "the fact that cities are untidy places disturbs and offends us."

To illustrate how the preservation of buildings in both Europe and America has been "designed," he outlined the principles underlying the restoration of Ostia, a Roman town dating from 350 B.C. that was preserved under Mussolini, and the 1920s restoration of Colonial Williamsburg under the aegis of the Rockefellers. For Kostof, Ostia is an example of the scholarly and romantic approach to preservation practice in its repair of existing ruins: "There is no moral statement about the good old days. What you see is what you get. What you don't see, you have to bring yourself." Colonial Williamsburg, on the other hand, embodies the theory that restoration is synonomous with the attempt to capture an ideal moment in history by creating "a state of completeness that may never have existed." The 18th-century structures still standing in the village were restored, while those dating from the 19th century were torn down. Missing or destroyed buildings were rebuilt in the Federal style to achieve a stylistic whole. Such period recreation, explained Kostof, was subsequently employed in Plymouth and Salem, and, more recently, at theme parks such as Walt Disney World. He warned that these "Shangri-las of history" are no substitutes for real culture or for the preservation of our collective memory. "We have to learn how to negotiate the old and the new in cities," he asserted, pointing to such successful examples of "living" preservation as Charleston, S. C.

The San Antonio example: Urban paragon or paradise lost?
AIA convention organizers traditionally plan a series of programs that address recent architecture and urban planning in the host city. This year's program consisted of three panels that dealt with the public/private mix of current building in San Antonio, urban design issues involving continued development along the city's famous Paseo del Rio, and the 80-mile-long San Antonio-Austin Corridor, an experiment in planned regional urbanization. Despite the contention by some presenters that San Antonio's aggressive pro-growth plans will be tempered by a concern for quality of life, there are distressing signs that the city is destined to repeat the mistakes of its Sunbelt urban brethren. San Antonio already has the second highest number of freeway miles (after Los Angeles) in the country, and one speaker advocated further highway expansion to stimulate additional growth. During a panel discussion entitled "The Entrepreneurial City: Guiding the Public/Private Mix," David Garcia, the city's special projects manager, revealed how San Antonio has been especially successful in obtaining federal UDAG funding and then joining with private developers on a host of large-scale renewal projects. Most of these proposals, however, involve bolstering the city's convention/tourist trade—a new downtown shopping mall, a Rouse-developed festival marketplace, several new hotels, expansion of the convention center, and conversion of the HemisFair redevelopment site into a 90-acre park—and their implementation promises to turn the city into something of an urban theme park centering on the River Walk and the Alamo. Development pressures along the river are intense, and there is justifiable concern among some that the River Walk may become a victim of its own success, as developers erect tall buildings at the water's edge.

As things now stand, downtown San Antonio is really two cities: below grade, the still-compelling charm of the meandering Paseo del Rio attracts tourists strolling past sightseeing barges, lush landscaping, and European-style cafes; at street level the "other" San Antonio comprises a depressingly neglected urban fabric of architecturally significant buildings surrounded by rubble-strewn lots, vacant storefronts in the once-vibrant Houston Street shopping district, and bus stops overcrowded with those too old or too poor to escape the desolation of the inner city. The panelists never really addressed San Antonio's esthetic and social woes, but relied instead on predictable praise for the River Walk—"the best urban place I know anywhere," said one—and spurious comparisons between the city and other distinctive American metropolises like New Orleans, Boston, and San Francisco. Disappointingly absent in San Antonio today is the kind of visionary urban planning that created the River Walk during the 1930s. Instead, it has been replaced by unenlightened boosterism.

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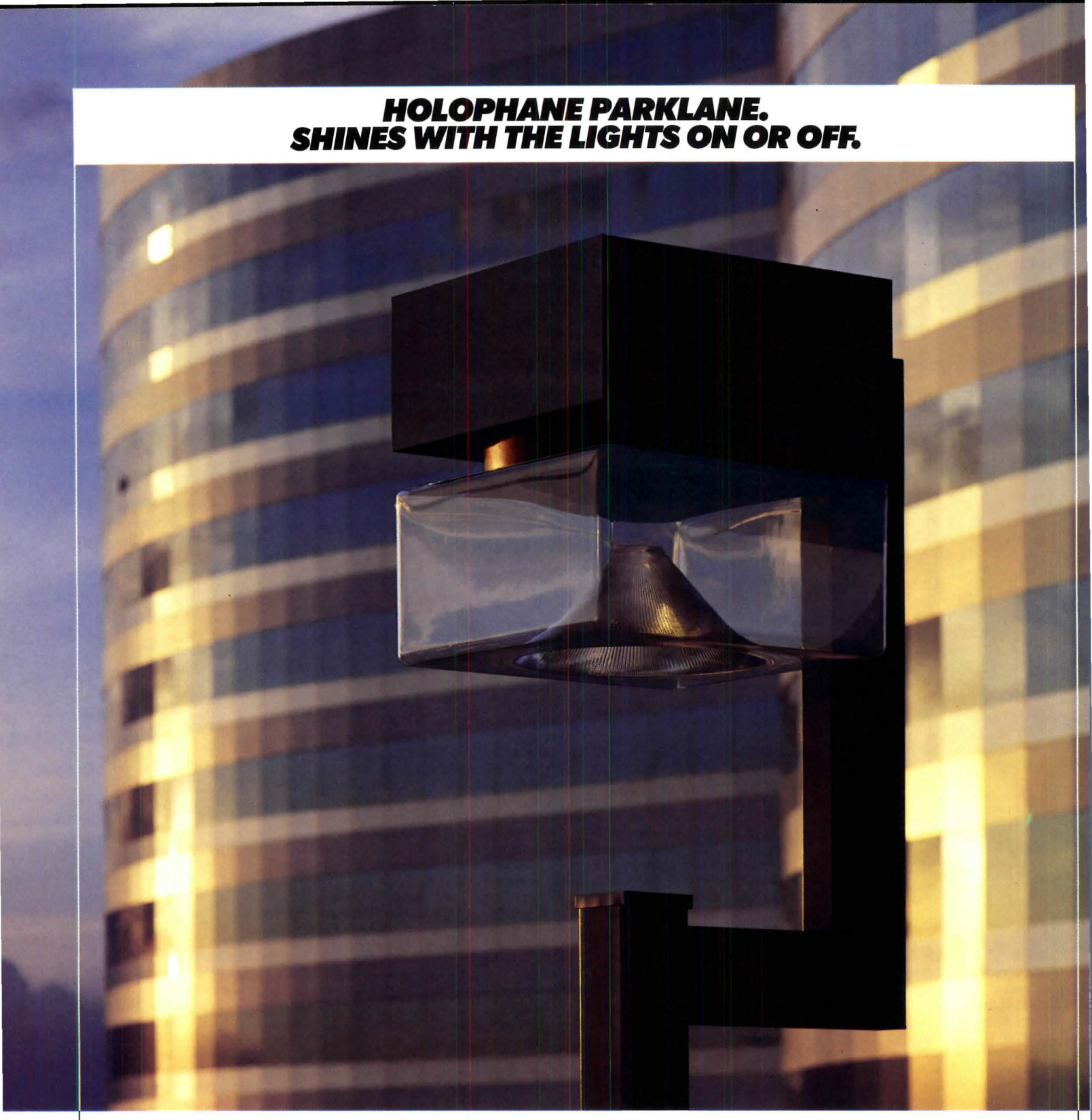

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which he called the single most important documents of all, especially for principals. With these documents, architects can determine their profitability per direct-salary expense (revenue divided by expense) and per direct labor hours (revenue divided by hours). At each stage of a project, the cumulative figures are matched against target figures to show not only if one is making money but, if not, why. For instance, a high figure for labor hours may mean that too many senior people are on the job. The system may point out other problems, such as not having billed up to the completed stage of work. It also shows which type of profitable projects to pursue.

• *The competitive edge.* Dr. Stuart Rose, who conducts marketing training for the AIA, The American Consulting Engineers Council, and the American Society of Interior Designers, among others, stressed techniques for taking the driver's seat in presentations, interviews, and general client encounters. His headings included "the flesh and the muscle" (sentence structures and word emphasis that grab attention), "the skin" (tone of statements), and "the drama." He recommended that, in an interview, you do not show every project you have ever done but beat the selection committee to the punch on questions by going around the table and drawing out each member's concerns. ("If they try to ask questions, tell them questions come later," said Rose.) Then summarize what they have said. Ask them if your summary is okay. Finally, say you would really like the job and you have the right firm to do it. "Simply saying 'thank you for seeing us' sounds obsequious." Rose discussed techniques for drawing out what clients are looking for ahead of meetings. "If they don't want to tell you, ask if they wouldn't rather have a firm that is responsive. Throw the onus on them." For presentations, he recommended doing what you do best: "If you do good magic-marker drawings and can show enthusiasm that way, do them. If you jingle coins in your pocket when you talk standing up, talk sitting down."

• *Energy as a form giver.* Texas A&M professor Raymond Reed argued for a return to energy fundamentals. For instance, architects seem to have their application of insulation to buildings reversed. People, he pointed out, have their fat on the outside to keep them warm but architects put the thermal protection for buildings within. Still, he saw the major problem with new buildings housing heavy concentrations of lighting, mechanical equipment, and people as cooling, not heating. "There's something wrong when you see, as you can, air conditioning having to be run on the coldest days in Boston," he said. He espoused the basic principles used to build older buildings. "How many buildings were built before we learned to harness oil?" he asked. "And how many will be built after it has run out?" He used the remodeling of the Wainright building in Chicago as an example of what he deemed to be a muddling of original concepts: An open central space was closed in to create an "atrium." That meant the offices no longer could receive natural ventilation and had to be air-conditioned. This meant lowering the ceilings and cutting off natural light. More artificial light meant more air conditioning. "This kind of thing becomes a vicious cycle," said Reed. Buildings in temperate climates with usual temperature variations of less than 30 degrees (e.g., Greenville, N. C.) really do not need air conditioning. But if owners insist, there are still ways to put less strain on their pocketbooks and our public systems—for instance, cooling the mass of the building at night with off-peak rates. Instead of air conditioning, Reed would prefer, in another simile to human comfort techniques—this time, the parasol—finding ways to keep the sun off buildings in winter and taking the cover away in winter. "If the result produces strange-looking buildings," he said, "we are living in a strange society." Indeed, he saw energy influencing social patterns in the future when shortages do begin to manifest themselves. Rich people, he said, will move into the cities where energy can be used more efficiently for comfort and transportation while the poor people, so displaced, will come to fill up the vacant suburbs.

• *CAD: Implementation and beyond.* David Jordani of consultants Jordani & Associates talked about the management of a design firm as having more influence on the success of systems than the choice of which system to use. "The field is so competitive that whatever one manufacturer develops today will be offered by all companies tomorrow. Research on what you want to do with a system is the most important activity during the prepurchase period." Still, "If a firm has poor production processes to start with, CAD is not going to make any difference to what is produced. Plan your use of a system and set goals," he said, "even if you have to change them." Also, he felt that CAD should not be a design company's first application of computers. "The money won't be as efficiently spent as it would be for several PCs for the project managers." He had strong ideas on who should run a system: "Don't hire CAD operators. Train architects to use it."

Three presidents: Current president John Busby (left) will be succeeded by current first vice president Donald Hackl at the end of the year. Delegates elected Ted Pappas (right) as first vice president, thus is slated to become president in 1988.

• *Determining the value of your firm.* Hugh Hochberg of the Coxe Group discussed a few methods to be used when ownership is to be broadened, sold, or a partner wants out. "If you want to leave, you don't just take half the assets and walk out the door," said Hochberg. He pointed out that a firm's value is determined by the people in it—"a value far less predictable than, for instance, machines." He outlined four methods for determining a firm's value:
1. Earnings capitalization. A multiple based on the number of years that a firm's profit can be seen to be self-generating is applied to that profit. A normal multiple if the firm is healthy is two years.
2. Discounted cash flow. A longer period of profit is projected and then discounted based on the fact that cash in hand today is worth more than it is in the future.
3. Multiple of net worth. A multiple, usually between 1 and 1.75, is applied to the excess of assets over liabilities.
4. Net worth plus earnings. The return on net worth is used to produce a reasonable multiplier close to that expected in normal business investments.

Hochberg outlined a number of qualitative and quantitative factors that influence all of the above formulas. Under qualitative factors, he included the ratios of senior people and owners to the general staff, and of those with marketing capabilities, the quality of fixed assets, staff stability, the staff's energy level, and the firm's position within its markets. Quantitative factors, besides net worth and earnings, included liability exposure, revenue per employee, the extent and nature of debt, economic conditions within the firm's markets, and the number of competing firms.

• *The AIA Documents: An overview.* Attorney Dale Ellickson, the director of the institute's documents program, explained not only the growingly complex categories of some 88 documents required for the many different types of contracts that are currently written but the new documents that will be coming out at the end of the year. New provisions, for instance, will mean "no more contrators dumping 1,200 drawings for approval at 4:30 on a Friday afternoon." He said that the documents, first created in 1888, would continue to reflect changes in the ways architects practice and court tests. And one may run into trouble when altering one section without altering others, e.g., A-201 which defines basic responsibilities—and requires the approval of shop drawings, while lawyers will often add an addendum saying that the architect will only review them. Among the factors that influence the choice of documents is the method by which the contractor is to be paid and the design of subsystems. "The owner may want the cost breaks of having his mechanical contractor design the system," said Ellickson. Other factors include the form of construction contract. "You must produce much more detailed working drawings if a project is to be bid instead of negotiated," he reminded his audience. *C. K. H.*

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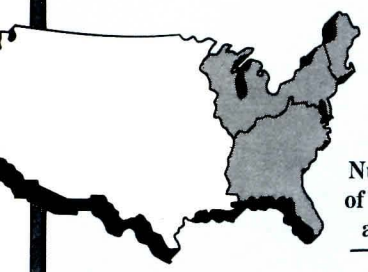
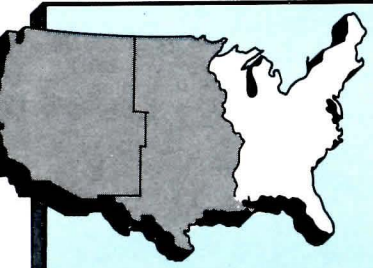
Costs: They had to go up a little at some point

Summary of Building Construction Costs



Districts Eastern U. S.

	Number of metro areas	1/86 to 4/86	4/85 to 4/86	1977* to 4/86
Metro NY-NJ	18	0.25	2.25	1722.39
New England States	33	0.52	2.67	1672.90
Northeastern and North Central States	120	0.55	1.41	1655.87
Southeastern States	106	0.60	1.44	1709.10
Average Eastern U. S.	277	0.55	1.62	1682.59



Western U. S.

Mississippi River and West Central States	122	0.29	1.37	1663.38
Pacific Coast and Rocky Mountain States	106	-0.15	0.09	1727.97
Average Western U. S.	228	0.09	0.78	1693.41
United States Average	505	0.34	1.24	1687.48

* Using only cities with base year of 1977

Of course, conventional wisdom tells us that the prices of everything will always go up. With construction costs holding steady through much of 1985 and finally dropping by a smidgen in the final quarter, something had to give. And it did. Construction costs in the first quarter of 1986 rose—by a smidgen. And this was not in all cities, since Denver, Minneapolis, New York, Pittsburgh, San Franciso, and Seattle continued to show declines. Both components of costs—labor and materials—contributed to the general rise.

Labor's gains were strongest in the East, New England, the Northeast, and the South, with the West Central States following. Paradoxically, strength within the construction markets, both residential and commercial, is credited with keeping labor costs down—along with low inflation.

Material prices, led by gypsum board, plywood, and lumber, increased slightly due to the strong housing market. However, asphalt products began to reflect the downward trend of the cost of oil, and they may continue to go down some more before the current rising cost of oil catches up. Structural steel, electrical conduit, and copper also declined.

Projections for the next several months are for continued stable construction costs. The many labor contracts that will be negotiated between May and September are anticipated to be within the bounds of inflation and the major union thrusts to be fringe-benefit improvements and productivity limitations. However, shrinking profits for the producers of construction materials during the first quarter cannot be ignored. Eventually, this last factor, coupled with high demand, is going to produce a rise. According to the McGraw-Hill Information Systems Company, first-quarter sales rose 5 percent above first quarter '85, while profits fell 4 percent below those for the same period. Hardest hit were producers of lumber, cement, steel, and heavy-construction equipment.

McGraw-Hill Information Systems Company studies are conducted quarterly by direct contact with union and nonunion sources, direct-material suppliers, construction-labor consultants, and both general and specialty contractors in each city.

Cost Information Systems
McGraw-Hill Information Systems Company

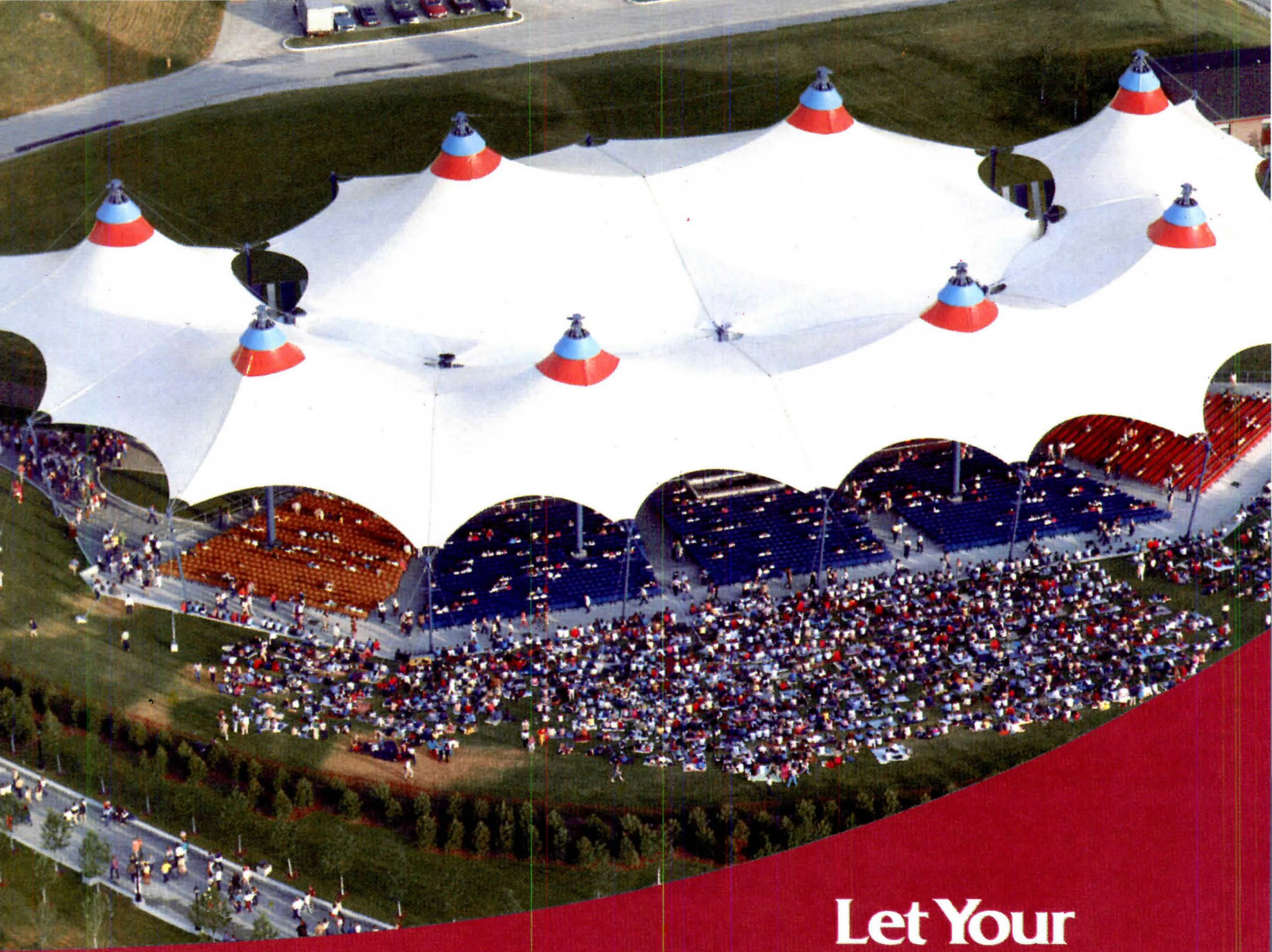
Historical Building Costs Indexes

Average of all Nonresidential Building Types, 21 Cities

1977 average for each city = 1000.0

Metropolitan area	1977	1978	1979	1980	1981	1982	1983	1984	1985 1st	1985 2nd	1985 3rd	1985 4th	1986 1st	1986 2nd
Atlanta	1171.5	1712.6	1925.6	2098.6	2078.0	2360.6	2456.7	2448.7	2446.2	2506.3	2539.5	2518.3	2526.3	
Baltimore	1018.4	1107.7	1304.5	1446.5	1544.9	1639.5	1689.7	1703.7	1737.1	1749.9	1750.8	1743.8	1744.5	
Birmingham	1029.7	1142.4	1329.9	1407.2	1469.9	1468.1	1535.7	1594.7	1592.8	1583.9	1567.5	1565.7	1578.8	
Boston	1028.4	0998.6	1236.0	1283.7	1432.5	1502.0	1569.9	1646.0	1671.6	1696.9	1714.5	1721.0	1725.7	
Chicago	1007.7	1032.8	1199.7	1323.6	1344.7	1425.8	1439.5	1476.7	1476.8	1479.5	1499.1	1528.0	1556.4	
Cincinnati	0848.9	0991.0	1323.9	1385.2	1350.4	1362.6	1430.8	1484.5	1487.7	1492.5	1488.1	1486.6	1489.1	
Cleveland	1034.4	1040.8	1287.5	1388.2	1459.5	1511.4	1475.9	1464.0	1461.6	1472.8	1481.8	1474.1	1482.6	
Dallas	1042.4	1130.6	1431.9	1481.9	1750.6	1834.3	1925.9	1958.0	1961.5	1971.5	1964.6	1963.3	1964.2	
Denver	1038.8	1100.4	1495.6	1487.4	1632.2	1679.1	1800.1	1824.3	1828.7	1824.6	1825.9	1821.8	1798.8	
Detroit	1018.1	1087.3	1275.3	1447.4	1580.3	1638.0	1672.1	1697.9	1711.9	1712.3	1704.6	1692.6	1696.0	
Kansas City	1023.5	0951.5	1125.8	1233.2	1323.4	1381.8	1407.5	1447.1	1455.7	1465.1	1471.0	1472.5	1476.9	
Los Angeles	1022.5	1111.0	1255.3	1387.5	1474.3	1503.3	1523.9	1555.1	1571.0	1584.3	1579.1	1582.0	1598.4	
Miami	1004.5	1080.9	1330.1	1380.6	1369.1	1392.1	1467.6	1522.2	1529.8	1536.1	1543.7	1540.6	1549.9	
Minneapolis	1060.2	1196.8	1286.9	1327.7	1442.6	1576.8	1624.6	1640.4	1639.9	1667.3	1680.7	1661.0	1641.9	
New Orleans	1001.3	1138.8	1291.9	1505.7	1572.7	1616.9	1650.5	1691.4	1739.5	1751.0	1758.8	1762.5	1782.0	
New York	1005.4	1043.0	1247.1	1319.4	1419.2	1491.8	1672.5	1747.2	1765.1	1789.5	1812.3	1806.7	1803.3	
Philadelphia	1013.8	1074.2	1487.5	1539.5	1660.7	1769.4	1819.5	1922.1	1965.4	1982.2	1981.3	1967.9	1974.2	
Pittsburgh	1016.1	1015.0	1227.0	1341.7	1493.2	1479.5	1497.2	1576.1	1580.2	1595.5	1612.5	1611.0	1607.7	
St. Louis	1039.1	1198.8	1275.9	1320.0	1397.3	1451.2	1524.9	1625.5	1628.2	1644.8	1637.8	1641.8	1652.4	
San Francisco	1083.2	1326.8	1473.4	1644.8	1776.4	1810.1	1856.8	1935.3	1929.5	1944.8	1958.3	1961.8	1955.9	
Seattle	1142.5	1137.9	1373.4	1616.8	1814.9	1962.7	1979.0	1948.9	1973.1	1955.3	1963.5	1937.9	1925.2	

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 divided by 200.0 = 75%) or they are 25% lower in the second period.



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Practice:
Clients are the angels of invention

An architect well known for novel ideas that sometimes raise professional hackles poses his views on what architects do

By Charles Thomsen

Professionals develop traditions that become art—an end in themselves. Lawyers write incomprehensibly. The General Accepted Accounting Principles become a matter of morality for accountants. We architects foist current fashions on our clients with solemn manifestos that we ourselves believe—at least for the moment. Too many of us design to suit other professionals. Sometimes, it almost seems that we would be happier without the frustrations of clients.

Innovation comes from solving real problems in the real world. The only meaningful innovation is that which is wanted by somebody.

Three great firms have, in fact, been shaped by listening to the needs of their clients

Tom Ellerbe is 94. He has a seven-decade perspective on the practice of architecture, having joined his father's firm when he was in his late 20s. Two years later, his father died, and Tom took over. The firm had work with a small industrial company named 3M and a family of doctors named Mayo.

I thought I'd like advice on being successful from a man who could keep two clients for 75 years. His reply: "It was listening to the Mayo brothers and learning about technical competence." In solving medical design problems—in working closely with these clients—Ellerbe became the country's leading medical architect.

At CRS, Bill Caudill found a new way to listen to clients. When the firm was just a few people in College Station, Texas, it landed its first project for a school—in Oklahoma. The designers did several schemes, but every time they went up to make a presentation, the design was turned down. Realizing that CRS was losing its shirt on the project, Bill decided that he and his partners should load drafting boards in their cars, drive to Oklahoma, and work in the client's board room until they got their plans approved. They did it. It worked wonderfully. And it worked in two ways. Watching the architects work, the clients began to understand what Bill was trying to do as an architect. And Bill began to understand how they wanted to teach school.

Such "squatters" became a tradition at CRS. Everybody loved it. They would pack up, go off, and sit down with educators to learn how this project differed from the previous one. They learned how schools worked. They didn't get wrapped up in unrelated architectural philosophies. They solved real problems for educators.

Developer Gerald Hines chose 3D/I for his first project and the firm has worked for him ever since. During Houston's great expansion, 3D/I worked closely with developers and learned what they needed. The firm learned early that to make a project economically feasible, a developer had to have an efficient floor plan, core, skin, and mechanical systems and how to produce them. The firm even learned to quote its fee in dollars per square foot so the amount could be easily used in the client's pro-forma calculations.

Today, many firms understand good hospital, school, and office-building design. The basic skills of Ellerbe, CRS, and 3D/I, once innovative, are now a commodity. So when much of the innovation at the practical level stops, when firms' special building types mature, how do good firms continue to set themselves apart from other architects? Beyond design innovation, there are four classic benefits that attract clients: price, packaging, service, and quality.

When services are seen to be a commodity, price often becomes the decisive selection criteria

The usual strategy is to become a low-cost producer. That's not bad. Clients benefit from a good price—for construction and fees. We don't give enough thought to ways of reducing costs. The professionals who have worked out ways to design and build economically deserve our respect.

But even in selling commodities, price doesn't have to be the determining factor. One consumer company, Southland Corporation, has taken the world's most basic commodity product—groceries—and added convenience. Its Seven-Eleven stores sell the same quart of milk for more than the local supermarket, but they make it available when the supermarket is crowded or closed.

McDonald's has built success selling hamburgers. Its product is not innovative, nor does it sell its product at a lower cost than its competitors. However, it adds speed, dependable quality control, and, through advertising, familiarity.

After cost, purchasers often see packaging as one of their principal benefits

Take hi-fi. During the '50s and '60s, technological innovation in sound reproduction took great leaps. You bought components from the innovators—Bogen, AR, Girrard. Eventually, technological innovation topped out. A few hundred dollars would buy all the fidelity anyone but an audiophile could want. Only infinitesimal gains in sound quality were available for higher expenditures.

In the mass market for stereo equipment, technological innovation quit being the major buyer influence. Packaging became important. Bang & Olufsen of Denmark integrated components into a beautiful package and added features like remote control and pre-programmed functions. The Japanese began packaging speakers, turntables, cassette decks, tuners, and amplifiers into modular clip-together, super blasters. Packaging included the addition of peripheral features as well as esthetics. Component integration became an issue.

The same concepts fit our business. While most of the firms in the market are trying to be the low-cost producer, there are a few that are superb at packaging. As Bang & Olufsen did for stereo equipment, Philip Johnson has done I believe in the repackaging of office buildings' appearance. The Republic Bank and the Transco Tower are the same office-building technology. The only difference is the package.

In Washington, D. C., the height and zoning restrictions have produced clear technical solutions for Washington office buildings. Mechanical and structural systems are all worked out. The only thing left for architects is what a friend calls "facadomy"—packaging.

There is a rich and healthy controversy about packaging in architecture. We have discarded the International Style—an unpopular esthetic with laymen. One had to be taught to like it. Populism has returned. Design is capricious, whimsical, sentimental, historical, or high-tech. The appreciation of architecture is no longer the province of an enlightened few. Architects are again producing architecture that is understood—and enjoyed.

In fact, this architecture is more than enjoyed. It is bought, rented, and used. It is profitable. Despite Houston's recent office glut, Philip Johnson's Republic Bank and Transco Tower both leased quickly.

Back to hi-fi. In addition to beautiful design, packaging also means providing many choices of components and flexibility in putting them together. In our profession, we are seeing an unbundling—or repackaging of the design process.

Developers may hire a landscape architect, a planner, a design architect, a working architect, and five interior architects for one project and then go out and select their own mechanical, structural, electrical, and civil engineers. We're seeing the public sector do the same thing. The Corps of Engineeers may establish requirements such as office location, expertise in building type, and minority participation. One firm can rarely fulfill all the stated requirements. Joint ventures are the only answer.

The State Department, GSA, and the Air Force are all looking for innovations in the project-delivery process that will combine performance requirements and esthetic solutions all in an economical package.

Continued

Mr. Thomsen is president of 3D/International, architects headquartered in Houston.

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Sometimes we don't understand the difference between good service and good architecture

Let me describe the difference with an analogy. Let's say you go to a repair garage and find your car's not ready when promised, and that you have a surprise problem that is said to cost $700 to repair. You go the next night, the bill is not $700, it's $1000, and the steering wheel is dirty. Would you go back?

Let's change the service slightly. The garage service manager calls you before you go to get your car, expalains its problem, estimates the cost at $1,100, and says that he will call to confirm that it will be ready the next day. He does. You go pick it up. The bill is $1,000 instead of $1,100. Not only that, the steering wheel is clean and the garage has thrown in a $2 wash job.

The mechanical result was the same. The difference was that the service manager called and leveled with you. He thought about you as well as your car. That's good service. It's not quality work, it's good service.

The client must be a member of the design team. The developer has probably become more involved in design than any client in history. Architect and developer are collaborators until the building works and the pro forma is right.

Recently, I talked to one of our important clients for whom we have done a lot of work. I asked him to tell me how we were doing. I don't take him for granted. One of the nicest things he said was, "You are all a pleasure to work with." Well, I suppose it would be easy to be complimented by that, but there are two messages there. Dennis is a successful developer in a tough market. He has a lot of confidence in his own judgment. He wants an architect who will listen—and then add his own thoughts. He didn't say that we were great at achieving 90-percent efficiency, sizing ducts properly, or doing good design. I believe he thinks we are, but he expects that. What he said was not, "You guys are good architects" or "I can hand a job to you and rest assured that it will be okay." He said we were good to work *with*. He wants to be involved, to be a part of the development of our work. He believes his ideas can make a better product. So do we.

Quality is much misunderstood but it is definitely not only in the eye of the beholder

Many years ago, I discovered the speed and economy inherent in using industrialized building systems. We must have built 100 schools around the United States using such systems. When I advocated them, many architects asked, "But is it quality?"

After a while, I got to wondering what they meant. When I asked, I got responses like, "Well, there's nothing more solid than a good concrete building," or, "I'm concerned about these light curtain walls," or, "There's nothing as solid as concrete block and brick." Pretty soon, I got the idea that quality, to them, meant heavy.

I've also heard people use quality synonymously with luxury, elegance, and expense. Many of us think of quality as deep carpets, marble, and fine woodwork. A Cadillac is quality; a Toyota is not.

But to the automobile industry, quality control means conforming to requirements. A few years ago, I was given some statistics—20 percent of the cars off U. S. production lines require some fixing before delivery to a dealer. In Japan, the number is 7 percent. By that definition, a Toyota is a higher-quality car than a Cadillac.

When I was just out of school, I had the opportunity to work on a feasibility study for a high-rise office building. One of the clients was Warren Bellows of Bellows Construction Company. Bellows had built most of Houston's tall buildings. He had just finished the tallest building west of the Mississippi—the Humble, now Exxon, building. For this project, he was both builder and owner.

I went to him to get his ideas on it. I was excited. I was going to meet a great man. After we got over a few preliminary niceties, I asked in my most respectful voice, "Mr. Bellows, what concepts should guide us in the design of this project." I was ready for the real stuff. I was anticipating break-through construction and profound insight into the problems of office building design. I was prepared for new structural systems, symbolism on the skyline of Houston—at least a slip-formed core. I got it. Warren pursed his lips, leaned back, got very contemplative and said, "Well, I don't want to skimp when it comes to keeping water out of the building."

Driving home, I thought , "Four thousand years of architecture, and we still haven't learned how to keep the water out."

Here's the point. Quality comes on the wings of inspiration. Real quality comes from doing a lot of little, mundane, unexciting day-to-day chores properly. Innovation is essential. So is keeping the water out. Our clients want us to design facilities that serve them better. They want us to reduce their cost. They want good packaging, service, and quality. Listen to the clients. They are the angels of invention.


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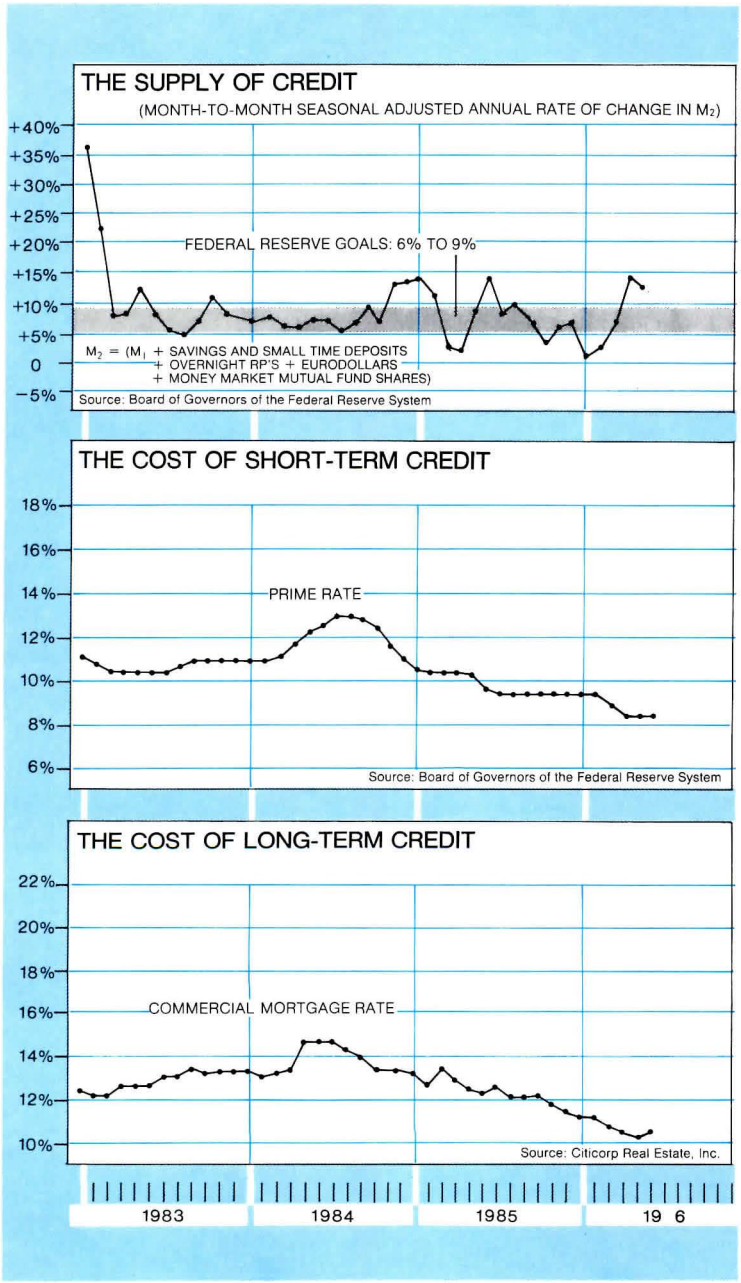
Finance:
Tax reform clouds the economic outlook

By Phillip E. Kidd

Macro economic conditions remain ideal for supporting vigorous real growth: inflation is very low; oil prices have been cut in half; interest rates are at their lowest levels since the mid-1970s; and the dollar is no longer strong. Nevertheless, these forces have so far not stimulated demand for the output of enough domestic industries to push the economy into the fast-paced expansion that should be occurring. Indeed, there is a distinct uneveness about activity in many key sectors of the economy.

In the construction industry, housing and retail gains are offset by declining office and industrial building, leaving total construction at midyear just about the same as a year ago. In the automobile industry, when incentive programs are introduced, sales increase; when such programs expire, sales slump. In the capital-goods industry, the industry's production is below last year's because advances in defense- and space-equipment production have not been sufficient to counter the slippage in business equipment—as that sector feels the pinch of lower expenditures for domestic oil and gas exploration. Similarly, a search through the statistics of other industries reveals very much the same pattern of vacillating production and sales. As a result, the economy, lacking strong momentum from a number of expanding industries, continues to advance at around a 2-percent rate.



There has been ample time for economic forces to start increasing the output and sales of a broad group of industries—which would be the advance signal that faster real economic expansion was very near. Since there are no such definitive signs, one must reluctantly admit that there will be still more delays in achieving a higher rate of real GNP. When will we see the GNP, now at 2-percent real growth, achieve 4 percent?

Significantly, a new force—tax reform—has surfaced that clouds the answer to that question even more than it is usual to cloud economic forecasting. Only a few months ago, it was the impact of the Gramm-Rudman bill, not tax reform, that concerned most forecasters. However the improbable is happening: Conferees have begun ironing out the differences between reform bills passed by House and Senate.

It is too early to have a clear idea of what will survive. What *is* important is Congress's firm belief that a tax reform bill will be passed this fall, and its perception that it will be revenue neutral—that it will raise the same amount of money for the federal government as the existing tax structure. Moreover, both proposals would collect more funds from business than under the present tax system, with the House generally harder on business than the Senate.

Equally important, the House and Senate measures are heavily front-end loaded, but with different implementation dates. The House version makes the provisions curtailing tax benefits retroactive to January 1, 1986; while the tax-rate cuts are retroactive to July 1, 1986. In contrast, the Senate version, which is the early favorite to be closest to the final bill, would limit tax deductions at the beginning of next year; whereas it would wait to lower tax rates for individuals and business until mid-1987.

There would be a storm of protest over a retroactive phase-in plan, so the Senate proposal is more probable. Although projected to be revenue-neutral over a five-year period, such a phase in-process would raise everyone's taxes in 1987, but lower them in 1988 and for several years thereafter. In 1987, this would increase federal revenues and lessen federal borrowing, which would relieve interest rates. However, it is doubtful if lower interest rates and more financing for private uses could overcome the very negative impact in early 1987 on consumption, production, and investment from the our sudden loss of sizable purchasing power.

Because the Senate phase-in plan could have potentially harsh consequences for economic growth in the first half of 1987, the House/Senate Conferees may agree on a more moderate phase-in plan. This would narrow the timing between the curtailment of tax deductions and the implementation of tax-rate simplification and reductions. Nevertheless, some phase-in formula is likely to achieve some of the cuts in the 1987 deficit mandated by Gramm-Rudman.

Passage of a compromise tax reform bill this fall offers enormous long-term potential for real growth; but in the near-term, economic activity is likely to suffer through an erratic period of adjustment. Among those individuals and businesses anticipating the loss of tax deductions next year, many will increase spending during the final months of this year. Such actions will boost real growth in the fourth quarter of this year, but weaken expenditures and lower real growth in the first quarter of 1987.

Throughout this transition period, shifts in monetary policy will be crucial in minimizing possible disruptions to the economy. The Federal Reserve will restrain monetary policy cautiously in the fourth quarter, choosing to follow the financial markets up as significant increases in tax-related spending combine with very stimulative macro forces to push real GNP growth sharply higher.

In turn, interest rates at year-end will be 100 to 150 basis points (1/100ths of a percent) above their current levels. In the first quarter of 1987, the Federal Reserve will aggressively ease monetary policy to offset the loss of both tax-incentitve spending and purchasing power from the phase in of the tax reform bill. By the end of the first quarter, interest rates all along the yield curve will be moderately lower than today's. Short-term rates will range between 5.75 and 8.5 percent and mortgage rates will range between 8 and 10.5 percent. Since the uptick in interest rates will be brief, housing and retail building will not lose their momentum; but an office and industrial rebound will have to wait for that elusive, sustainable, surge in real economic activity.

Mr. Kidd is a prominent economic consultant and former director of Economics Research for the McGraw-Hill Information Systems Company.

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Architectural education: an A.R.E. mini-test— how good are you on structures?

For those of you who tested yourself with our previous mini-test on the Pre-Design section of the Architect Registration Examination, here is an even more challenging one—on general structures. Again, take a few minutes, grade yourself, and let us know what you think

The response to our mini-test taken from the Division A: Pre-Design section of the A.R.E. (RECORD, February 1986, page 59) was overwhelmingly favorable and enthusiastic, and ranged from interns preparing to take the exam to "old pros" checking their mettle. This one samples some basic general questions on structures, and again was prepared by the NCARB, along with the following explanatory introduction to reflect the nature of this division of the exam. The rest of the nine divisions will be covered from time to time. The approved answers are inverted below right. H.L.S.

The following ten-question mini-quiz is presented so that you may try your hand at a sampling of general structural problems from recent editions of the Architect Registration Examination (A.R.E.). Such a sampling is representative of the exam in only a limited sense: no matter how carefully selected, ten questions cannot possibly reflect the range of material covered in the A.R.E.'s Division D: Structural Technology—General. The actual exam lasts 2 1/2 hours and is far more comprehensive than these few questions would reveal. (If the mini-quiz whets your curiosity, however, you can find more sample questions in Volume 2 of the *A.R.E. Handbook.* For information about the *Handbook,* contact Sharon Costello at NCARB, 1735 New York Avenue, N.W., Suite 700, Washington, D.C. 20006.)
The basic orientation and approach of Division D is outlined below:

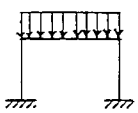
Division D: Structural Technology—General
The identification, resolution, and incorporation of the technical aspects of construction in structural systems as related to the design of buildings.
The problems and questions in this Division are mostly presented in the form of multiple-choice: however, written identification type questions will also be used. This Division is organized around tasks demanding a considerable store of factual knowledge combined with analytical ability. Some conceptual and creative skill is also applicable. The candidate will be asked questions in the areas of: analysis and selection of appropriate structural systems and components; complex structural systems; structural connections; loading; code requirements; costs; structural construction methods; materials and safety; the impact of structure on the design of buildings; and the historical aspects of architecture as related to structural theory and design.

Questions

1. Which of the following statements about buckling in concentrically loaded long steel columns is INCORRECT?
(A) Round pipe sections are ideal shapes to prevent buckling.
(B) Buckling is influenced directly by the strength of the material.
(C) The slenderness ratio is the effective length of the column divided by its least radius of gyration.
(D) Column end conditions influence buckling.

Answer _____

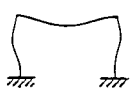
2.



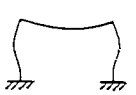
Which of the following diagrams best represents the exaggerated deflected condition of the rigid frame shown above?

(A)

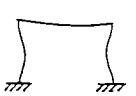
(B)



(C)



(D)



Answer _____

3. The numerical value in pounds per square inch for the stress allowed in structural timber is LEAST for
(A) compression parallel to the grain
(B) compression perpendicular to the grain
(C) extreme fiber stress in bending
(D) horizontal shear

Answer _____

4. When common wire nails are driven into the end grain of a solid wood timber, which of the following can be expected?
(A) The tendency of the wood to split will be lessened.
(B) The lateral load capacity of the nails will be increased.
(C) The nails will fall out unless a large size is used.
(D) Withdrawal resistance will be less than that of nails driven into side grain.

Answer _____

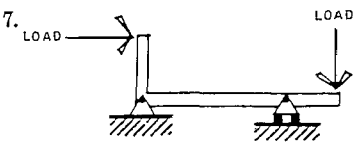
5. Which of the following statements concerning composite steel and concrete construction are correct?
I. In horizontal shear, stress is transferred between steel and concrete by studs.
II. Less structural depth is usually required in composite construction than in non-composite construction.
III. Compared to all-steel construction, substantial savings in steel weight are possible.
IV. The deflection under total load is usually greater than in non-composite construction.
(A) I and III only
(B) II and IV only
(C) I, II, and III only
(D) I, II, III, and IV

Answer _____

6. In ultimate-strength design, the American Concrete Institute (ACI) building code requires the use of the coefficient ϕ in designing concrete members. This coefficient is applied because of
(A) the possibility of inaccuracies in workmanship
(B) wind loads
(C) earthquake loads
(D) the short duration of loads

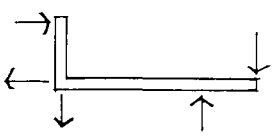
Answer _____

7.

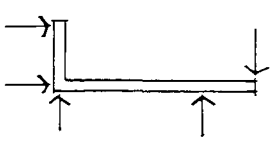


Which of the following free-body diagrams best illustrates the horizontal and vertical components and reactions shown on the space diagram above?

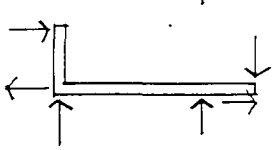
(A)



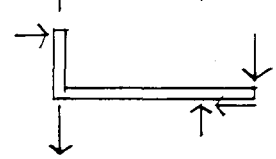
(B)



(C)



(D)



Answer _____

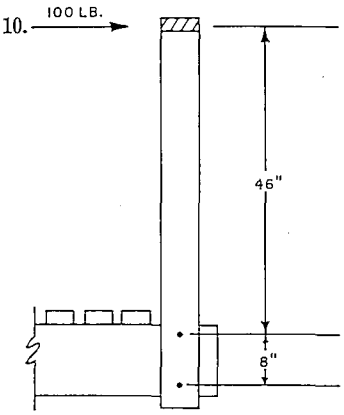
8. Steel column base plates should be designed to provide for
(A) shear at the column flange
(B) both bending and allowable bearing pressure
(C) allowable bearing pressure but not for bending
(D) an adequate l/r ratio for the columns

Answer _____

9. A building code allows a design live-load reduction for snow loads in excess of 20 pounds per square foot for roof pitches of more than 20 degrees. If $R_s = \left(\frac{S}{40}\right) - \frac{1}{2}$, where R_s = the snow load reduction in pounds per square foot per degree of pitch over 20 degrees and S = the total snow load in pounds per square foot, what is the total allowed reduced-design snow load for a 30-degree pitch roof with a snow load of 40 pounds per square foot?
(A) 5 lb. p.s.f.
(B) 15 lb. p.s.f.
(C) 25 lb. p.s.f.
(D) 35 lb. p.s.f.

Answer _____

10.



A balcony railing is bolted to a beam as shown above. For the applied load shown, what is the maximum force on the critical bolt?
(A) 425 lb.
(B) 525 lb.
(C) 675 lb.
(D) 800 lb.

Answer _____

The following are the approved answers for the 10 questions:

1.—B	6.—A
2.—B	7.—A
3.—D	8.—B
4.—D	9.—D
5.—C	10.—C

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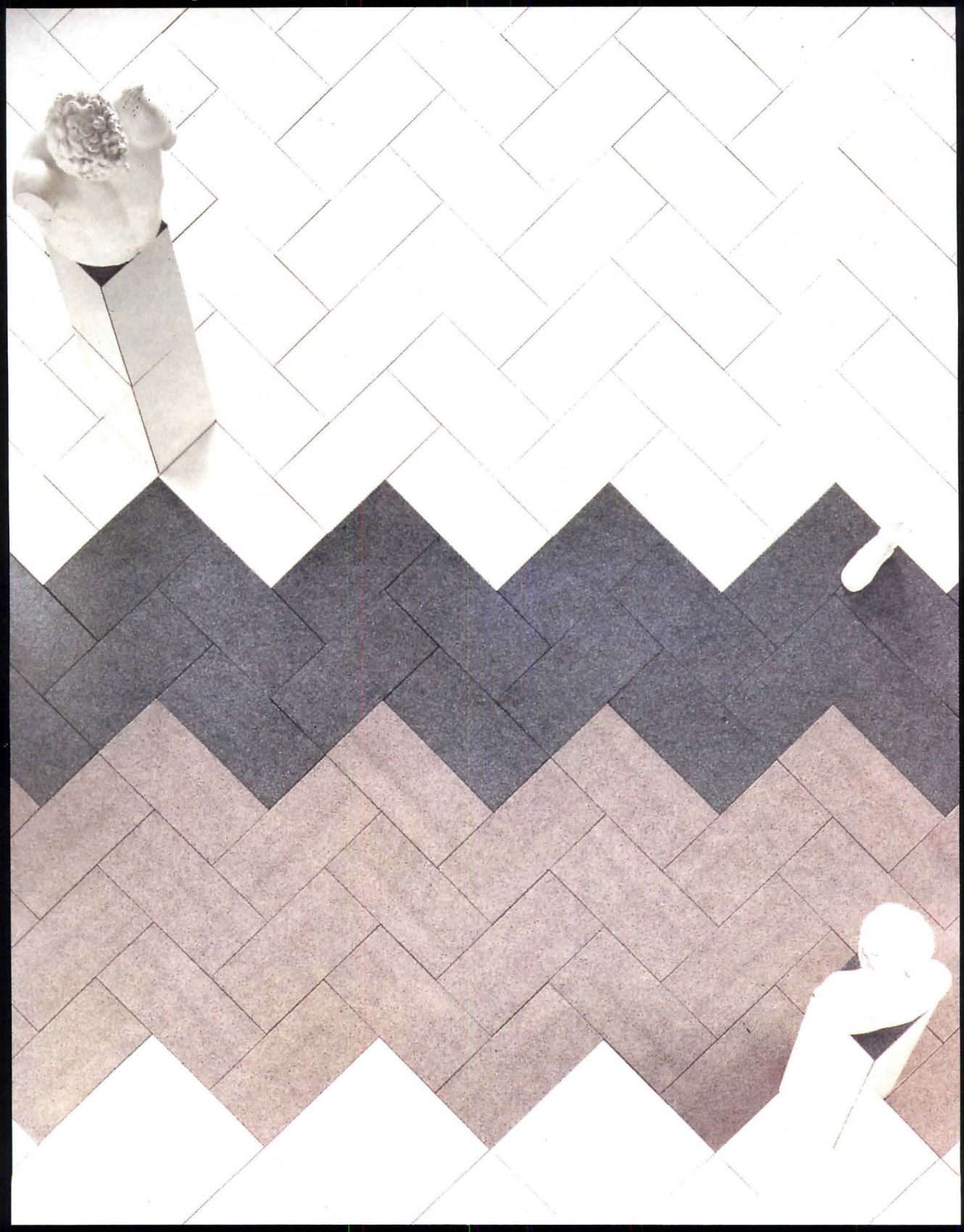

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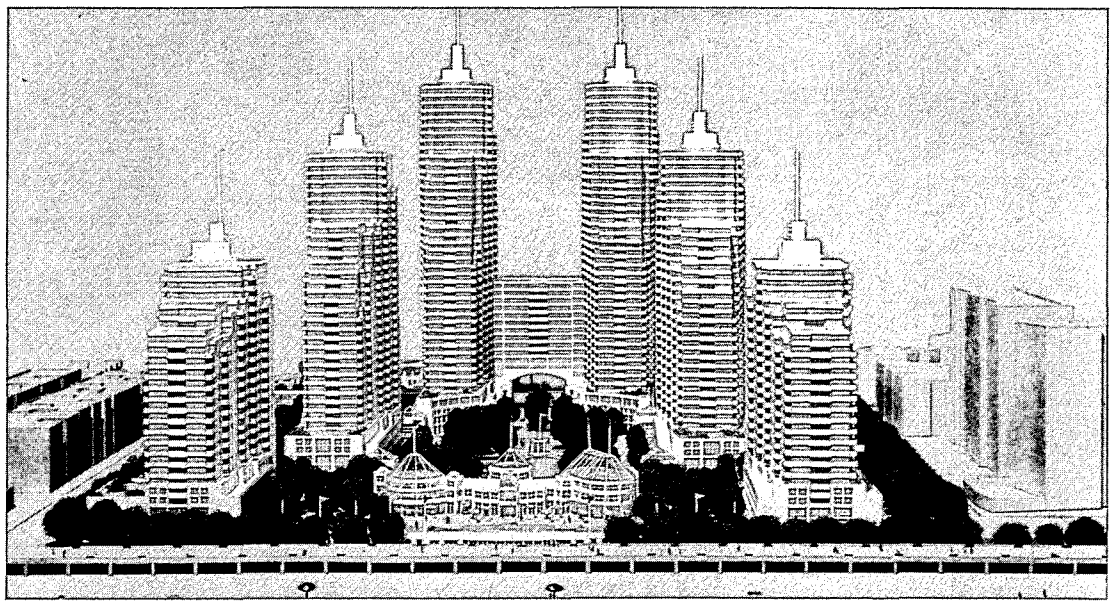
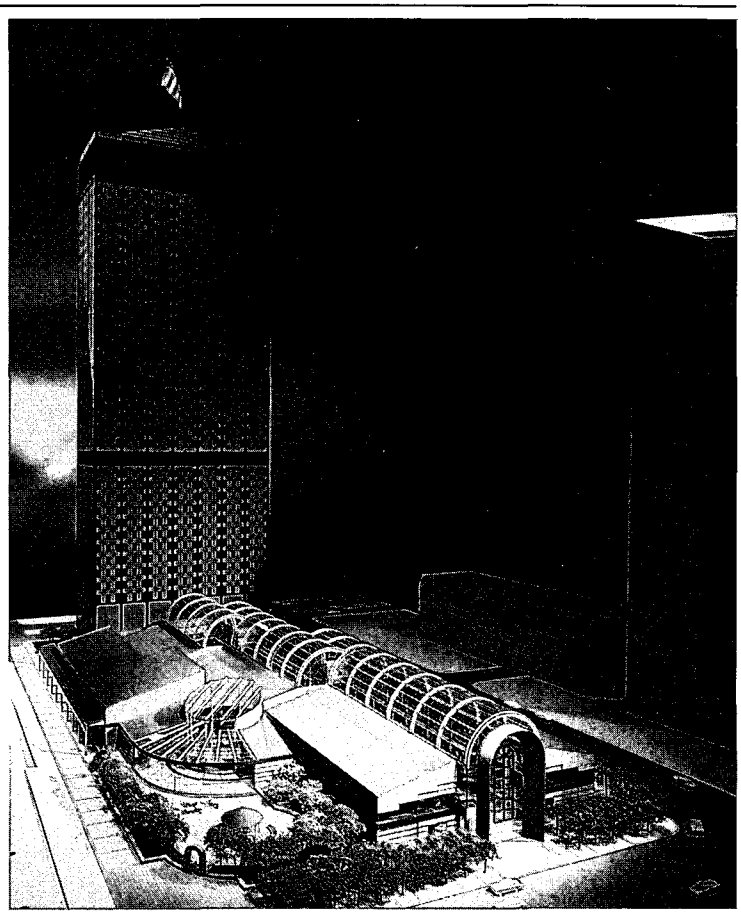
The shifting fortunes of Brooklyn's Brighton Beach



If the 2.9-million-square-foot residential complex currently being planned for a 15-acre oceanfront site in Brooklyn seems more in character with Miami Beach than Brighton Beach, it is no accident. Project developers Alexander Muss & Sons own south Florida's best-known hotel—the Fontainebleau—and architects Beyer Blinder Belle have deliberately incorporated such resort-like design elements as nautical detailing (white-painted pipe railings, a glass-roofed seaside pavilion housing a two-story health club, and lots of festive flags), an enormous free-form pool set into eight acres of open space, and a gently curved building configuration meant to ensure ocean views from most of the project's 2,200 apartments. Dubbed Brighton-by-the-Sea, the proposal comprises six towers ranging in height from 24 to 44 stories, two low-rise townhouse wings, ground-floor commercial and retail space, and parking for 1,850 cars. As the first investment in unsubsidized housing in Brooklyn in over 25 years, the project represents, according to borough president Howard Golden, "the quintessential market test" for the revival of Brooklyn's beleaguered neighborhoods.

Bleak Cleveland plaza bites the dust



When Harrison & Abramovitz designed Cleveland's Erieview Tower back in 1964, the New York firm followed the general order of the day by setting the 40-story office building behind a vast, three-block-long public plaza. Over the past two decades, however, architects and city planners have come to recognize that some of these open spaces—brought on by well-intentioned post-war zoning ordinances—are not necessarily the urban oases their advocates originally envisioned. In Cleveland plans are afoot to convert Erieview's plaza into a two-level, 200,000-square-foot arcade housing 70 shops and restaurants. Designed by Kober/Belluschi Associates, the 500-foot-long, green-glass galleria will feature an 85-foot-high, barrel-vaulted roof and an off-center food court located under an angled rotunda dome.

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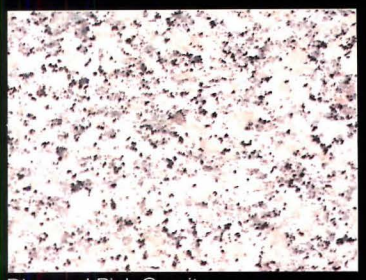
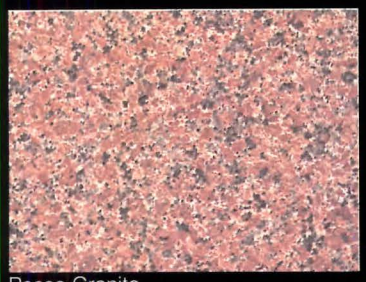
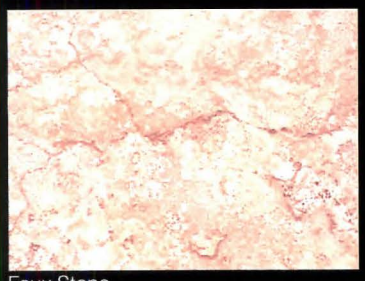
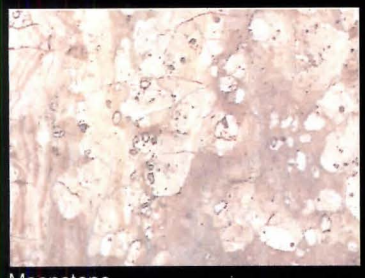
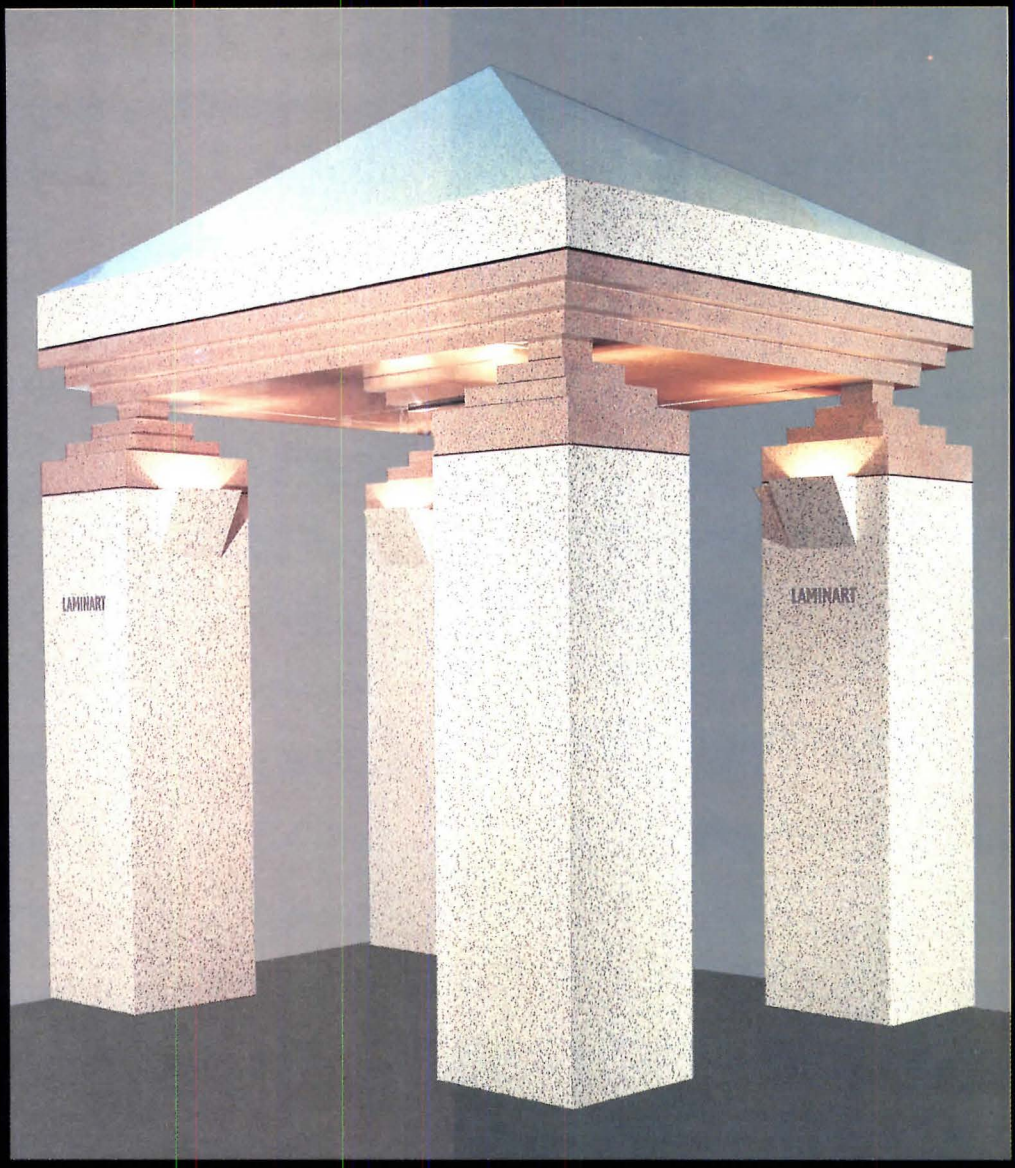

Diamond Pink Granite


Rosso Granito


Faux Stone


Moonstone



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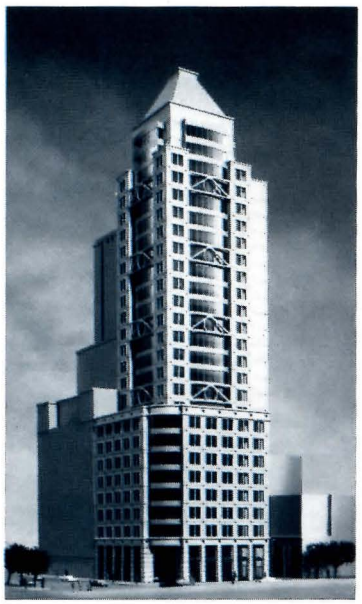
Competition calendar

• The Dayton View Historic Association is sponsoring a competition that seeks designs for infill housing in a National Register-listed, inner-city neighborhood in Dayton, Ohio. Cash prizes totaling $2,250 will be awarded to the top three entries. Submission deadline is Nov. 26. For competition packages, send $5 by Sept. 15 to Dayton View Historic Association, P. O. Box 113, Mid-City Station, Dayton, Ohio 45402, or call Jeffrey Wray, AIA, for further information (513/461-4694).

• The Portland Cement Association is requesting entries to its biennial Concrete Building Awards competition. Concrete buildings completed between Sept. 14, 1984, and Sept. 30, 1986, are eligible for consideration, and winning designs will appear in the January 1987 issue of RECORD. Entry deadline is Sept. 30. For information, contact Glen W. Simon, Portland Cement Association, 5420 Old Orchard Rd., Skokie, Ill. 60077 (312/966-6200).

• A 500-seat interior of a place of worship is the program of a design competition sponsored by Classical America. Cash prizes totaling $4,000 will be awarded to three top entries and four honorable-mention submissions. Entry deadline is Nov. 1. For information, write Classical America, Box 821, Times Square Station, New York, N. Y. 10108.

Etched in stone

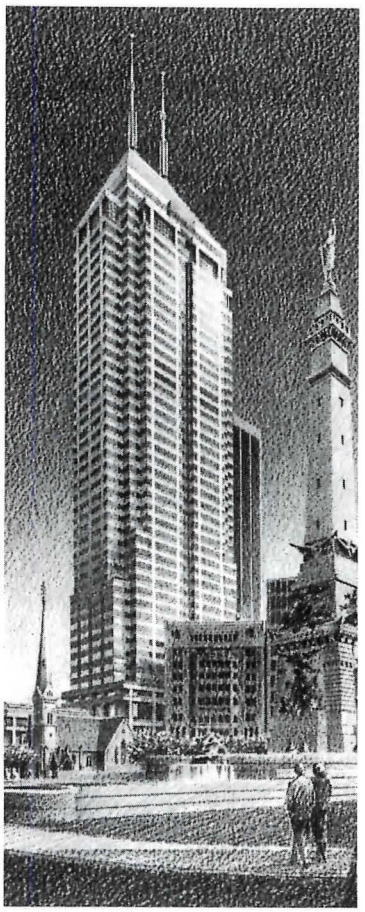


Skidmore, Owings & Merrill has unveiled plans for a 25-story, 198,000-square-foot office tower opposite the New York Public Library that both "respects the masonry tradition of its Fifth Avenue neighbors and makes its own significant statement," according to the architects. Sheathed in granite and limestone, the building's seven-story base echoes the boxy massing of department stores that once lined this stretch of Fifth Avenue; an 18-story setback tower, by contrast, is clad in gently curving glass. The building's most distinctive feature is an expressed structural system that permits a totally flexible, column-free interior. Wind-bracing aluminum-clad trusses will connect rigidly framed masonry corners, while a floodlit copper roof will evoke the mansard crowns of early 20th-century New York towers.

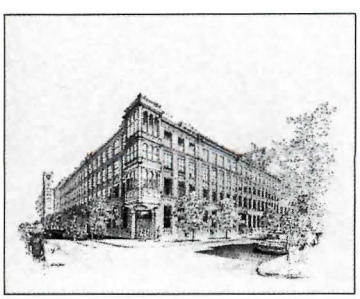
In keeping with the urban context: Two current projects by The Stubbins Associates

The thoughtful brand of Modernism that has characterized the work of Hugh Stubbins for almost half a century has been giving way recently to a mode of architecture that combines Stubbins's signature concern for function with a careful consideration of the urban setting. Two current projects exemplify the trend. In Indianapolis, Stubbins has unveiled plans for American Fletcher Center (top photo), a 48-story bank headquarters structure that will be, at 701 feet, the tallest building in the Indiana capital. The steel-framed tower will be located just off Monument Circle, the physical and spiritual heart of Indianapolis, and its symmetrical design, setback facades, and hipped roof topped by twin 100-foot-high communications masts are intended to provide a distinctive southern termination of the vista along the city's War Memorial Mall. Two low-rise wings on either side of the tower will enclose skylit public winter gardens. By cladding the building in light gray granite and dark granite spandrel panels, the architects have attempted to relate the tower to the adjacent Christ Church and Columbia Club.

For a site facing Fort Point Channel in Boston's historic Leather District, the Stubbins office has designed a 162,000-square-foot office building (bottom photo) that maintains a consistent 90-foot-high streetwall before rising in a series of three setback penthouses. In addition to its modest scale, the structure's corbeled brick details, stone sills and lintels, and recessed windows and arches echo the architectural vocabulary of adjacent 19th-century buildings. A rounded corner tower crowned by a copper pyramid is meant to form a visual gateway down Beach Street from South Station to Chinatown.



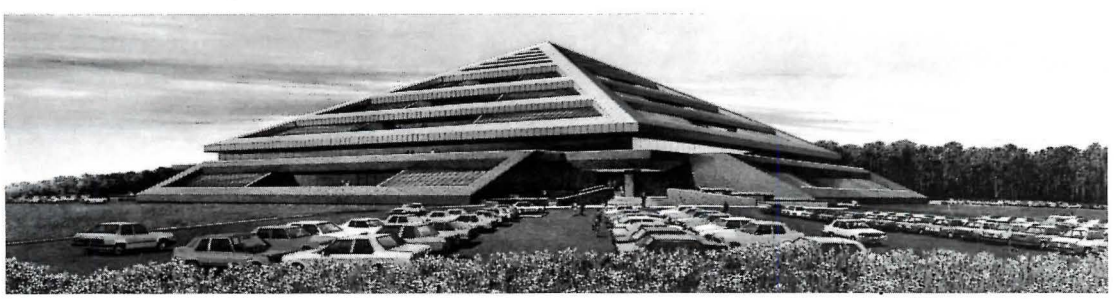
From slide rules to sliding glass doors



It's difficult to imagine a more graphic symbol of post-industrial America than the conversion of the 100-year-old Keuffel & Esser factory in Hoboken, N. J., where the nation's first slide rules, surveyors' instruments, and drafting tools were once manufacturered, into a 99-unit apartment building dubbed the Grand Adams. John Winklemann of James N. Lindemon & Co. is project architect.

Office furnishings giant builds new research and marketing facility

Steelcase, the nation's largest manufacturer of contract furniture, has begun construction on a 470,000-square-foot Corporate Development Center, located in Gaines Township, Mich. Designed by architects WBDC, Inc., in the form of a low-profile pyramid, the 128-foot-high building will house nine corporate divisions devoted to product research, development, and marketing. The heart of the facility will be 10 laboratories where environmental researchers can conduct testing in such areas as ergonomics, acoustics, lighting, electronics, and office privacy. The interior will feature "interaction centers"—informal areas meant to encourage impromptu meetings among employees—and a "directors cluster" of executive offices intended "to generate spontaneous interaction of key decision-makers."



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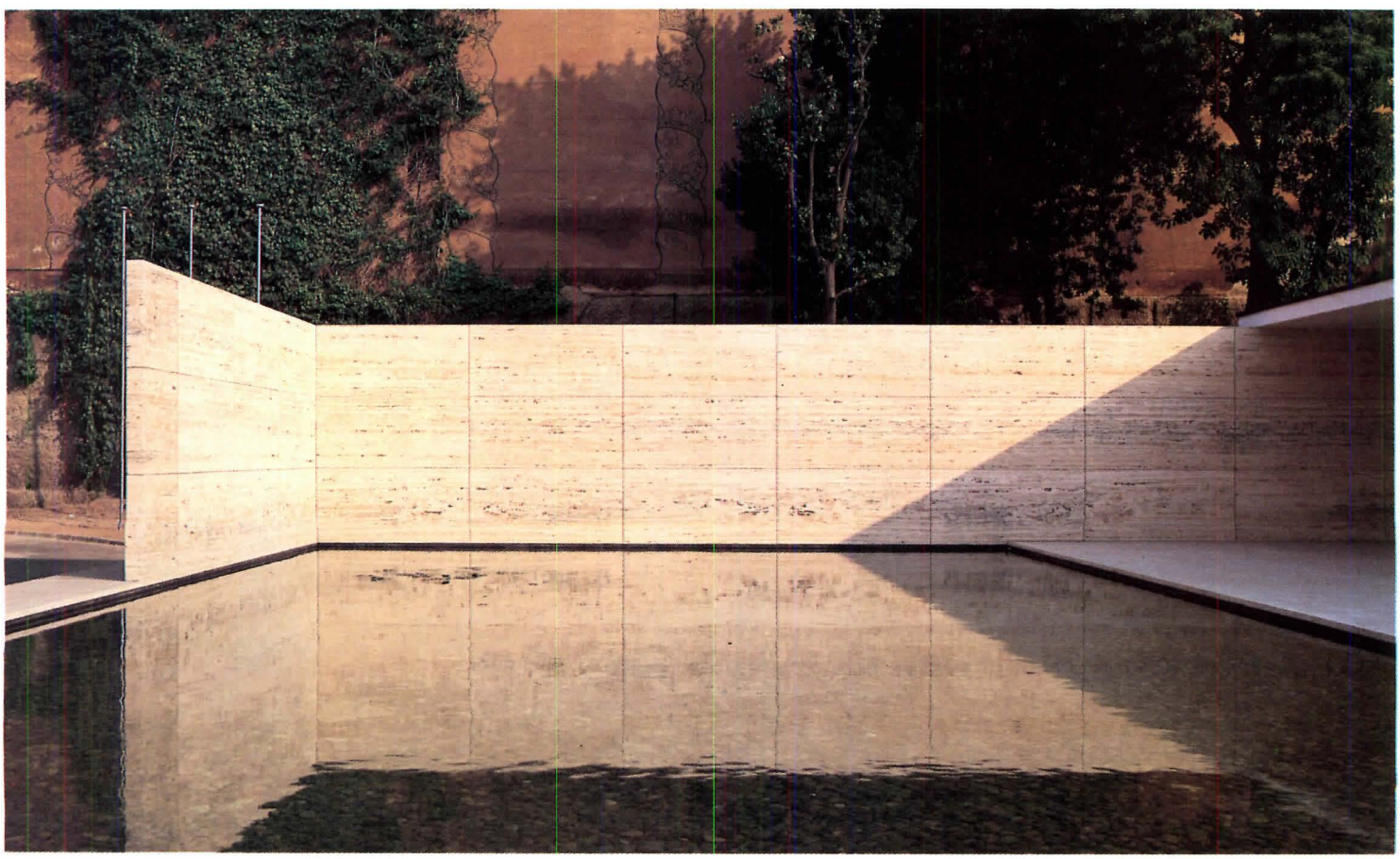
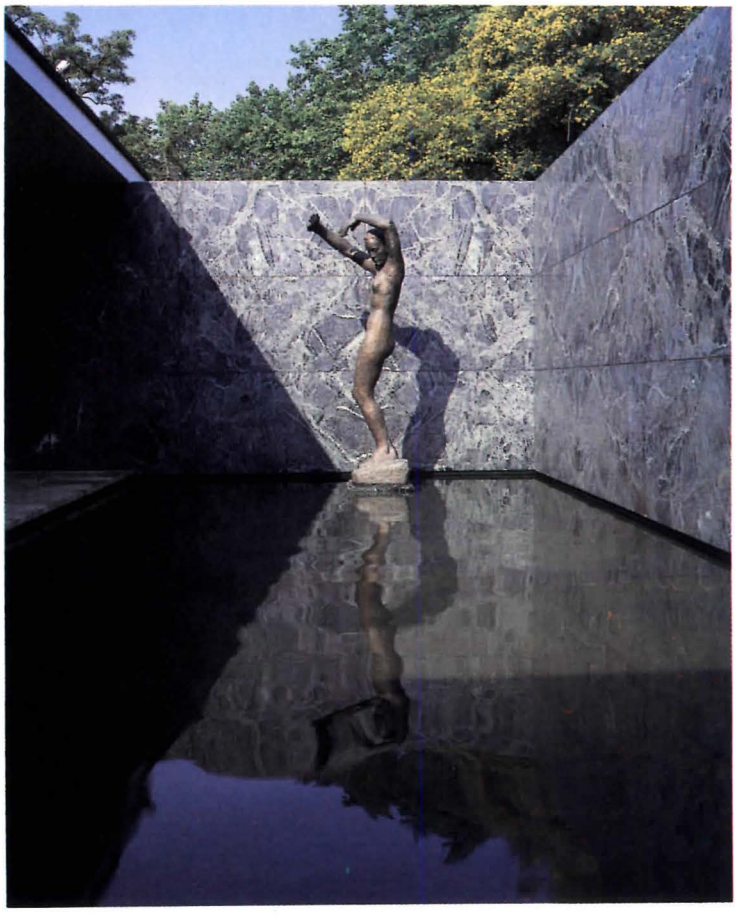
Barcelona reconstructs an icon of architectural Modernism

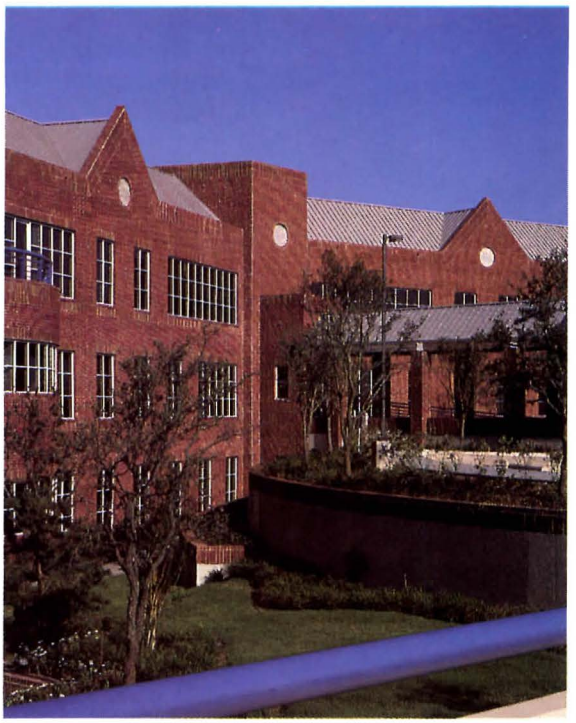
The German Pavilion that Mies van der Rohe designed for the 1929 Barcelona International Exposition is one of the great paradoxes of modern architectural history. Created by a government about to fall into the depths of Hitler's fascism and located in a country on the brink of Franco's relentless totalitarianism, this sublimely aloof icon of the International Style has always seemed a strange embodiment of its period and place. The pavilion, moreover, is one of the most celebrated buildings of the Modern movement yet, because it was dismantled shortly after the Exposition closed, few living today have actually seen it. The building's profound influence on architects over the past 57 years, then, has been primarily through the publication of black-and-white photographs—obligatory fare in virtually every history of 20th-century architecture—and through the occasional exhibition of Mies's drawings. The idea of rebuilding the Barcelona Pavilion had surfaced as early as 1954, but it was not until 1983 that a public foundation—headed by King Juan Carlos I—was established with the intention of



reconstructing the pavilion by June of this year, the centennial of Mies's birth. Although funding was raised primarily in Barcelona, project sponsors also received technical assistance from Mies archives in New York and West Berlin.

The timing of the rededication could not have been more fortuitous. In addition to providing an appropriate physical symbol for the Mies centenary, the rebuilt pavilion might also stand for the artistic renaissance of Spain in general and Barcelona in particular, both of which stagnated grievously under Franco's regime. Indeed, the effect of the first color photographs that are beginning to emerge from Spain is overwhelming, our time-honored impression of the Barcelona Pavilion as a seminal work of architecture now joyously confirmed. Although architects in charge of the reconstruction had to alter slightly Mies's original plans to accommodate electricity, telephones, a new drainage and water system, and a basement, these changes are invisible to the naked eye. More importantly, the signature Miesian elements are all there—his rich material palette of travertine, serpentine marble and onyx, glass, and water; the cruciform, chrome-plated steel columns; the famous Barcelona chairs, upholstered in their original white leather; and a bronze replica of Kolbe's female nude, a gift from the German government. Risen from the ashes, a building that had belonged to the ages once again belongs to us all. *P. M. S.*





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Design awards/competitions: Royal Architectural Institute of Canada 1986 Governor General's Medals for Architecture

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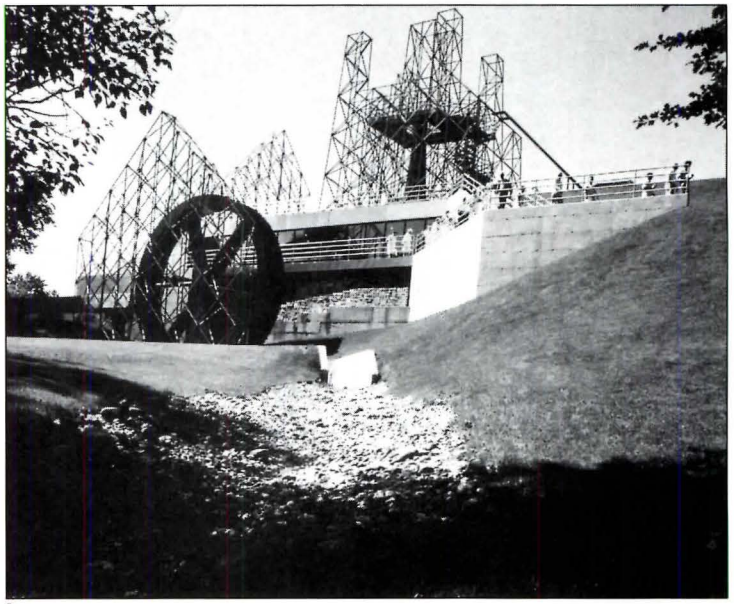

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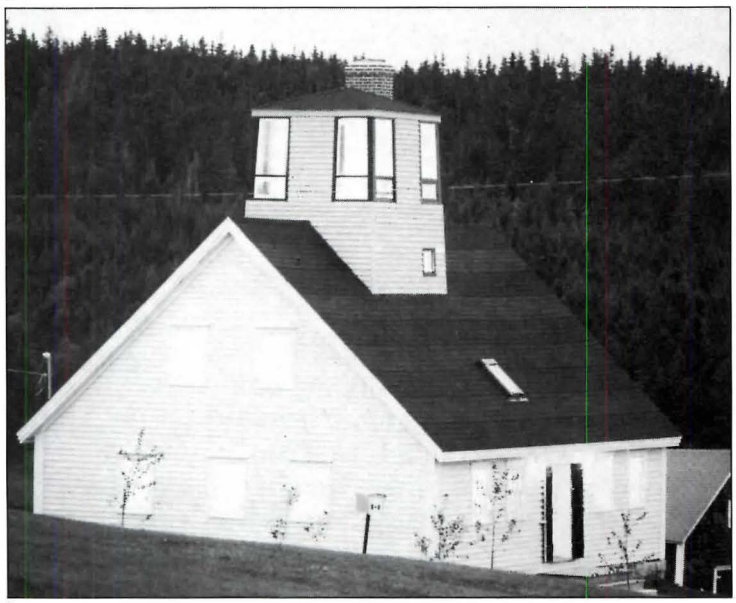

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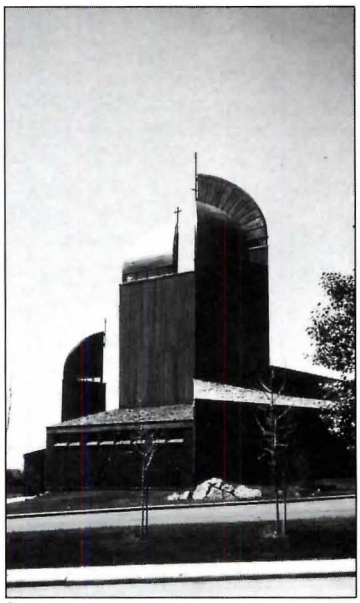

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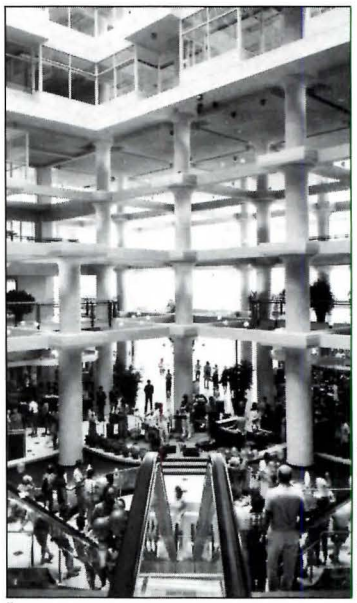


5

Fiona Spalding-Smith

1. Pyrch Residence, Victoria, British Columbia; Patkau Associates, Architects. Commissioned by a retired couple, this house is organized around an irregularly shaped rock outcropping that commands distant views of the Pacific Ocean. The dominant volume of the house is a double-*height living room*, topped by a copper-clad hipped roof that intentionally breaks with the structure's even parapet line. In order to maintain large wall surfaces for the display of the owners' art collection, the architects made extensive use of skylights for interior illumination.

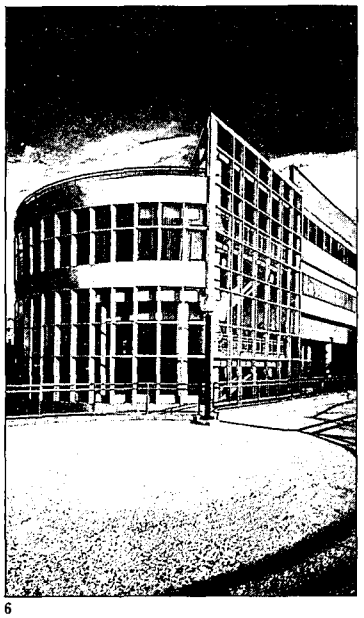
2. Ensemble du Haut-Fourneau Forges du Saint-Maurice, Trois-Rivières, Québec; Gauthier, Guité & Roy, Architects. This visitor interpretation center, the first completed component of a 19th-century industrial village being restored by Parks Canada, preserves and exhibits the remains of a blast-furnace complex. Eschewing archaeological replication, the architects chose to encase the furnace in transparent, steel-framed structures meant as stylized suggestions of gable-roofed buildings that formerly occupied the site. Hydraulic mechanisms such as a water wheel, dam, and raceways are built of modern materials and are situated at their appropriate historic locations.

3. House on the Nova Scotia Coast, Upper Kingsburg, Nova Scotia; Brian MacKay-Lyons, Architect. During the renovation of a 13-room, 200-year-old house, the architect was inspired by the stone foundations and central chimneys of nearby burned-out farmhouses. Floors and walls of the original structure were removed until two basic masses—the perimeter house and the central chimney tower—remained, providing the framework for a modern open-plan interior clad in native wood and stone. The tower is intended, according to the architect, as "a symbol for the center of one's world" and contains a new fireplace, a locally made wood stove, a bathroom, closets, bookcases, eight sleeping berths, and a widow's walk.

4. St. Stephen's Byzantine Ukrainian Catholic Church, Calgary, Alberta; Hugh McMillan, Architect, in association with Radoslav Zuk. The architects' goal was to satisfy this church's liturgical requirements while "generating an image both expressive of our dynamic age and in character with the building's surroundings," which include the nearby Rocky Mountains. Toward that end they designed the lower portions of the church to harmonize in scale and materials with new low-rise houses in the adjacent area; lofty towers, by contrast, are meant as time-honored, abstract symbols of a place of worship.

5. Queen's Quay Terminal, Toronto, Ontario; Zeidler Roberts Partnership, Architects [RECORD, June 1985, pages 134-141]. A major *mixed-use* project on Toronto's waterfront comprises a 148,000-square-foot retail center, five levels of office space, 72 condominium units, and 59,000 square feet of parking—all located in a massive cold-storage warehouse erected during the late 1920s. By cutting away a diagonal section of the building's lakefront elevation and removing some of the floor slabs surrounding a central atrium, the architects created a visually continuous interior space through the structure's reinforced-concrete framework.

A Catholic church in Calgary, a mixed-use waterfront project in Toronto, and a house on the Nova Scotia coast were among the 10 projects recently tapped for Governor General's Medals in the 1986 awards program of the Royal Architectural Institute of Canada. The quadrennial program was established in 1950 "to recognize outstanding achievement in architectural design and to promote public recognition of the contribution architecture makes to the quality of life in Canada." This year's competition attracted 162 entries and was reviewed by a jury comprising architects John Andrews, Fumihiko Maki, and Moshe Safdie, and architectural historian Kurt Forster. Unusally frank in their assessment of current design in Canada, the jurors bemoaned Canadian architects' "vulnerability to passing fashions and trends"—especially from south of the border—and an attitude toward contextualism that one juror called "paper-thin and artificial." More positively, another juror lauded Canadian architects for their unusual "care and craft handling public spaces, access, and street frontage" in such projects as parks and community centers.



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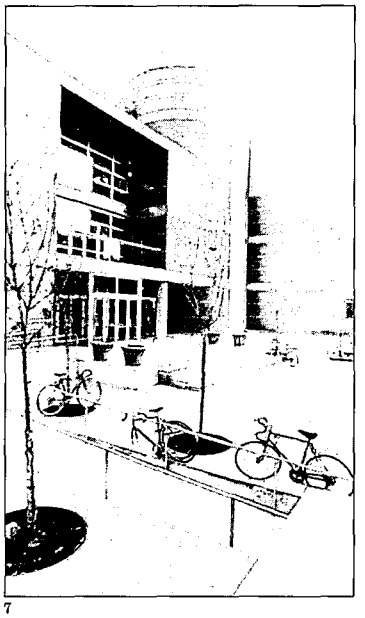

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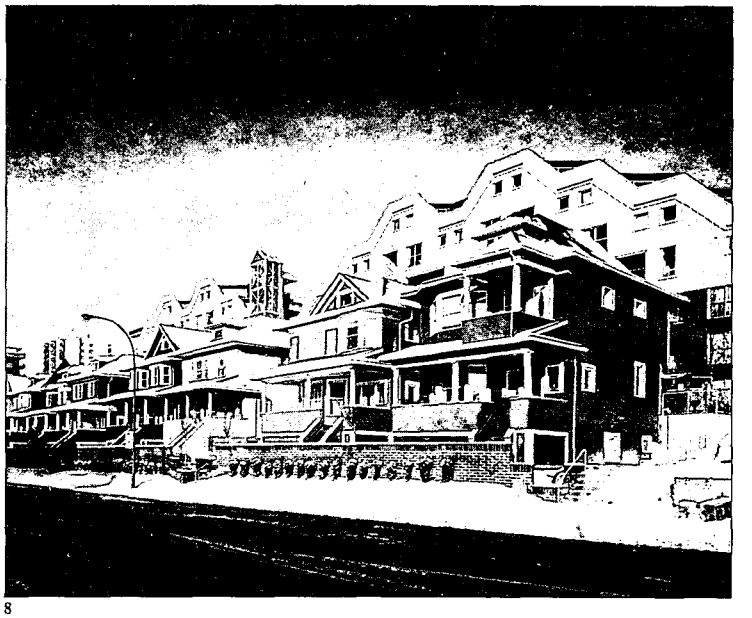

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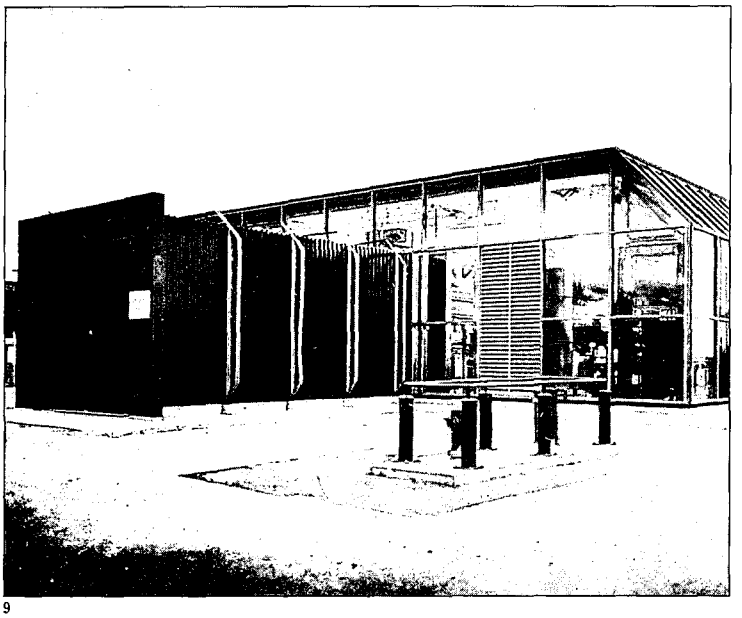

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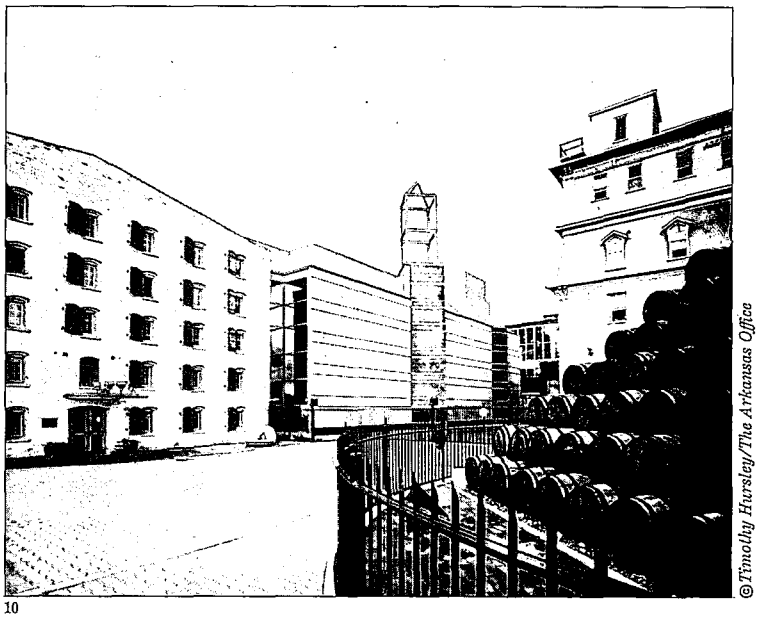

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6. Medicine Hat City Hall, Medicine Hat, Alberta; Graham McCourt Architects. A new municipal building for a city of 40,000 in southeastern Alberta is oriented directly toward the South Saskatchewan River, fulfilling the architects' stated goal of "reintroducing this important natural amenity to the citizens of Medicine Hat... and connecting the landscape of the river valley to the downtown core." Inside, the structure has been organized into separate administrative and legislative zones linked by a three-story-high atrium. Parking and computer facilities are located below grade.

7. Metropolitan Toronto Central YMCA, Toronto, Ontario; A. J. Diamond & Partners, Architects. An ambitious recreational and administrative program for Toronto's flagship YMCA facility called for five building wings, joined by a public promenade, that focus on a central rotunda. Although the architects indicated a desire to sheath the facility entirely in cut stone, budgetary restrictions resulted in a building ensemble faced primarily in brick. Continuous limestone bands serve as the complex's primary unifying device.

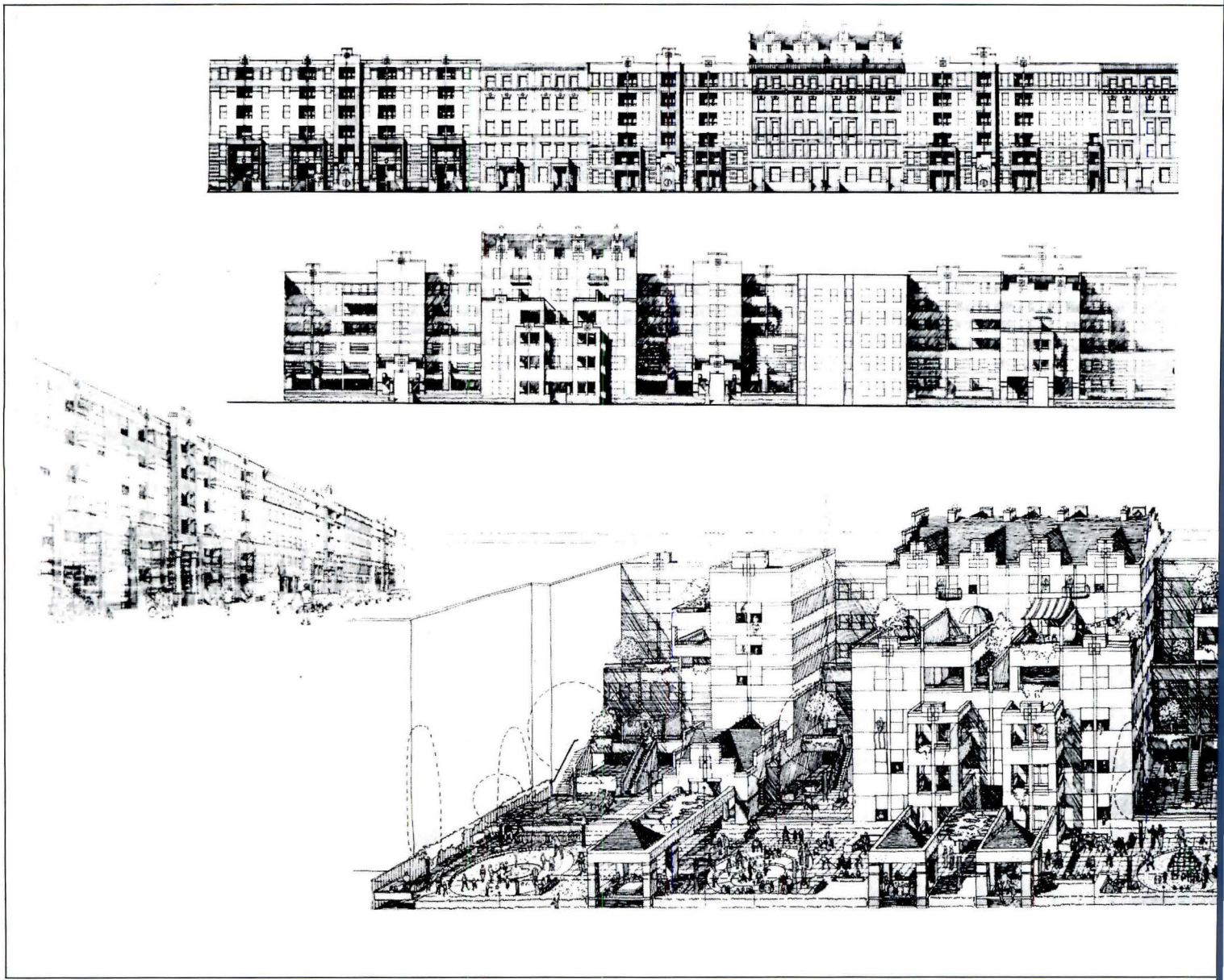
8. Pacific Heights Housing Cooperative, Vancouver, British Columbia; Roger Hughes Architects. A low-cost housing cooperative in Vancouver's West End comprises 16 maisonette units in a restored row of eight late-Victorian dwellings, and a mix of single-story and duplex units in a new infill building to the rear. The city initiated the project as a prototypical in-town development that combines family units (in the restored houses) with apartments for single people and childless couples (in the new structure). A 33-foot-wide by 300-foot-long landscaped courtyard, designed for use mainly by residents of the family units, separates the old and new buildings.

9. Automotive Diesel Shop, Red River Community College, Winnipeg, Manitoba; The IKOY Partnership, Architects [RECORD, March 1986, pages 106-111]. A primary-colored catalog of steel beams, trusses, concrete planks, pipe railings, hvac ducts, electrical raceways, and plumbing fixtures was assembled in this 60,000-square-foot training facility for students of automobile mechanics. The building's elaborate high-tech appearance belies a surprisingly straightforward interior that consists of an open-plan auto shop, into which a mezzanine level housing classrooms and staff offices has been inserted.

10. Seagram Museum, Waterloo, Ontario; Barton Myers Associates, Architects [RECORD, April 1985, pages 138-145]. Located on the site of the original Joseph E. Seagram distillery amid some of Canada's most significant 19th-century industrial architecture, this new museum houses exhibits that deal with the history and science of the distillation and wine-making processes. The entrance to the complex is through a renovated 1857 warehouse, where timber barrel-storage racks define a skylit arrival courtyard. The facility's restaurant and museum shop open onto the courtyard. The main museum is new construction—a 17,000-square-foot, 40-foot-high room broken up into freestanding pavilions housing exhibitions and an introductory film theater on the first level, with Seagram company archives and museum offices above.

Inner-City Infill Housing Competition for Harlem

A team comprising Michael Pyatok & Associates of Oakland and William Vitto & Ira Oaklander Architects of New York City has been awarded the $15,000 first prize in a national competition to design infill housing for five individual parcels located on a three-block site in the central Harlem section of New York City. Initiated by the New York State Council on the Arts and co-sponsored by the Harlem Urban Development Corporation, Manhattan Community Board #10, and the New York Landmarks Conservancy, the competition attracted 74 entries and was organized with the hope of



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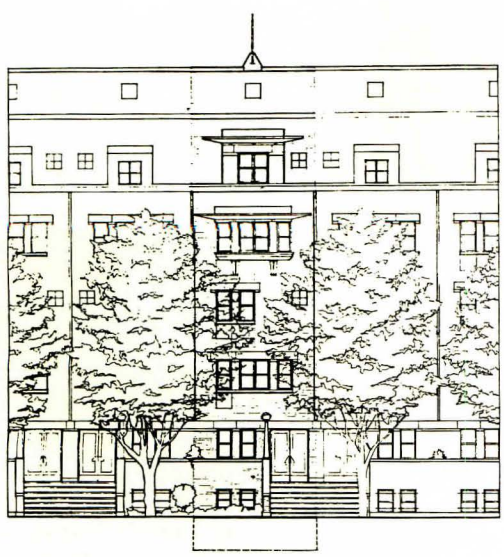

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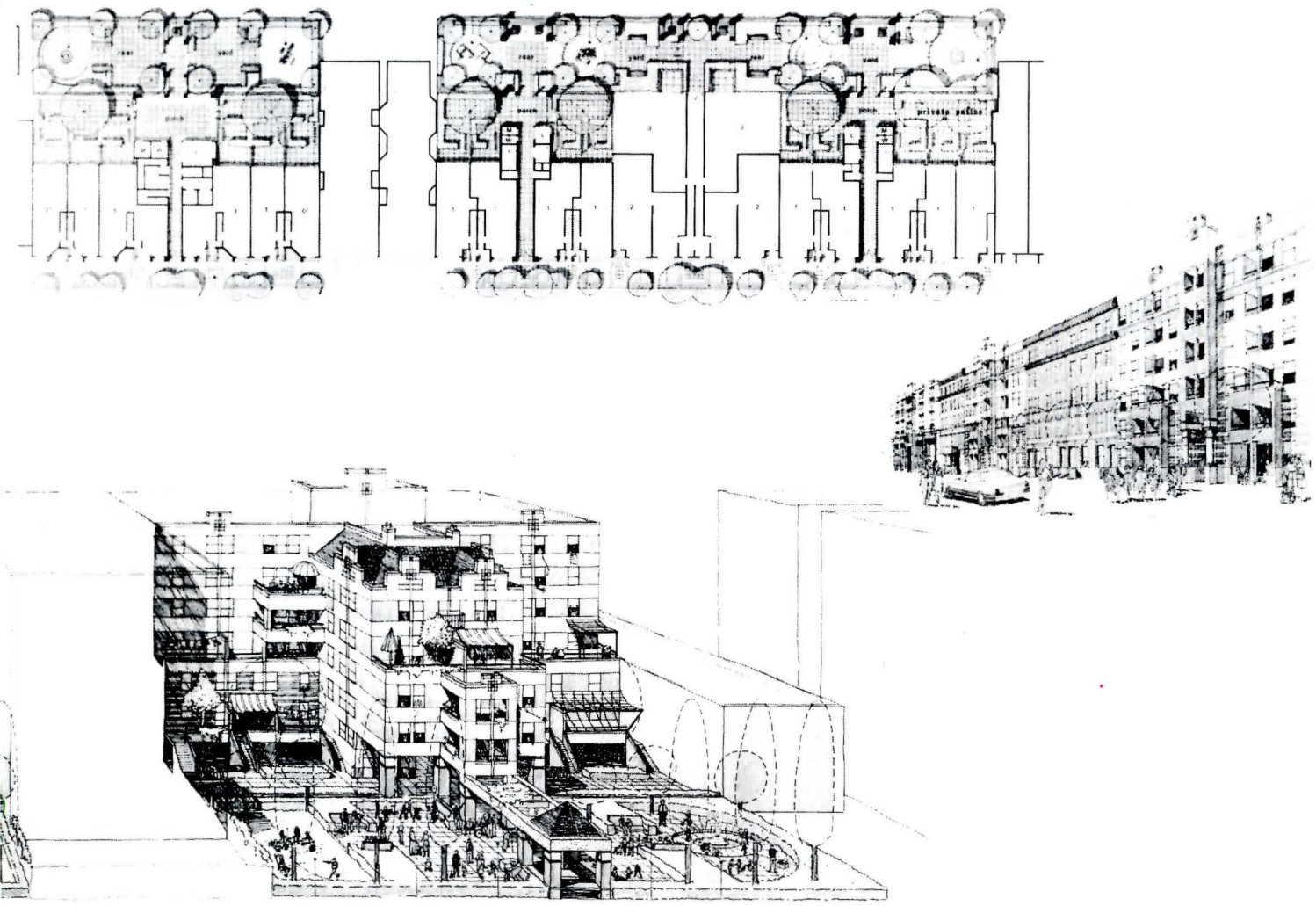
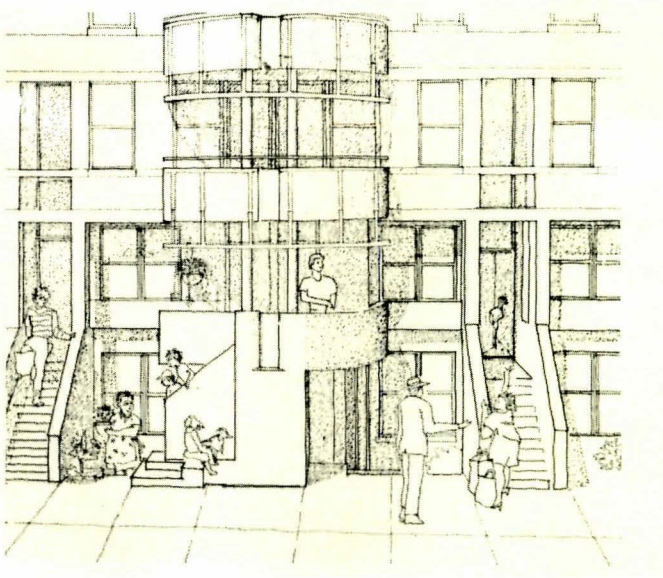
1. First place: Michael Pyatok & Associates and William Vitto & Ira Oaklander Architects. The winning architects recognized the traditional composition of a typical block in Harlem—a mix of late 19th-century town houses and early 20th-century tenement-style apartment buildings—and they developed a six-story residential hybrid that the jury felt exhibited "an exuberance that celebrates the central Harlem neighborhood." Intended to attract a mixed-income group of tenants, each proposed structure is essentially a three-story "row house"—designed for occupancy primarily by large families with children—surmounted by three stories intended for smaller families with few or no children. Residents of the lower stories would enter their dwellings via classic New York stoops, while those living on the upper floors would gain access through two-story-high outdoor arcades (locked at the street) that connect with elevator lobbies located off rear courtyards. By this ingenious system, the danger of children using elevators—a major problem in high-rise public housing projects—is eliminated. Throughout the proposal the strategic siting of communal meeting places like stoops, terraces, and shared yards is meant to increase security and encourage interaction among residents. In design terms, the architects have attempted to match the heights of their structures with existing housing along the Harlem streetfronts. Although the new buildings will be clad in decidedly modern materials—namely, concrete block of varying textures, colors, and glazed finishes—their proportions, cornices, and lines of articulation will echo the features of extant structures.

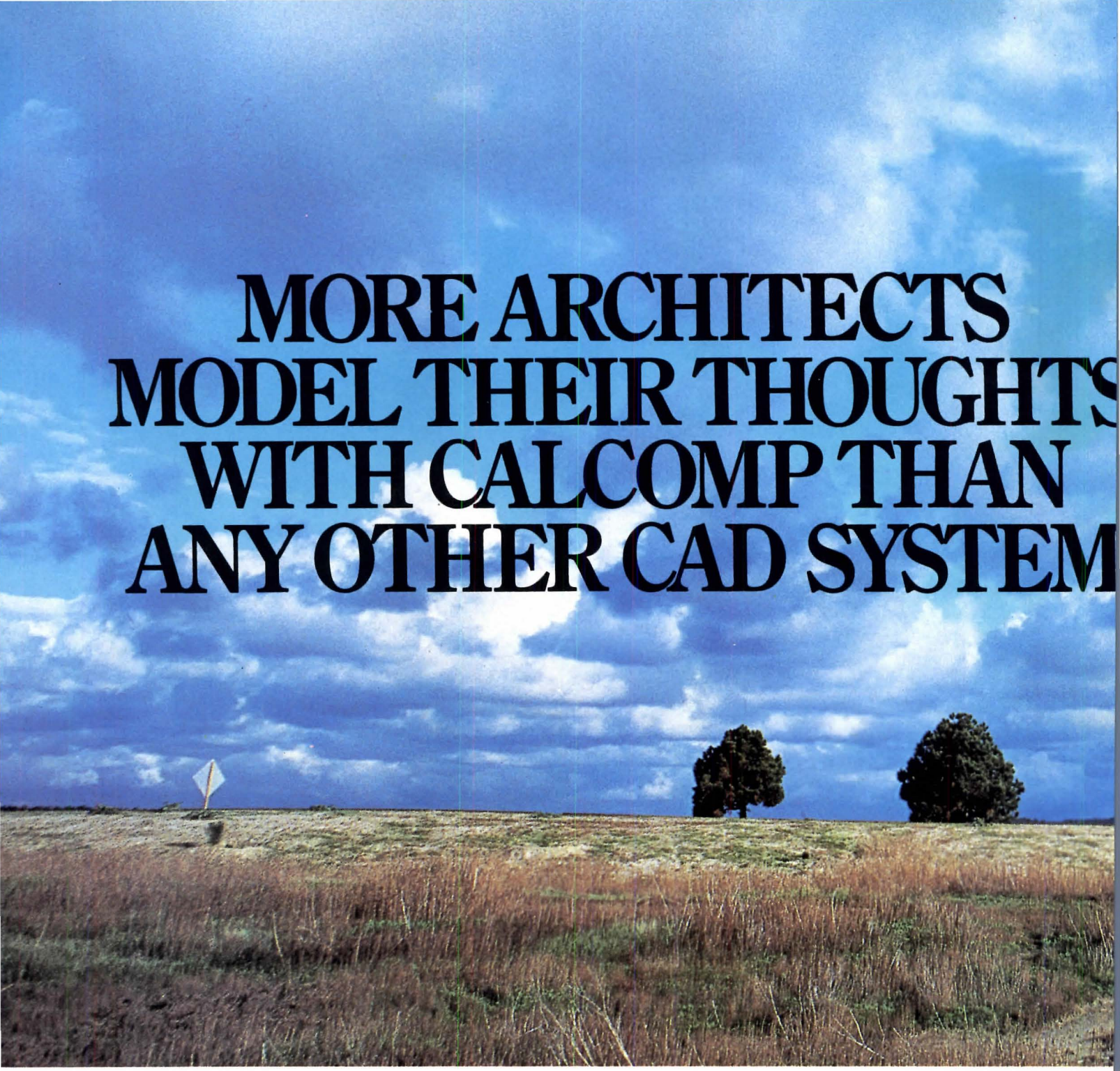
developing "prototypical solutions that might serve as national models for the problems of urban multifamily housing, a recently neglected area of architectural practice." The competition organizers are currently working with the New York City Department of Housing Preservation and Development to investigate funding sources that might be utilized to implement the premiated design. We illustrate below the three top entries, selected by jurors Max Bond, Peter Calthorpe, Lewis Davis, Virginia Fields, Daniel Rose, Donald Stull, and Anne Vernez-Moudon.



2. Second place: Stephen Campbell and Mark Nielsen, Architects. Dubbed Philip A. Payton Place after the realtor who opened up Harlem to black settlement in the early 20th century, this scheme calls for a series of five-story, owner-occupied town houses, each of which would have at least two rental units to help moderate-income building owners cover mortgage and maintenance costs. The jury praised the architects for providing street-facing open space—each range of houses would be set behind raised communal terraces reminiscent of New York row-house architecture dating from the 1920s—while maintaining a consistent street wall. The jury also liked the proposal's "progressive strategy for economic implementation, which would give a committed person a reason for staying in Harlem."

3. Third place: Adele Naude Santos Architects. Among the three finalists, this submission perhaps exhibited the most complex urban design plan—an open-space network comprising children's lots, vegetable gardens, roof terraces, and basketball courts; purposely discontinuous pedestrian mews set at right angles to the street; and, unusual for New York, provisions for midblock parking. Five-story residential buildings feature such time-honored row-house features as bow fronts and high stoops; less conventional are dormered, barrel-vaulted roofs on some of the structures. Despite the architects' attempts to accommodate a variety of family types and incomes, the jury felt the proposal lacked a sound economic strategy, and that the design reinforced some of the negative aspects of existing housing in Harlem.





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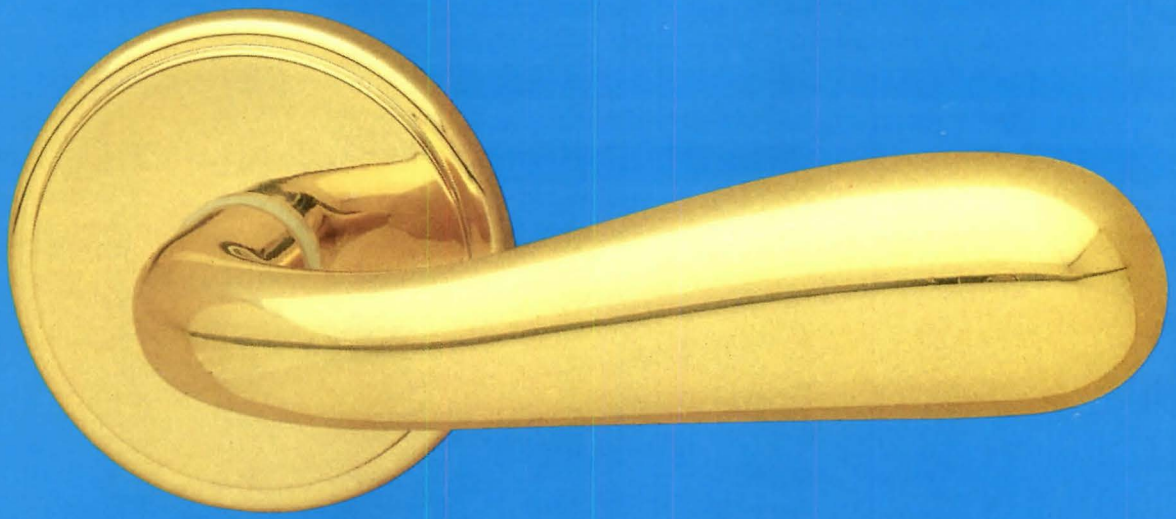

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A Concrete Atlantis: U. S. Industrial Building and European Modern Architecture 1900-1925, by Reyner Banham. Cambridge: MIT Press, 1986, $25.

Reviewed by Roger Kimball

In his much-admired study of the European origins of Modern architecture, *Theory and Design in the First Machine Age* (1960), Reyner Banham investigated the "revolution in sensibility" that transformed architecture in the opening decades of this century and found its fulfillment in the passionate rationalism of the International Style. Now in *A Concrete Atlantis,* Banham complicates the history he set forth in his earlier work, focusing on the contribution that American industrial architecture—factory buildings, grain elevators, and the like—made to the development of European Modernism.

In brief, Banham's thesis is that there is "a causal, cultural, and conscious connection between such masterworks of explicit architectural Modernism as the Cité de Refuge or the Villa Savoye and the utilitarian structures of a certain period and type of North American industry." In some 250 copiously illustrated pages, he provides us with a painstaking introduction to the merits of these neglected—and, as it happens, often abandoned—structures and attempts to show how they sparked the imaginations of Modernists from Gropius and Le Corbusier to Mendelsohn and Sant'Elia.

As Banham points out in his introduction, the forms of American industrial architecture first gained circulation in Europe when seven pages of illustrations of American grain elevators and factories appeared in the *Jahrbuch des Deutschen Werkbundes* for 1913. The illustrations were accompanied by an article on the development of modern industrial architecture by Gropius, and together they had an enormous impact on incipient Modernism throughout Europe. After outlining his case for the importance of American industrial architecture in the history of Modernism, Banham analyzes a number of the structures whose architectural excellence he wishes to champion. He devotes his first chapter to a study of so-called "daylight factories"—that is, concrete-framed buildings that are "like X-ray images, their very bones on public display." Beginning with Bethune Hall in Buffalo (1915-1917), Banham gives a careful account of the ways in which such stolidly elegant factories and office buildings provided inspiration—and models—for the innovations of European Modernism.

Similarly, in his second chapter, Banham discusses the evolution of the technology and building materials of American grain elevators, giving particular attention to the deep impression that these austerely monumental storage containers made upon Modernists searching for an architecture of ever simpler, ever more purified forms. In his third and final chapter, "Modernism and Americanism," Banham details the influence of American industrial structures on modern European architecture, focusing especially on Gropius's celebrated Fagus factory (1911-14), some manifestos by Le Corbusier, and the calculatedly American form of the huge Fiat factory (1914-26) near Turin.

Banham has adapted the title of his book from Francis Bacon's description of America as "the great Atlantis." For just as 17th-century America was new and unformed enough to be idealized by scientific rationalists like Bacon, so the products, and indeed the entire *ethos,* of American industrial architecture at the turn of the century provided pioneering European Modernists with novel alternatives to the 19th-century historicism they were seeking to go beyond. But it was precisely in what seemed least "architectural"—least indebted to the canons of the *art* of architecture as then practiced—that America stood as a kind of "Atlantis" for European Modern architects. What they admired were not the heavily ornamented productions of "name" architects, but the clean lines and stripped-down monumentality of industrial structures. "Let us believe the words of American engineers," wrote Le Corbusier, "but let us beware of American architects!"

That American architecture around the turn of the century had an enormous impact on the development of Modernism in Europe has long been recognized. But, whereas most historians place the birth of Modern architecture in Chicago and single out the development of the steel frame and electric elevator as the signal achievements that made the International Style possible, Banham's story takes place mainly in cities like Buffalo, Cincinnati, and Detroit, and features innovations in concrete design and construction, not steel. "Around 1900," he writes, "the action and the excitement were not in iron and steel but in concrete, which was about to take off into the most spectacular stage of its development."

Accordingly, instead of reiterating the influence of Richardson, Sullivan, and Wright on the development of Modernism, Banham examines the work of a number of lesser-known figures like Ernest L. Ransome, who has claim to being "one of the greatest of all the concrete pioneers of the later 19th century." In Banham's view, the best of the factories and grain elevators he discusses "represent the triumph of what is American in American building art" just as much as the work of Richardson or Wright. In all this, Banham is both reclaiming a neglected aspect of our architectural heritage and, more polemically, taking issue with the dominant strain of academic architectural history, represented, for example, by the work of his teacher Nikolaus Pevsner. I doubt that most readers will find Banham's story convincing in every particular; like most frankly revisionist history, it has too much the air of special pleading and is too eager to persuade us of its thesis to be accepted without reservation. But, while *A Concrete Atlantis* lacks the breadth and balance of *Theory and Design in the First Machine Age,* it is nevertheless a careful study that considerably enriches our knowledge of a complex and fecund period of architectural history.

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Roger Kimball contributes frequently to RECORD *and other publications.*

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Lighting up the town: Architectural illumination in the Jazz Age

"Hitherto, in speaking of architectural lighting, people have visualized mainly the lighting of interiors. But there is another field—the lighting of the exteriors of buildings, which should likewise be raised to the level of an art and has great possibilities. In floodlighting, as at present practiced, we have the germ of the process. . . . With the cooperation of the architect and the deliberate design of a building with a view to pleasing appearance by artificial light as well as in daylight, great things might be done."
The Illuminating Engineer XXII, 1929

By Timothy Rub

Like so many of the new technologies (most notably steel framing and reinforced concrete) that came into widespread use during the late 19th and early 20th centuries, the development of electric illumination opened up to the architect a host of esthetic possibilities and technical problems. At the same time it also served to reinforce an already well-established trend that continues to exercise a profound influence on architectural practice: i.e., the architect's reliance on the services of other professionals in orchestrating the increasingly complex process of building design. In this case the manufacturer of lighting equipment and the "illuminating engineer" played important roles.

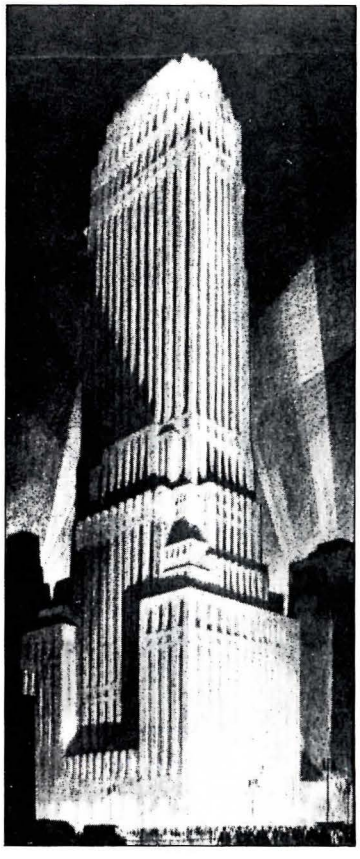
Perhaps more than any other decade, the 1920s witnessed the most significant progress in this field, particularly in the development of new and more powerful lamps, accessories such as hoods and lenses that could shape and color the beam in a variety of ways, and sophisticated electro-mechanical switching systems. These innovations enabled the architect to exploit an extraordinary, and hitherto unimagined, range of effects on a building's interior and exterior.

In a broad sense, lighting design during the '20s became more "architectural" in character—a shift in emphasis that was most apparent in the gradual transformation of lighting fixtures, or "luminaires." This change was signaled by the rejection of such traditional models as candelabra and wall sconces (which until that time had been primary sources of inspiration for the design of incandescent fixtures) and by an emphasis on coordinating a fixture more closely with its setting. As designer Walter Kantack noted in 1928: "During recent years there has been a gradual awakening to the fact that electricity has definite characteristics as a lighting medium which, when recognized and employed, result in a fixture very different from the candle type and oil lamp of former times."[1]

Even more radical, however, were efforts by lighting designers and engineers to integrate the source of illumination into the very fabric of the building in the form of electrical signage, recessed lighting used to emphasize structural lines, and wall and ceiling panels manufactured of translucent materials. "We are becoming more familiar with the possibilities offered by reflecting surfaces," Kantack noted, "and in designing our lighting equipment are actually thinking of light as a definite element built into our structure, having just as important a place as color, materials, and surface ornament have commanded in the past."[2] A characteristic example that incorporated these new luminous architectural elements was the Niagara-Hudson Power Company Building in Niagara Falls, which boasted illuminated pilasters and recessed lighting in the cornice.

Another illustration of the growing relationship between architecture and the science of illumination during the 1920s was the development of floodlighting. By the beginning of the decade this technology was already well developed; yet its commercial and decorative potential remained largely unrecognized, despite the fact that these possibilities had been convincingly demonstrated in a spectacular display of lighting technique at the Panama-Pacific International Exposition of 1915, held in San Francisco.

The new methods of electrical illumination employed at the Exposition were nothing short of extraordinary. There were, of course, all sorts of exotic, and frankly theatrical, lighting effects such as "Novagem Jewels," (light-refracting prisms affixed to buildings) and powerful searchlights with multicolored lenses used to create an artificial aurora borealis. More importantly, however, the Exposition revealed for the first time the effectiveness of floodlighting as a means of illumination. Prior to 1915, exhibition buildings both in the United States and abroad had been illuminated by outline lighting—strings of incandescent bulbs so arranged as to emphasize certain structural and ornamental features. This method had its merits, but it also had several disadvantages, chief among them the fact that much of the building tended to be obscured by the glare of the bulbs. At San Francisco outline lighting was superseded by a new technique that afforded the designer the means to "model" the building under artificial light. As W. D'Arcy Ryan, director of General Electric's Illuminating Engineering Laboratory, explained: "[At the Exposition] incandescent outlining in the main group of palaces was avoided, and screened or masked flood or relief lighting to produce the third dimension or depth substituted, and great care was exercised with proper relative intensities. For the first time at an international exposition the



Above: Tower of Jewels and Manufacturers' Building at dusk, Panama-Pacific Exposition, San Francisco, 1915. The use of colored searchlights at the Exposition to provide nighttime illumination foreshadowed the extensive application of architectural floodlighting during the 1920s. Left: Chanin Building, New York City, 1927-29, Sloan & Robertson, Architects. Hugh Ferriss's dramatic rendering is an early example of architects' and developers' utilizing floodlighting as a way of marketing new commercial buildings.

Timothy Rub is a doctoral candidate in art history at New York University's Institute of Fine Arts. He recently curated a major exhibition on the architectural history of the Bronx, reviewed in last month's RECORD.

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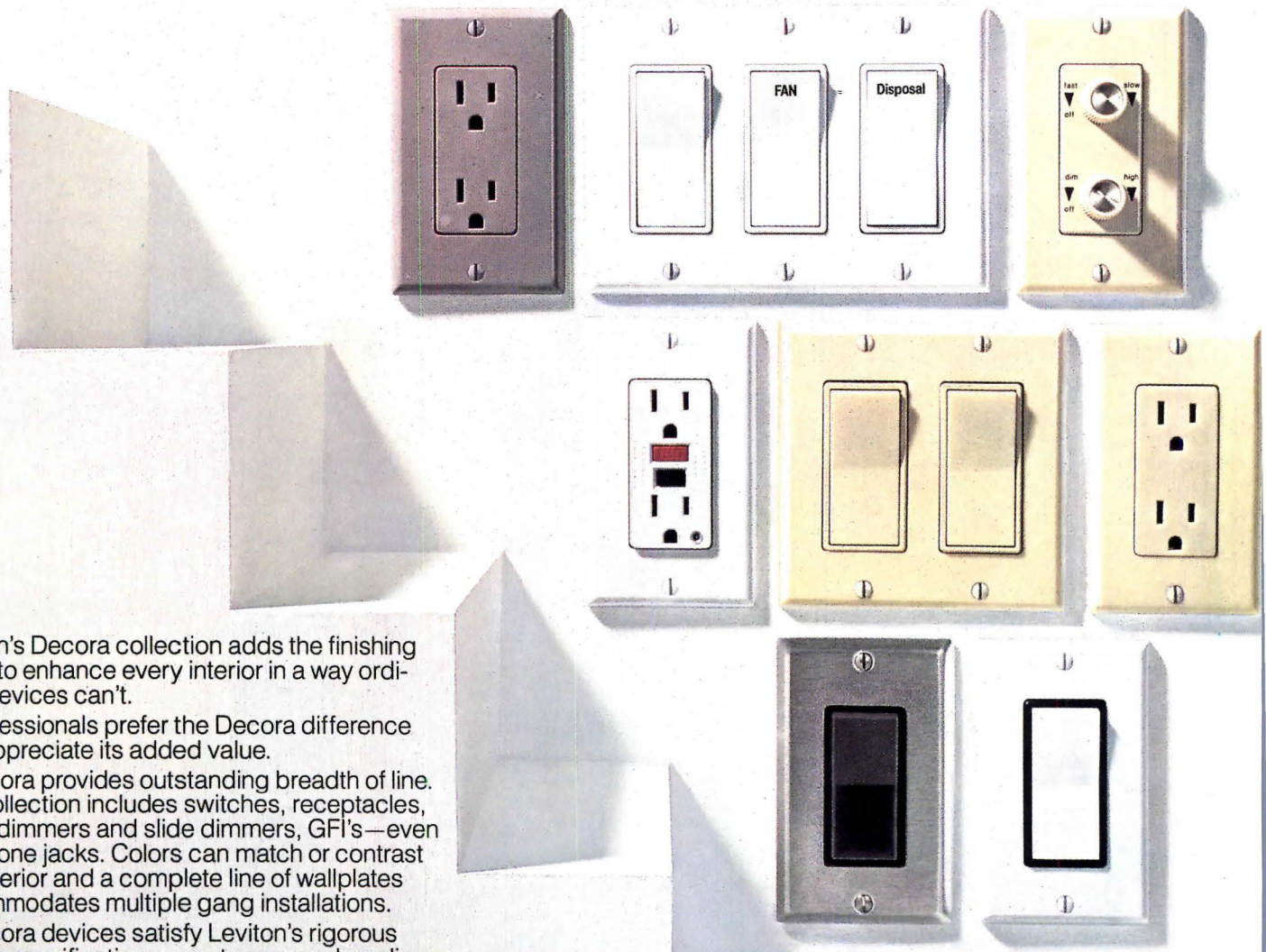

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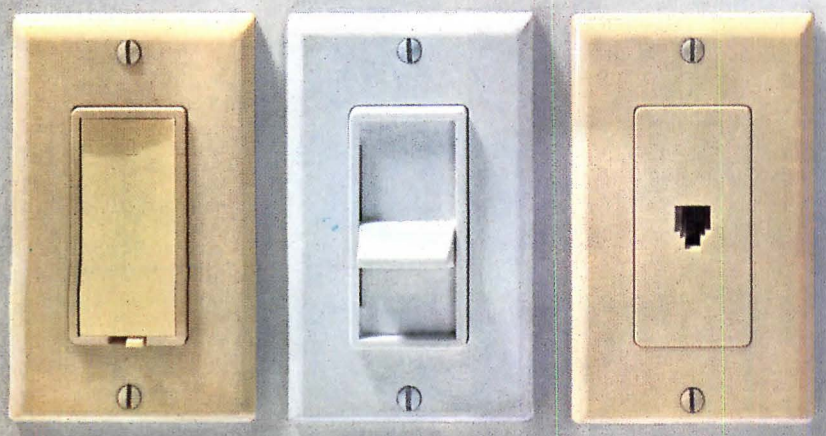

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illuminating sources, whether arcs, incandescents, or gas, lost their identity as such."[3]

If the Panama-Pacific Exposition demonstrated the virtues of floodlighting as a decorative medium, its success in the marketplace was largely dependent on the commercial uses to which it could be put. The list of applications is impressive. Floodlighting came to be used for the illumination of airports and construction sites; for nighttime sporting events, from football to skeet shooting and miniature golf; for the enhancement of security at military installations; and for tourist attractions and scenic wonders as varied as the Washington Monument, the Royal Pavilion at Brighton, and Niagara Falls. Recognizing the potential size of the market, manufacturers such as General Electric and Curtis Lighting Company promoted floodlighting in technical pamphlets and journals like *Light* and *The Magazine of Light*, and with exhibits at trade shows throughout the country. They also devoted considerable resources to research and product design, out of which came a broader understanding of the complex issues involved in architectural illumination, particularly the reflectivity and absorption of certain materials and more precise ways of calculating the candlepower required for decorative lighting schemes.[4]

Property owners and developers took the bait, realizing that in spite of the considerable expense involved in its installation, maintenance, and operation, floodlighting could be a highly valuable marketing tool, promoting as it did a form of "brand recognition" that would pay dividends after the close of business. It should come as no surprise, then, that the Woolworth and Wrigley buildings—both of whose owners were noted for their business acumen—were among the first skyscrapers to be illuminated at night. As one representative of Curtis Lighting pointed out: "Floodlighting is one of the most emphatic advertising mediums. It establishes the location of a structure much more convincingly than the street designation."[5] Edward G. Neale, the president of Luminous Structures, Inc., a company which, among other things, constructed illuminated service stations for Texaco, went even further in his claims when he observed that "light has real sales value, and when the commercially wise architect uses light, not merely as an accessory but as an actual architectural element, he has provided his clients with a very distinct advantage in the highly competitive race for business."[6]

While Curtis, G. E., and a host of smaller firms in the industry were rapidly expanding their product lines—which included bulbs of varying sizes, mounts, reflectors, and lenses that could both color and texture the beam—the illuminating engineer was also actively promoting the services he could supply to the architect, stressing whenever possible the necessity for close cooperation between the two professions. Trade groups such as the Westinghouse Lighting Institute, the Electric Lighting Manufacturers Association, and the International Congress on Illumination played important parts, meeting periodically to discuss the subject and to keep their members abreast of the latest developments. In addition to consulting on the installation of lighting systems, illuminating engineers were also instrumental in suggesting ways that the effects of floodlighting could be studied at the design stage. One of the most common methods was the use of reverse photostats of perspective renderings, which could be worked over with chalk or light color washes to consider the effect of alternate schemes for illuminating the buildings. Another was to wire scale models with miniature bulbs. "Careful architects," *The American Architect* reported, "experiment extensively in this manner."[7] Indeed, one measure of the increasing use of floodlighting during the late '20s was the popularity of presentation drawings showing the building as it would appear at night. Hugh Ferriss's rendering of the Chanin Building in New York City exemplifies the technique.

Selling the idea of floodlighting was one thing; realizing its potential as a decorative medium yet another. Several lighting methods came to be widely used: one of the first was to set the lamps at a distance from the building, either on the ground or on adjacent structures, in order to obtain an even level of illumination across the entire surface. Of all floodlighting techniques this was the simplest to design and the easiest to implement, as well as the one that most closely approximated daylight conditions. Its main drawback, however, was that it produced a dull, shadowless effect that tended to suppress detail.

Architects and illuminating engineers soon realized that the design of floodlighting should be based on an entirely different set of considerations, both practical and esthetic. And once this premise was accepted, it opened up an entirely new set of possibilities. "The most successful designers in this field," one critic observed, "look upon night illumination as an opportunity rather than a difficulty—a chance to utilize dark sky and dim entourage as a setting for beauty of a wholly different type from that which is appropriate in all-enveloping light."

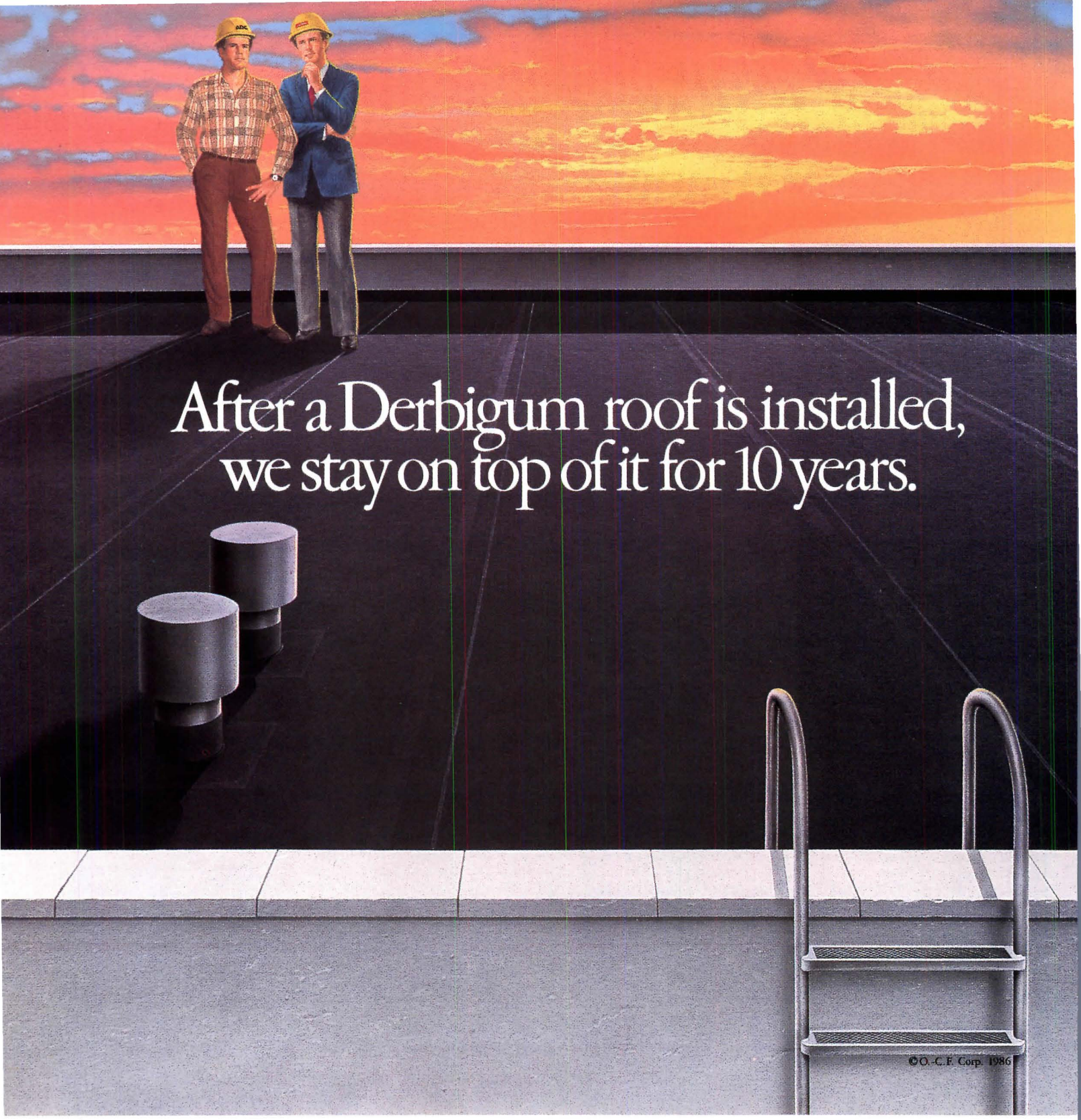
The implication here was that floodlighting should be used in a selective, essentially dramatic way to produce contrasts of highlight and deep shadow, or to place an emphasis upon certain parts of the building—a cornice, colonnade or tower, for example—rather than on the whole. Irwin Chanin, a developer who had been primarily involved with theater design and construction before turning his hand to office buildings, had this in mind when he observed that floodlighting had become a valuable addition to the repertory of ornament available to the modern designer. "At the Chanin Building," he remarked, "the effect has been to add light and shadow to the decorative elements available to the architect and builder, and in the original design of the building provision was made for the use of lights as a part of the decorative scheme. Instead of ornamentation in brick, stone, terra-cotta or other tangible materials, lights and shadows in various degrees of intensity, cast at numerous angles, create decorative schemes by optical illusion, much in the same manner that the theatrical producer secures a variety of effects through the manipulation of stage lights."[8]

Bassett Jones, an experienced designer of stage lighting and a consultant for the illumination of the Chicago Tribune Tower, proposed a slightly different formal theme. One of the first to address the esthetic possibilities of night lighting, Jones was fascinated with the aspect of the city after dark, when buildings appeared as if "glowing from within," and he suggested that this image might serve as a point of departure. The floodlighting of a building, he noted, "may be modulated by illuminating the principal lines or masses of the exterior, or merely by substituting lines of light for structural lines, so as to pull the whole together and develop a definite and appropriate composition. But however it be done, *it is the building itself that gives forth light.*"[9]

Because it minimized expense while maximizing advertising value, the most popular and certainly the most practical method of floodlighting was to limit the illumination to the uppermost part of the building—usually the tower and, on occasion, the setbacks—which made sense since these were more often than not the only parts that could be seen from any distance. By 1930 nearly every

Courtesy of The New-York Historical Society

The Empire State Building, 1929-31, by Shreve Lamb & Harmon (top), and the Paramount Building, 1927, by Rapp & Rapp (bottom), are two New York City examples of toplighting applied as an integral part of architectural design.



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By the late 1920s floodlighting had become increasingly sophisticated, a result of experimentation in graduated uplighting, silhouetting, and highlighting of ornament. The resulting unification of architecture and illumination was exemplified by the Merchandise Mart in Chicago by Graham, Anderson, Probst & White (1929, top). The 1933 Century of Progress Exposition in Chicago demonstrated a new range of innovative lighting techniques, including complicated color effects, sequential illumination schemes, backlighting through structural glass block, and neon lighting. Albert Kahn used neon to great effect at the fair in his General Motors Building (bottom).

major city in the country could boast several examples of this type, but it was New York, merely by virtue of the sheer number of its tall buildings, that led the way. Cass Gilbert's Woolworth Building and Harvey Wiley Corbett's Bush Terminal Building were among the first, followed in the late 1920s by the American Radiator, RCA Victor, New York Central and Chanin buildings, each of which was intended, from the beginning, to include lighting as an integral element of the design. There were innumerable variations on the theme: for example, the tops of several prominent skyscrapers, most notably the Empire State Building and Sixty Wall Tower, were not floodlit but rather illuminated from within, through panels of translucent glass.

Although toplighting may have been the most economical as well as spectacular way of illuminating a building, it was at times faulted on compositional grounds. As Corbett observed: "There is a tendency for the illuminated part [of the building] to float unsupported and thereby lose its structural significance. The form of the illuminated portion should be so tied in with the rest of the building that it should appear as a jewel in a setting forming a coherent part of the whole structure."[10] What he and many other critics had in mind was a systematic application of the several methods of floodlighting techniques available to the architect—graduated uplighting, silhouetting, and the highlighting of important compositional features—which, when used in combination, would "bring out the character of the structure." The sophisticated lighting scheme of Chicago's Merchandise Mart was perhaps the most successful example of the approach advocated by Corbett.

Whatever the technique adopted, it was generally agreed that floodlighting could be used to best advantage on the modern skyscraper. Classical designs tended to look rather bizarre when lighted from below, because the shadows cast upward by the entablature, stringcourses and decorative forms "reversed," as it were, the logic of the composition by distorting the lines of the building. The problem could be avoided by setting the floods at a distance and directing them downward upon the building—a difficult and often expensive solution. By contrast, the skyscraper style of the 1920s—or "American Perpendicular" as it was sometimes called—lent itself admirably to the new lighting techniques. On new skyscrapers, Raymond Hood noted during an interview published in *The Magazine of Light* (May, 1930), "the lights can be arranged to stream up the vertical forms of building, gradually disappearing into the night, and the setbacks and terraces provide ideal places for the operation of the lights."[11] Harvey Wiley Corbett agreed, adding that detail was a relatively unimportant issue in night illumination. What mattered were broad contrasts of light and shadow, and these, too, favored the new commercial architecture's commanding factors of "mass, proportion, silhouette and color," none of which would be adversely affected by reversing the angle of light.[12] Some critics, putting the cart before the horse, even went so far as to claim that the new forms of lighting had exercised a material influence on the development of the modern style. While this was grossly overstating the case, it should be admitted that there was a significant relationship between the two.

In 1930 Raymond Hood remarked that "the possibilities of night illumination have barely been touched. There lies in the future a development even more fantastic than anything that has ever been accomplished on the stage. Up to the present we have contented ourselves mainly with direct and floodlighting of varying intensity. There is still to be studied the whole realm of color, both in the light itself and in the quality and color of the reflecting surfaces, pattern studies in light, shade and color, and, last of all, movement."[13] In making these claims Hood was merely voicing a commonly held opinion that the advances in lighting methods and materials of the 1920s presaged even more remarkable innovations in the future.

That dream did materialize, if only briefly, in 1933 at Chicago's Century of Progress Exposition. Among those on the committee of architects responsible for its design were some familiar names: Hood, Corbett, W. D'Arcy Ryan, and the designer Joseph Urban, who coordinated the color scheme. As at San Francisco nearly 30 years earlier, the illumination of the Chicago Exposition was, in a word, extravagant, and featured the use of new materials like structural glass block and neon lighting. Unfortunately, the timing of the fair could not have been worse: When the Exposition opened, at the depths of the Great Depression, its exuberant message already seemed dated—which goes some way toward explaining why architectural floodlighting itself went out of fashion. It was born of a theatrical impulse, a gestural flourish in keeping with the taste for the grandiloquent so characteristic of American urbanism in the 1920s. Some would say it was just another sales gimmick which, with the collapse of the economy, had outlived its usefulness. Whatever the case, floodlighting clearly had no place among the more sober architectural priorities of the 1930s, or during the decades that followed, when the controlled technocratic image of international Modernism prevailed. With a renewed interest in early 20th-century styles—especially Art Deco—and in the current bull market, it comes as no surprise that architectural floodlighting is once again back in vogue.

Notes

1. *The Kaleidoscope* (October 1928), p. 5.

2. *Ibid.*

3. W. D'Arcy Ryan, "Spectacular and Exposition Lighting," *Proceedings of the International Congress on Illumination* (New York, 1929), p. 1422.

4. Nela Park, General Electric's research facility in Cleveland, was the center of this activity in the United States. Matthew Luckiesh, the director of research, published several volumes on the art and science of illumination, among them *Light and Color in Advertising and Merchandising* (New York, 1923).

5. J. L. Stair, *The Lighting Book* (Chicago, n.d.), p. 233.

6. Edward G. Neale, "Styling Luminous Advertising in 1934," *The Magazine of Light* (Year End 1933), p. 22.

7. "Exterior Illumination of Buildings," *The American Architect* (July 1935), p. 63.

8. "To Light A New Skyscraper," *The New York Times*, January 14, 1929, p. 43.

9. Bassett Jones, "Structures in Light," *Light* (April 1924), p. 6.

10. "Architecture of the Night," *The Magazine of Light* (May 1930), p. 39.

11. *Ibid.*, p. 22.

12. *Ibid.*, p. 39.

13. *Ibid.*, p. 22.

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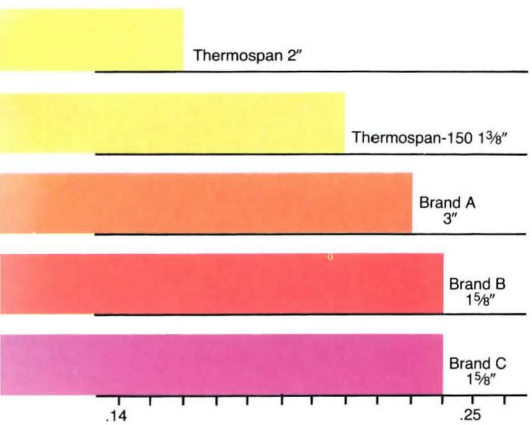

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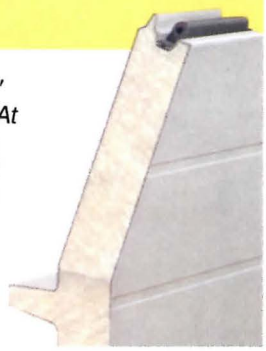

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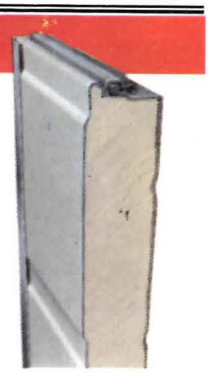

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Many mansions

In my Father's house are many mansions. . . . John 14:2

We have rarely shown a portfolio of religious buildings as catholic (with a small "c") as the collection we present in the following pages: a church in New York City, a mosque near Vancouver, a cathedral in Charleston, South Carolina, and a stupa in Leverett, Massachusetts. This heterogeneous assortment is obviously not meant to be an ecumenical Record Houses of Worship representing every major creed (there are several glaring omissions here). Our modest goal is rather to give a few particular examples of a nearly universal aspiration: shaping the physical stuff of architecture to embody belief in a transcendent reality. Because the varieties of religious experience are so diverse—and there are no clear signs in the modern world of an imminent convergence—the designs that express them take more radically different forms than one finds within almost any other building type today. "Function" has a special meaning for religious structures that eludes the usual programmatic analysis or economic determinants. "Style" becomes a matter of greater profundity than pulling suitably fashionable adornments off the shelf.

The before-and-after story of The Community Church of Astoria (below and overleaf) demonstrates that the strait gate to affluence need not be an obstacle to serving one's chosen mission in a proud and comely manner. Adaptability is not always a virtue, of course, and the need to reconcile tradition with changing ways can sorely test the spirit of any religious body. The Ismaili Jamatkhana, designed for Canadian Muslims uprooted from other lands (pages 90-95), and the Roman Catholic cathedral of Charleston, a turn-of-the-century landmark remodeled to conform with Vatican II (pages 96-99), exemplify disparate responses to unavoidable change. Even the basic requirement of shelter can turn out to be irrelevant to higher spiritual purposes, as at the Leverett Peace Pagoda (pages 100-103). Asked about the impenetrable pagoda, which he designed, architect Louis Mackall commented, "It's puzzling to Westerners that anyone would build a stupa, especially one you can't get inside. We're accustomed to thinking that if you want to make the world better you clean up the streets, you shelter the homeless, feed starving children. . . . For me, the Peace Pagoda is a symbolic attempt to express a hope infinitely beyond the world we live in. As you get older you begin to catch a whiff of that hope." None of us is young enough to ignore it. *Douglas Brenner*

Courtesy Alfredo De Vido

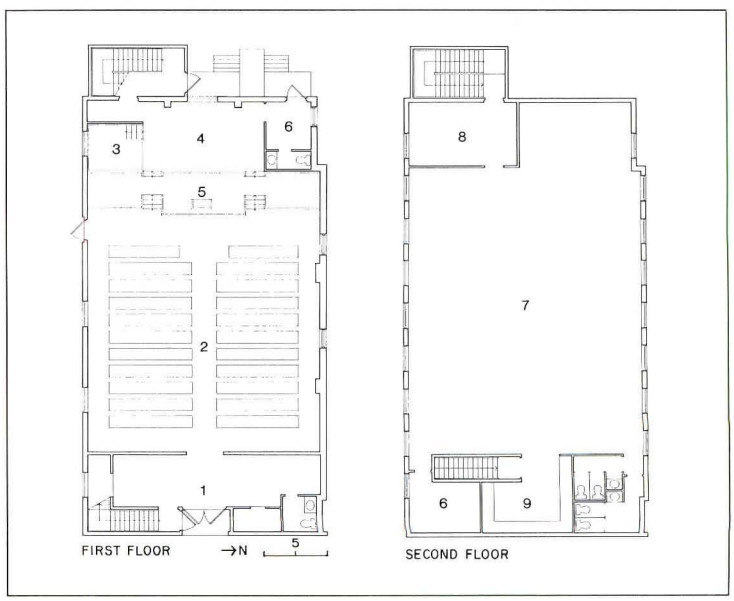
Community Church of Astoria
Astoria, New York
Alfredo De Vido Associates,
Architects

Let us rise

©*Paul Warchol photos*

When he is not ministering to the spiritual needs of his flock, the pastor of the Community Church of Astoria drives a New York City bus. Hard work and dedicated service, on the part of clergy and laymen alike, have sustained the interdenominational Protestant church since it was established in 1934 as a mission in New York's Borough of Queens. Of necessity, the founding congregants met for worship in private houses until funds could be raised to erect a permanent church, which opened its doors in 1952 (photo preceding page). One story tall and no wider than a standard 25-foot storefront, that humble structure offered little room to spare for a growing congregation. In recent years, as quarters became uncomfortably tight, the church trustees concluded that they would have to double their space, and somehow provide a multipurpose area for Sunday school classes, choir rehearsals, suppers, and the like. Because a modest treasury ruled out the purchase or construction of a new building, Community asked architect Alfredo De Vido for guidance on enlarging the church it already owned—a tough challenge given a site only marginally wider or deeper than the foundation line. The challenge was logistical, too, since church leaders urged that any interruption of regular services be as brief as possible, knowing that alternative facilities would depend on the kindness of neighbors.

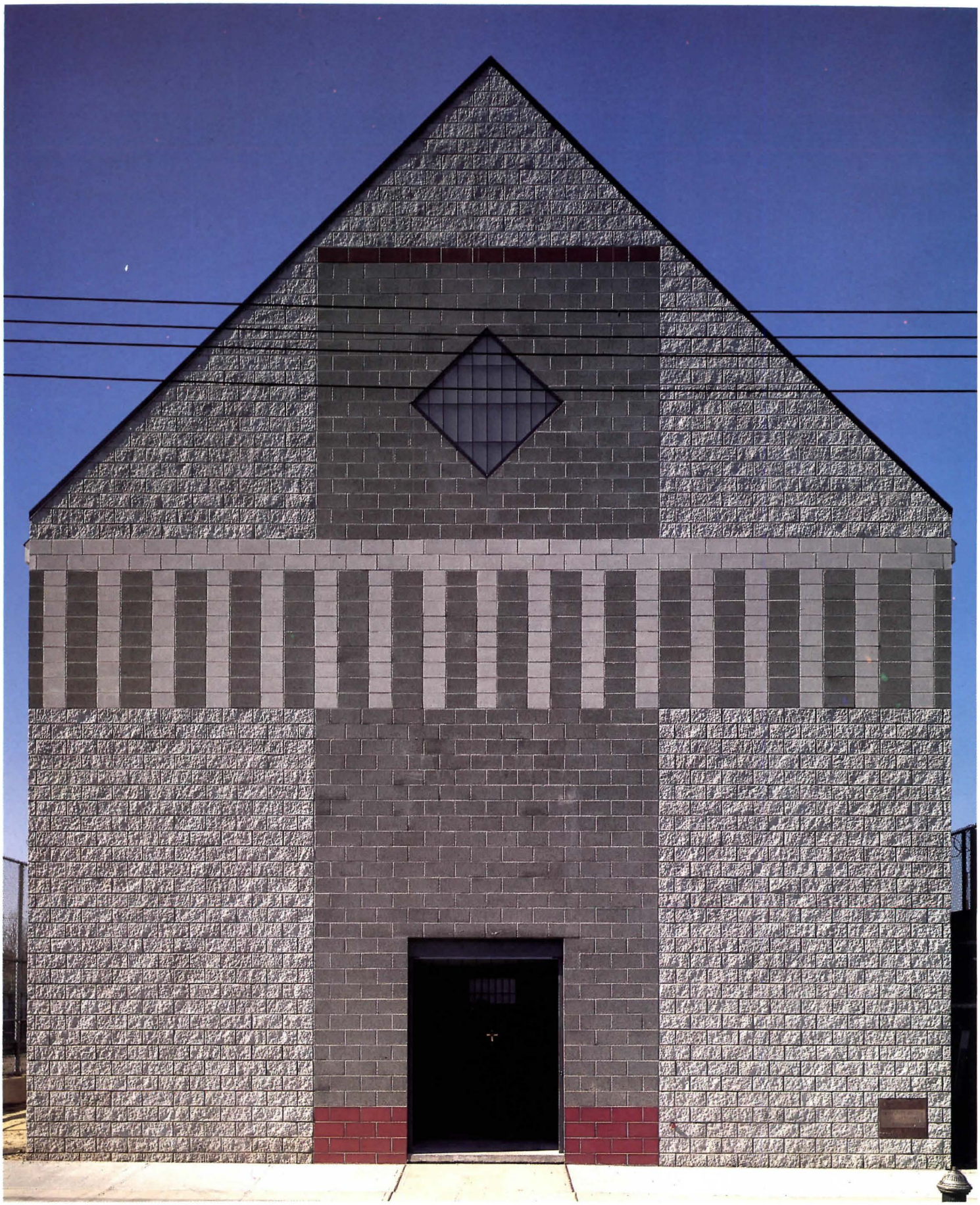
De Vido elected to build alongside and on top of the church, timing construction and demolition so that the interior would not have to be vacated for any longer than six months. During the first phase of the project, while the congregation was still in regular attendance, workmen laid block walls for a 15-foot-wide extension to the south, installed bar joists above the extant ceiling level to link this new space and the old hall under a continuous span, and added a full second story and roof (fortunately, the 1952 structure was sound enough to carry its share of the extra load). Only then, once Community's congregation had moved into temporary exile, did phase two begin with the removal of the former south wall. Adjusting the nave axis southward to reflect the building's new center, De Vido created a symmetrical room whose pristine, white enclosure focuses attention on the sanctuary. Plain pine furniture, translucent plastic sandwich window panels, and chandeliers fashioned from lengths of standard electrical conduit accord with this simple esthetic. The windows are vandal-resistant, as are the facades of split- and ground-face block and glazed tile that, on the two most prominent sides of the building, encase utilitarian patchwork in a rugged abstraction of venerable Christian motifs. Some connoisseurs of folk architecture may mourn the quaint "before" elevation immured within the "after," but those who come here to pray voice no regrets, preferring a solider witness to their own faith and dignity.



1. *Vestibule*
2. *Nave*
3. *Baptism pool*
4. *Choir*
5. *Pulpit*
6. *Office*
7. *Hall*
8. *Meeting room*
9. *Kitchen*

Patterns of grafitti-deterrent textured block and easily cleaned tile evoke traditional ecclesiastical forms of portal, clerestory, and cross. The "narthex" lintel houses a roll-down security gate and the "rose window" is glazed with durable plastic. Behind the facade, De Vido doubled usable area to comprise 4,000 square feet. A total budget of $292,500 included installation of a complete hvac system.

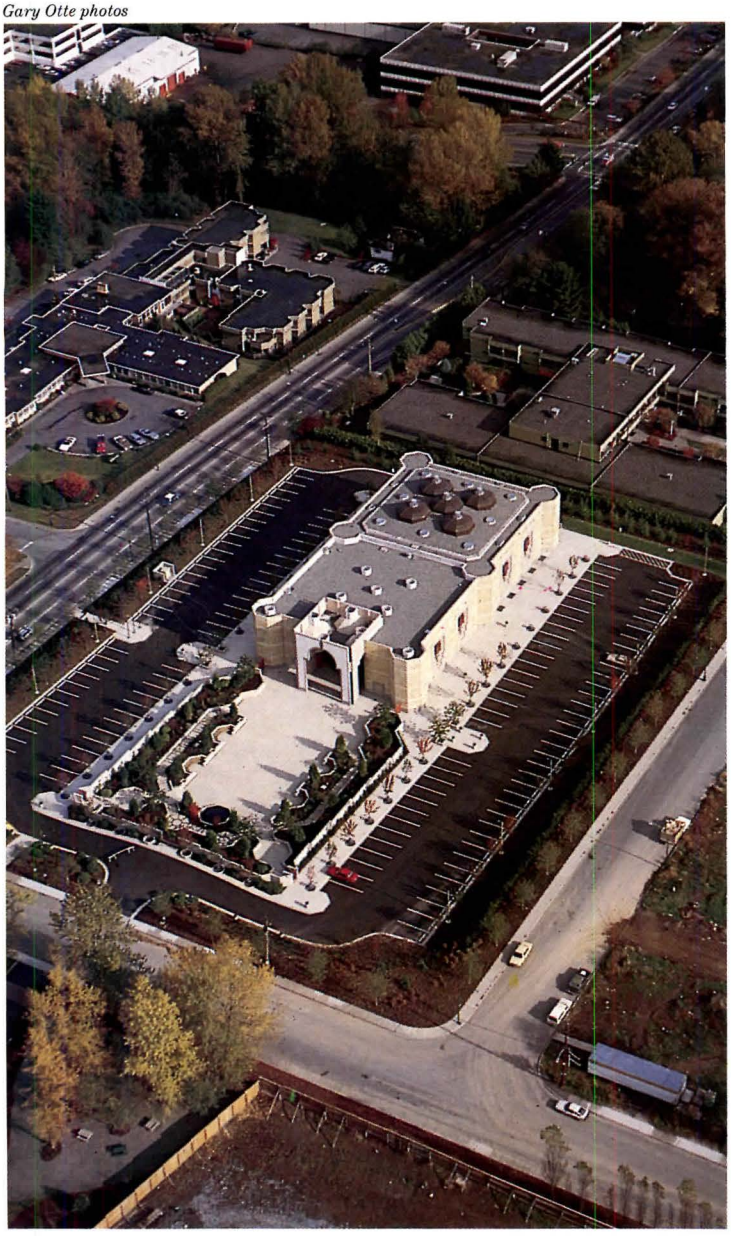
Community Church of Astoria
Astoria, New York
Architects:
Alfredo De Vido Associates—Alfredo De Vido, principal-in-charge; David Cook, project architect
Engineer:
Paul Gossen
General contractor:
Spensieri & Paolo Construction Corporation



Ismaili Jamatkhana and Centre
Burnaby, British Columbia,
Canada
Bruno Freschi Architects

Coordinates of sanctity

Gary Otte photos

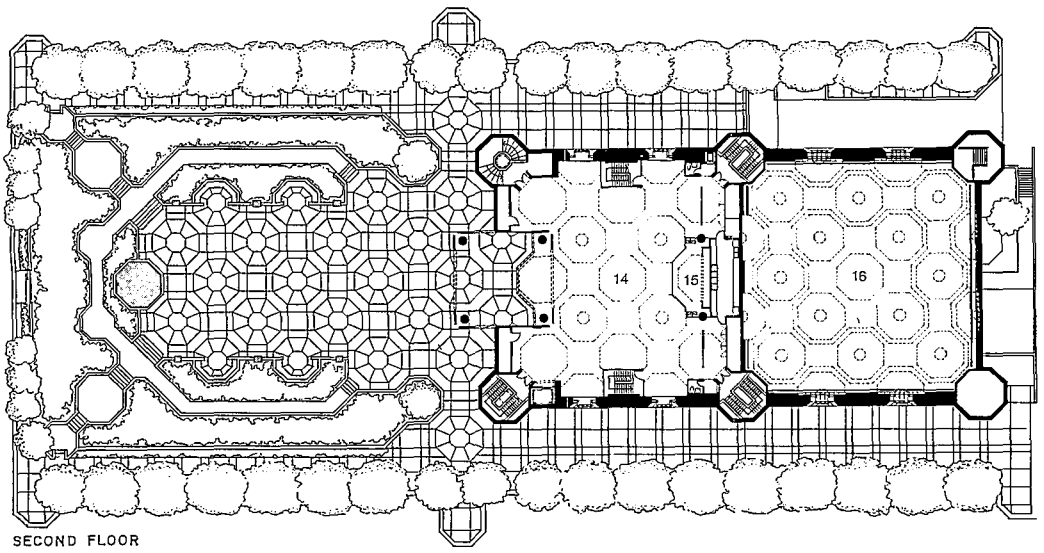


The triennial Aga Khan Award will be announced this fall, reminding us again that efforts continue throughout the Muslim world to inform modern buildings with the spirit of Islamic culture. Few architects have carried out this mission as sympathetically, or as confidently, as the Canadian Bruno Freschi in his design for the Vancouver headquarters of the Ismaili Muslims, an international sect whose spiritual leader is Prince Karim Aga Khan, patron of the Award. The major influx of Ismailis into Canada began only in the 1960s and accelerated in the '70s with the arrival of refugees from political unrest in East and Central Africa. A prosperous and well-organized community, the immigrants soon joined forces to acquire a site in Burnaby, near Vancouver, where they could build their first permanent North American *jamatkhana*, or mosque, and establish an administrative base for social and educational activities. Their architect, a descendant of Italian Catholics, had admired Islamic art as a student and traveler long before he received the Ismaili commission. Ironically, it was Freschi (also chief architect of EXPO 86) who found himself advocating the relevance of centuries-old Muslim forms to his clients: eager to be adaptably "modern" in their new country, they had set no program beyond the functional requirements of a prayer hall, gathering place, offices, and classrooms. The Burnaby Planning Department insisted that whatever was built obtrude as little as possible upon its neighbors.

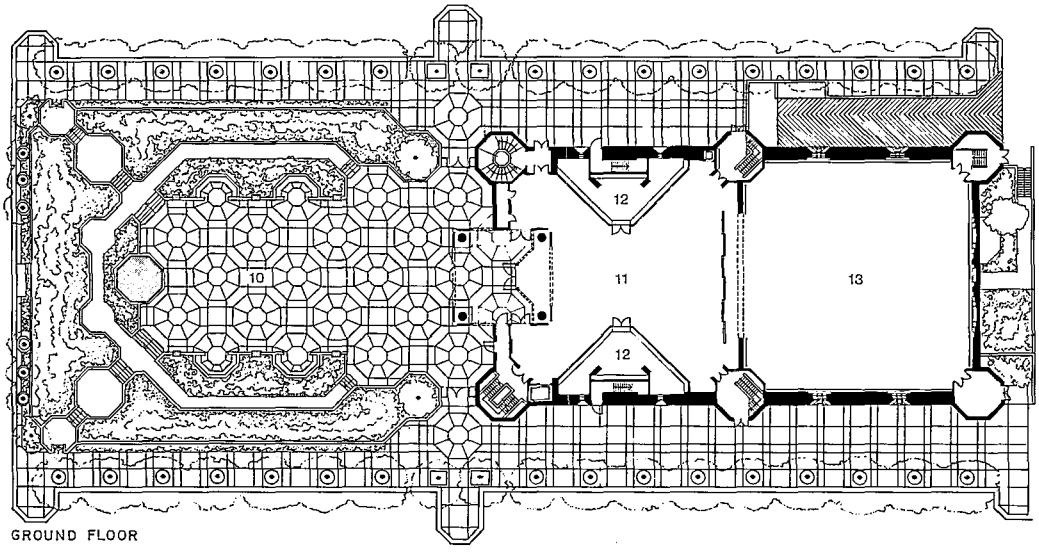
Ismailis and prominent Islamic scholars helped Freschi sort through a wealth of historical phenomena to identify perennial themes in the Muslim heritage that could translate into currently available materials and technology. The timeless language of geometry—long cherished by Islam but also vital to international Modernism—ultimately seemed to offer the ideal idiom for a New World jamatkhana. An epitome of cosmic harmony and a matrix for esthetic invention, mathematical discipline pervades Freschi's scheme—from the basic symmetry of a double-square plan to the multilayered network of octagons, circles, and other, more intricate, figures that threads through the building and the surrounding garden like a three-dimensional kilim tapestry. In typical Muslim fashion, these motifs weave an episodic sequence of indoor and outdoor rooms, linked along a continuous pathway. Each spatial volume possesses its own inherent order and allure, at the same time that each is perceptibly a transition to the next stage in a physical and spiritual journey whose ultimate goal lies beyond walls and rooms.

Because Freschi's symbolic allusions are neither wholly abstract nor precisely antiquarian, as befits a synthesis of modernity and tradition, the "meaning" of this particular jamatkhana is as multilayered as its geometry. Iconographic intent is as evident in the juxtaposition of exposed concrete structure with sandstone ashlar as it is in more orthodox Islamic details such as calligraphic inlays or ceilings honeycombed with coffers and cupolas aglow with polished brass. Unlike Muslim architects seeking shelter from the hot Middle Eastern sun, Freschi opened up skylights and enormous lanternlike windows of etched, opalescent glass to transmute the cool radiance of the northwestern sky into an all-encompassing force of magical intensity. The Levantine roofscape of copper-sheathed cupolas will eventually almost disappear behind a dense perimeter of trees. These "sentinels," as Freschi calls them, shield the outer limits of a microcosmic paradise, a garden that also forms an axial forecourt to the central portal. With its recessed vault, the portal suggests a giant stylized *mihrab*, the prayer-wall niche that orients worshippers toward Mecca; more prosaically, the porch is a gateway to the "loggia" that occupies nearly half the main floor. The loggia sometimes serves as a grand reception hall; but as a way station along the building's symbolic pathway, it is simply the place where the faithful doff their shoes before entering the prayer hall. Even the prayer hall offers an equivocal vision of journey's end. As Freschi has written, "Light, pattern, mass, and enclosure center the person in the room, yet the symmetrical room does not have a center. The center is in each person in the room."

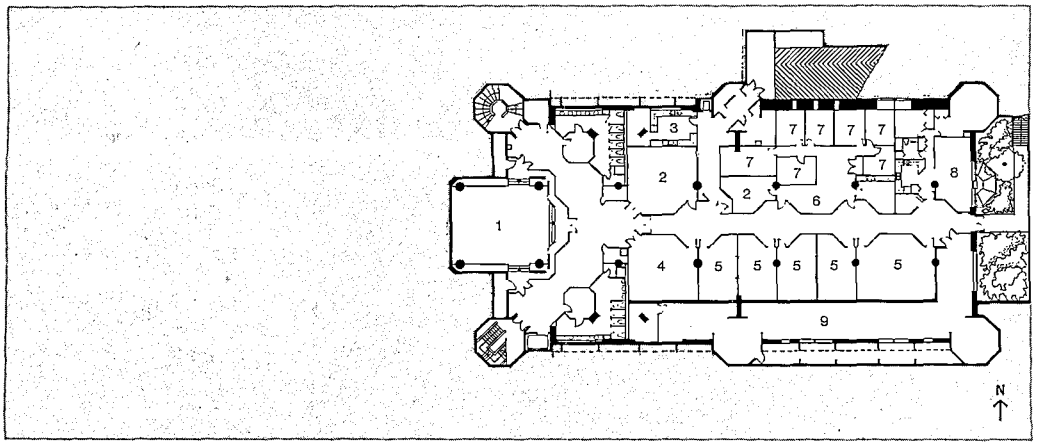
What Bruno Freschi calls the "relentless" geometry of his parti is most striking in plan. Repetitive modules not only unite disparate functional zones within the 41,660-square-foot building but also bind architecture to landscape. Flowering, aromatic shrubbery and plashing fountains were essential components of the Ismailis' program, in keeping with the Muslim ideal of a manmade earthly paradise (from the Persian pairidaeza, *or "walled garden") for contemplative tranquillity. Freschi's variation on that theme most closely resembles 16th-century Mogul prototypes, although the botanical display combines flora native to the Northwest with specimens favored by gardeners in various parts of the Islamic world. A thick planting screen around the edge of the 3.5-acre site and a low profile for the Jamatkhana were stipulated by the local planning department. The constraints of suburban height restrictions necessitated full use of the basement for administrative offices and educational facilities. Externally, the tall, open-crowned "arch" of the white marble portal (preceding page) helps to counter the enforced horizontality, as will columnar evergreens that can grow to a height of 40 or 50 feet.*



SECOND FLOOR



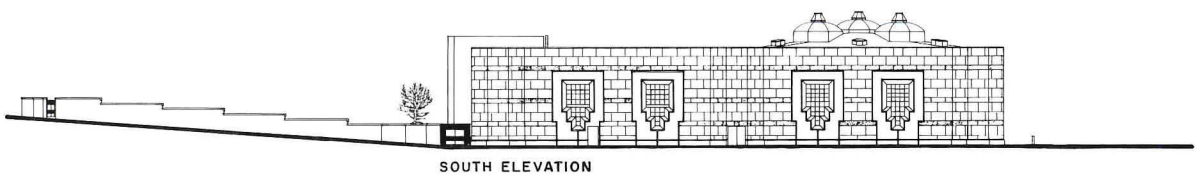
GROUND FLOOR



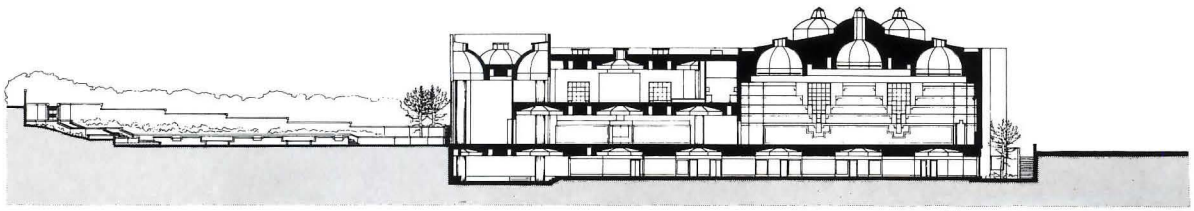
BASEMENT

1. *Council chamber*
2. *Meeting room*
3. *Kitchen*
4. *Library*
5. *Classroom*
6. *Reception*
7. *Office*
8. *Caretaker*
9. *Mechanical*
10. *Courtyard*
11. *Loggia*
12. *Coat and shoe room*
13. *Prayer hall*
14. *Social hall*
15. *Stage*
16. *Open to below*

In the absence of a minaret, a form the Ismailis specifically forbade, octagonal cupolas rise discreetly to announce the presence of the two-story prayer hall inside. The clustered roof lanterns recall a characteristic feature of Turkish mosques, although the Near Eastern model has been westernized by the addition of skylights. In the same vein, Italian sandstone wall cladding evokes the solid masonry of ancient Muslim monuments, while exposed concrete (as around the windows below, or in the side walls framing the main portal's Carrara frontispiece) reveals the actuality of modern structure. Large windows are something of a rarity in conventional mosque design: jamatkhanas have customarily been erected on urban sites surrounded by other buildings, and in climates where it is desirable to filter strong sunlight. Furthermore, the extraordinary stepped windows at Burnaby invert the usual Muslim pattern of openings narrowed at the top, another sun-shading device. Freschi turned his ziggurats upside down, and corbeled their central mullions outward, to take advantage of gentler northern light. The panes are translucent, however, since client and architect agreed that full visibility was undesirable.



SOUTH ELEVATION

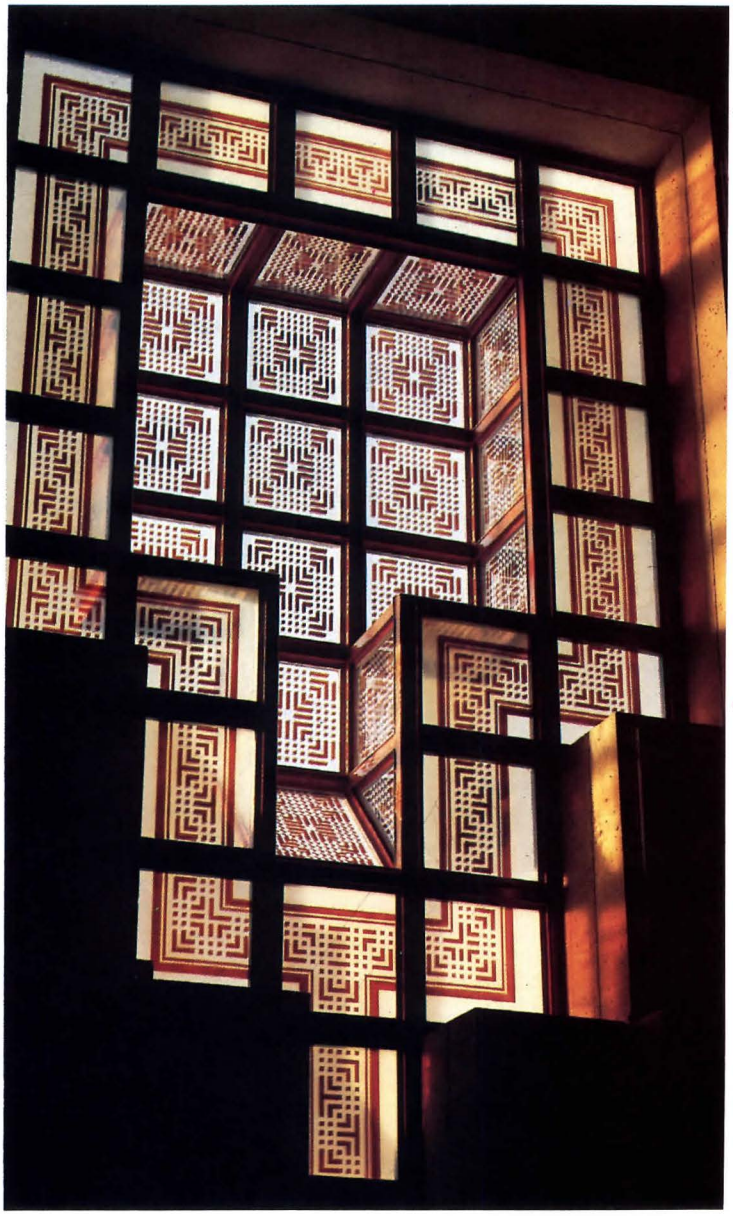


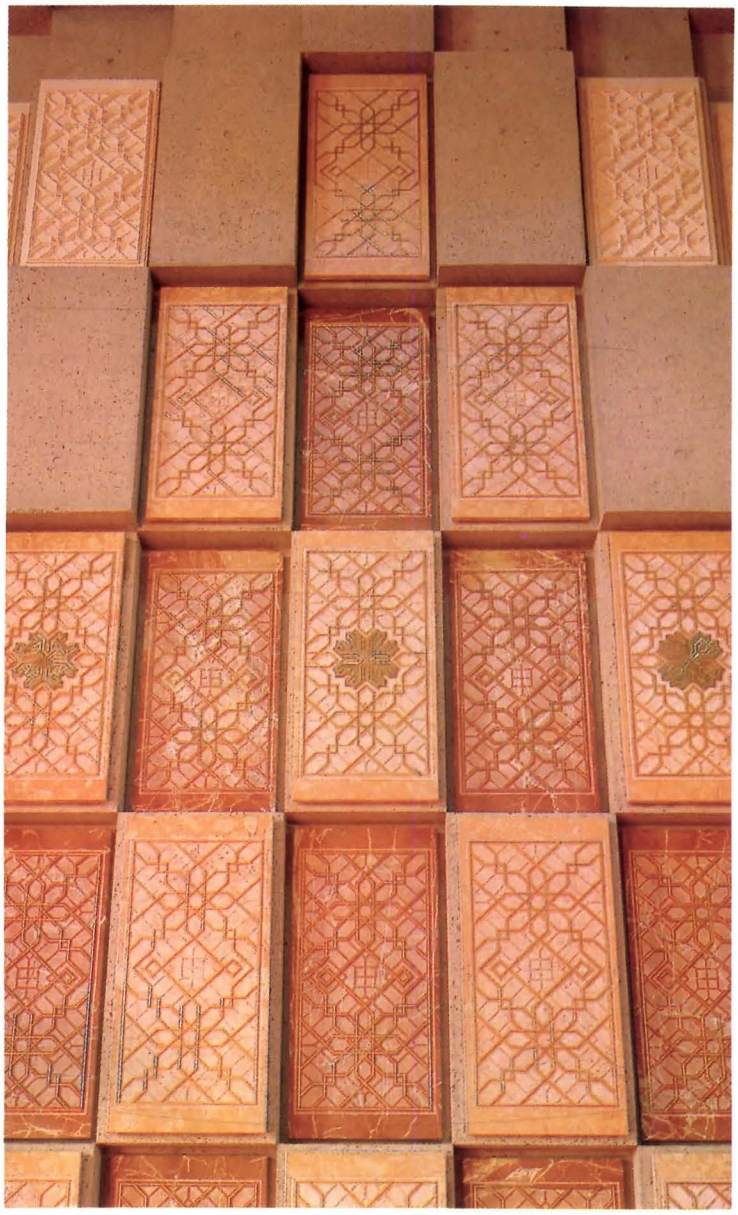
WEST - EAST SECTION

20

Faceted and inset with cast opalescent glass, the prayer-hall windows resemble huge lanterns. Throughout the day, one-inch-thick panes etched on both sides with abstract calligraphic motifs tint the light a golden or rosy hue. Stylized calligraphy also adorns brass-inlaid wooden screens, bas-reliefs of ivory-colored marble-dust tile set into zigguratlike concrete piers, and the sand-blasted rose and coral marble prayer wall (which the Ismailis will not permit to be photographed in its entirety). Stepped panels at the center of the eastern prayer wall (detail opposite right), which compose a subtly geometric mihrab in line with Mecca, are inscribed with the names of Allah, Muhammad, and Ali, the Prophet's son-in-law and the Muslim world's first imam, *or spiritual leader. Low offering tables called* paats *border the prayer hall*

and divide it symmetrically into areas for men and women. The figure of a Chinese cut-pile carpet repeats the octagonal ceiling configuration. Brass rings inside the concrete cupolas vary the predominantly rectilinear geometry. Similar coronas with suspended lamps, in the loggia (bottom opposite) and in the social hall upstairs, were inspired by Turkish oil chandeliers.



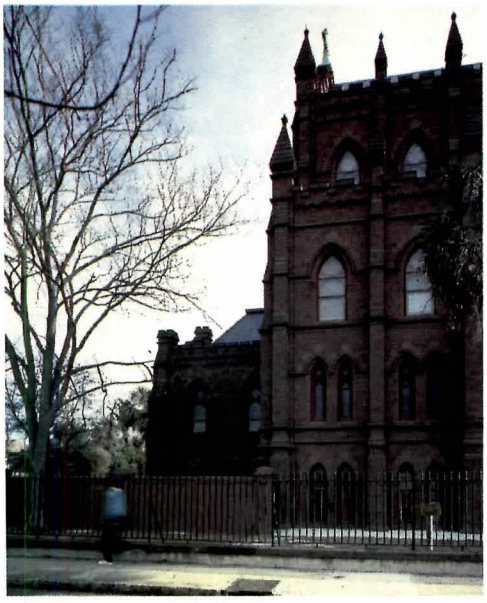


Ismaili Jamatkhana and Centre
Burnaby, British Columbia, Canada
Owner:
The Aga Khan Foundation
Architects:
Bruno Freschi Architects—Bruno Freschi, principal; Shanti Ghose, associate-in-charge; Roland Küpfer, project architect; Joyce Drohan, Richard Belli, Julia Meadows, Lynne Werker, Elizabeth Mackenzie, project team
Interior designers:
Bruno Freschi Architects—Bruno Freschi, Lynne Werker, Utopia Design Furnishings, Julia Meadows
Engineers:
Bogue Babicki Associates Inc. (structural); Keen Engineering Ltd. (mechanical); W. T. Haggert & Co. Ltd. (electrical)
Lighting:
William Lam and Associates
Acoustics:
Bolt Beranek and Newman
Landscape architect:
Vagelatos Associates Landscape Architecture Ltd.
Artist in glazing:
Lutz Haufschild and Associates Ltd.
Consultants:
Garr Campbell Associates Inc. (landscape concept); Hanscomb Consultants Ltd. (cost); Mozhan Khadem (calligraphy); Oleg Grabar (Islamic art historian); William L. Porter (special technical consultant)
General contractor:
The Foundation Company of Canada Ltd.

Cathedral of St. John the Baptist
Charleston, South Carolina
Arthur Cotton Moore/Associates,
P. C., Architects

A discreet conversion

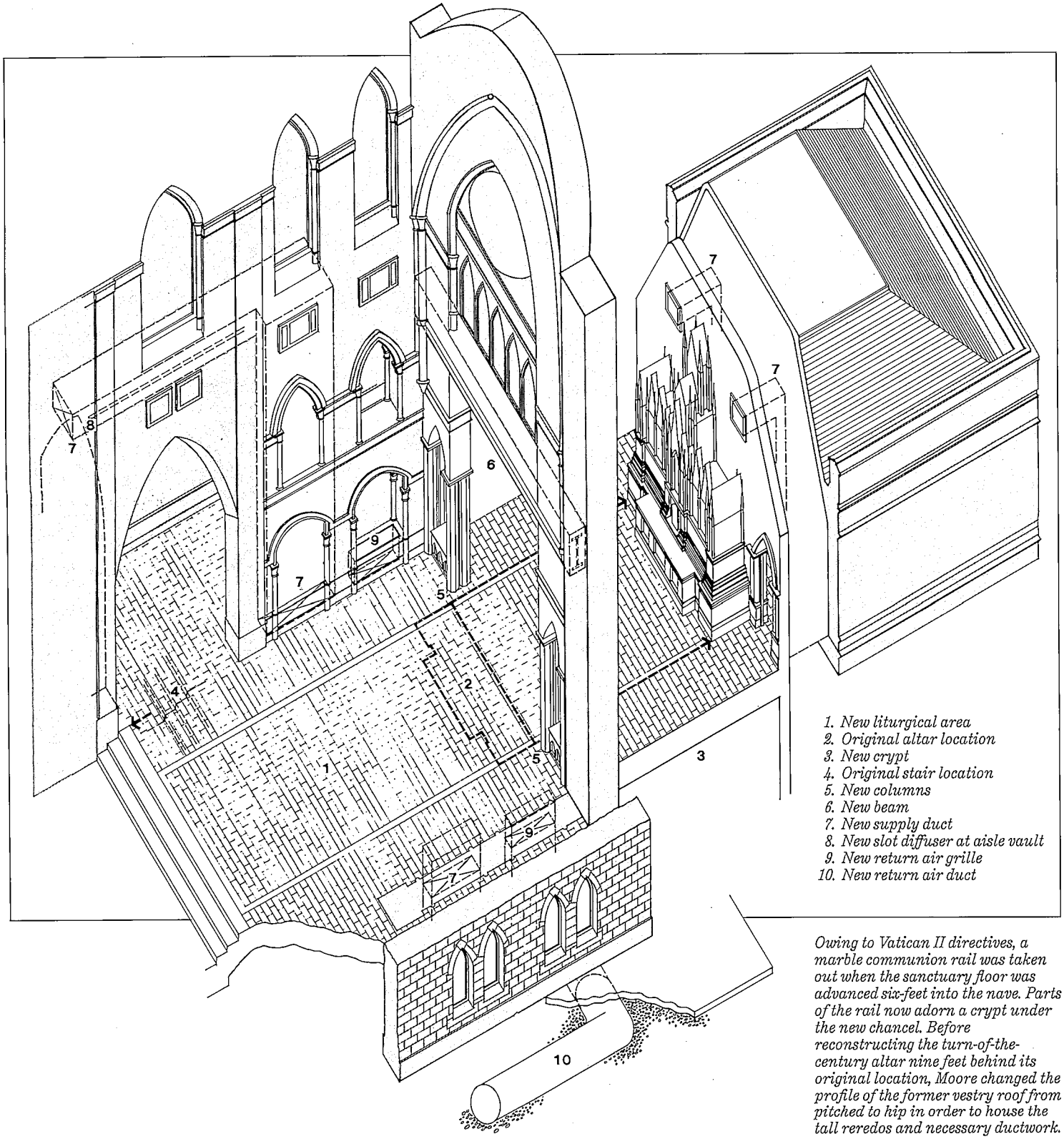
Walter Smalling photos



Historic preservation is virtually a secular religion in Charleston, South Carolina, and the merest hint of possible "improvements" to an old building there is enough to stir the wrath of the faithful. Knowing this, architect Arthur Cotton Moore was "fairly incredulous" when the Most Reverend Ernest L. Unterkoefler, Roman Catholic Bishop of Charleston, told him he wanted to "bash through" the sanctuary wall of his cathedral. The neo-Gothic Cathedral of St. John the Baptist was consecrated only 79 years ago, making it one of Charleston's younger monuments, yet it embodies a venerable heritage (an earlier cathedral, which replaced a simple wood-frame chapel erected in 1821, stood on the same site from 1854 to 1861, when it was destroyed by fire). Keenly aware that generations of sentimental reverence adhere to every detail of the church, the Bishop proposed a substantial remodeling only from a sense of urgent necessity. St. John's was designed around 1890, when ecclesiastical practice did not favor the more communal, participatory ritual promulgated by Vatican II, and though most of the building needed no physical adaptation to be brought up to date liturgically, the Victorian high altar presented an unacceptable anachronism. Above all, the sanctuary platform, or predella, furnished too shallow an area in which to reorient the mass from a traditional wall-mounted altar and reredos to a now-obligatory freestanding table facing the congregation. (Other circumstances unforeseen by the original architect ranged from televised masses to ordinations where six-foot candidates for the priesthood would be unable to prostrate themselves without hanging their feet over the predella steps).

Bishop Unterkoefler decided that the simplest way to gain space would be to to recess the existing altar and its flat surround into an adjacent vestry, thereby creating a new chancel alcove. Moore readily saw the logic of this scheme, but cautioned that it would hardly be simple to execute if, as the Bishop insisted, the historic character of the cathedral were to remain intact. Further complicating Moore's task was a program that also called for thorough interior restoration, readjustment of flood-plain drainage, a total upgrading of electrical capacity, acoustics, and audio service, and the unobtrusive installation of sprinklers, a complete new lighting system, and air conditioning (previously, only a basement chapel had been mechanically cooled, making summertime mass in the main church a test of faith). At times, the project approached archaeology, as when the marble reredos behind the high altar was dismantled into some 200 pieces prior to storage and reassembly. Just as painstaking was the "needling" of the upper chancel wall: four-inch-thick beams were bored through the masonry on two-foot centers and connected with scaffolding on either side, to stabilize the triforium, clerestory, and central rose window while the lower wall was demolished and replaced with concrete piers and steel beams to frame a new sanctuary opening. Eventually, plasterers clad this armature and the rest of the now-gutted chancel in Gothic columns, arches, moldings, and brackets—part replication, part invention.

Painted in shades of gray and blue that gradate upward from dark to light, and picked out with white and gilt trim, the refurbished decor satisfies the Bishop's request for an "uplifting" interior, "noble" rather than "sumptuous." Ingenious concealment of mechanical systems enhances this chaste elegance (cutaway diagram overleaf). Air supply ducts, for example, run behind blind arches that separate chancel and aisles, with grilles set into quatrefoils above the reredos and along the triforium; slot diffusers discreetly parallel the ridge ribs of aisle vaults. Moore neatly avoided the intrusion of 30-inch-diameter return ducts within the nave by burying them under sidewalks outside the aisles; exterior condenser apparatus at the back of the cathedral is out of view behind a brownstone-colored stucco enclosure reminiscent of local garden walls (bottom left). Following the lead of P. C. Keeley, the building's architect of record, Moore rendered plans for a steeple atop the tower. Unfortunately, Charleston history repeated itself and, as at the turn of the century, a budget-conscious diocese vetoed the spire.



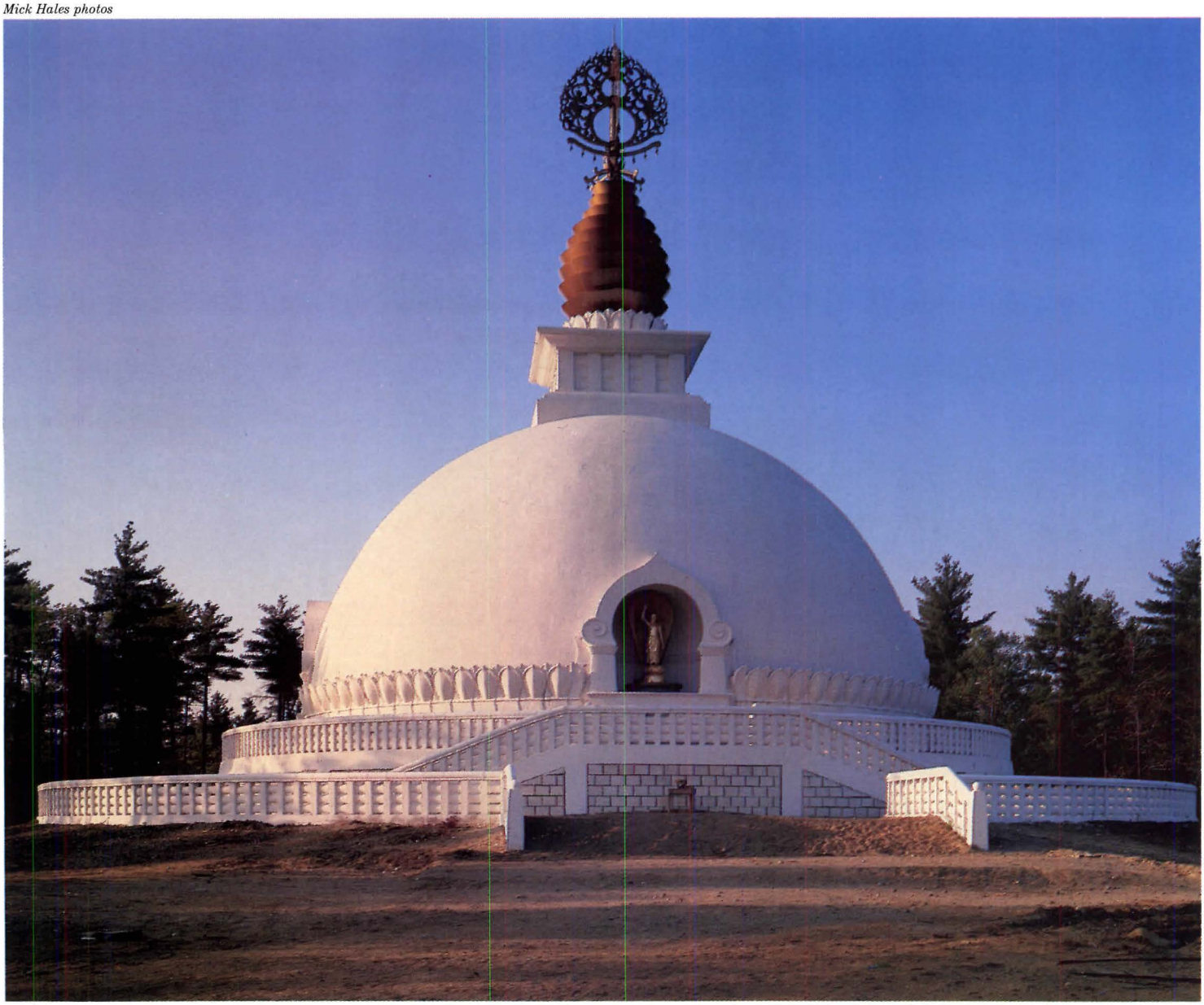
1. *New liturgical area*
2. *Original altar location*
3. *New crypt*
4. *Original stair location*
5. *New columns*
6. *New beam*
7. *New supply duct*
8. *New slot diffuser at aisle vault*
9. *New return air grille*
10. *New return air duct*

Owing to Vatican II directives, a marble communion rail was taken out when the sanctuary floor was advanced six-feet into the nave. Parts of the rail now adorn a crypt under the new chancel. Before reconstructing the turn-of-the-century altar nine feet behind its original location, Moore changed the profile of the former vestry roof from pitched to hip in order to house the tall reredos and necessary ductwork.

The entire chancel was stripped down to bare brick for structural alterations and insertion of mechanical systems, such as ductwork behind blind arches (above right). Refurbishment of the nave included sound-absorbent pew upholstery, down-lights, and hidden cables for television filming. An elevator for the handicapped was designed to rise inside an oak confessional below the organ loft.

Cathedral of St. John the Baptist
Charleston, South Carolina
Owner:
Diocese of Charleston
Architects:
Arthur Cotton Moore/Associates, P. C.—Arthur Cotton Moore, principal; Ik Pyo Hong, project manager
Engineers:
Tadjer-Cohen Associates (structural); Glassman-LeReche & Associates (mechanical/plumbing/electrical)
Accoustical consultants:
Polysonics Inc.
General contractor:
Ruscon Construction

Mick Hales photos



The clearing, which commands a scenic view over the Pioneer Valley, is yet to be landscaped by Katsuo Saito. A shack built as a site office for the pagoda project (right) remains in use for construction of an adjoining temple, designed by William Llan Starkweather. Scaffolding and salvaged barn wood is now being recycled, and timber forms for the stupa dome will become roof trusses in the temple.

Heaven on earth

Leverett Peace Pagoda
Leverett, Massachusetts
Louis Mackall & Partner, Architects

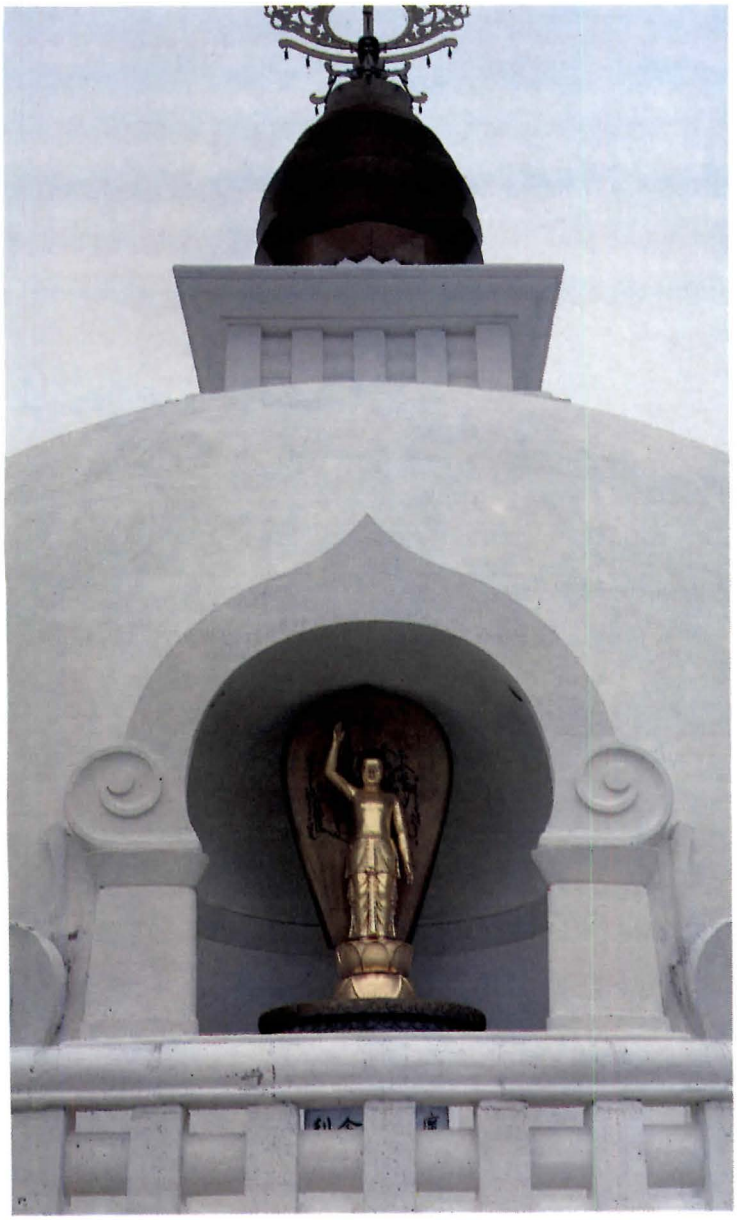
The Most Venerable Nichidatsu Fujii built his first pagoda on a mountain in Japan after the bombing of Hiroshima and Nagasaki. A Buddhist monk and founder of the Nipponzan Myohoji order, Fujii consecrated the domed shrine to universal peace and enlightenment, reviving both the form and religious purpose of a 2,500-year-old tradition of stupa design that originated in India. "The appearing of a pagoda touches the hearts and minds of all people," he explained. "Those who venerate this pagoda absolutely reject nuclear warfare and firmly believe that a peaceful world will be manifested." Before his death in January, 1985, at the age of 100, Fujii had inspired the construction of more than 70 pagodas in Asia and Europe, and overseen the beginnings of the first in North America, the Leverett Peace Pagoda. The site for the latest project, a wooded hilltop in western Massachusetts, was donated to the order, as were the services of the professionals who designed the stupa and the labor of the nearly 1,000 volunteers from many faiths who built it over one and a half years. Louis Mackall, the architect, knew little about Buddhism until he met nuns and monks from Nipponzan Myohoji as fellow demonstrators protesting the Trident submarine. Reciprocal good will (and a joint leap of faith) led to the peace pagoda commission, a collaborative effort with engineer J. Robert Jennings, Rev. Mamoru Kato, senior monk at the small monastery that tends the shrine, and a host of others.

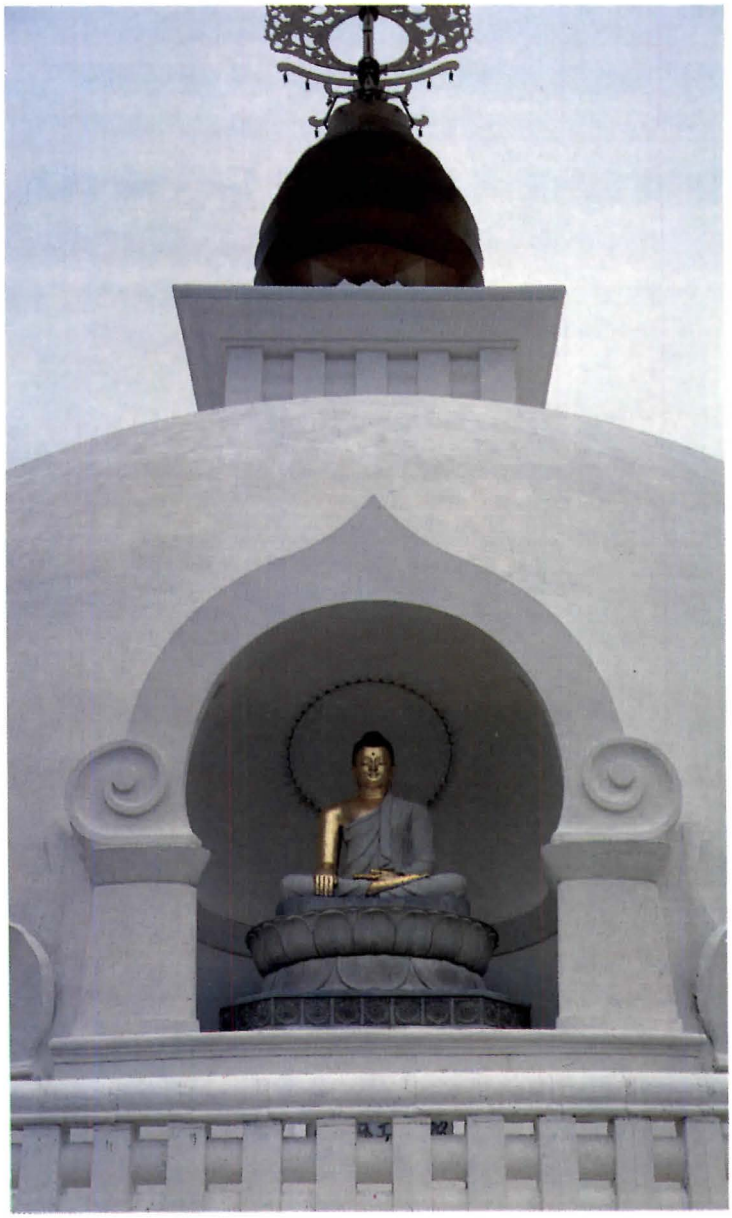
As a Westerner from a professedly "secular background," whose career had focused hitherto on private residences and custom furniture, Mackall approached the creation of a stupa somewhat uneasily. Fujii and Kato had already agreed on a generic model, the second-century-B. C. tope at Sanchi, India, one of the earliest pagodas erected to house Buddhist relics. But beyond determining the basic type of a domical structure with central pinnacle, and a thematic program for sculptural iconography, they hoped their architect would reinterpret precedent according to his own lights, as an American. To that end, Mackall intensively drew and redrew the elementary contours and decorative motifs he was shown in photographs of Sanchi and modern peace pagodas, striving for a sense of intimacy with alien shapes and symbols, and a measure of the plastic vigor he saw in the ancient prototype but found lacking in many contemporary stupas.

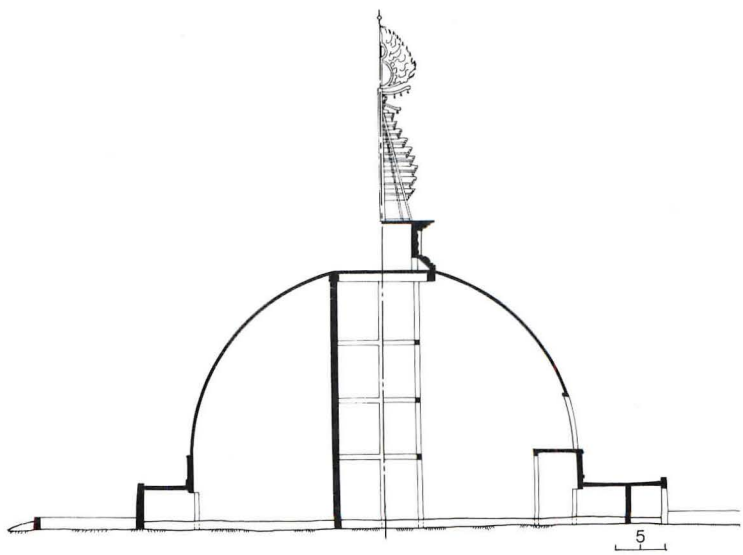
Once this research had been sufficiently "edited" by Buddhist advisors and pondered with Jennings to produce a schematic outline of the concrete pagoda's form and structure, Mackall began modeling clay maquettes of sculptural details, such as a lotus-blossom frieze and ogee-arched niches. These three-dimensional sketches were then transposed into three-quarter-scale plaster casts. The filigree "water-flame" finial of the pinnacle, largely conceived by artist Shin Higuchi, was laser-cut from aluminum, a rare intrusion of sophisticated technology. In general, construction relied on sweat, ingenuity, and solidarity: "All of the pure energy brought to the process of building the pagoda remains here," says Kato. Trees cleared on site were lashed together for scaffolding, and formwork and trusses for the 80-foot-diameter dome and its podium were assembled by hand from scrap wood. While volunteer Earl Johnson pneumatically sprayed the shell over rebars, a team of Sri Lankans troweled its curved surface (their adjustments by eye were accurate to within an eighth of an inch of Jennings's screed). The same team sculpted freehand concrete statues.

Many non-Buddhists who helped out for a few days or even weeks during construction were perplexed by the lack of any apparent access to the interior of the dome, which in the finished stupa is permanently sealed. Visitors still wonder why there is no "inside," no clear destination, as they watch saffron-robed monks and nuns circumambulate the outdoor walkways beating hand drums and chanting. There are many possible replies to the lingering question. One of them is suggested by Rev. Clare Carter, a nun at the pagoda: "Our teacher was always trying to make the point that heaven is also this world. Our life here is a creation of this heaven through human effort."

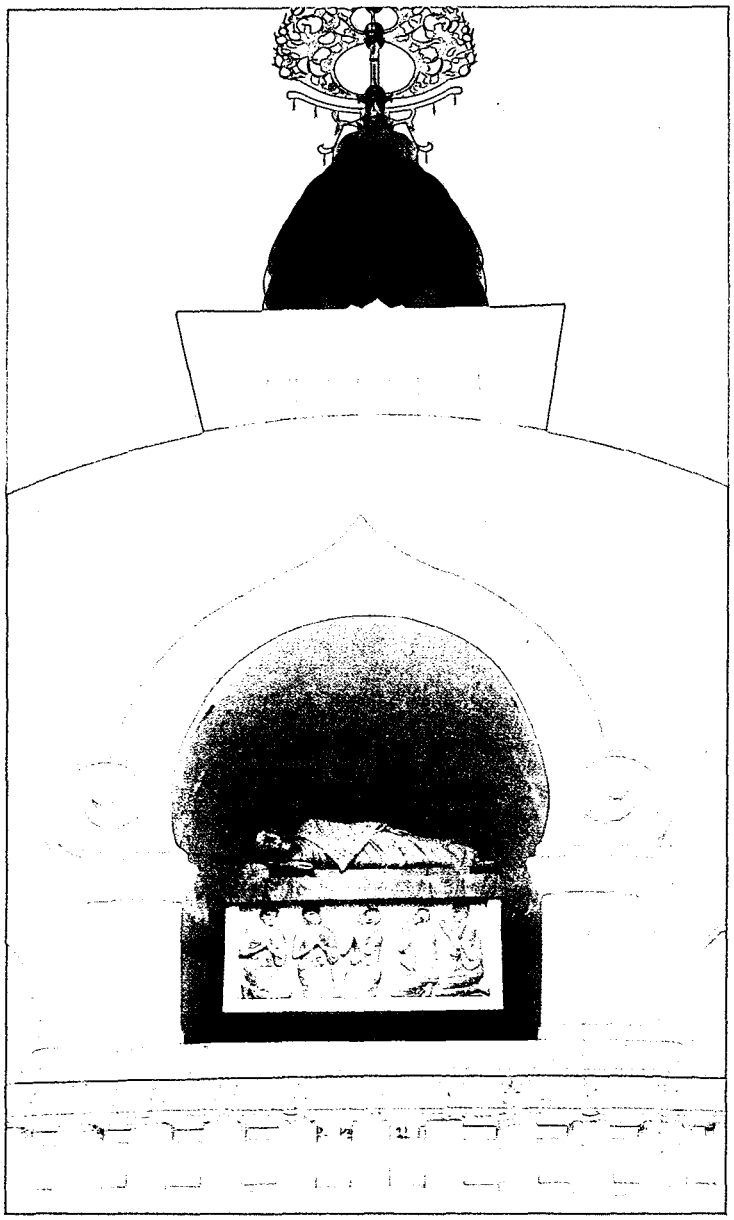
Twice daily, monks and nuns walk around the pagoda as a community, making one circuit on the lower walkway and two on the upper, beating hand drums, and stopping at each of four niches (below) to bow and chant a prayer for peace that was first intoned by the 13th-century Japanese monk Maha Bodhisattva Nichiren. The statues in the niches (viewed clockwise starting at the head of the stairs, left to right in photos below) represent the "Birth Buddha" vowing to relieve suffering, a favorite subject of Nichidatsu Fujii; "Buddha defeating evil spirits just before final enlightenment"; "Buddha entering Pari-Nirvana"; and "Two Buddhas expounding Supreme Dharma," which is inscribed with a quotation from Nichiren, "Establishing righteousness and truth for the sake of the comfort and peace of nations."

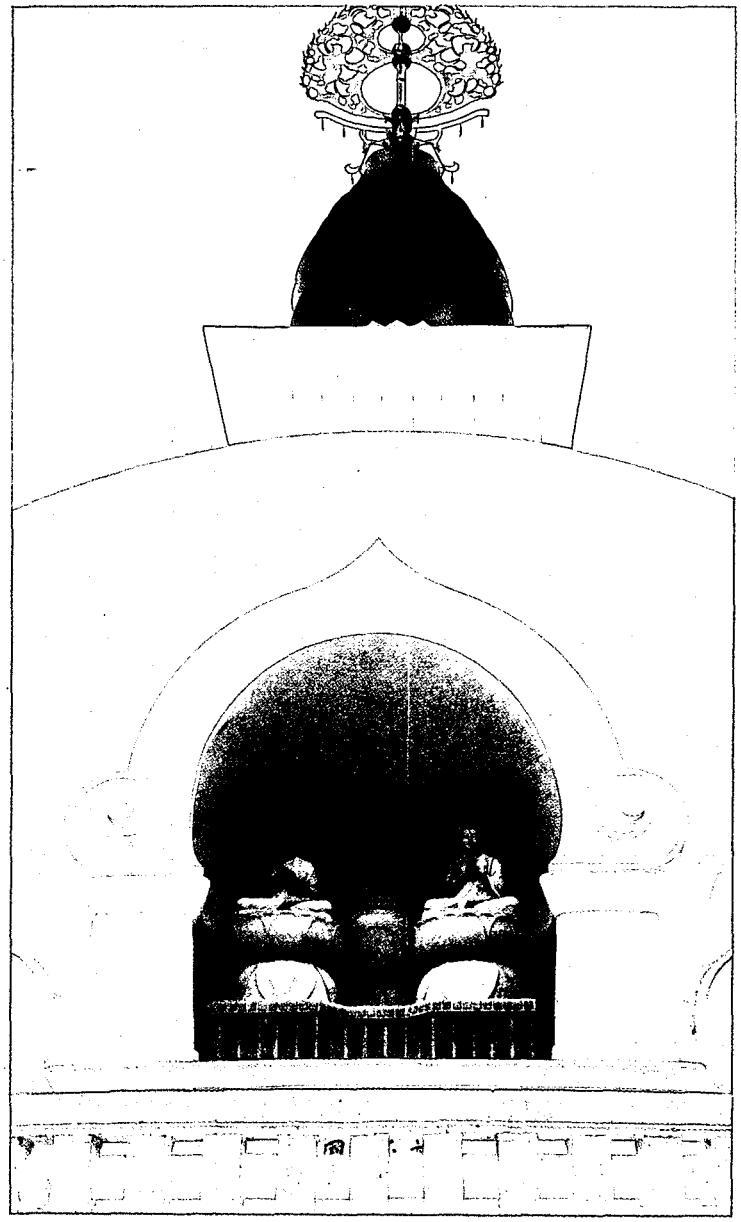






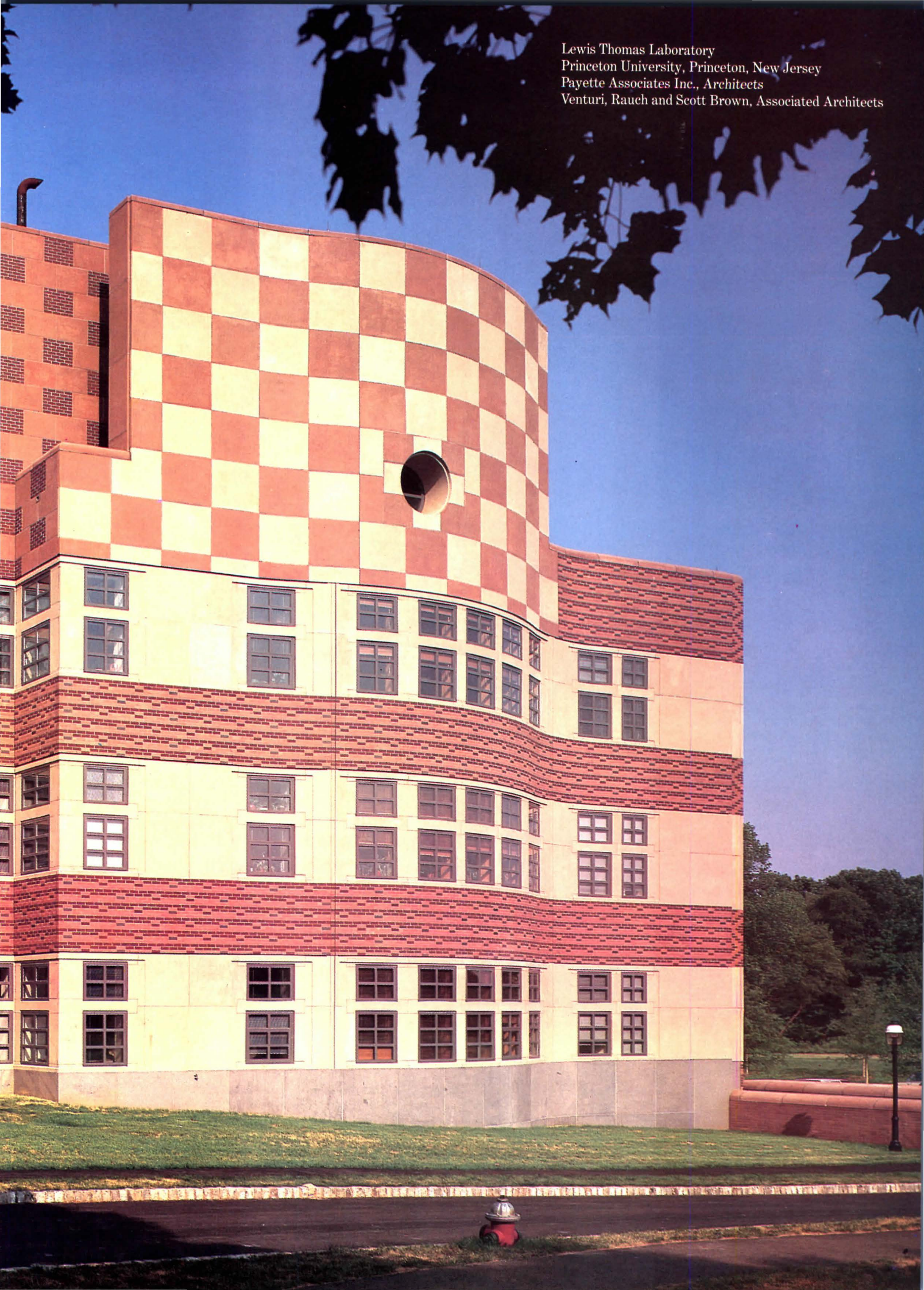
As in the earliest Asian stupas (and modern versions as far afield as London and Vienna), the tower of the Leverett Peace Pagoda is meant to house relics of Buddha, which the Nipponzan Myohoji order venerates as emblems of enlightenment and nonviolence. A "prayer in stone," the pagoda itself is regarded as an embodiment of Buddha. Nine undulating "leaves" on the pinnacle symbolize nine ways of consciousness; the finial, or kota, *whose base is hung with wind bells, depicts heavenly beings making offerings. Shipped in 140 pieces by the fabricator in Connecticut and bolted together on site, the gilded aluminum superstructure rests on a single-cast concrete tower. Piers at the core of the dome centered timber formwork, which was extracted through openings in the podium now filled in with precast block.*





Leverett Peace Pagoda
Leverett, Massachusetts
Owner:
The Monks and Nuns of Nipponzan Myohoji
Architects:
Louis Mackall & Partner
Engineer:
J. Robert Jennings
Construction supervision:
Rev. Mamoru Kato, Rev. Hideki Sasamori, J. Robert Jennings, Robert Davidson
Gunite:
Earl Johnson
Sculpture:
A. A. Gunetileka, W. J. Lentis, D. M. Heembanda, W. A. Rajapaksa
Finial calligraphy:
Shin Higuchi
Aluminum construction:
Lippincott Inc.
Fiberglass formwork:
Norman Sypher, Holly Hamilton
Gold leaf:
Rev. Yoshio Ishiyama, Rev. Midori Haptanda, Rev. Jacqueline Gemme, Marianne Gunther
Electrician:
Rupert Clark
Public relations:
Paula Green, John Schuchardt
Core workers:
Bonnie Aharonian, David Allen, Rev. Toshio Asami, Hank Berry, Rev. Clare Carter, Russ Carter, Bob English, Kathleen Flannigan, Charlie Ferguson, Lisa Groves, Thomas Heineman, Brian Herschler, Rev. Kimiyasu Ishiboshi, Toshi Kashima, Thomas Menches, Rev. Gyotetsu Morishita, Richard Morrison, Terry Nash, Rev. Katsuzo Sawada, Rev. Toshie Yasuda
Landscape:
Katsuo Saito
General contractor:
Nipponzan Myohoji

Back to the future



Lewis Thomas Laboratory
Princeton University, Princeton, New Jersey
Payette Associates Inc., Architects
Venturi, Rauch and Scott Brown, Associated Architects

©Paul Warchol photos

"Going back . . . ," the first words of Princeton University's alma mater, is an obsession for its alumni, like myself, as if the return to campus could somehow transport us all back in time. Although the Gothic quadrangles crisscrossed by worn walkways are, sure enough, just as our mind's eye so fondly recalls, times have changed. Striving to be more than a well-preserved memory, the 240-year-old university has undergone substantial expansion in recent decades in both the size of its student body and in its social and academic facilities. During the past five years, the campus has been subject to a rash of new building and renovation projects—work often steeped in controversy for its seeming rejection of Princeton's proud tradition of pointed arches and gargoyles, and, more unsettling for its sons (and now daughters), its transformation of the way things were.

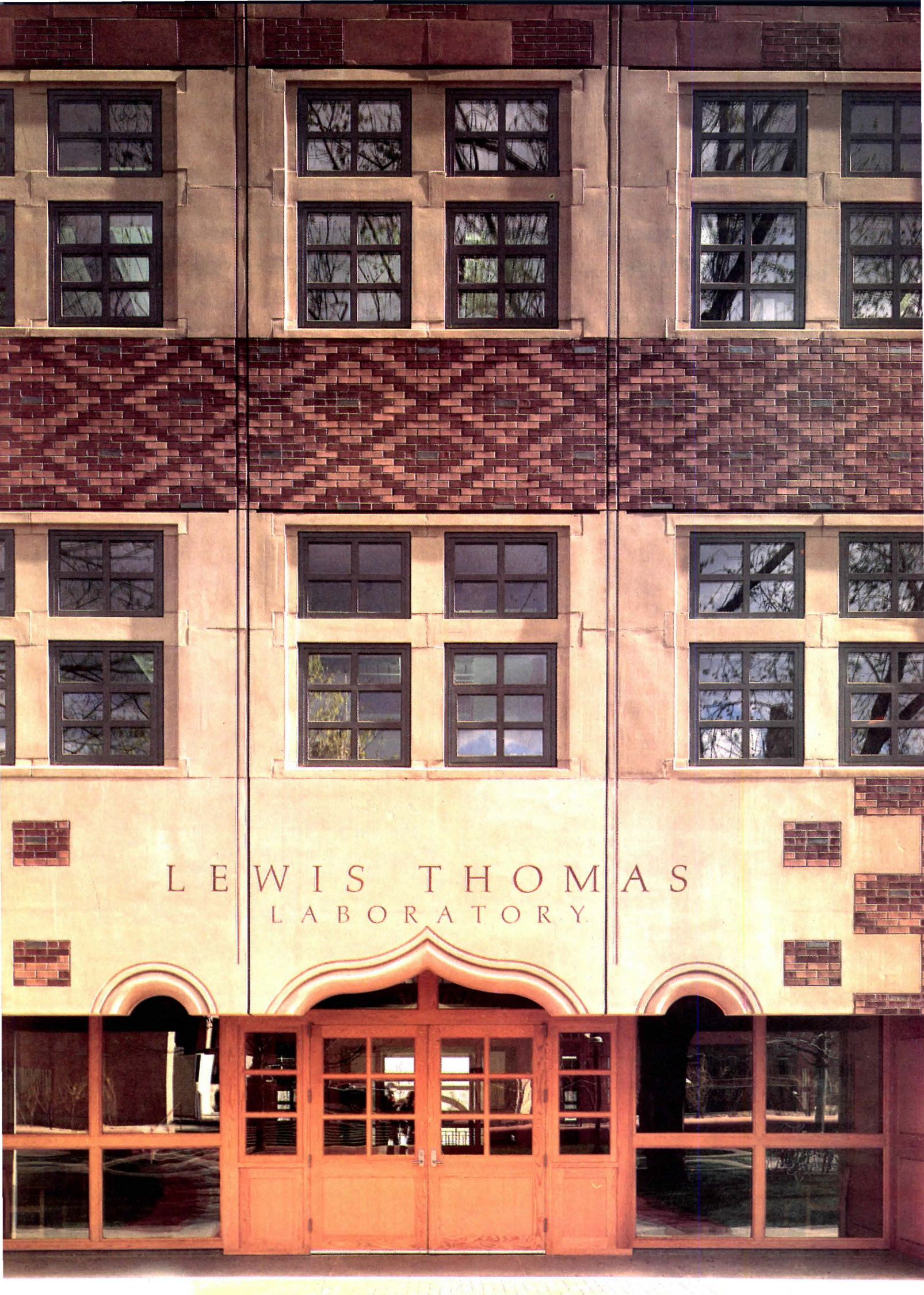
Lewis Thomas Laboratory, the latest addition to Princeton's increasingly eclectic architectural pantheon, is not only a deeper foray into unfamiliar (for the university) stylistic territory, it also represents a radical shift from its previous build-only-as-a-last-resort policy. Intended for a molecular biology department that had not yet been fully recruited, the $29-million facility, the most expensive in Princeton's history, was meant to prove the university's commitment to the growing field of study of the "genetic engineer." Realizing that it would require more than scant promises of tenure to woo sought-after scientists from the clutches of competitive institutions, Princeton turned to the firms of Payette Associates and Venturi, Rauch and Scott Brown with the difficult task of creating an unsurpassed facility for research and experimentation. The selection was based on the experience of a more-than-satisfied customer: Payette was busy reworking the outdated laboratories of Princeton's chemistry department (and, not incidentally, had just completed a molecular biology building for rival Harvard), and Venturi, Rauch and Scott Brown was basking in the critical success of Gordon Wu Hall, Princeton's newest dining and social hall (RECORD, September 1983-II, pages 86-97). The rules of the joint venture were set forth by university president William G. Bowen, who took pains to broker the overtures that preceded the arranged marriage. Both firms graciously accepted the proposal, each more than willing to assume its own clearly delineated role. Thomas Payette distilled the directive to a quite simple "anything on the outside was his [Robert Venturi's] ultimate decision, and anything on the inside was our ultimate decision."

Drawing on its own area of expertise, Payette's office compiled the building's program and Venturi's office joined in to study its siting and the formation of a forecourt bisected by College Walk (above). A combined Payette-Venturi team then reviewed the working habits of biologists and divided the program accordingly. The footprint of the 114,000-square-foot-building was determined by locating the heavily used areas—i.e., laboratories and offices—along the perimeter, in effect designing the building from the inside out. All too familiar with facilities in which the laboratories had been treated by architects as necessary evils that they were forced to accommodate, Payette wanted to remove the suffocating shield around them and to expose the day-to-day operation of these scientific workshops. Indicative of the profession itself, the Molecular Biology Department is not, as departments in related fields are often known to be, just the sum of individual researchers with reputations that precede them who demand their own inner sanctum in which to putter and meditate undisturbed. It is, rather, an interdisciplinary group that depends on collaboration and information exchange. Toward that end, the communal laboratories in Lewis Thomas Laboratory were designed to visually extend into the corridors, and lounges were located at both ends of the three principal experimental floors to encourage interaction.

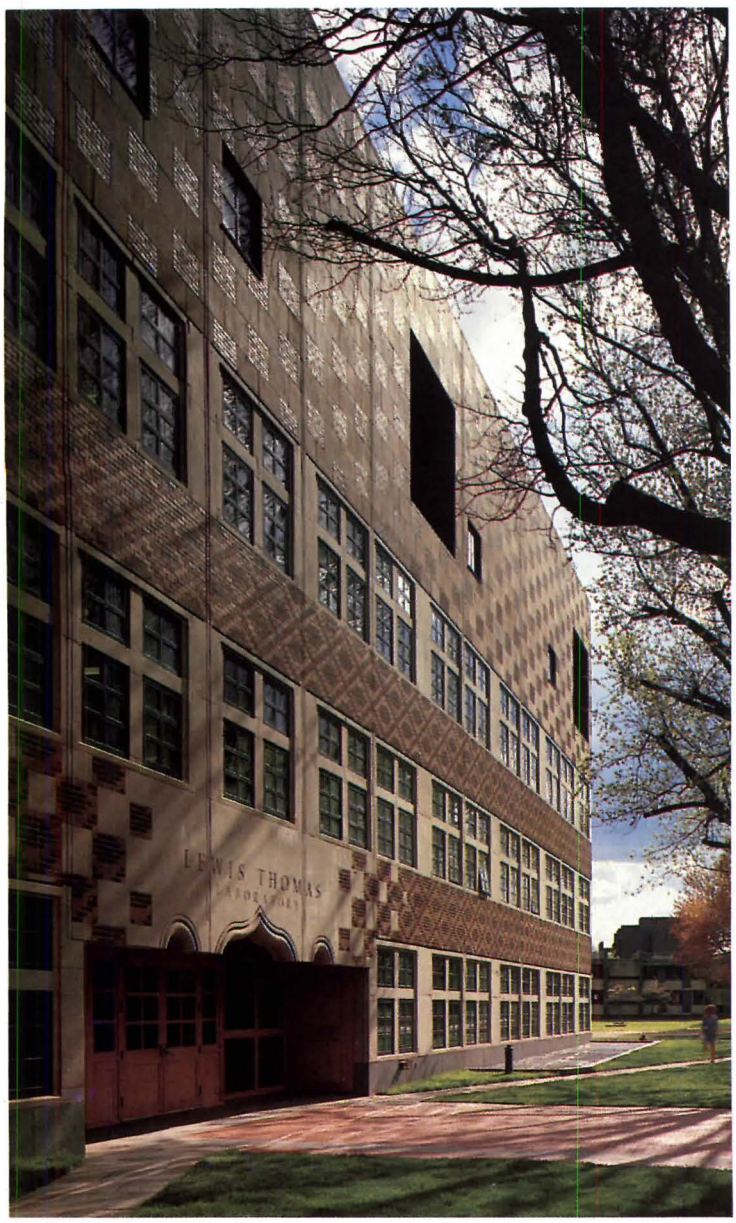
Once the conceptual organization of the building was developed to the satisfaction of the Payette-Venturi team, Payette's office began refining the interior, and Venturi's office began laboring over the facades. "We were given the module of the workstation," remembers Robert Venturi. "We liked not arguing with them on that. The interior of this building is, by its nature, highly repetitive. We said we would not fight it." Convinced that the correct strategy of dealing with the front was to acknowledge its expanse along College Walk, the Venturi team chose to accept its implied planarity. Avid students of what they refer to as our complex and contradictory built environment, they looked to two sources for instruction on repetition and rhythm—New England mills and Elizabethan manor houses, the former deemed appropriate because of the factory-like nature of laboratories and the latter because of the neighboring amalgam of brick structures. From these precedents came inspiration for the ornamental brick bands that add a layer of historical symbolism to the exterior, befitting the heritage of its academic setting. The pattern, Venturi admits, "was the hardest part. Although we've been advocates of pattern and color for a long time, when I grew up you didn't touch pattern." The polychromatic patchwork quilt of diaper and checkerboard patterns is, in fact, stitched together with the assiduity of a seasoned couturier. Shifts in pattern camouflage the building's bulk and differentiate the spaces contained within, and variations in color enhance the sense of depth. The brick pattern is interrupted only by the Gothic cutout above the main entrance (opposite), where the richly-grained wood doors introduce the material palette of the interior.

For some, Lewis Thomas Laboratory is an unwelcome newcomer to the campus—duly dubbed "S. S. Moly Bio" by its wittier detractors—that has provoked more than its share of student debate. Comments range from "ugly" and "ridiculous" to "the most interesting thing to happen on campus for a long time." Although the criticism is often not as sophisticated as its levelers are purported to be, Venturi does not completely dismiss it as the spewings of petulant onlookers ignorant in architectural history, but confesses instead that "a lot of things I do myself I don't exactly like, but after a process it seems absolutely the right thing to do and later I get to like it." A Princeton graduate himself, Venturi is reminded of the fruits of his own education: "What I got from my teachers was a sense of history, context, that architecture evolved from something. The implication was that it went on from there."

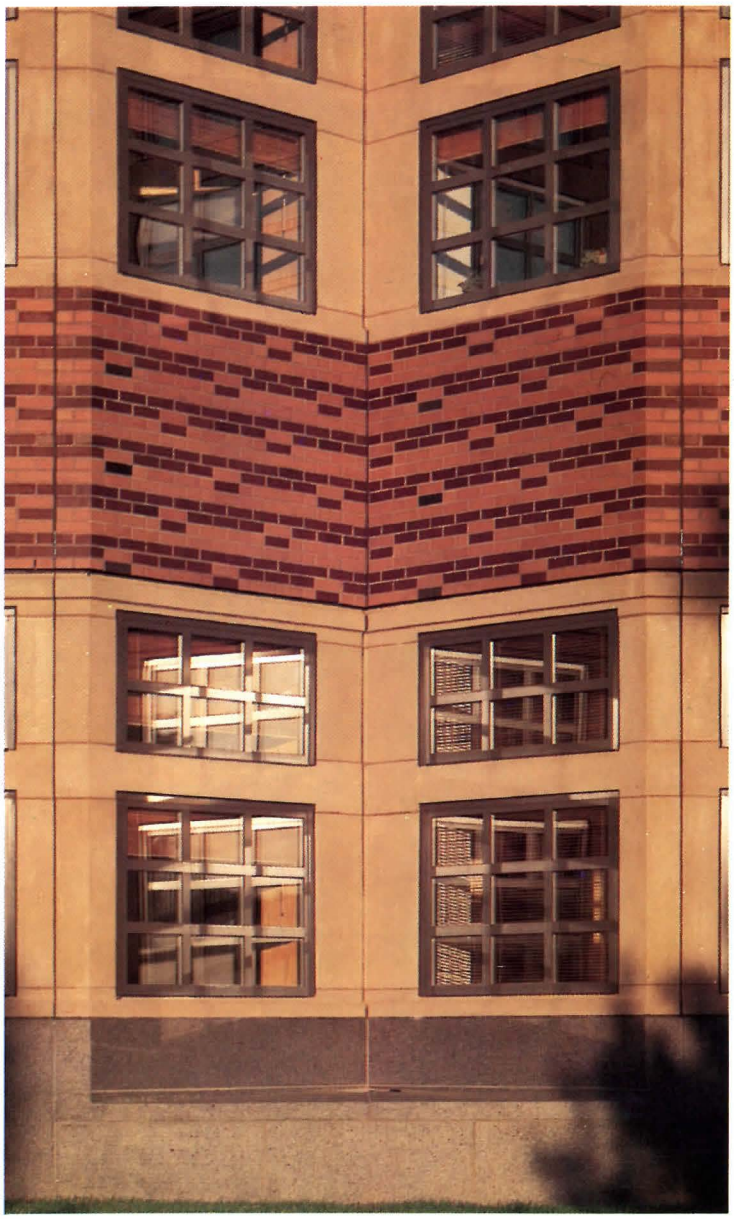
It's a fitting postscript that Payette Associates and Venturi, Rauch and Scott Brown are now collaborating on similar buildings for the University of Pennsylvania, Dartmouth, and UCLA. They are, clearly, moving on. *Karen D. Stein*


LEWIS THOMAS
LABORATORY

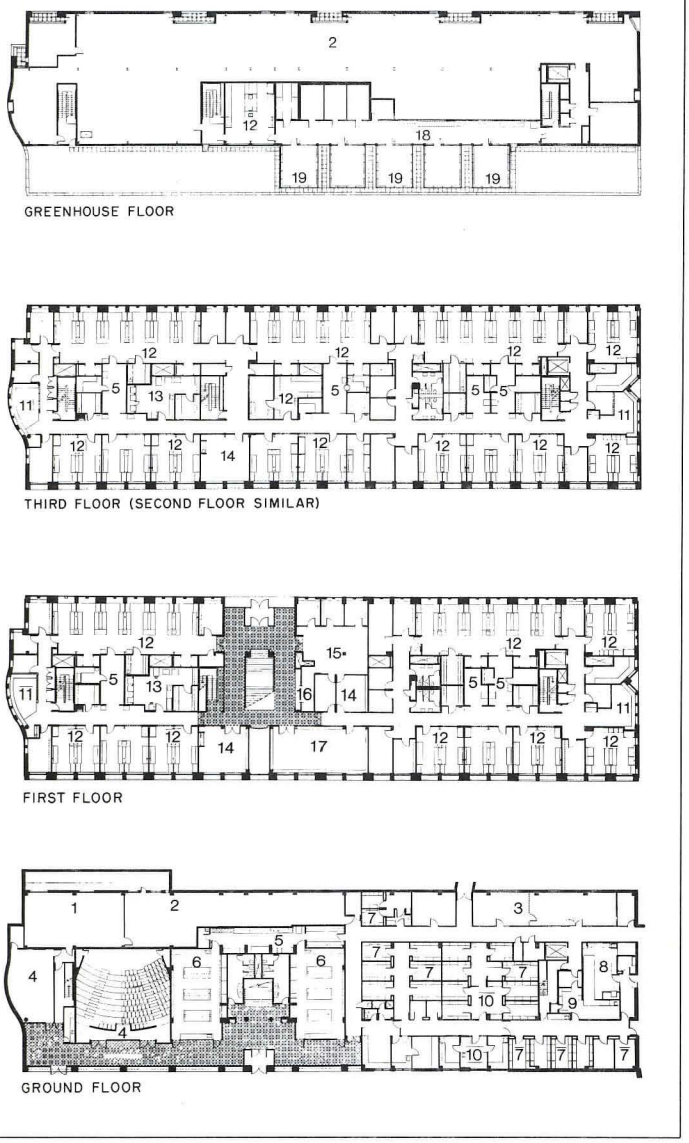
The brick pattern of the facades was the subject of extensive field testing, a puzzling enterprise to those who passed the piles lining the site before construction began. Princeton has several committees composed of members of the administration and faculty that review all proposed additions to the campus. Although these various groups are more than willing to offer their recommendations, once the basic concept is agreed on, "there comes a time," as Jon Hlafter of the Office of Physical Planning concedes, "when the trustees and the various review committees leave it to the architect to get it right." Getting the pattern "right" and its rhythm in syncopation with the air-intake vents of the front facade (below left) and the greenhouses along the rear facade (below right) was a difficult task, as Robert Venturi readily



admits, but after much travail he did do just that. Some have accused the diaper and checkerboard pattern of being outlandish and disrespectful of Princeton's architectural heritage, but, on the contrary, its studied air makes it exceedingly appropriate to the academic setting. Princeton University, once a bastion of conservatisim (so much so that when it finally went co-ed in the late '60s several of its once-beneficent sons wrote in that the university would never again be the recipient of their generosity), has come a long way since Colonial times when all of its functions were housed in one building. Lewis Thomas Laboratory may be the campus's most controversial building of the past decade, but it is destined, as the vacillating reputations of generations of buildings before it can attest, to fall in and out of favor.



Payette Associates organized the three main research floors of Lewis Thomas Laboratory around a main corridor and central stairway that increase opportunities for interaction beyond the confines of the laboratories and offices (plans below and photos right, top and middle); lounges at each end, equipped with the requisite chalkboards, were designed to accommodate spill-over discussions

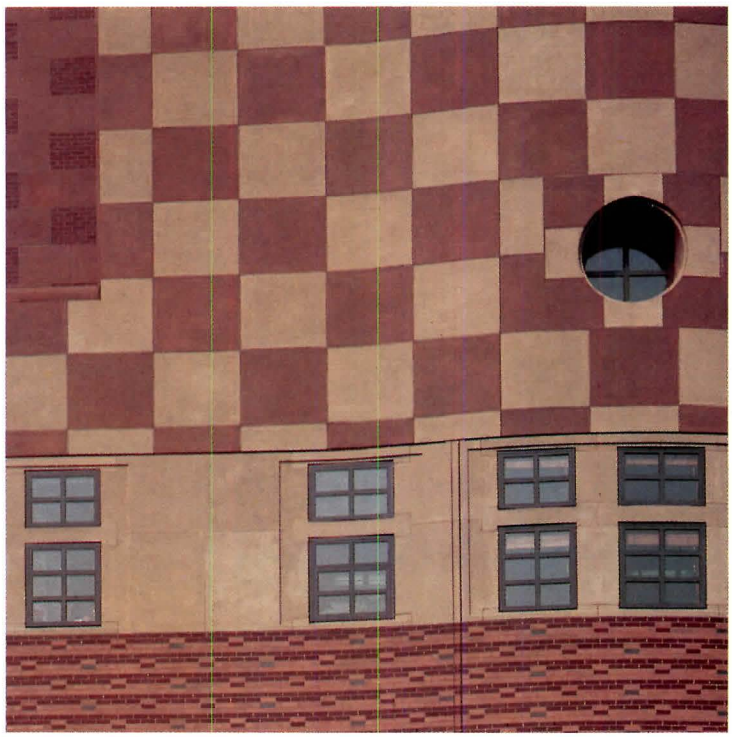


1. *Electrical switch gear room*
2. *Mechanical*
3. *Store room*
4. *Seminar*
5. *Equipment room*
6. *Teaching lab*
7. *Cage rooms*
8. *Cage washing*
9. *Clean cage*
10. *Work room*
11. *Lounge*
12. *Labs*
13. *Glasswash*
14. *Conference*
15. *Administration*
16. *Mail*
17. *Reading Room*
18. *Potting corridor*
19. *Greenhouses*

(opposite). Generous fenestration in the laboratories admits ample natural light during the day that is supplemented with indirect lighting; fixtures are located on top of the air diffusers to minimize clutter under the steel ceiling (bottom right). Project architect James Collins, Jr., refers to the white-painted ducts and wire-support racks, which facilitate changes in electrical demand, as a "noble attempt" to make the laboratories appear more spacious. Collins regrets that his firm had not been able to maintain even tighter control over the mechanical system, which consumed approximately 20 percent of the building's square footage. Contrary to the deliberate character of the building, the emergency generator exhaust stack that peeks out above the west facade like an inquiring scientist's telescope (page 105) is not an intentional play on its shiplike shape.

Although maligners of Lewis Thomas Laboratory's ornamental masonry have complained that it recalls the Ralston Purina logo or a hodgepodge of computer graphics, its actual precedents go back farther than that. Venturi and his colleagues looked at Elizabethan manor houses and the 19th-century English Gothic Revival of William Butterfield to learn about variations on diaper and checkerboard patterns. But the problems with their assembly were distinctly 20th-century. Not only were several carloads of the wrong-colored brick delivered, only to be immediately rejected, but the architects soon learned that the different densities of the bricks affected the way mortar dried around them. "Once you begin to play with subtleties, it's much more difficult," admits Jon Hlafter of Princeton's Office of Physical Planning. The deficient installation of the cast-stone window surrounds has no such excuse (page 107).

Lewis Thomas Laboratory
Princeton University
Princeton, New Jersey
Owner:
Princeton University
Architects:
Payette Associates, Inc.—David Rowan, principal-in-charge; James Collins, Jr., project architect; Ben Trogdon, Bob Schaeffner, Len Davis, Ed Fowler, Leslie Glynn, Herman Woerner, Chris Shaffer, Dick Fullerton, and Reba Brennan-Wagner, project team
Venturi, Rauch and Scott Brown, Associated Architects—Robert Venturi, principal-in-charge; Ronald McCoy and David Schaaf, project architects; John Rauch, Denise Scott Brown, Margo Angevine, Rick Buckley, Sam Harris, Bob Marker, James Timberlake, Ann Trowbridge, David Vaughan, and Maurice Weintraub, project team
Engineers:
R. G. Vanderweil Engineers, Inc. (mechanical, electrical, and plumbing); Simpson, Gumpertz & Heger, Inc. (structural)
Consultants:
George E. Patton, Inc. (landscape); Ripman Lighting Consultants (lighting)
General contractor:
Barr & Barr, Inc.



Democracy at work

For 20 years, ever since the Massachusetts turnpike muscled its way directly through Boston and Prudential Center built a tower on the highway's air rights to the northwest, the gaping hole seen opposite discouraged pedestrians and builders alike. The site accommodated not only I-90 and its three-way off-ramp but a set of railroad tracks for Amtrak and commuter trains and another set for the Boston Albany. Moreover, and notwithstanding the unflinching aplomb of Boston pedestrians, neither the hole nor its boundary streets favored foot traffic. The gaping hole thus effectively isolated an assortment of neighborhoods and buildings: the Back Bay to the north, the South End to the south, Copley Square at the northeast corner, and Prudential Center at the northwest corner. No matter where you started, you couldn't get there from here.

The owner of the site, the Massachusetts Turnpike Authority (MTA), was understandably eager to realize the value of this land for the benefit of its bondholders. Over the years, the small triangular corner that noses into Copley Square—repository of Richardson's Trinity Church, McKim, Mead, and White's Boston Public Library, Cummings and Sears's New Old South Church, and Pei's Hancock Tower—had many suitors. The bulk of the 9.5-acre site, however, was a wallflower. Even an amateur could recognize that an enormous amount of money would be needed to ready the site for building. The MTA wanted the entire site developed simultaneously, fearing that development of the "easy" site would leave the hole permanently a hole. It therefore welcomed an expression of interest from the Urban Investment and Development Company (UIDC) which, as developers of Chicago's Watertower Place and a subsidiary of Aetna Life & Casualty, combined experience with financial strength.

Kenneth A. Himmel, a vice president of UIDC in the late 1970s when these events occurred, concedes that the company thought less about physical constraints than it did about commercial promise. Prudential and Hancock are only two among many office buildings that produce a daytime population of around 30,000. Additionally, the deluxe department stores, boutiques, and art galleries around Prudential Center and on nearby Newbury Street already attracted affluent shoppers from the city and the suburbs, a population that UIDC thought would increase with new shopping magnets and the new Back Bay Station (now under construction). UIDC also thought that it would have no trouble renting an office tower and that a couple of hotels would profit from conventions at the Hynes Auditorium (now being expanded) on Huntington Avenue. "There just were very few open spaces left in the city on which to even consider building a big project," Himmel remembers, "and as it turns out, although I didn't think about it in these terms when I started, the problems created an opportunity—most people looked at the site and found it such an eyesore they'd rather deal with a big new development."

The big new development UIDC had in mind was Copley Place, a mixed-use commercial complex to encompass offices, stores, hotels, restaurants, and movies. The establishment of an animated node at this site seemed appropriate, and indeed the Boston Redevelopment Authority (BRA) had already envisioned similar use: the Illustrative Re-Use Site Plan for the Regional Core, published in 1975, posited commercial development here, and even included pedestrian bridges.

The major lesson taught by Copley Place, however, is not how to plan and build a large urban complex but how to engage, fruitfully, the opinions and cooperation of the public in a private endeavor that will clearly impinge on its lives. Such public involvement occupied the dreams of young architects and students back in the '60s—remember participatory design?—but too often dwindled into unfocused caring and belated complaint. The exacting structure of Copley Place's Citizens Review Committee (CRC) proved far more useful.

The MTA had resolved to retain its ownership of turnpike air rights by renting them instead of selling them outright as it had to Prudential in the '60s. The Commonwealth of Massachusetts, rather than the City of Boston, was thereby inevitably drawn into the development process since the law requires the Governor to co-sign all long-term leases entered into by the MTA, an otherwise autonomous authority. The Governor, then (and now again) Michael S. Dukakis, called in urban planner Frank T. Keefe, Director of the Office of State Planning. Keefe, still bearing scars from public protests centered on the recently failed Park Plaza proposal near the Public Garden and a mixed-use proposal for Cambridge, had grown chary of the competitive RFP process—a process he characterizes as "static," "segmented," and "bizarre," one that, for citizens, architects, and developers, "maximizes confrontation and defensiveness, and does not benefit the community, the public agencies, or the best solution." Keefe wanted no more of that. Moreover, both Keefe and the MTA, recognizing UIDC as one of only a handful of developers strong enough to tame the site and finish the job, were loath to lose a bird in the hand. Both the Commonwealth and the MTA thus favored designating a sole source for development.

However convenient, though, sole-sourcing is fraught with danger for public figures. If elected and appointed officials are to avoid suspicions, let alone accusations, of corruption and favoritism, plans must not only have the approval of the community but must be *seen* to have such approval. Above all, the public must not learn about unacceptable plans on the eve of construction. It will be quick to express its dissatisfaction, quite possibly causing the developer to cut his losses (often substantial) and thwarting governmental ambitions. It was for practical political, legal, and financial reasons that the Commonwealth formed the CRC, not because of vaguely defined democratic ideals. (Though the MTA funded the staff and operations of the CRC, it otherwise kept its distance, perceiving its overriding duty as running a safe, efficient highway.)

The CRC included, at its head, Tunney Lee, an associate professor of architecture at MIT and formerly with the BRA. It also included representatives of numerous constituencies—business associations, big neighborhood and little block associations, labor unions, special interest groups from the Back Bay and the South End, from nearby Fenway, even from Beacon Hill. Interested groups in the Back Bay, both merchants and the prosperous, well-educated residents, tended to homogeneity of outlook—that is to say, politically liberal. Lee describes them as "full of talent—they always had someone who could read an environmental impact statement or analyze emission standards. Lawyers, scientists—and architects galore." The South End, on the other hand, "a very complex, very rich neighborhood," he describes as "a volatile mix of recent gentry, who were very conservative, to very radical organizers, and everything in between, including an old black middle class that had sprung up with the pullmans and the train yards." And if the neighborhood lacked much of the academic expertise found in the Back Bay, it had plenty of political savvy.

Since the Governor's office wanted the broadest possible representation of interested parties, an ad hoc group—Keefe, the state representatives from the Back Bay and the South End, a newspaperman familiar with leaders in both districts, and "others"—conducted a painstaking census and notified some 50 groups of the CRC's scheduled meetings. The first set of workshops, in June and July 1977, aimed at describing the scope of the development in as much detail as available and at identifying the residents' concerns. Very preliminary plans were explained. (UIDC's architect later resigned the commission; The Architects Collaborative did not get involved as master planners until spring of 1978.) At this point, Lee wanted to hear everything; he considered no question trivial. "We elicited a lot of concerns. 'I'm afraid if you build this thing all the cars will park on my street.' 'I'm afraid if you build this thing I won't be able to buy a bottle of milk at the corner.' 'When you build this thing we'd really like to get from here to Prudential.' That was the kind of thing I wanted to hear.

Copley Place
Boston
The Architects Collaborative,
Master Planners

These became the basis of the guidelines—our next piece of work."

The guidelines, which loom large in everyone's narration of Copley Place's planning, were frankly intended to bind the developer, under threat of monetary penalties, to the agreed-upon wishes of the community on specific issues of land use and design, as well as employment. To ensure compliance, the guidelines would be incorporated in the MTA's lease with UIDC and in UIDC's subleases. Enforcement would thus move from criminal law, where legislative act would put it, to more familiar civil law.

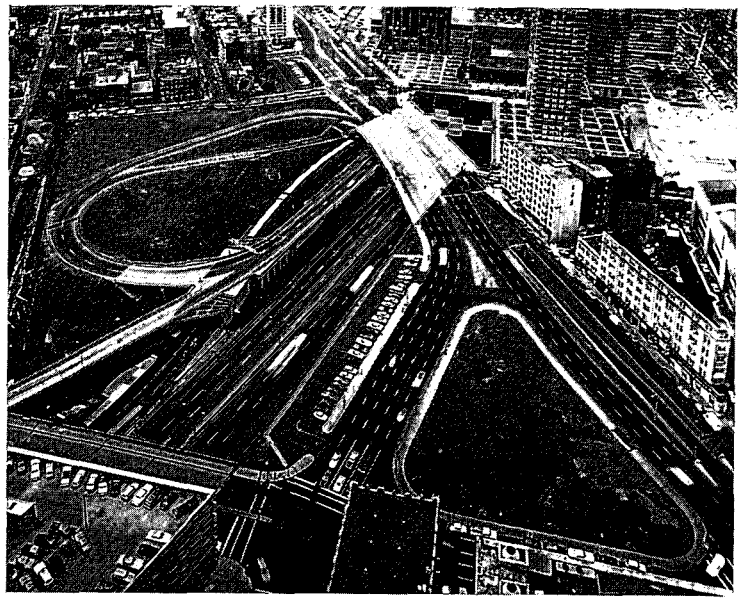
The second set of CRC meetings, which delivered final recommendations to the Governor in September 1977, defined particular guidelines to satisfy particular concerns. Lee at the same time made sure that CRC members understood legal and physical immutabilities. The CRC's funding allowed generous access to consultants and expert studies. Almost too much, according to one participant, who felt obliged to absorb the many papers offered but sometimes felt also that he was "drowning." But Lee was stern. "I didn't want feelings but opinions based on measurable fact."

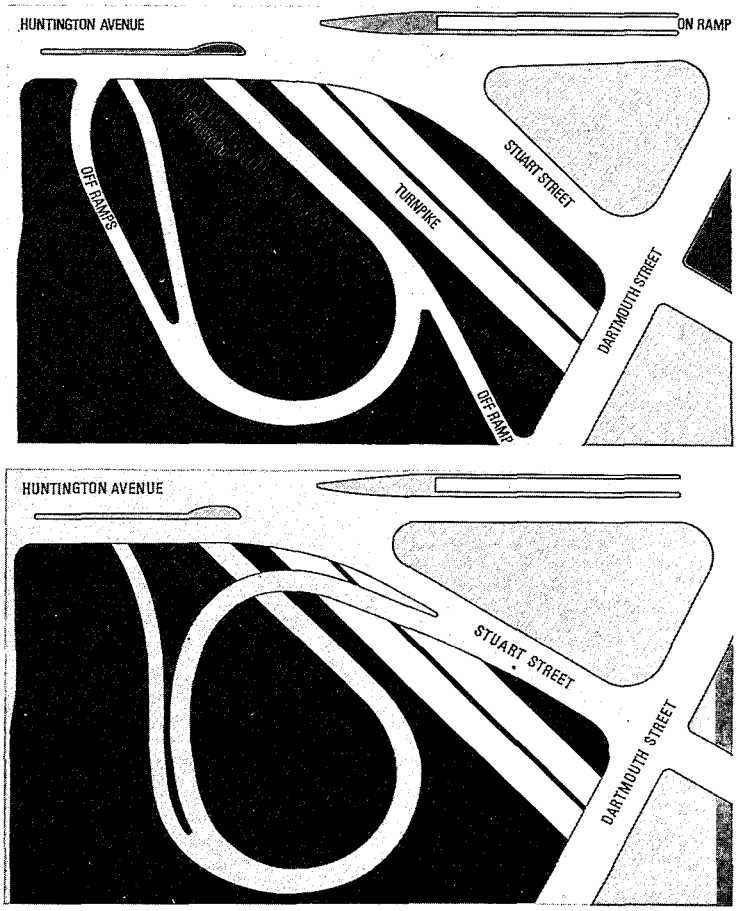
Among the design issues covered in the guidelines—and there were many—*massing* took in a number of subsidiary issues. Not surprisingly, *height* worried the mainly residential neighborhoods, which did not want to be overwhelmed by buildings the size of Prudential or the soaring Hancock Tower. Though it had envisioned an office tower, UIDC promised almost at the outset to build no higher than half the height of Hancock, and in the event TAC avoided the adverse impact of the office component by laying it on its side and dividing it into four pods. At the same time, the tower of the Westin Hotel, which occupies the desirable triangle, retreats to the western end of its corner so as not to loom over Copley Square or the Public Library. Meanwhile, dwellers in St. Botolph Street, which debouches into Harcourt Street on Copley Place's western edge, wanted a *view corridor* to Hancock Tower, the familiar sight of which makes residents psychologically a part of the larger city. Lee allows that being an architect helped at times like this. "We could say, 'You can move the Marriott Hotel over. It may not be ideal from a planning point of view, but this is important stuff—the biggest thing that's happening in the next hundred years.' " *Shadow* also concerned Copley Place's neighbors, but, as Lee points out, "any architect can show that," given building heights and locations. The shadows here fall mostly on Huntington Avenue and the turnpike's on-ramps or within shadows already cast in Copley Square—and fortunately not on houses in the South End. And they do not obscure John La Farge's cherished lancet windows in Trinity Church, at least not during services.

Other planning and design considerations, like *pedestrian circulation* and *housing*, are discussed on the following pages.

Though jobs do not ordinarily affect architectural decisions, at Copley Place they greatly affected real-estate matters. In the South End, citizens, especially blacks, ethnic whites, and women, wanted both construction and permanent jobs—not just any jobs, but good jobs. Rigorous percentage quotas were written into the leases: 30 percent minorities for permanent jobs, 50 percent Boston residents, 17.2 percent residents in eight neighborhoods in the "impact area," and 50 percent women. Employment figures are monitored by the Massachusetts Commission Against Discrimination.

In the end, about half the guidelines survived lease negotiations, but the CRC could make sure that the survivors included its most essential wishes. Beyond that, Lee points out, "By working hard for a few months, we saved probably a couple of years." Which all seems to demonstrate that the democratic process, when applied with diligence, means that nobody loses everything and everybody wins quite a lot. In an uncharacteristically reflective aside, Keefe said, "Just goes to show you—you let the citizens in, you have a dynamic process, things move more quickly. Democracy works. Democracy works." *Grace Anderson*





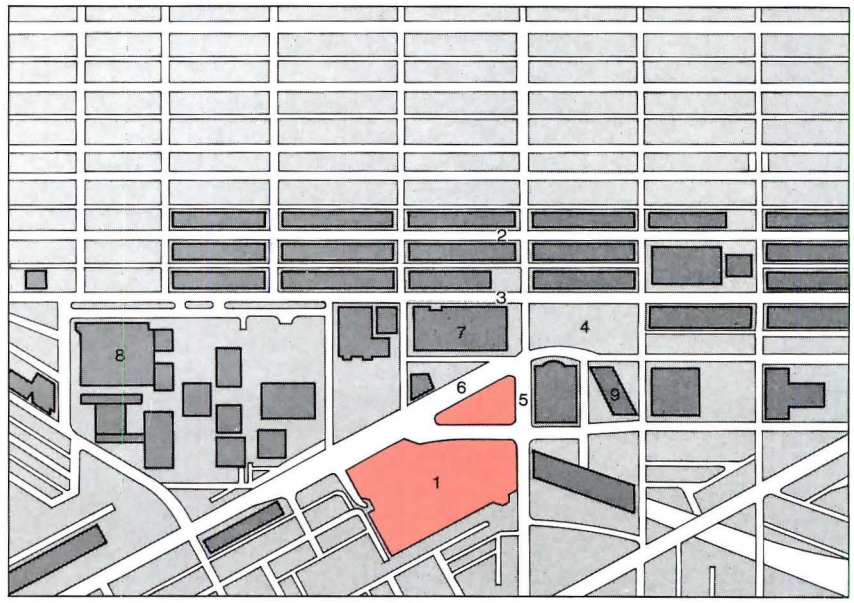
Clearing the tangle that clogged the site necessitated major realignment of the turnpike's three-way off-ramp. One little-used ramp to Dartmouth Street was simply eliminated, much to the relief of its South End neighbors. More radically, the ramp that had led to Huntington Avenue was moved inside the Prudential Center ramp and now curves tightly to empty on Stuart Street, which was also realigned.

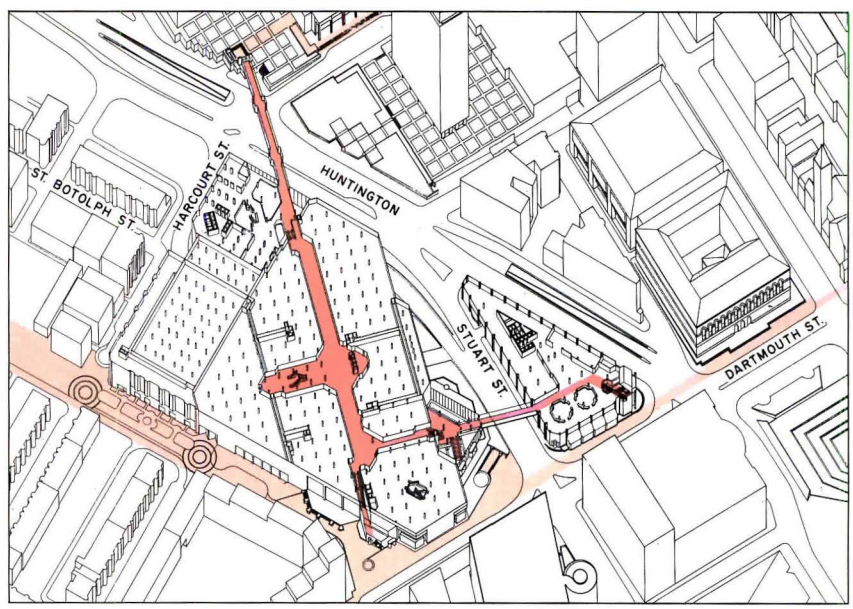
Knitting up the ravelled urban fabric torn by the turnpike 20 years ago was one of the major opportunities offered by the development of Copley Place. Only Dartmouth Street and Huntington Avenue had permitted reasonable foot traffic around the gaping hole dividing the tidily orthogonal Back Bay on the north from the more relaxed street plan of the South End. Prudential Center itself, sitting alone on a platform above the turnpike, interposed another barrier. As master planners, TAC proposed outdoor *pedestrian circulation* from Newbury and Boylston streets along Dartmouth Street. At the Westin Hotel and Nieman-Marcus corners, pedestrians enter Copley Place to complete the loop indoors, ending at Prudential Center and its surrounding department stores.

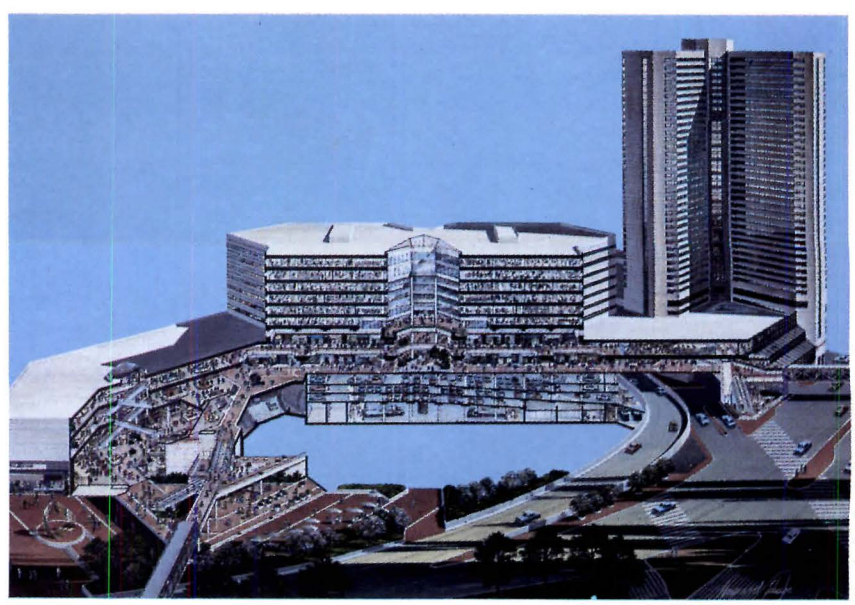
If an enclosed shopping mall seems somehow un-Bostonian, one must remember that, in addition to the heavy vehicular traffic on Huntington Avenue and Stuart Street, the center of Copley Place had to be raised 30 feet above grade to clear the ramp as it rises above the railroad and to provide a 15-foot truck clearance. Moreover, the original site provided very little area suitable for foundations. As Himmel says, "The moment you build buildings over the turnpike, you're dead, cost-wise," and the CRC spent many hours discussing three-dimensional complexities. Elimination and relocation of the ramps (see preceding page) freed one corner of the site for the department store and another for the Marriott Hotel. Within the circle defined by the ramps, the designers placed parking and services. (Zaldastani Associates engineered the three lower levels under a separate design contract.) Site preparation cost $35 million, offset partly by a federal Urban Development Action Grant of $18.8 million obtained by the city. The entire 3.5 million-square-foot project cost $530 million.

Disagreement over the inclusion of *housing* at Copley Place was heated and at one point threatened the project's continuation. Members of the CRC from the South End, supported by members from the Back Bay, insisted that the complex include affordable housing to ease predictable pressures on rent in an area already suffering such pressure from gentrification. The developer, on the other hand, had no expertise in this field and was more than reluctant to undertake it. In the end, the complex does include 100 apartments, 25 percent of them with subsidized rent, in a low-rise building at the corner of Harcourt Street facing the South End. It has proved very successful.

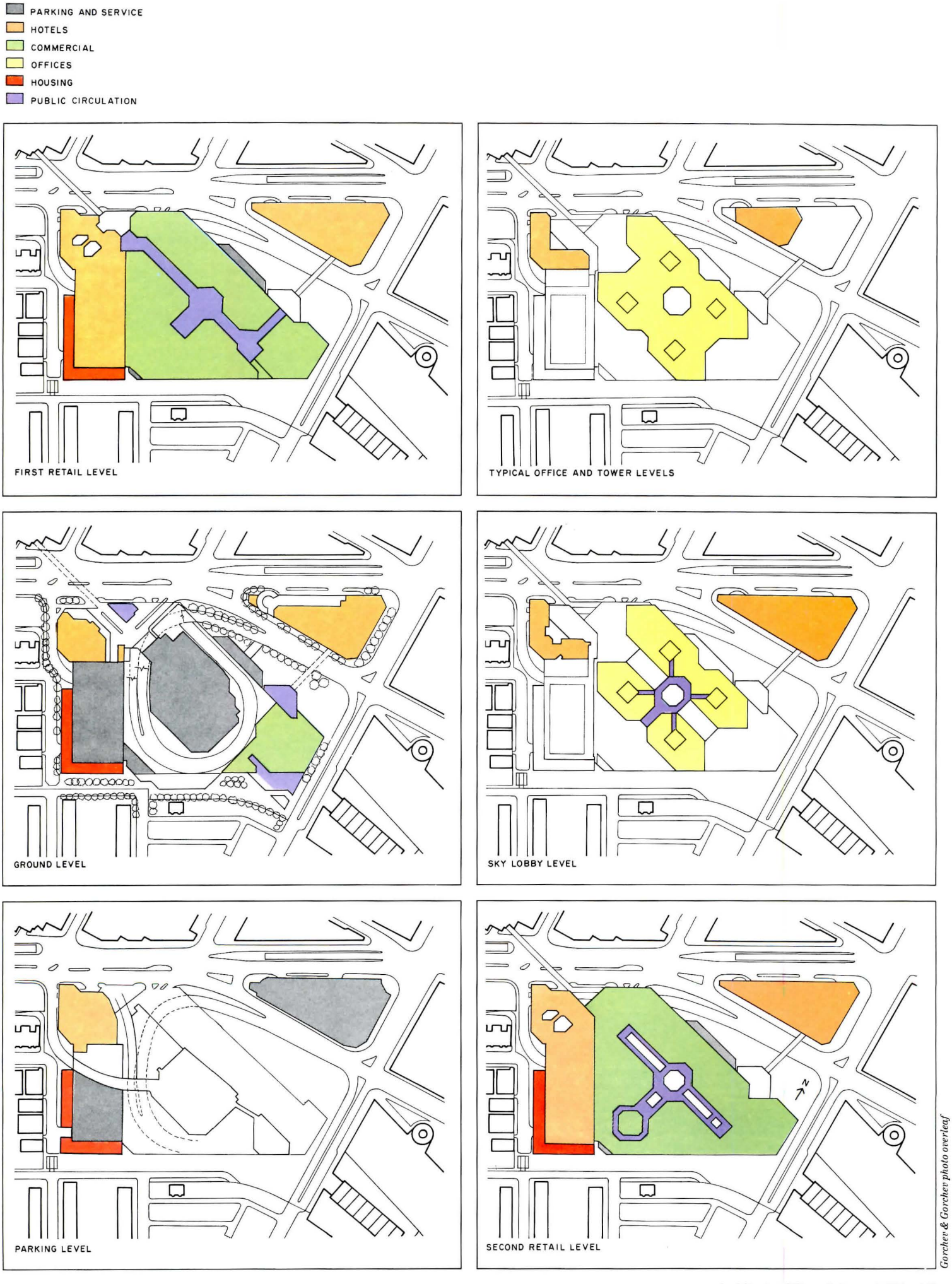
1. *Copley Place*
2. *Newbury Street*
3. *Boylston Street*
4. *Copley Square*
5. *Dartmouth Street*
6. *Huntington Avenue*
7. *Boston Public Library*
8. *Prudential Tower*
9. *Hancock Tower*







Rendering by Howard Associates Inc.



Gorchev & Gorchev photo overleaf

Animating the edges of this big complex was an especial concern of the developer and its commercial tenants and of the residential neighbors. None of them wanted expanses of blank forbidding wall along the sidewalks. But at Copley Place, with so much volume at its base taken up by the highway and railroads, such animation was hard to achieve. TAC provided a large open plaza over the turnpike (opposite top), which gives entrance to the Nieman-Marcus store and to small ground-floor retail. Around the corner from Nieman-Marcus, an active opening from public transit promises still more activity when the Back Bay Station and a new transit line are completed. When transportation construction finishes, a landscaped deck will occupy the entire length of the complex facing the South End. The architects of the Marriott Hotel, The Stubbins Associates, sought some liveliness along the Huntington Avenue sidewalk; despite that fact that the hotel's lobby is on the second level, they persuaded the management to install a downstairs bar.

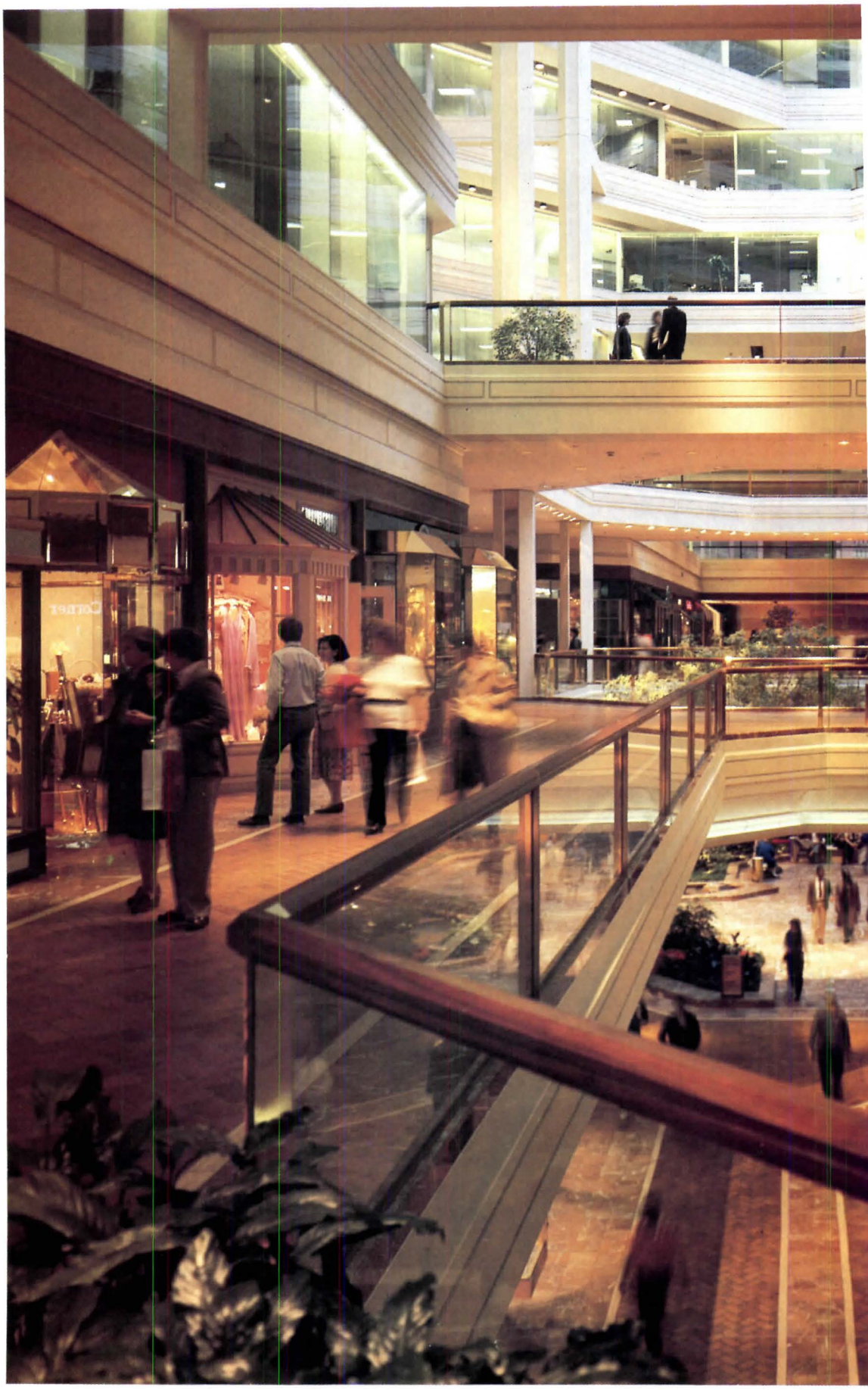
Though pedestrian bridges are not commonplace over Boston's crooked narrow streets, even in the high-rise financial district, Copley Place needed them if pedestrians were to avoid vehicular traffic. Stuart Street (opposite top), which receives traffic directly from the turnpike's off-ramp, is spanned by a short bridge designed by TAC to connect the Westin Hotel with the complex's central office and retail area. Huntington Avenue, with its on-ramps, is broader and even more intimidating. Its pedestrian bridge, designed by the Stubbins firm, joins the Marriott Hotel and a plaza in Prudential Center (this page and opposite bottom left). Walkers visible through glass enclosures enliven both bridges.

The mere existence of Copley Place has had a salutary effect on the appearance of Copley Square. Since the demolition of the old S. S. Pierce store some 25 years ago, the square's spatial volume leaked through a hole flanked by the Copley Plaza Hotel and the Public Library. The Westin Hotel now stops the leak (opposite bottom right). Precast concrete panels clad all of the buildings, their arrangements differing slightly to distinguish the various parts. Though the 19th century had far more exuberant tastes in color and ornament than the 20th century, TAC based Copley Place's palette on the Victorian stone buildings around the square, paying particular attention to the New Old South Church. Copley Place carefully lines up with that church to frame the white marble library.

©Steve Rosenthal photos

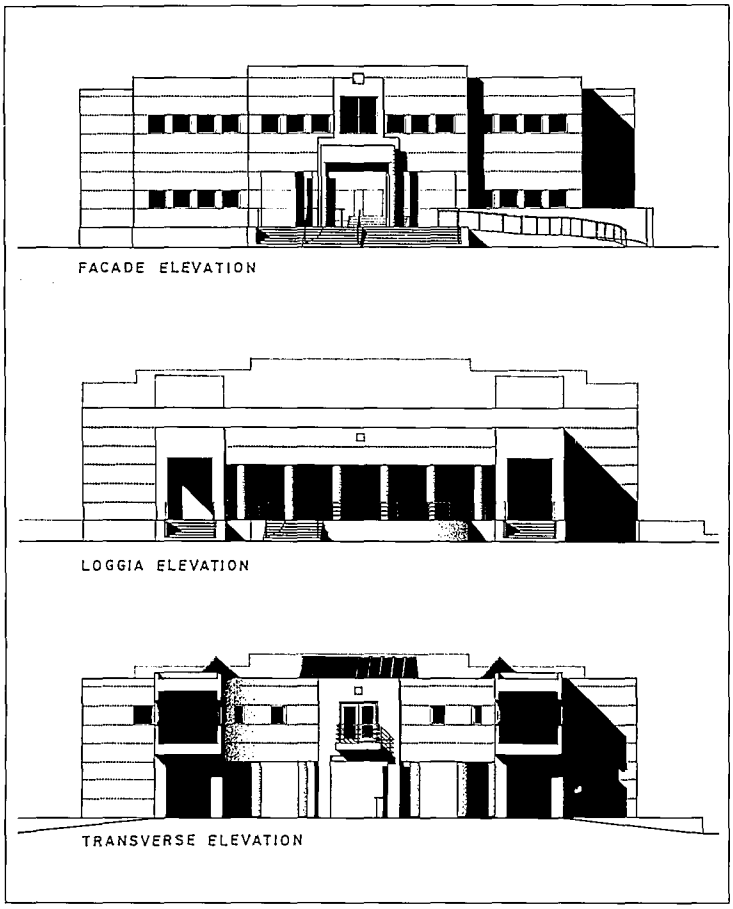
The urban quality of the mall at Copley Place sets it apart from the familiar notional internal street. No wide-open stores here, but real shop windows and real front doors. Though each of the shops is individually designed, TAC set some zoning rules for such things as window projection to suggest a street edge. Shoppers follow the brick "sidewalk" to a marble-paved "park" in the middle of the central area, the park furnished with benches, trees, and sunshine falling through a glass dome. The four pods, each effectively a separate office building, rotate around the atrium and share a street above the shops (opposite center). The office floors slide over one another to skew the atrium and prevent disorientation in an even circle. One of many sets of escalators leads from Stuart Street to a foot bridge (opposite bottom).

Copley Place
Boston
Owner:
Urban Investment and Development Company
Architects:
The Architects Collaborative (master plan, Westin Hotel, retail, office and parking)—Howard F. Elkus, principal-in-charge; John P. Sheehy, co-principal and project architect; H. Malcolm Ticknor, co-principal and project manager; David K. Jacobson, project coordinator; Jeremy Wood, James Solverson, William Hall, Robert Adams, Vern Herzeelle, Mark Robitz, Thomas Van Aarle, Peter Thomas, Rainer Koch, team; Nelson Hammer, landscape architect. The Stubbins Associates (Marriott Hotel)—Richard Green, principal-in-charge; Michael Kraus, project architect. Vitols Associates (housing)—Victor Vitols, principal-in-charge; Marqueis G. Major, project architect; Julia Smith, project designer.
Engineers:
Lev Zetlin (structural/Westin Hotel); Zaldastani Associates (structural/retail, office, and parking); Martin & Cagley (structural/Marriott Hotel); Thomas Rona & Associates (structural/housing); Parsons, Brinckerhoff, Quade & Douglas (civil); Syska & Hennessy (mechanical/electrical/Westin Hotel) R. G. Vanderweil (mechanical/electrical/retail and office); Joseph Loring (mechanical/electrical/Marriott Hotel); Environmental Design Engineers Inc. (mechanical/housing); Johnson & Stover (electrical/housing).
Contractors:
Turner Construction Co. (Westin Hotel); Perini Corporation (retail, office and parking).
Construction managers:
Morse/Diesel Inc. (Marriott Hotel); Barkan Construction Co. (housing).



Gardenhouse
The Atlanta Botanical Garden
Atlanta, Georgia
Anthony Ames, Architect

A garden and its villa

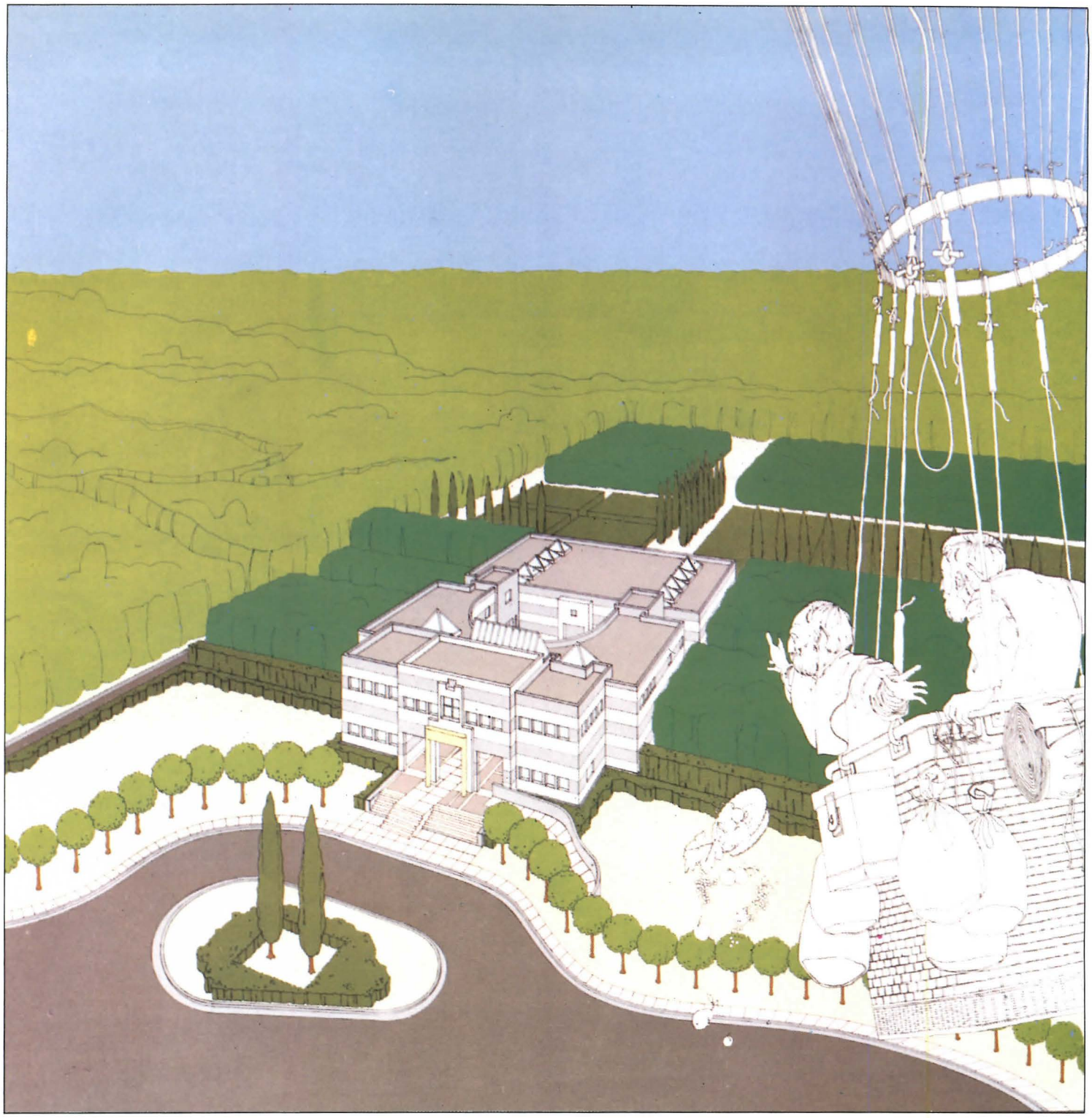


As the aerial perspective drawing reveals, Ames conceived of Gardenhouse (the official name for the visitors' center/administration building) and the gardens as mutually reinforcing elements within a unified classical composition. Framed by hedges and trees that conceal the horticultural spectacle within, the grand portal of the building's street entrance (top above and opposite bottom left) frames a tantalizing glimpse of a courtyard and wall fountain, but dramatically witholds a full vista of the gardens until one completes a roundabout promenade to reach the broad eastern loggia (center above and opposite bottom right).

If something in the drawing opposite looks oddly familiar, it's perhaps because you remember the Caravaggio painting in which similar men (and a similar fruit basket) appear, or because the general shape of the building recalls the Villa Giulia, in Rome, or because the surrounding landscape evokes the gardens of countless other villas all over Italy. If the balloonists seem unduly amazed, it is probably at finding themselves and other shades of the Old World across the ocean in Atlanta, Ga. The rendering is one of a series in which architect Anthony Ames delineated a master plan for the Atlanta Botanical Garden and his design for a $2-million visitors' center and administration building within the 60-acre complex. At the time Ames was invited to submit his proposal, the Garden had been welcoming the public and conducting other business in two converted trailers next to a parking lot and miscellaneous horticultural displays. Two greenhouses and a cluster of formal rose beds predated the Garden's founding in 1976, and other parts of the Garden's 15 acres of "home demonstration areas" had been donated and laid out as independent entities. Drawing on garden history, above all the classical tradition of Renaissance and Baroque Italy, Ames devised an axial scheme that integrated the patchwork of extant landscape displays, future plantings, and necessary architectural amenities within a readily perceptible, all-encompassing esthetic order.

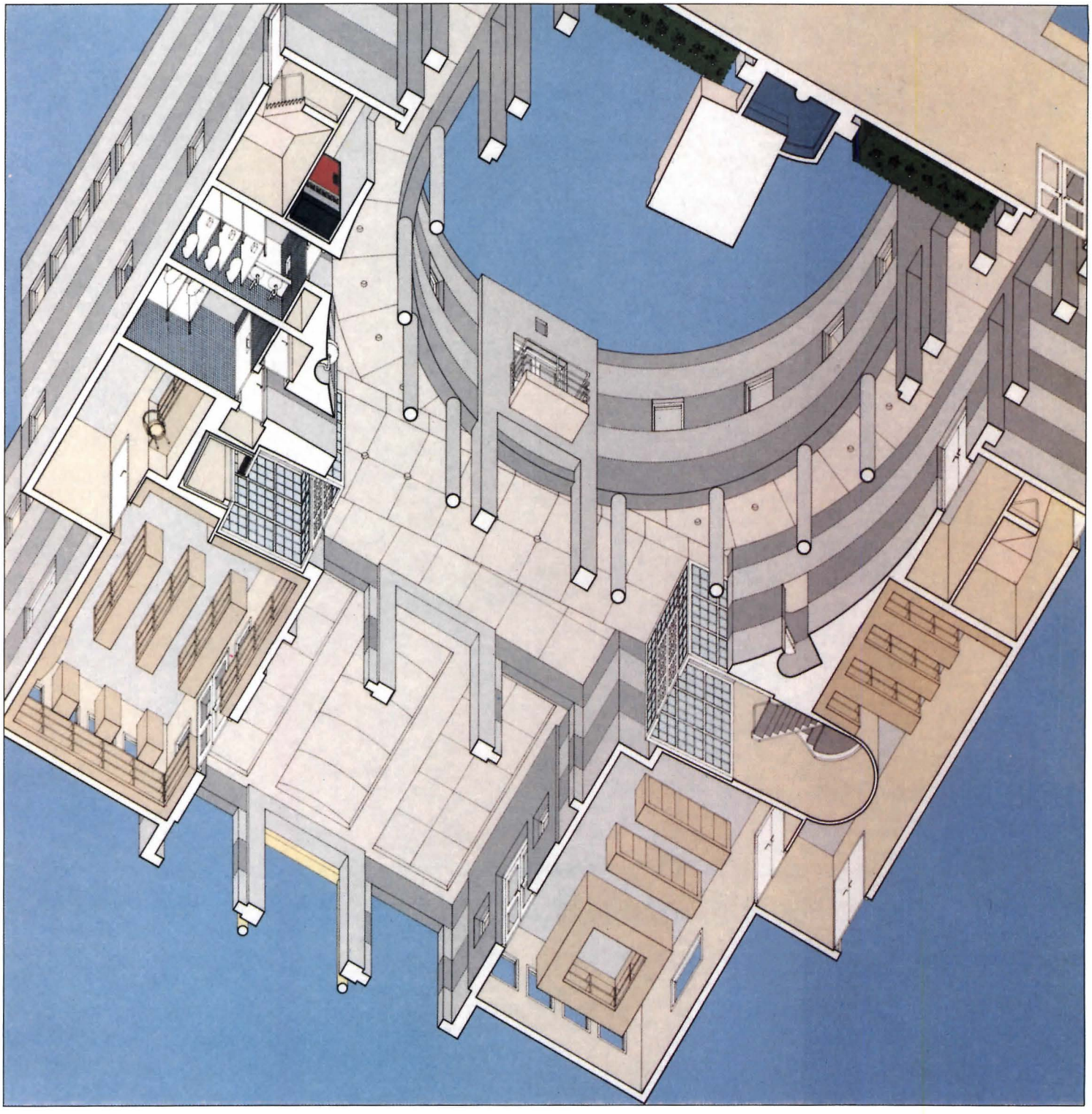
This organizing principle remained constant while Ames tried out four different locations and partis for the 23,000-square-foot main building. In each instance, he experimented with some variant on the villa, a typology that seemed eminently suited to his program. When, at the client's request, the building site shifted from the center of the garden to the periphery, Ames's design changed from a centralized plan, radiating outward into its setting, to a more linear form, which acts as a facade and a gateway—in essence, moving from Palladio's Villa Rotonda to Vignola and Amannati's Villa Giulia. Thematically, the latter prototype was especially relevant in that it merges garden and architecture into a continuous sequence of dramatic episodes, proceeding from the dignified salutation of the frontispiece to the more intimate embrace of amphitheatrical inner courtyards. Pragmatically, this spatial progression afforded a workable model for clustering indoor functions around a pleasant cortile (half the size of the Villa Giulia's) where visitors can gather before moving forward into an exhibition hall or dispersing via cross-axial portals into the garden.

As is apparent in the finished structure (opposite below and following pages), Ames's debt to Mannerist Italy does not extend to Classical orders, sculptural decoration, or elaborate grottos, nor was it meant to. He conceived the architectural component of his design as a patent transformation of a venerable private building type to suit more democratic modern requirements. This metamorphosis is most visible in rotated circulation pathways, explicit not only in plan, as in a diagonal swath through the courtyard, but in elevation, as in metal-and-glass stair towers angled out of brick walls. Without disrupting the pervasive repose of the entire structure, these Modernist interventions are reminders that, as a rule, when Ames seeks inspiration, he is more likely to consult Corbu or Meier than refer to earlier masters. Indeed, Ames still questions whether the formal quotation of his preModern paradigm may not be "too literal," but asserts that the fit of model to program was "too perfect" to pass up. Though his clients obviously came to share his belief in the appropriateness of this architectural solution, they did not find his arguments for a related garden plan equally cogent, and elected instead to engage an independent landscape architect. The result of this separate commission, a congeries of picturesque plantings that suggests the amalgamation of numerous suburban gardens, fails to compose the sweeping vistas that the building so confidently promises. Would-be visitors to the entire garden complex designed by Anthony Ames must content themselves with site plans and the view from his imaginary balloon. *Douglas Brenner*



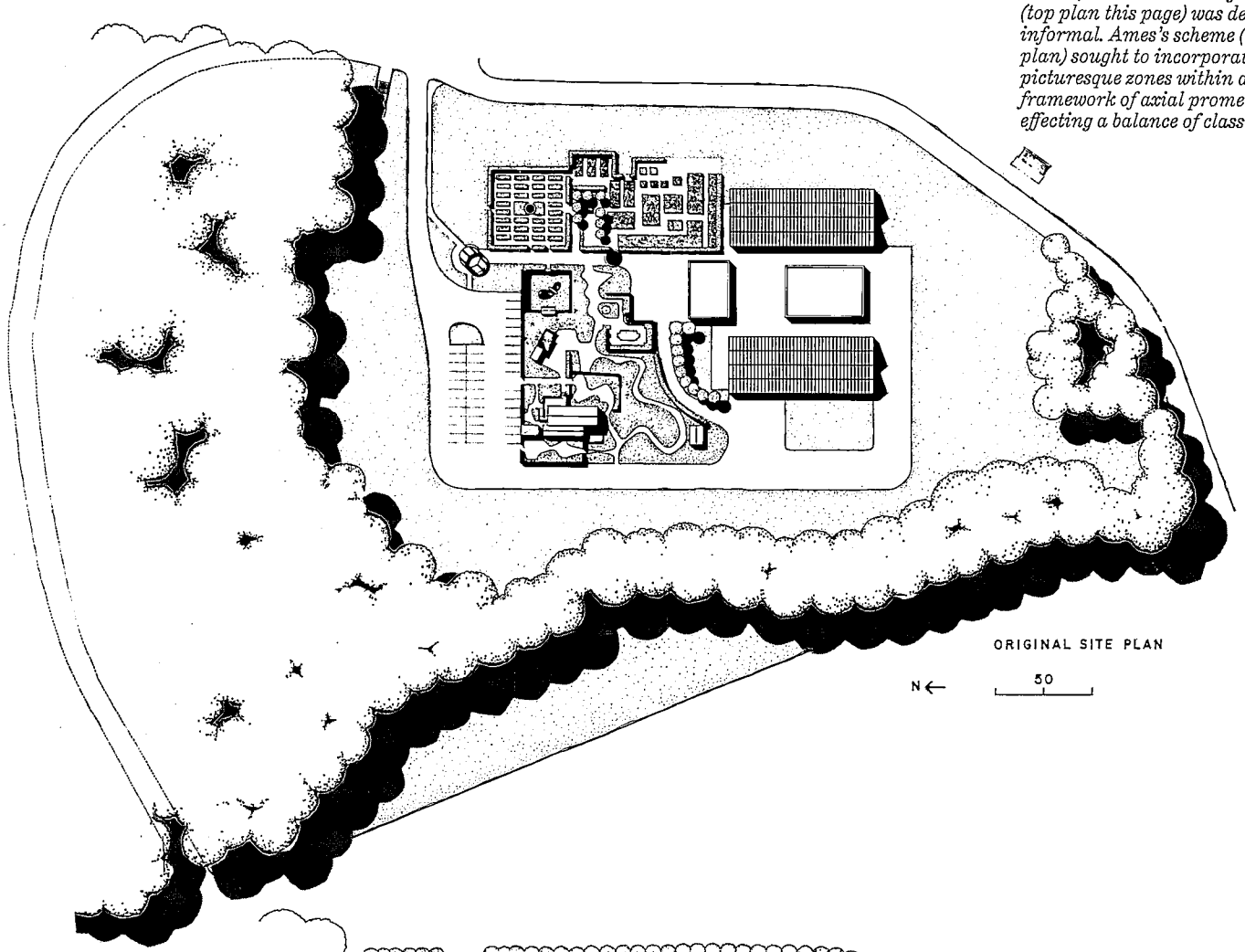
©Stephen C. Traves/SPS Inc. photos

Anthony Ames based the general configuration of his parti on the plan of the 16th-century Villa Giulia. Nevertheless, he explains, "Within this static plan, a 'rotated,' activated circulation system struggles to make its presence felt. In the Villa Giulia circulation is private and concealed. In the garden center it is neither—due to the public nature of the building the circulation must be obvious." This dynamic shift is evident in the cross-axis superimposed on the ground-floor paving and in the volumes of stair towers that orient to the diagonal grid (drawings above and opposite). Contrasting tones of paving blocks emphasize the skewed geometric overlay, just as an ornamental drain cover carved in the shape of the Botanical Garden's dogwood-blossom symbol marks the "original" center of the courtyard.



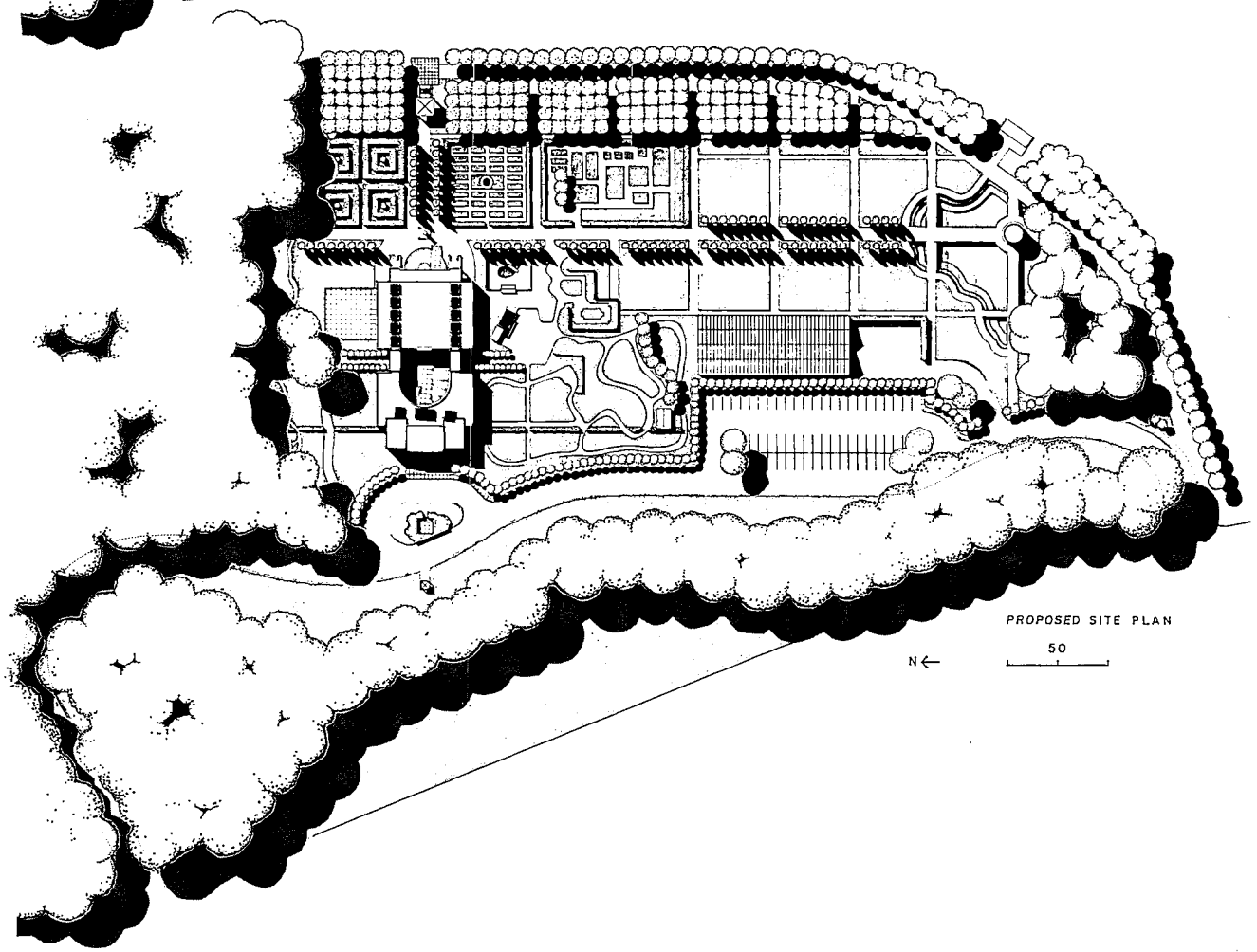
Poché created in the interstices of angled and curved volumes was hollowed out to accommodate various service and storage areas, without cluttering circulation or views. The second-story balcony overlooking the wall fountain was omitted from the actual building, as was (at the client's insistence) the longitudinal swath through the cortile. The pathway connecting the stair towers remains intact. Courtyard pavers are an integrally colored composition granite. For the exterior walls, Ames had initially considered glazed white brick, and then gray concrete block, wanting a neutral palette and crisply defined forms to complement the gentler shapes of nature. The client preferred a clay brick commonly used in Atlanta's period-style houses, and this is the material that Ames ultimately specified.

Situated in a municipal park laid out by Frederick Law Olmsted, the Botanical Garden leases its land from the city of Atlanta. Aside from geometric rose beds at its northeast corner, the Garden's original layout (top plan this page) was decidedly informal. Ames's scheme (bottom plan) sought to incorporate existing picturesque zones within a larger framework of axial promenades, effecting a balance of classical



ORIGINAL SITE PLAN

N ← 50



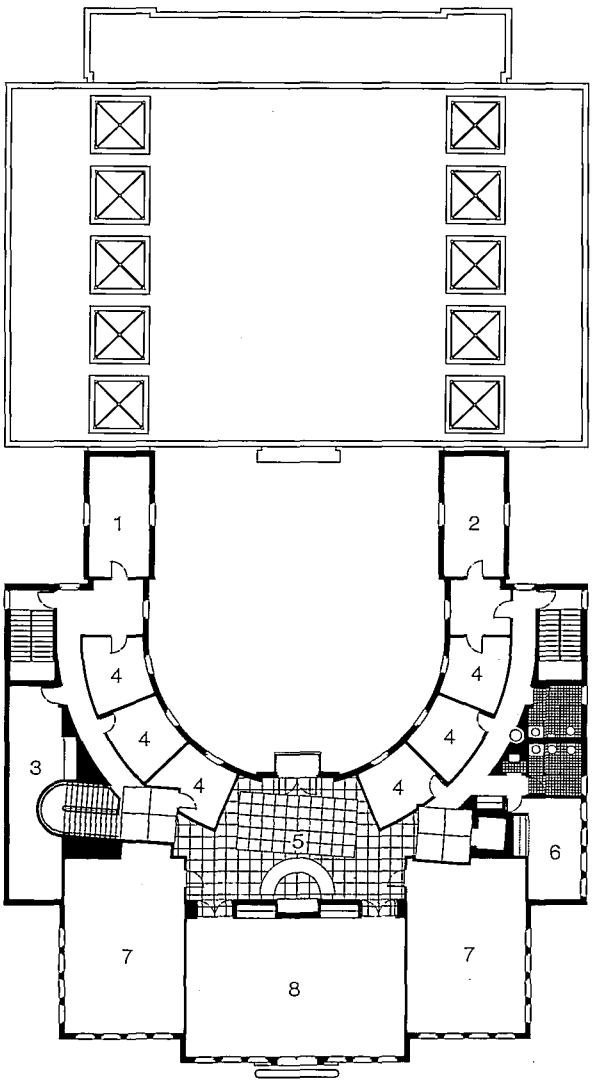
PROPOSED SITE PLAN

N ← 50

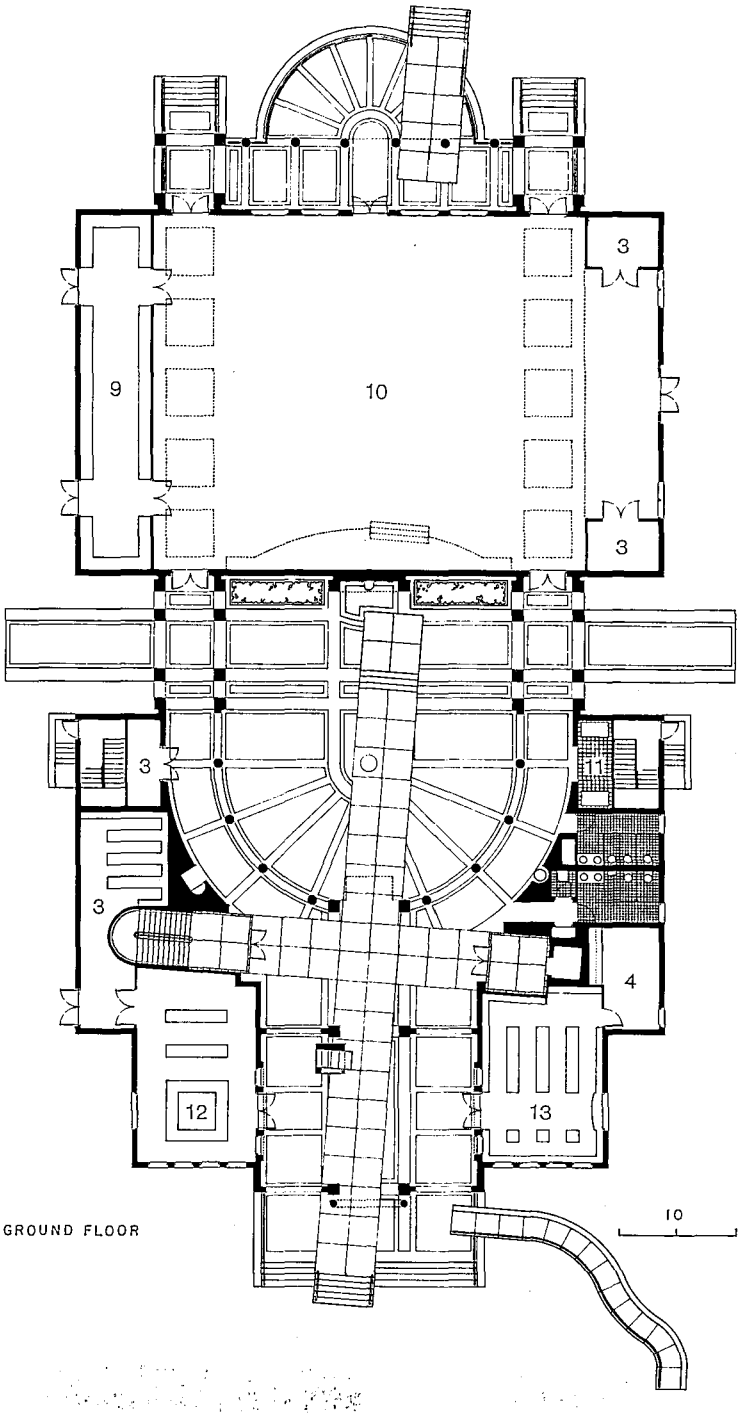
gardens with naturalistic landscape. Clear pedestrian routes are essential, given that attendance rises to as many as 1,500 visitors on a Saturday or Sunday. Another draw for crowds is the exhibition hall, used for horticultural shows, an annual ball, and private parties. (A curved access ramp for the handicapped was moved from the right to the left of the main entrance in the completed building.)

Gardenhouse
The Atlanta Botanical Garden
Atlanta, Georgia
Architect:
Anthony Ames—Anthony Ames, project architect; William Pantsari, job captain; Clark Tefft, Bailey Pope, Isa Caballero, assistants
Engineers:
Jack Lynch & Associates (structural); Newcomb & Boyd (mechanical, electrical, hvac)

Landscape:
Anthony Ames (master plan); Edward Daugherty (as realized)
Interiors:
Anthony Ames; E. Gordon Little
General contractor:
Beers and Russell, A Joint Venture



SECOND FLOOR



GROUND FLOOR

1. *Volunteers*
2. *Director*
3. *Storage*
4. *Offices*
5. *Reception*
6. *Snack room*
7. *Classroom*
8. *Members*
9. *Kitchen/workroom*
10. *Ballroom/exhibitions*
11. *Vending*
12. *Gift shop*
13. *Library*

The structural art of Santiago Calatrava

Santiago Calatrava's five-year-old professional practice is phenomenal on at least two grounds. He has built, or is in the process of building, an impressive number of projects in a country, Switzerland, that is traditionally conservative toward architecture, builds very little, and, with no shortage of designers, presents a highly competitive arena for commissions. The work is no less phenomenal for its synthesis. Engineering, architecture, and sculpture are masterfully coalesced. How such a synthesis is possible is hinted at by Calatrava's background.

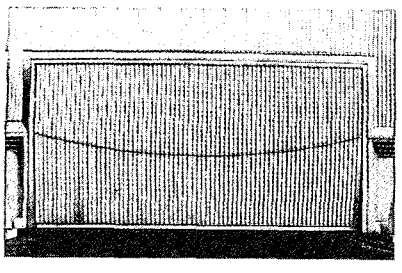
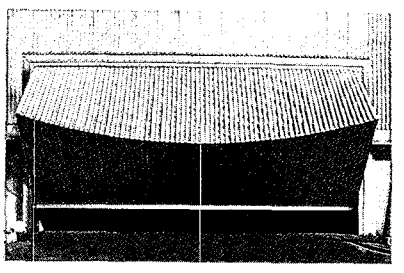
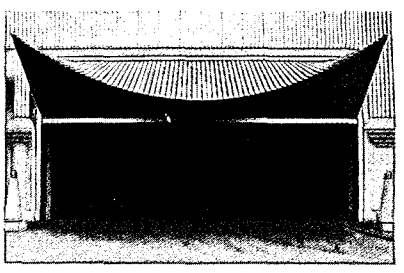
Calatrava was born in Valencia, Spain, in 1951, and began studying art in his home town at age 9. After high school, he studied painting and sculpture full time, first in Paris, then in Spain. But eventually he gravitated to the study of architecture, in which he received a degree after five years at the Escuela Technica Superior de Arquitectura in Valencia. Toward the end of his degree work, his regard for the importance of engineering in architecture deepened under the influence of works by Gaudí, Nervi, and Candela. He also developed a fascination for technology. So, a second degree was undertaken by Calatrava, this time in engineering, at the Federal Technical Institute (ETH) in Zurich, where he worked closely with Christian Menn. Having completed the engineering degree, Calatrava felt the need to formally regain touch with architecture and consequently studied one additional year at the ETH for which he received an architectural doctorate for his study of dynamic form. Specifically, he pursued an interest in foldable structures. (Incidentally, toward the end of his engineering education he started a series of metal and stone sculptures, an exhibition of which is currently touring Europe.) He began practicing immediately upon leaving the ETH, setting up an office in Zurich. As is typical for Europe, practicing design means entering competitions, and the first one Calatrava participated in, the Ersting Factory (below and opposite page), he won. Since then, many more competitions have been won, and direct commissions given. The projects that follow—built, unbuilt, and under construction—are representative of the range of work in the complete oeuvre, and illustrate recurring design themes.

The structural principles behind Calatrava's design are simple, leading to statically determinant configurations. In fact, the forms themselves come from moment diagrams that are formally studied during the initial stages of design. Two structural motifs dominate the work: torsion rings and folded girders. The PTT canopy in Lucerne (pages 132-133) and the canopies and concrete superstructure of the Stadelhofen Train Station (page 139) exemplify works whose structural character derives from torsion. Unlike the simple linearity of tension and compression, torsion is a spiraling stress. Calatrava knowingly lifts the locus of the torsion away from the boundary of the structure. The result is a dynamic form whose members radiate, as perfectly balanced vectors, from the torsion ring. Somewhat less arcane, Calatrava's folded girders also reflect his predisposition toward kinetics. The unbuilt Zupa Exposition Hall (pages 134-135) demonstrates an application of folded girders. Conceived of in construction terms as well as structural, the leaf-like form of his girders seems to hold a strong *architectural* fascination because of its ability to shape volume and modulate light (two of the designer's folded girder roof structures have been built: the Jakem Factory in Munchwilen, and the Concert Hall roof in Suhr). Conceptually, the foldable girders have much in common with the doors of the Ersting Factory, the splayed arches of the Bridge for Barcelona (page 136), the concrete tower of the Serge River Bridge (page 137), and the graduated progression of trusses at the St. Gallen pavilions (page 138). All enact, or imply, dilation.

Though Calatrava's structural concepts are fundamental and clear, the technical solutions are often very sophisticated. To a large degree, that sophistication enters at the detailing of connections and is most poetically expressed by the profiles of structural members and the juxtaposition of materials (consider the pavilions at St. Gallen). What Calatrava is seeking to reveal in the details is more than a direct expression of the manufacturing techniques a material undergoes. He is looking for an architectural statement that encapsulates all the complexities that come to bear on a constructed place. Which brings him back to his structural attitude: because of the inextricable complexity of each project, the structure must be direct.

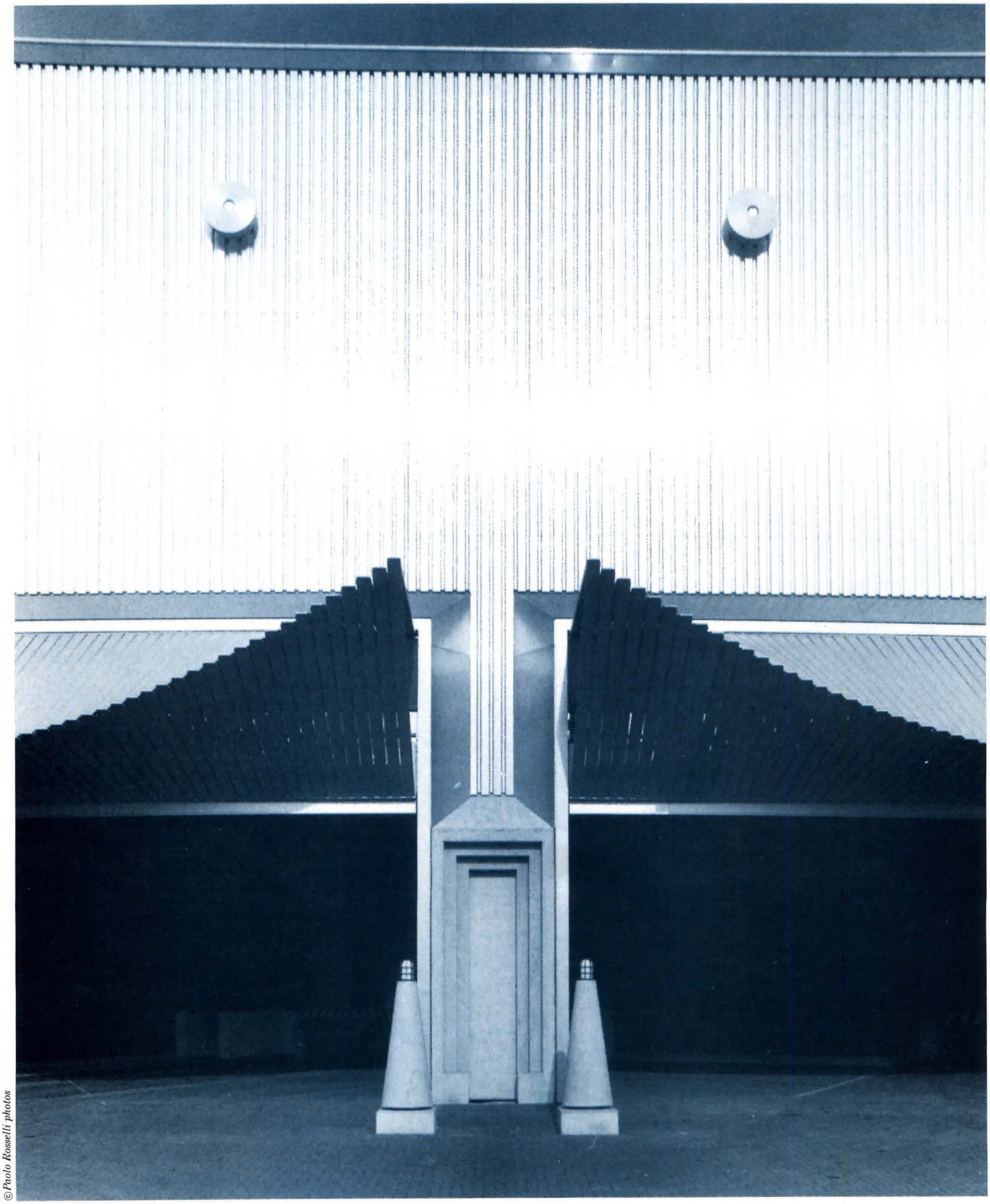
Two general design devices guide the architectural work: duality and symmetry. Calatrava believes that systems of duality give tension: simplicity versus complexity; heavy versus light; transparent versus opaque; compression versus tension; visual weight versus physical weight. Such dualities are evidenced throughout Calatrava's design, often with dramatic effect when, as in the case of the Lucerne canopy, there is "inversion." (The delicate steelwork supporting a transparent membrane has been positioned at the anchor side of the structure where you would expect the visually heavy, metal segment to be. This inversion throws the aluminum wing into flight.) Duality is, in his mind, a simple principle of beauty, like symmetry. On symmetry, he has stated, "To date, most of my works are symmetrical, maybe because I don't yet have the maturity to make asymmetrical works. Symmetry is very simple, a form of primary, regular beauty. But symmetry may not be the highest form of beauty. At this point in time I am more at ease with introducing contradictions (duality) through technical means, than through overall compositional form." Yet confident asymmetry does appear in many of the projects. In the transverse aspect of the canopies, and the longitudinal elevation of the Serge River Bridge (page 137), a dynamic balance is achieved among elements asymmetrically positioned in relation to their foundation. Asymmetry also appears in the position of the arches of the Bridge for Barcelona (page 136)—a response to the lack of orthogonality between the line of the vehicular road and the line of the railroad tracks it spans.

Clearly, Calatrava is seeking to work on many different levels while jumping comfortably among the roles of architect, engineer, and sculptor. The advantages of being all three at once are tremendous. Very few sculptors have an opportunity to make a form as big as a work of architecture. The architect has incredible possibilities within the sculptural and engineering disciplines. And the engineer's possibilities are greatly expanded when considered from an architectural vantage point. Each discipline has its own attitude that can be shared by the other two. And so it is in the work of Santiago Calatrava. He is a remarkable creative force with a promising future.
Darl Rastorfer

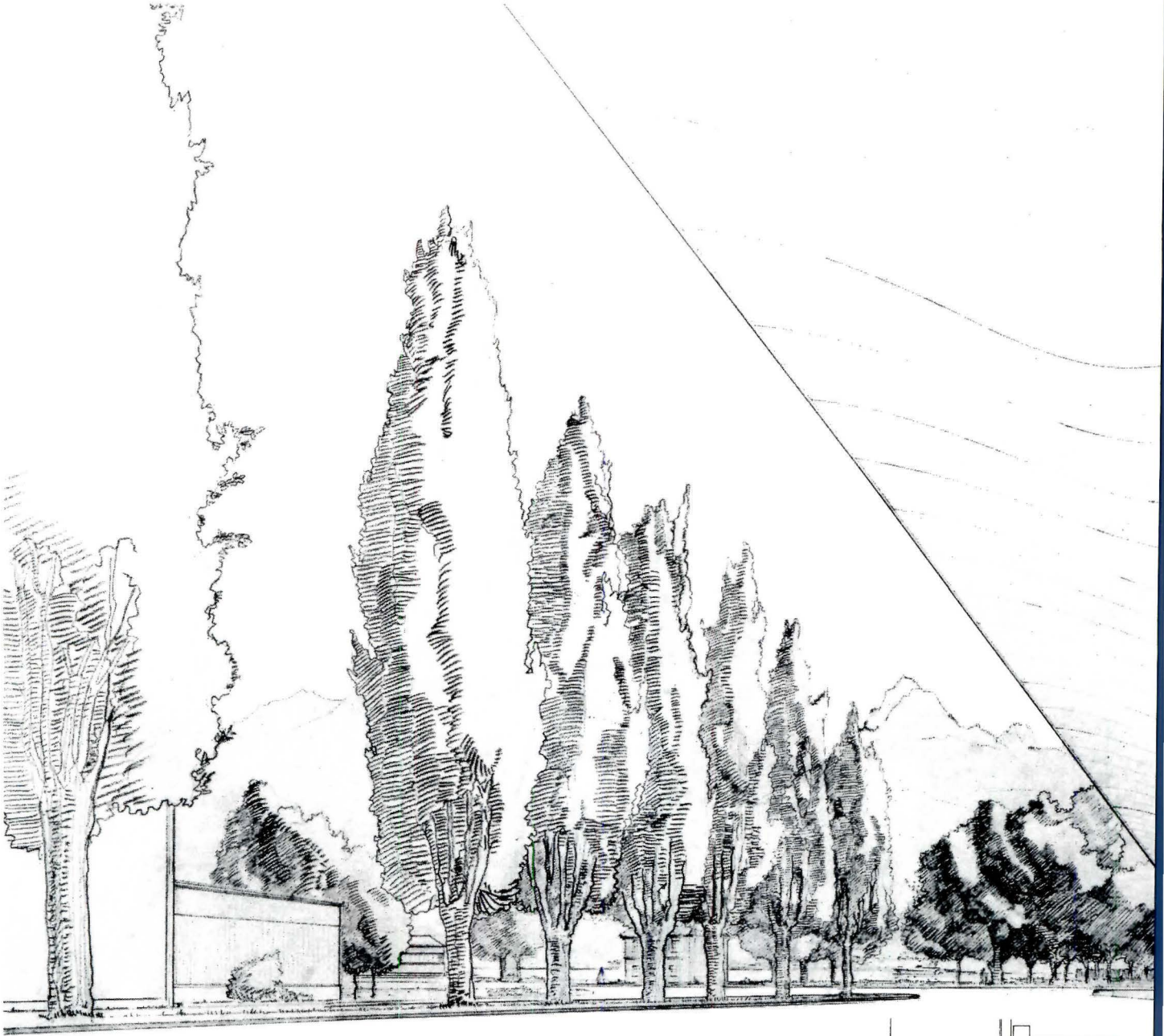
The Ersting Factory Westphalia, West Germany, with Bruno Reichlin and Fabio Reinhardt

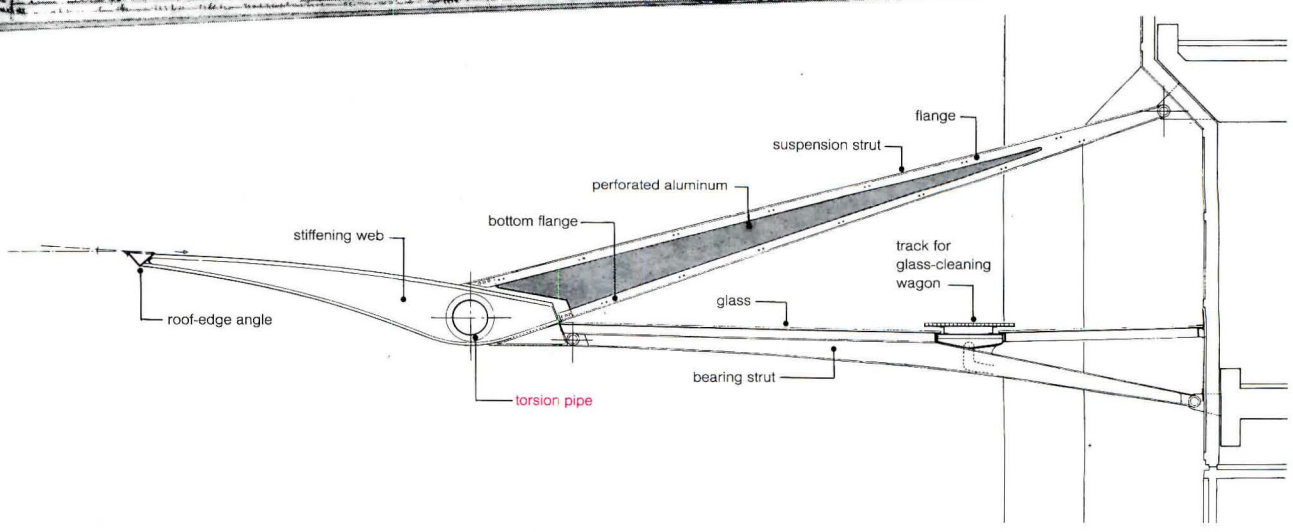
Santiago Calatrava made his first serious investigations of foldable structures between 1979 and 1981 while doing advance study at the Swiss Federal Institute of Technology (ETH) in Zurich. The first large project to be built in this "structural genre" was a set of segmented doors for the Ersting Factory in West Germany (photos below and opposite page). Calatrava has likened the doors to knees (in fact, he studied the bone structures of animals while developing kinetic forms). The doors' movement is provided by a simple, three-part frame, articulated at the top, mid-joint, and bottom. Movement at the articulations is accomplished by pinned hinges on each aluminum rib. When the doors are in their upright position, they function as canopies. Formally, the doors were conceived as elements intended to sustain the continuity of the wall. The geometry of the static wall, with its exposed concrete foundation, corresponds to the door lines of articulation, including the swag-like curvature of the mid-joint, and the closed and open positions of the doors. The factory was constructed in 1985.



Canopy for a PTT Building Lucerne, Switzerland

The postal service center (PTT) in Lucerne is sited on the lake, and adjacent to the city's art museum and main railroad station. Calatrava was commissioned to design a protective structure on the shipping/receiving side of the facility that would reach across a service road to the rail tracks. His solution is a high-strength steel and glass canopy whose power and grace are difficult to appreciate without seeing it firsthand (the canopy covers 8,610 sq ft with its 43.6-ft overhang). The canopy is clearly divided into two sections (rendering below). Running against the pre-existing building is a glazed, transparent zone that provides illumination to the work area, reveals the geometry of its own static system, and preserves the continuity of the earlier facade. The cantilevered box beam portion of the canopy, with its wing-shaped section, is covered with aluminum. This enigmatic, effortlessly resolved composition which places the opaque, visually heavy portion of the canopy away from its anchor, and the visually light at the anchor, tends to accentuate the cantilever's sense of flight.

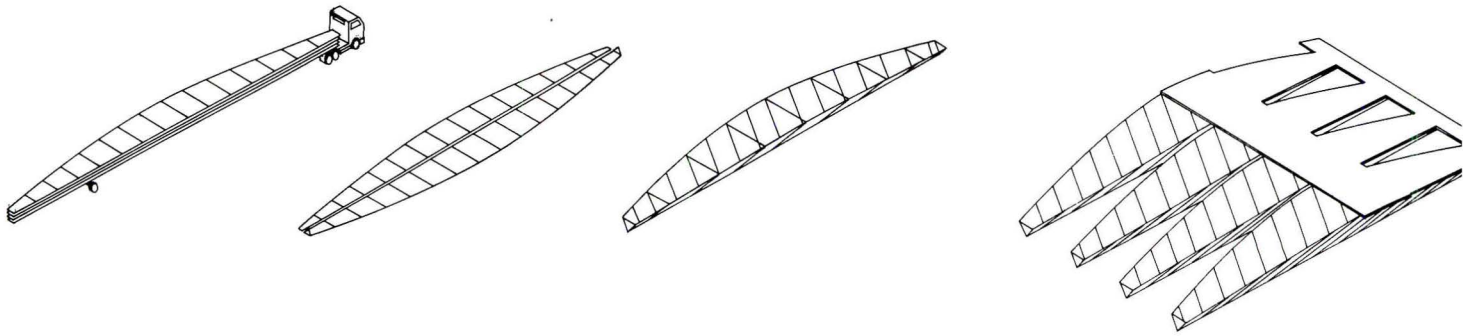


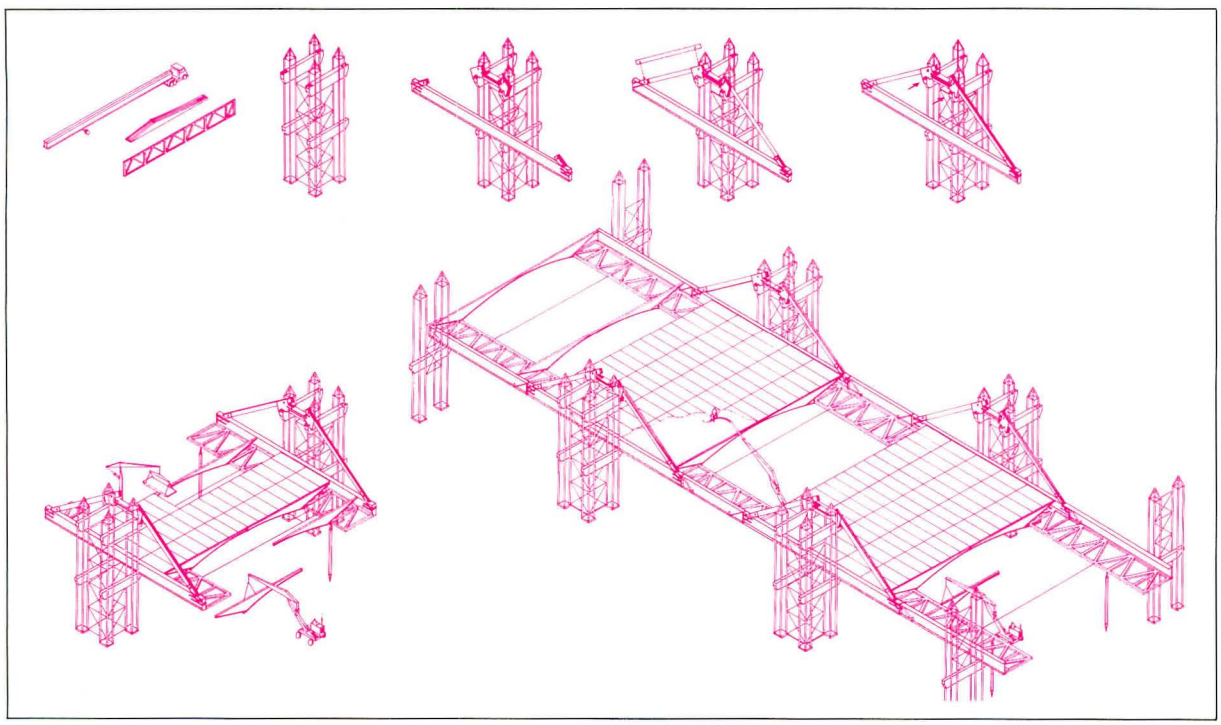


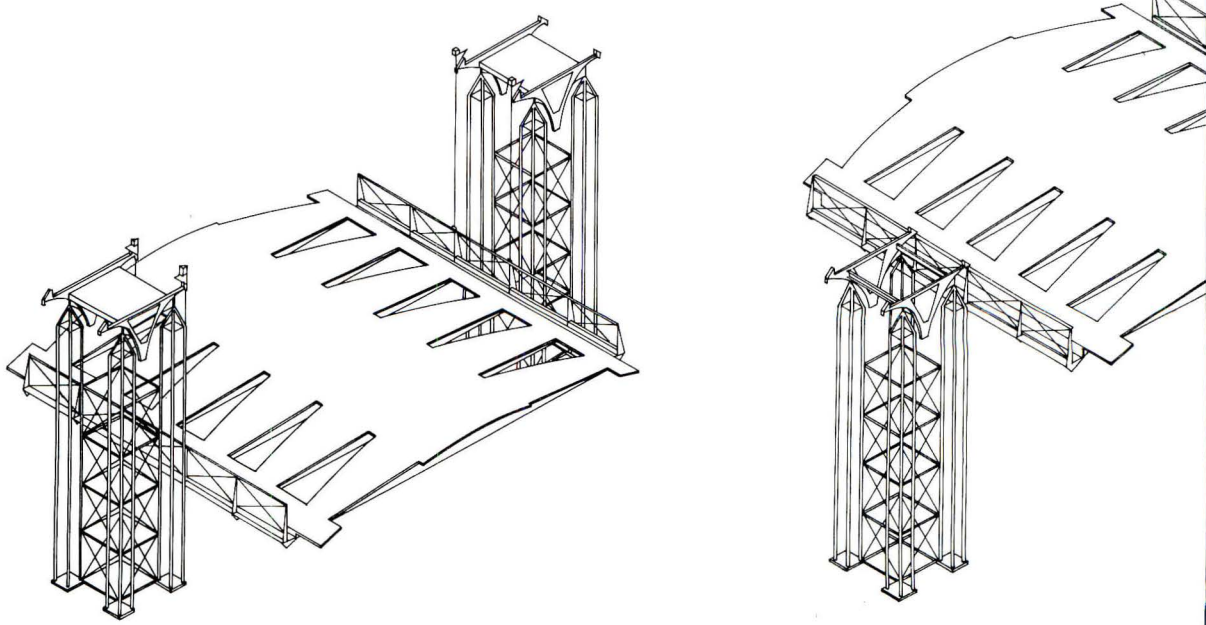
Structurally, the configuration revolves around a torsion pipe (diagram below), putting the Lucerne canopy within a series of projects by Calatrava that explore a common structural theme: the resolution of force vectors around a single point. (The Stadelhofen Train Station, page 139, demonstrates this theme in two places: its platform canopies, and the structures revolving around the concrete torsion ring.) At Lucerne, the suspension strut, bearing strut, and wing-shaped cantilever of the canopy are sized and geometrically positioned in accordance with the lines of stress that develop at the pipe. In molding the form to directly correspond with static forces, an economy is achieved that ultimately enriches the sculptural aspect of the design. The canopy was completed in 1984.

Zupa Exposition Hall
Zurich, Switzerland
with Martin Spuehler

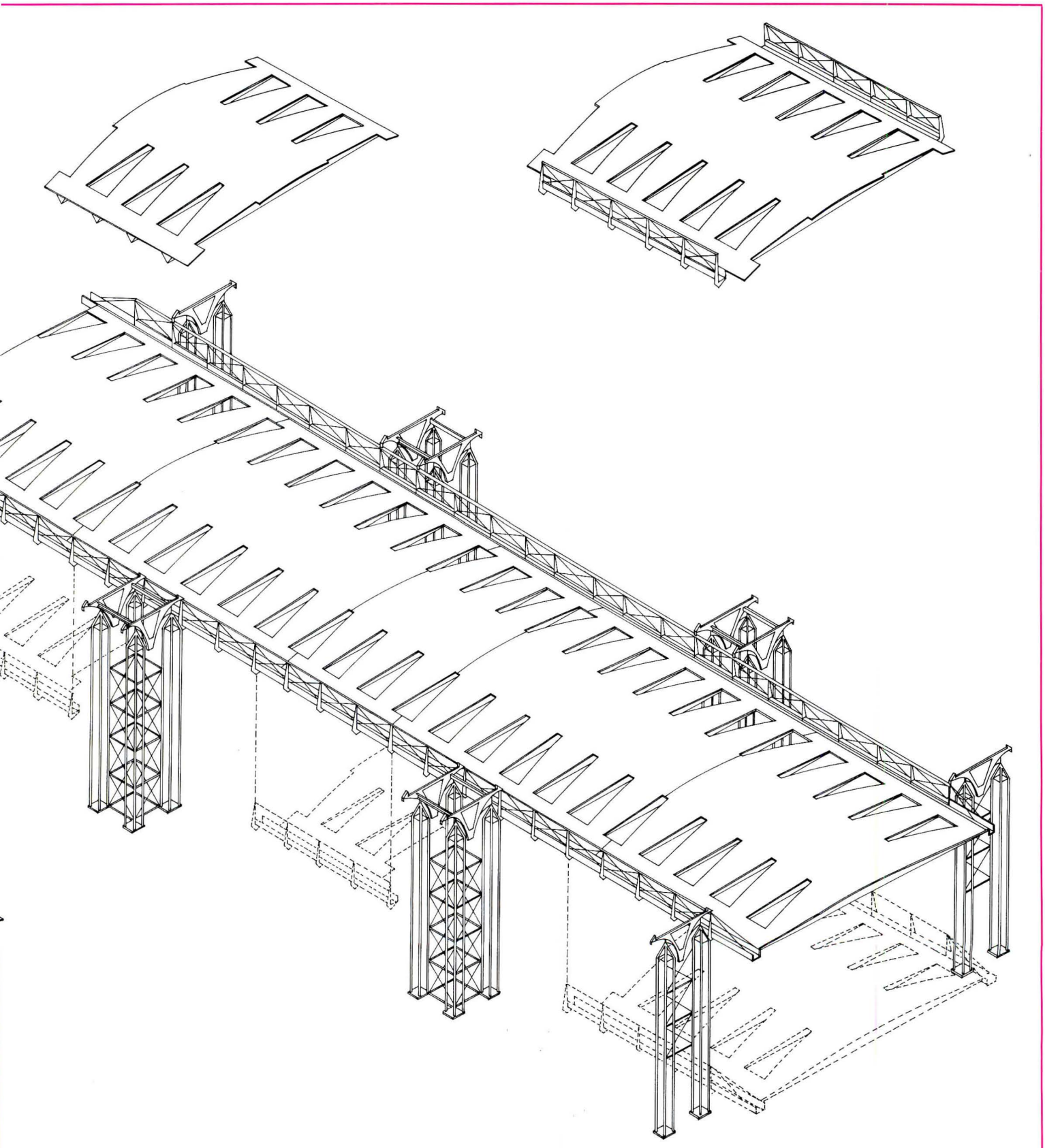
One criterion for the exhibition hall design done for a competition sponsored by the city of Zurich, was that it lend itself to speedy erection. Drawing, no doubt, on his experience with foldable structures, Calatrava's exhibition hall design is conceived as a simple kit-of-parts which are easily assembled. The maximum size for any factory-made component is determined by the weight and dimensional limitations of vehicular transport from the fabricator to the site (trucking diagram, upper left). The hall was to be built one module at a time, starting with the construction of towers. The second stage of construction involved the building of the roof on grade after which it is hoisted into position (axonometrics). The long span of the roof (98.5 ft) is made with folded girders brought to the site in two segments (top). Leaf-shaped, folded girders are one of two recurring structural elements in Calatrava's work, the other being torsion rings. Though not shown here, other projects by Calatrava in Switzerland that have been built or are under construction, which incorporate gracefully folded girder-forms, are the Jakem factory in Munchwilen and the roofing of the Concert Hall in Suhr. All three projects employ means of





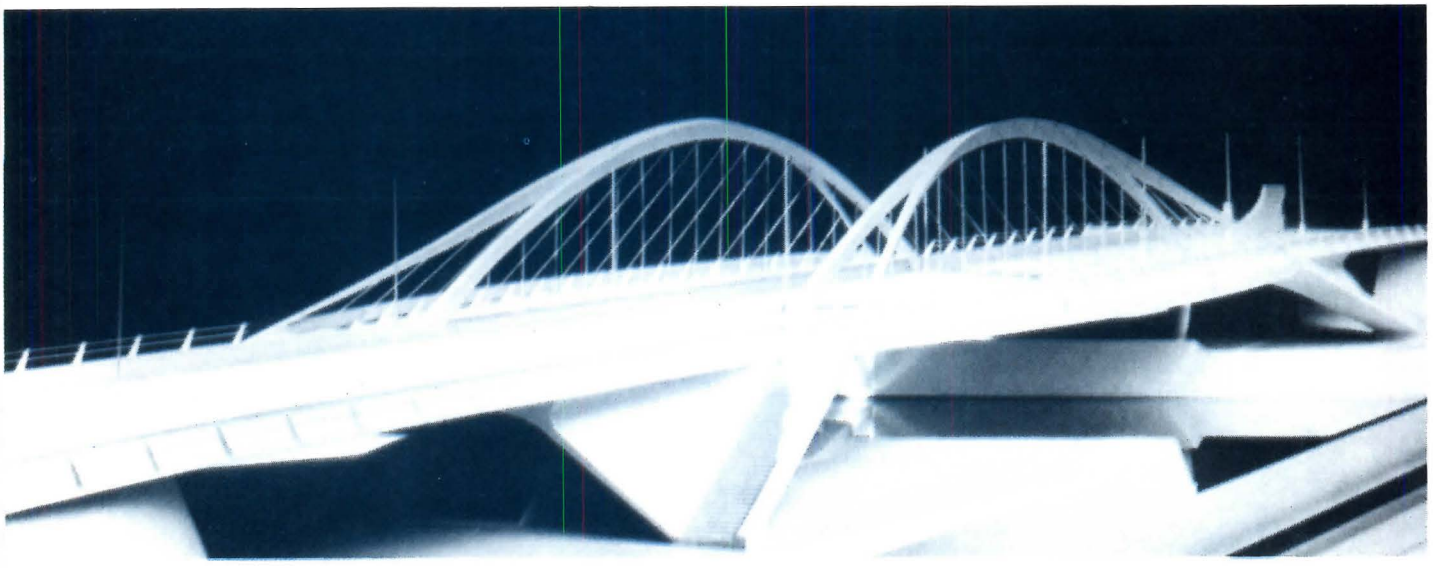


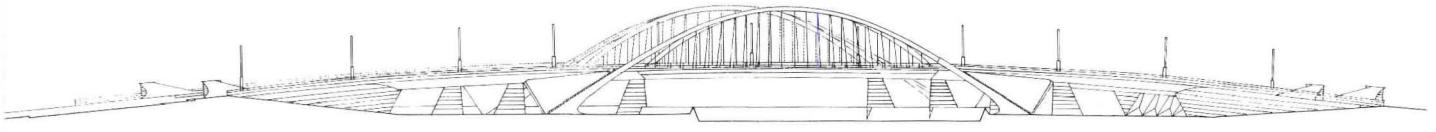
introducing natural light through the V-form volume of the girders. In the Zupa Hall, sunlight would enter at each end. Corrugated metal was to be used for the opaque surface. With the roof complete, work could continue under its protective covering despite inclement weather. The roof has been deleted in the drawings in red to show the construction process of the above-grade floor. The structural design loads for the exhibition hall are tremendous. To avoid unnecessarily adding to the imposed loads, the structure of the floor itself was designed to be light. A composite construction, curved steel floor beams are hung from steel edge beams, and trusses placed on their side are used as stabilization against horizontal forces. The edge beams and stabilizers are hung from the towers, then covered with light metal decking and a poured-in-place concrete slab. Hanging floors with suspension members is reminiscent of bridge design and relates to an office tower for Buenos Aires Calatrava designed in collaboration with Aldo Rossi. The Zupa Exhibition Hall was designed in 1982.

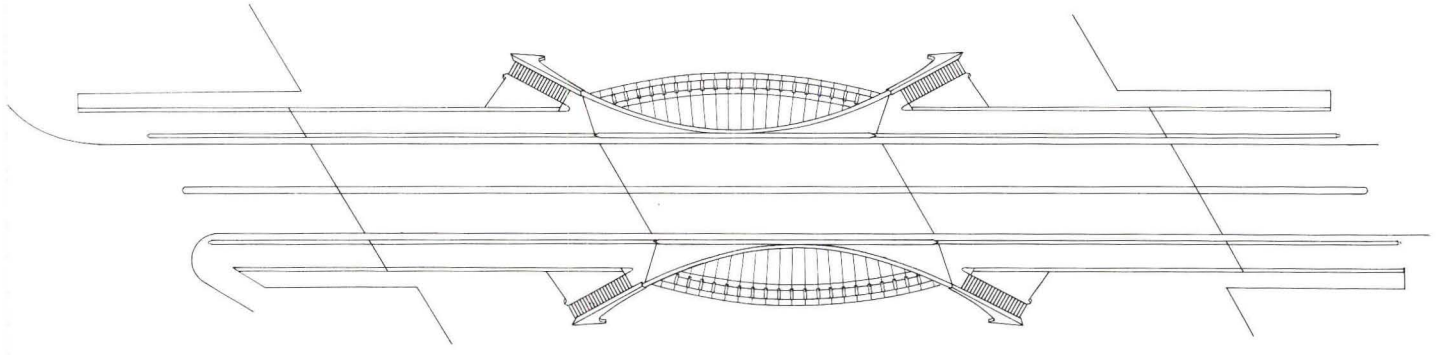


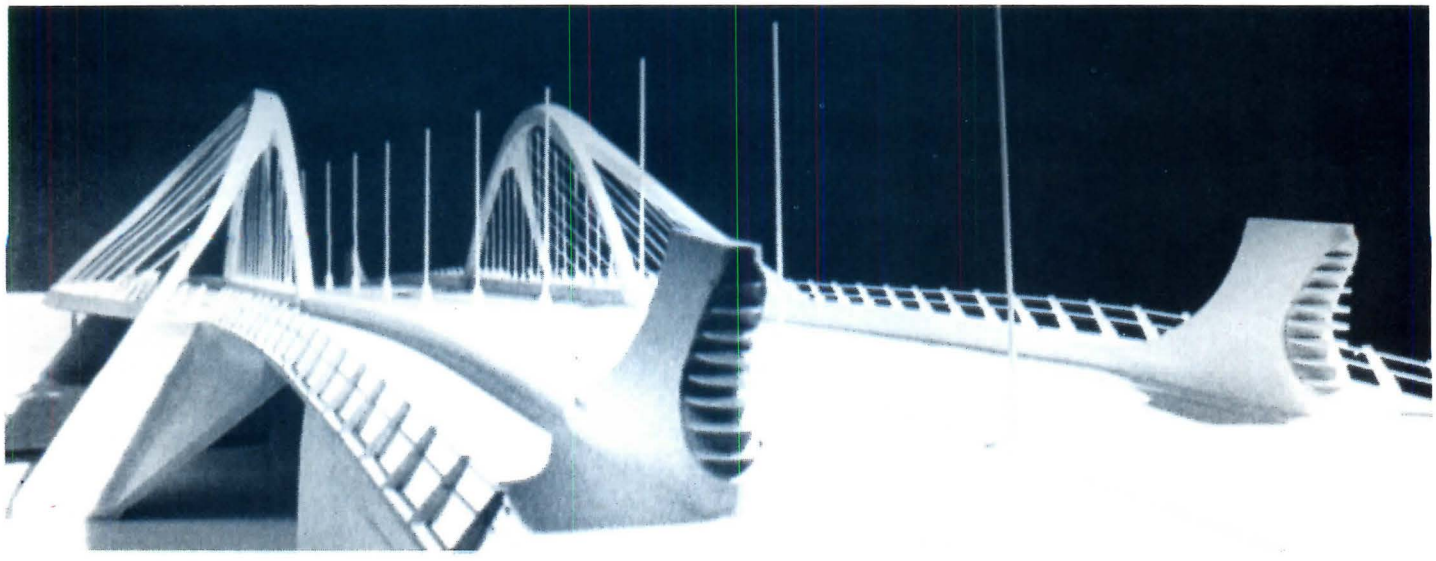
Bridge for Barcelona, Spain

Currently under design, the 460-ft Barcelona bridge will effect a major vehicular and pedestrian link between two main streets within the 19th-century city. The streets, and the neighborhoods they serve, are now separated by an earthen channel laid with railroad tracks. The pathway of the bridge will align with the existing streets. The asymmetrical alignment of the bridge arches along the road (plan) reflects the line of the tracks below. Designed in steel, each of the two arches opens and splays to allow pedestrian passage (bottom). The line of the arch continues to the ground (top), making the dimension for stairs that will connect to parks and train stations. The midspan of the bridge is supported by pairs of steel cables, hung from the arches. The cable networks enclose the pedestrian walkways. Also, the sidewalk is raised above the road, giving pedestrians additional security from vehicular traffic. (The space between the vehicular and pedestrian roads will be used to introduce natural light to the area under the shadow of the bridge.) Construction of the bridge is scheduled to commence this year and to be completed one year thereafter.



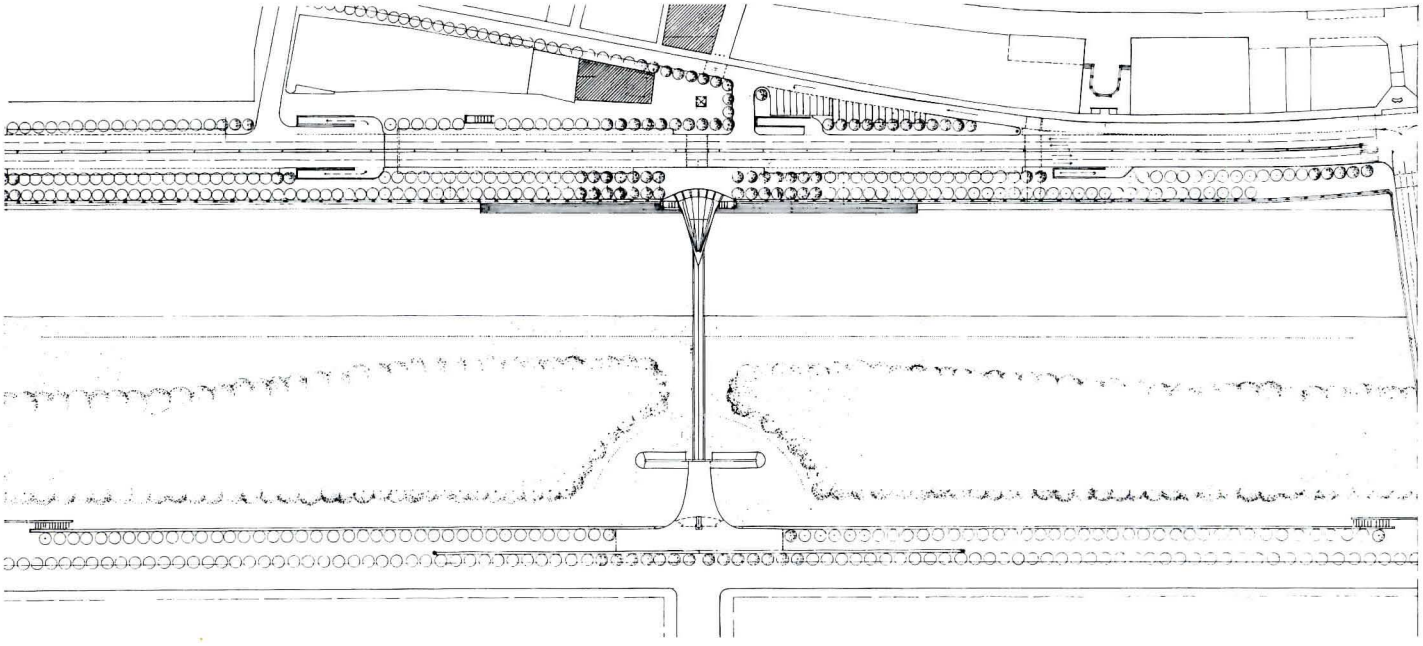


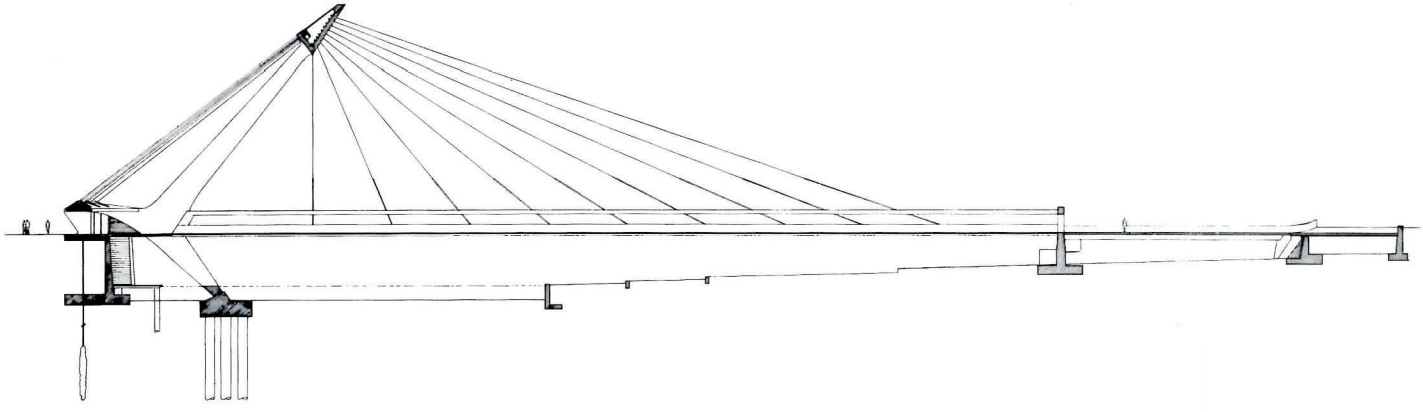


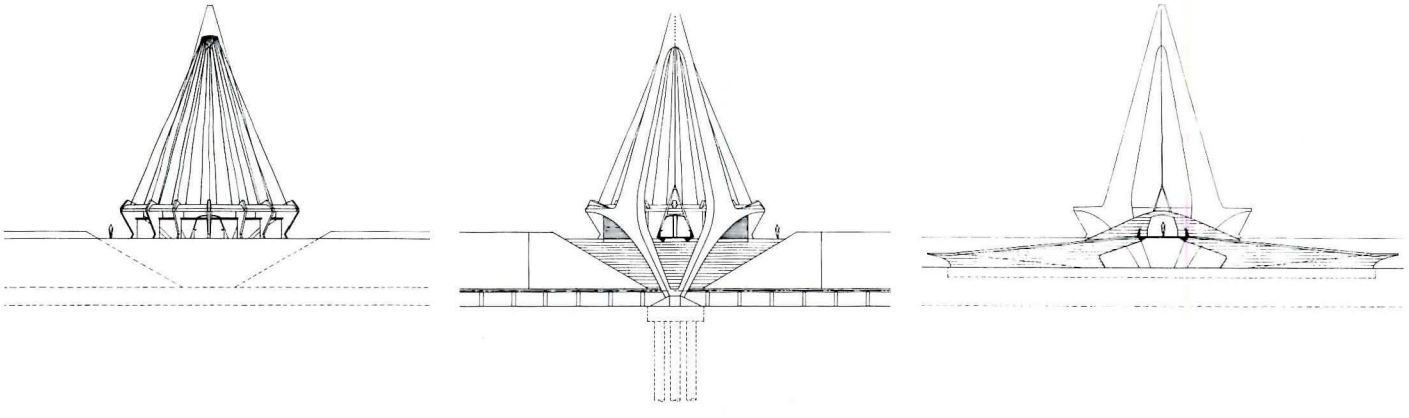


Serge River Bridge
Lleida, Spain
with J. A. Acebillo,
P. Barragan, B. Desola

Sandstone bedrock on the banks of the Serge River justified the asymmetrical solution for this pedestrian bridge. Conceived as an architectural point of orientation within the city, the tower of the bridge, directly tied to a foundation, is an organically shaped concrete hanger (elevations). Through the hanger flows the transfer of forces picked up by the steel cables. In this cable-stayed configuration, which resembles an ancient stringed instrument, all concrete segments are working in compression; the steel, in tension. The urban areas the bridge will link are as asymmetrical as the bridge itself. The bridge's gateway-forming superstructure shares its river bank with an established district in Lleida (site plan below). Calatrava's bridge will enable development of a new residential center on the opposite bank. On this side, two large ramps lead down to a park along the river (a grand stairway gives access to an esplanade on the tower side). The bridge will have an aluminum-covered passageway along its entire length. Final approval for construction is expected this year.

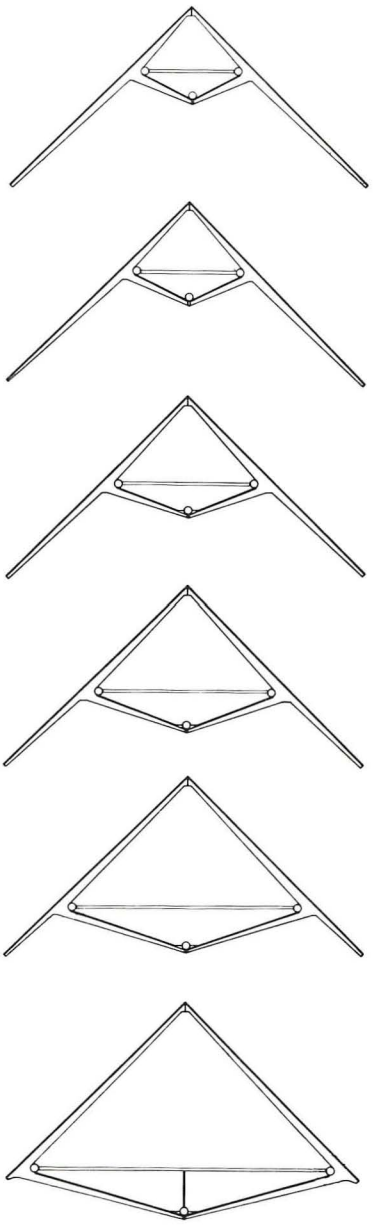


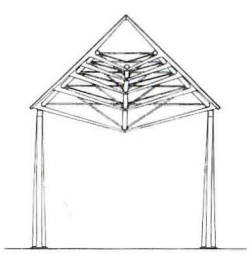


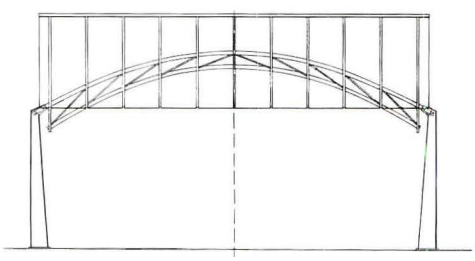


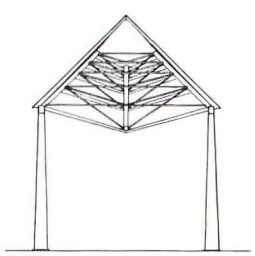
Pavilions at St. Gallen, Switzerland

The commission for this pair of pavilions—one serves as a bus stop with restrooms, one covers the entry to a pedestrian underpass below the street—came to Calatrava after he made a reputation for himself in Lucerne as a canopy-builder. The citizens of St. Gallen made one formal design request: that the pavilions assume the pitched-roof house form that characterizes their historic community. Calatrava sought a fusion between a traditional shape and modern methods and materials. The result, completed in 1984, is as splendid as it is engagingly simple. The beauty of the pavilions is in their exposed truss work. Patterned after spines with ribs, each hollow-tube steel truss in the graded series was individually fabricated. The main structural elements in the trusses are the triangular configurations pointing downward (truss series, right). The upper members, used to hold the glass membrane in place, act as stiffeners to the system. Columns are splayed, true to the force diagram. All electrical wiring and downspouts are contained within the core of the columns.



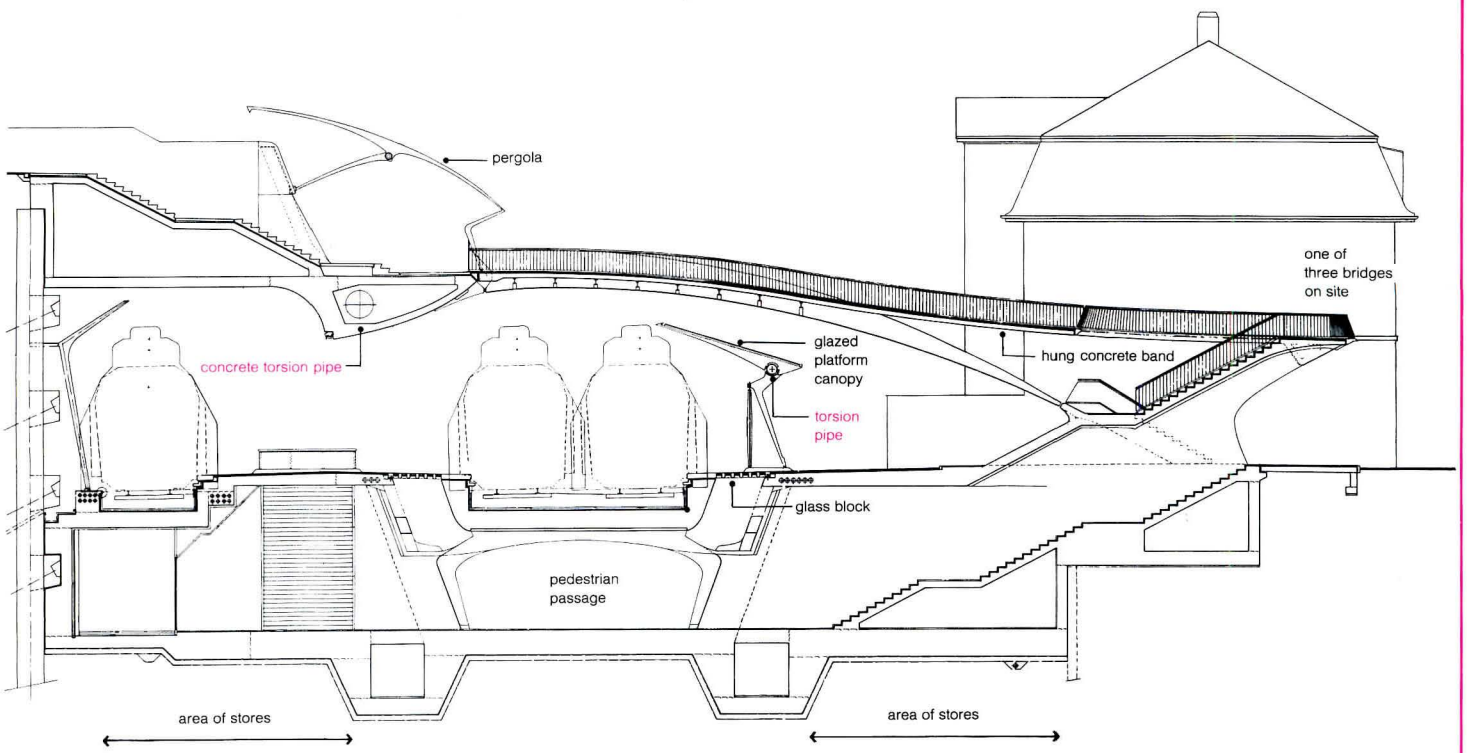


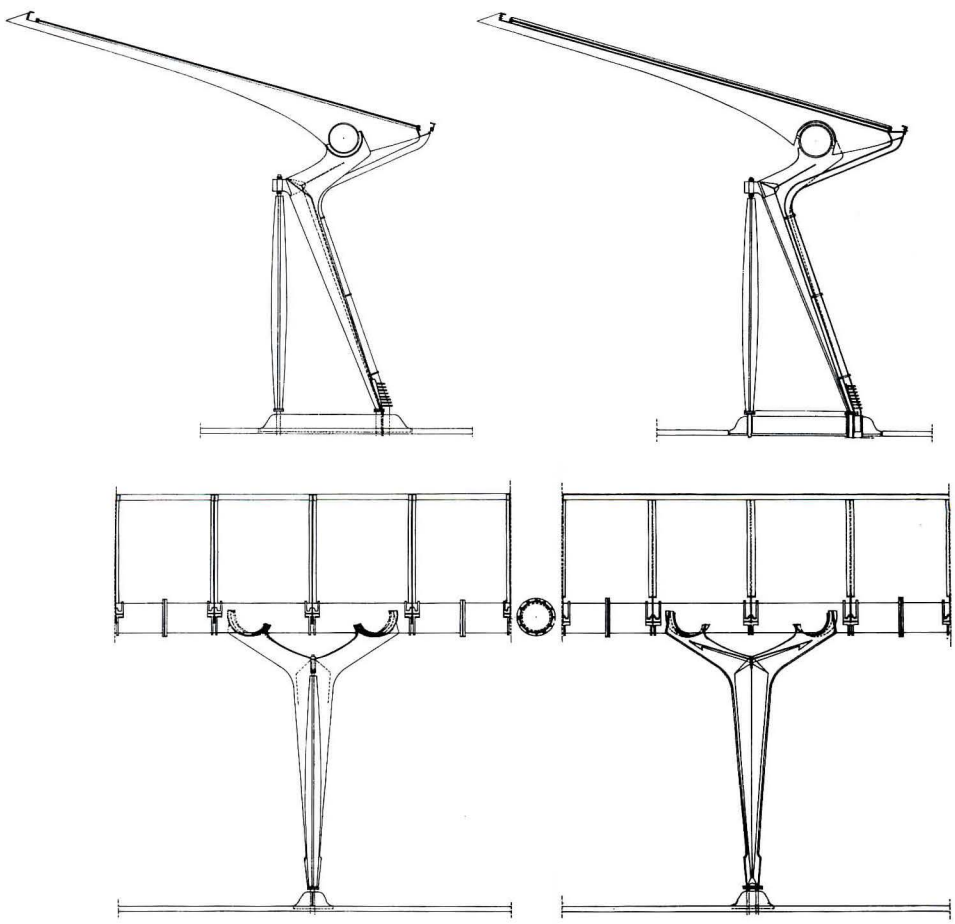




Stadelhofen Train Station
Zurich, Switzerland, with Arnold Amsler and Werner Ruegger

Now under construction, when complete in 1990, the Stadelhofen Train Station is expected to be the third most active in Switzerland. The 1,050-ft-long station is being built into a hillside that separates a garden section of the city from the town proper. Trees, vines, and pergolas are incorporated into the exposed face of the station to blend and soften it into the site. An underground arcade lined with shops constitutes a major internal feature. There are numerous changes in the section of the station along its length. But the vocabulary of structural forms that cover, bridge, and support, remains consistent. Apart from the inherent beauty of individual pieces (details of the platform canopy structure with torsion ring, bottom four drawings), two of the most extraordinary structural features appear in the station section below. First, a reinforced concrete torsion ring that runs along most of the building's length is related thematically to the torsion ring of the Lucerne canopy. Both realize an implicit desire to center forces around a position in space before they are resolved into the ground. Second, the bridge in the section, one of three in the design, is long, very thin, and is actually hung from the torsion member.





New products: NEOCON 18

From June 10 to 13, The Merchandise Mart was again crowded with architects, designers, and contract furnishing manufacturers who gathered in Chicago for NEOCON 18. The showrooms featured a variety of new products, a selection of which is shown here and on the following pages.

1. Fabrics
Unika Vaev has introduced "Crown Imperial," designed by William Morris, the latest addition to its celebrated *Archives Collection* that includes re-editions of Viennese Wiener Werkstätte fabrics (RECORD, February 1985, pages 164-165). In preparing the pattern for production, Sina Pearson, president of Unika Vaev, paid careful attention to matching the scale of the 1876 Morris original on view in London's Victoria and Albert Museum. The 100 percent worsted-wool damask features floral motifs in a geometric repeat, and is available in a selection of 10 colors. Anticipated additions to the collection within the next year will include two more Morris fabrics. Unika Vaev, Div. of International Contract Furnishings, Inc., New York City.
Circle 300 on reader service card

2. Stackable storage system
The manufacturer's new stackable storage system features modules with reversible drawer access that are available in five standard heights. The drawers are designed to accommodate either suspended printout folders and magnetic tapes, a variety of different-size binders, or half-height tubs for floppy disks or disk packs. The modules are constructed of heavy-gauge steel and have an embossed steel matte finish. Meridian, Inc., Spring Lake, Mich.
Circle 301 on reader service card

3. Table
The new *Eccentric* table was designed by Paolo Favaretto. The table features a color stripe on the inside of the table leg. The table comes with a variety of table-top sizes and shapes, and the solid-steel legs can be specified in chrome or a selection of *Kinkote* colors. Kinetics, Rexdale, Ontario.
Circle 302 on reader service card

4. Fabric
Architectural Grid I fabric features a small grid pattern. Constructed of a blend of modacrylic and nylon, the fabric comes in 48-in. widths. A variety of colors is available. KCR Fabrics, Inc., Chicago.
Circle 303 on reader service card

5. Cabinets
The new *Optimedia II* line of cabinets for filing and storing mixed-media was designed by J. Wade Beam. Available in six heights, two widths, and a selection of eight colors, the cabinets are intended to accommodate diskettes, printouts, magnetic tape, video-cassettes, and letter- and legal-size paper. The cabinets can be specified with tambour or receding doors. Wright Line, Inc., Worcester, Mass.
Circle 304 on reader service card

6. Cupboard
The *Oxford Group* designed by Ron Carter includes a desk and a high (shown) and low cupboard. The units are available in a variety of woods and finishes and can be adapted to meet specific size requirements. Interna Designs, Limited, Chicago.
Circle 305 on reader service card

7. Stool
A stool has been added to the *Liverpool* collection of chairs, benches, and tables designed by Ron Carter. Available in several different woods and finishes, including teak for outdoor use, the stool can be specified with an upholstered or slatted seat. Interna Designs, Limited, Chicago.
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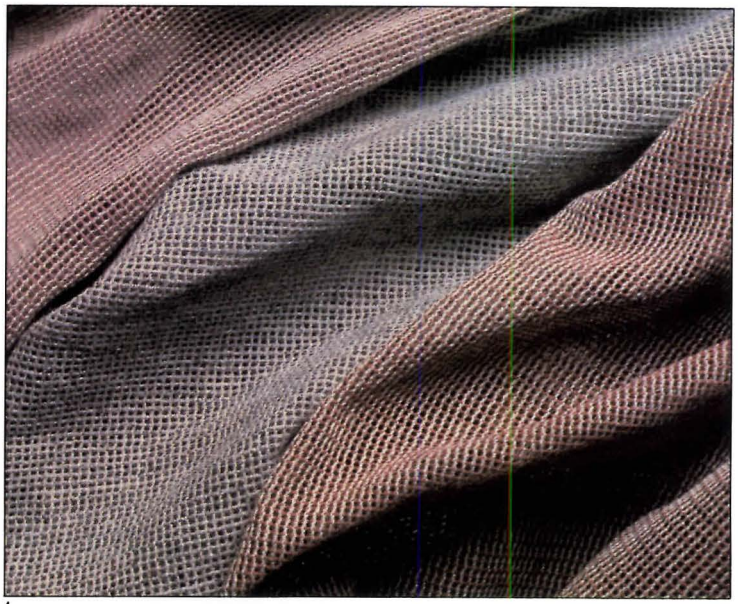

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8. Display cases
A line of display cases features units in several sizes. Constructed of aluminum extrusions with an anodized finish, the cabinets feature pedestal or plinth bases, interior illumination, shelves, and opaque background panels. Hinged or sliding doors are available. Peter Pepper Products, Inc., Compton, Calif.
Circle 307 on reader service card

9. Shelving
The *Primera* system of modular and freestanding shelving units is intended to coordinate with the manufacturer's line of tables and credenzas. The units are available with or without doors, in heights ranging from 29 1/2 in. to 86 in. Veneers and matching hardwood edges can be specified, including mahogany, white oak, and walnut. Tuohy Furniture Corp., Minneapolis.
Circle 308 on reader service card

10. Upholstery
Highlights is a new wool upholstery fabric collection intended for contract applications. Imported from England, the fabric is 48 in. wide and is available in seven colorways. Scalamandré, Long Island City, N. Y.
Circle 309 on reader service card

11. Floor lamp
The new *Agamennone* floor lamp was designed by architect Emilio Ambasz. The lamp's body is made of extruded aluminum coated with a high-gloss black baked-epoxy paint finish. The diffuser rotates 180 deg and contains a 150-watt metal halide bulb that is said to provide consistent lamp color. Artemide, Inc., New York City.
Circle 310 on reader service card

12. Desk
An executive desk has been added to the manufacturer's *Radial Series* of conference tables and credenzas. Designed by Stanley Jay Friedman, the desk features a two-tiered radius-edge wood top with a stainless-steel reveal. The top is available in a standard size of 36-in. by 84-in. or in custom-specified sizes, and is supported by two- or three-drawer pedestals. Brueton Industries, Inc., Springfield Gardens, N. Y.
Circle 311 on reader service card

13. Office system
The *Com System* of office furniture is now available with a new line of cabinets that can accommodate letter- and legal-size files. Overhead storage units and shelves can be mounted on to the system's panels, and a new 6-wire, 2-ground electrical system is designed to facilitate access to power. Krueger, Green Bay, Wis.
Circle 312 on reader service card

14. Wallcoverings
The *Natural Textures* collection of wallcoverings was designed by Laura Deubler Mercurio. The 258-unit collection features a variety of patterns and textures. The wallcoverings have a Class A fire rating, and are said to be extremely durable. J. M. Lynne Co., Inc., Smithtown, N. Y.
Circle 313 on reader service card

15. Chairs
The *D Collection* of German-designed ergonomic chairs includes executive, management, and guest seating. The collection includes a variety of leather and fabric upholstered models that can be specified with tilt mechanisms and swivel or fixed bases. Harter Corp., Sturgis, Mich.
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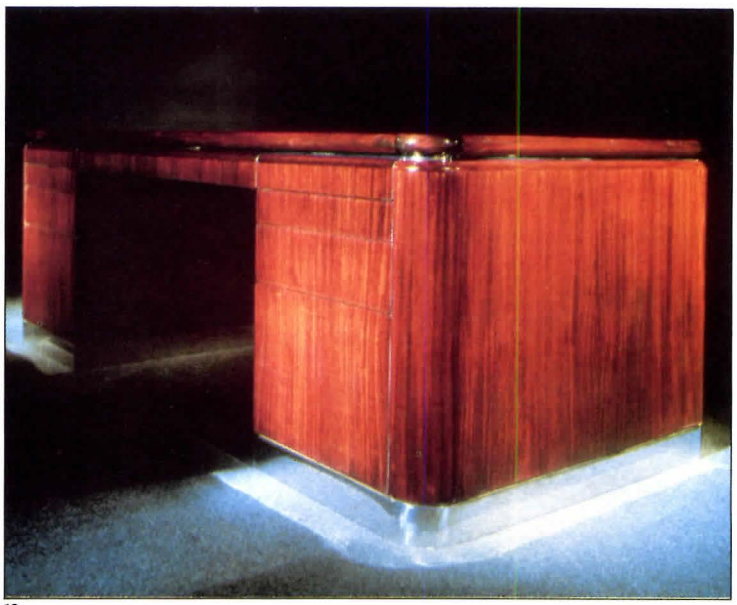

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Product literature

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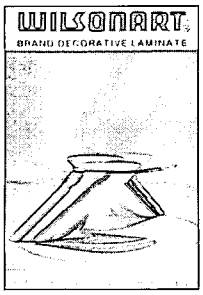

Decorative metals
A 4-page color brochure features the manufacturer's line of 15 decorative metals. Included in the literature are a specification chart listing available options, and photographs of the metals in varied applications. Ralph Wilson Plastics Co., Temple, Tex.
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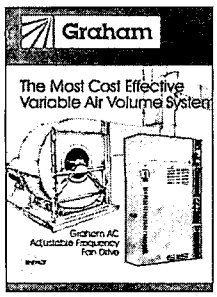

Hvac system
The manufacturer's hvac system is reviewed in a 6-page catalog. The literature highlights the features and benefits of an adjustable frequency drive and includes tables outlining potential annual electrical cost savings when an existing system is retrofit to the manufacturer's. Graham Co., Milwaukee.
Circle 401 on reader service card

Electrostatic coating
An 8-page foldout color brochure describes the equipment and processes that are necessary to produce electrostatic coating materials. Included are photographs of product applications, as well as a site plan and flow chart of the manufacturer's 90,000-sq-ft facility. Electro Static Finishing, Minneapolis.
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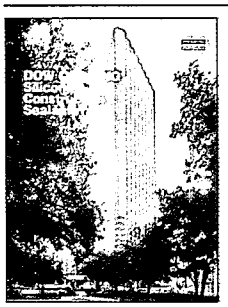

Sealants
A 16-page color brochure features the manufacturer's line of silicone construction sealants. The brochure includes a comparison chart of various sealant products; cross-sectional diagrams and descriptions of typical applications; and a section detailing product features and benefits. Dow Corning Corp., Midland, Mich.
Circle 403 on reader service card

Wall panels
The manufacturer's Indiana limestone wall panels are described in an 8-page color brochure. Photographs of the panels in place are included, along with detailed diagrams of a typical spandrel panel, and vertical panel sections. Harding & Cogswell, Bedford, Ind.
Circle 404 on reader service card

Curved panels
A 4-page color booklet describes the manufacturer's capabilities for bending profiled panels to specific curves and dimensions. The booklet directs information to the buyer, panel manufacturer, and architect, and includes diagrams of standard corner, common valley, mansard, and mitered details. Curveline, Inc., Ontario, Calif.
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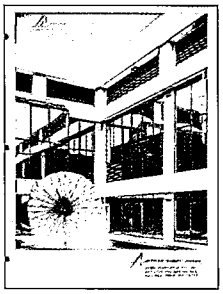

Louvers
A 72-page architectural and engineering manual features the manufacturer's louvers and dampers. Included are installation photographs and descriptions of stationary and operable, horizontal and vertical louvers; special purpose louvers; and mechanical dampers. Airstream Products Div. of Penn Ventilator Co., Inc., Philadelphia.
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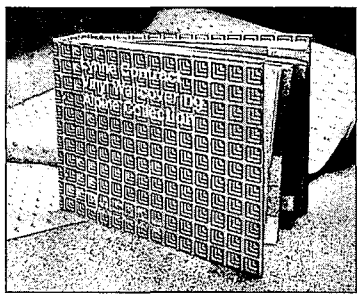

Wallcoverings
The *Alpine Collection* vinyl contract wallcovering book contains large-size samples of each pattern; specification data including flammability ratings, abrasion resistance, washability, and materials used; and ordering information. J. M. Lynne Co., Inc., Smithtown, N. Y.
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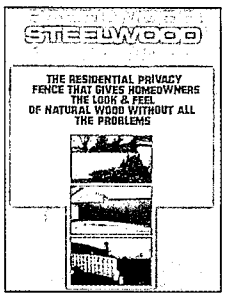

Fencing
A 4-page color brochure features the *Steelwood* fence enclosure system made from a high-density, pre-stained, exterior hardboard that is said to be stronger than natural wood. Each board is surrounded by a color-coated, galvanized steel channel. Allied Tube & Conduit Corp., Harvey, Ill.
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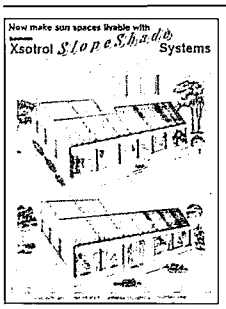

Outdoor shading
A 4-page booklet features the *Supershade* system of controllable outdoor shading for skylights, solar rooms, and other sloped glazing applications. The literature describes the differences between the manufacturer's tiltable, retractable, and nonretractable models. Baumann, Inc., Wauconda, Ill.
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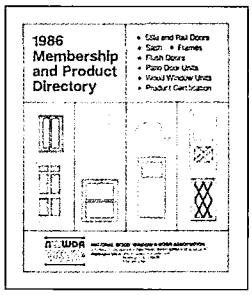

Doors and windows
A 24-page 1986 membership and product directory lists wood window and door manufacturers and their products, along with associate supplier members and their product lines. Included is information on stile and rail doors, frames, and wood window units. National Wood Window & Door Association, Washington, D. C.
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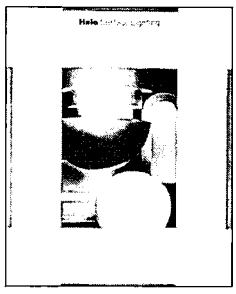

Surface lighting
A 38-page color brochure features the manufacturer's line of surface lighting products designed for decorative, architectural, and commercial applications. The brochure includes product descriptions along with information regarding accessories, lamp types, wattages, and photometrics. Halo Lighting, Elk Grove Village, Ill.
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Located in Arlington, VA, The Arlington Hospital is a full-service general hospital. Staffed by more than 700 licensed physicians, the 350-bed teaching hospital has been affiliated with Georgetown University School of Medicine since 1950.

"Scrubbing up at The Arlington Hospital is always a successful operation with Sloan OPTIMA® No-Hands Systems."

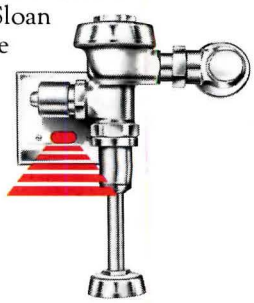
Cleanliness and efficiency are two essential aspects of providing responsible patient care. In a busy 350-bed teaching hospital, maintaining a sterile environment is a must. The Arlington Hospital has discovered an efficient way to ensure cleanliness with the installation of 58 Sloan OPTIMA No-Hands systems.

In the emergency room, the operating suites, and the labor and delivery rooms, Sloan OPTIMA No-Hands systems are helping to reduce maintenance, enhance cleanliness and promote water savings. An electronic sensor "sees" the user, and the OPTIMA system automatically turns the faucets on and off—only as needed. Awkward arm- or leg-actuated faucets are eliminated to provide a quick, no-hands scrub-up.

The results: a more sterile, efficient scrub station. Reduced maintenance and water usage. And greater convenience for medical personnel.

Easily installed in any new or retrofit situation, the Sloan OPTIMA system meets all building codes and readily adapts to existing sink and plumbing hookups. The system is also compatible with soap dispensers, hand dryers, shower heads, and more.

Ask your Sloan representative about Sloan No-Hands automated systems. Or write us.



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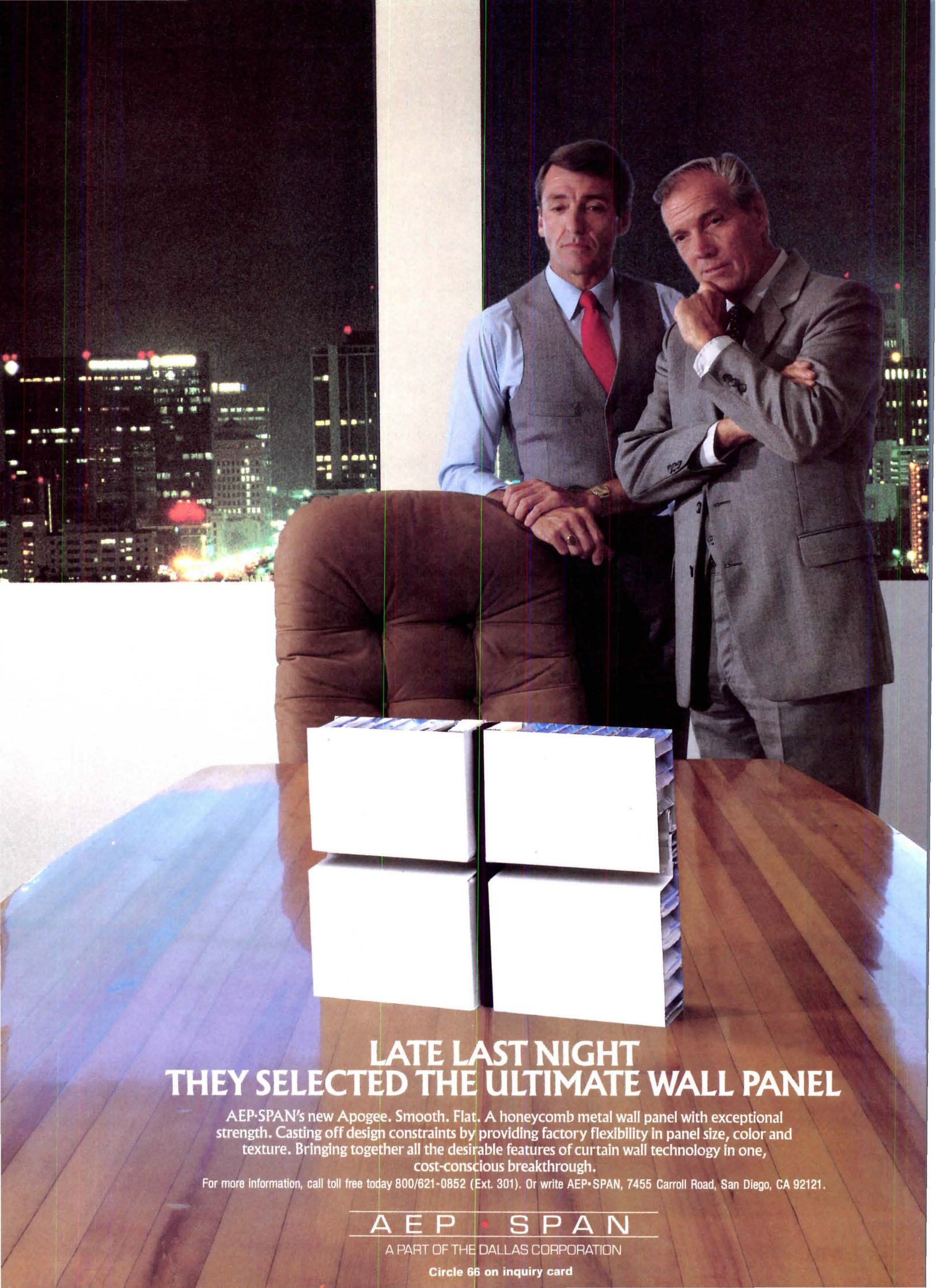

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Product literature *continued*

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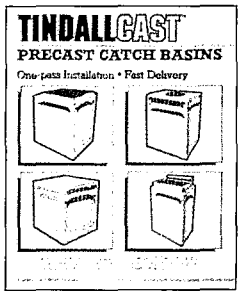

Catch basins
A 4-page brochure highlights the manufacturer's precast concrete catch basins. Included in the literature are on-site photographs, along with descriptions of product types and sizes, and grate, curb, and ditch inlets. Tindall Concrete Products, Inc., Spartanburg, S. C.
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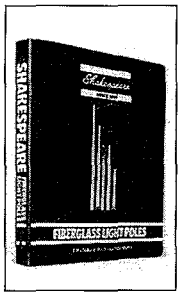

Light poles
The manufacturer's anchor base and direct burial fiberglass light poles are described in a technical handbook entitled *The Bluebook.* The book includes specification data sheets, guidelines for foundation designs, charts indicating expected wind velocities, and results of lateral load deflection tests. Shakespeare, Newberry, S. C.
Circle 413 on reader service card

Skylights
A 2-page color brochure features the *Studio Collection* of roof windows and skylights. Photographs and product descriptions are included, along with illustrations of optional mini-blinds, sun shades, outside awnings, and roller screens. Barra Corporation of America, West Caldwell, N. J.
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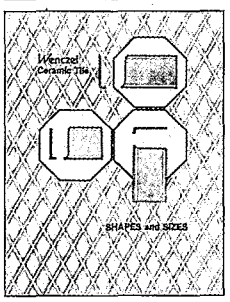

Ceramic tile
A 4-page catalog features the manufacturer's line of ceramic tile shapes and trim pieces. The catalog identifies each trim piece by cross section, dimension, product number, and available finishes. Diagrams of common residential installations are also included. Wenczel Ceramic Tile, Trenton, N. J.
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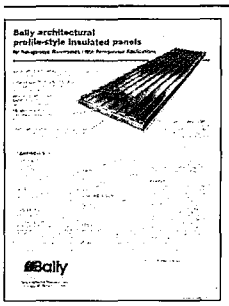

Construction panels
A 2-page color fact sheet describes the manufacturer's preinsulated, profile construction panels. The literature includes a labeled, cross-sectional diagram of the panel, along with specifications regarding materials used, available sizes, and the warranty. Bally Engineered Structures, Inc., Div. of Allegheny International, Bally, Pa.
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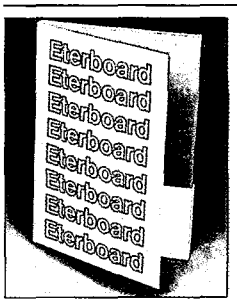
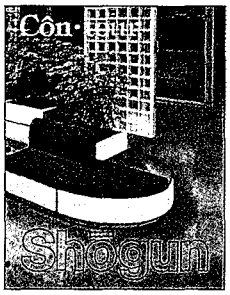
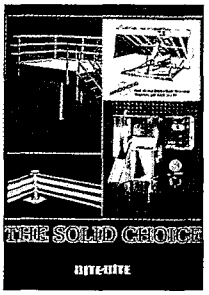


Utility board
A 4-page technical binder and sample of *Eterboard,* said to be a direct replacement for asbestos-cement sheets, is available from the manufacturer. Product features reviewed in the binder include noncombustibility, dimensional stability, water resistance, and long-term durability. Eternit, Inc., Reading, Pa.
Circle 417 on reader service card

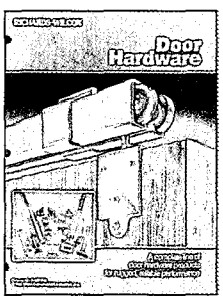


Furniture system
The manufacturer's open furniture system, featuring a precast concrete base as a unifying element to its variety of configurations, is reviewed in an 8-page color brochure. The literature contains photographs of the system in use in libraries, offices, and atriums. Shogun International Corp., Chicago.
Circle 418 on reader service card

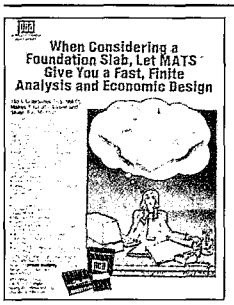


Loading dock equipment
A 12-page color brochure describes the manufacturer's line of loading dock and other industrial equipment. The literature outlines the features of three vehicle restraint systems, truck and railcar dock levelers, custom-engineered mezzanine systems, and protective railings. Rite-Hite Corp., Milwaukee.
Circle 419 on reader service card

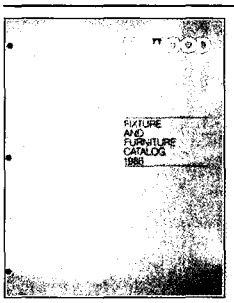
Building system
An 8-page color brochure features the *Multi-Story Spacesetter Building Systems.* The literature describes the custom-design, turnkey approach, fabrication quality, and appearance flexibility. Interior and exterior photos are included, along with detailed cutaway diagrams. Chief Industries, Inc., Grand Island, Neb.
Circle 420 on reader service card



Door hardware
A 72-page catalog features a line of hardware for slide, slide-fold, swing, and vertical lift doors. The listings include complete door packages, hangers, tracks, and hinges. Photographs, specifications, and ordering information are also included. Richards-Wilcox, div. of White Consolidated Industries, Inc., Aurora, Ill.
Circle 421 on reader service card



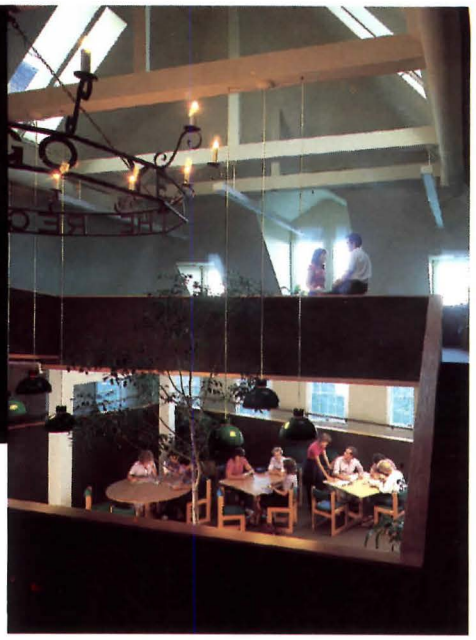
Software package
A 4-page brochure features the *MATS* microcomputer program designed for the analysis and design of concrete foundation mats, combined footings, and slabs on grade. The brochure includes a detailed review of product features and benefits. Portland Cement Association, Skokie, Ill.
Circle 422 on reader service card



Store fixtures and furniture
The manufacturer's line of wooden store fixtures and display furniture is featured in a 32-page color catalog. Photographs of specific store applications are included, along with detailed product descriptions, illustrations, and ordering information. Newood, Eugene, Ore.
Circle 423 on reader service card


No. 62
in a
commercial
design series.

How Andersen Helped A Christian College Resurrect A Historic Building.



The engineers said, "Raze it." Sentimental alumni said, "Save it."

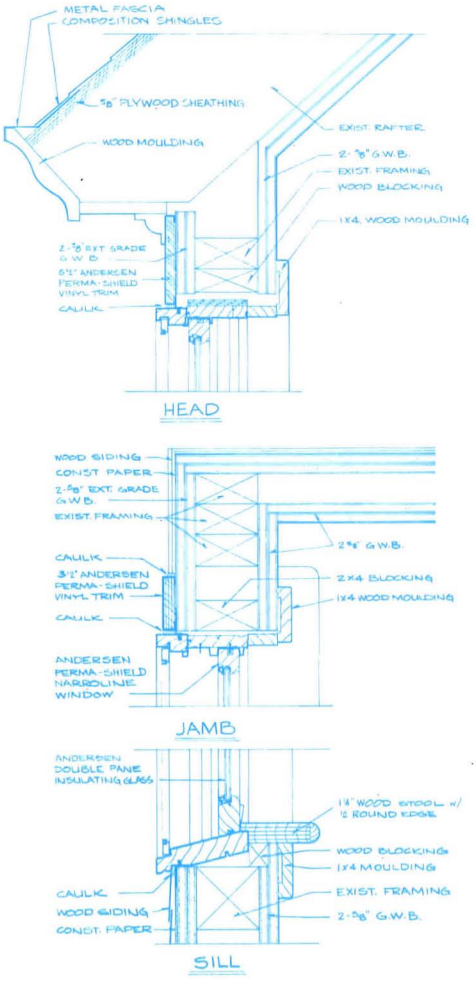
It was Simpson Hall, a Victorian landmark at Nyack College, and the oldest building on the campus of the nation's oldest fundamentalist Christian College.

It was condemned as a fire hazard in the 1960s. But caring alumni wanted to preserve Simpson Hall and their pledges started coming in.

Today this 1897 building has been returned to its former glory—having been stripped to its massive wood frame and restored.

When it came to replacing the aging windows, selecting Andersen® Perma-Shield® Narroline® double-hung

Simpson Hall
Nyack College
South Nyack, New York
Architect: Schofield/Colgan Architects
Nyack, New York
Single vertical grilles not by Andersen.



windows was an easy choice. That's because recreating the original exterior was of prime importance. So was energy efficiency in this South Nyack, New York, location.

Andersen came through on both counts. First, the clean, simple lines of Andersen windows complement virtually any design.

Second, Andersen windows feature double-pane insulating glass and weathertightness that greatly exceeds industry standards.*

What's more, the Perma-Shield family of products assures a long life virtually free of maintenance at Simpson Hall.

Now the generous alumni can look proudly at their college landmark.

You can look proudly at your remodeling, historic renovation or new construction project if you specify Andersen windows.

For more information: Call your Andersen distributor. See Sweet's File 8.16/An. Or write Andersen Corp., Box 12, Bayport, MN 55003.

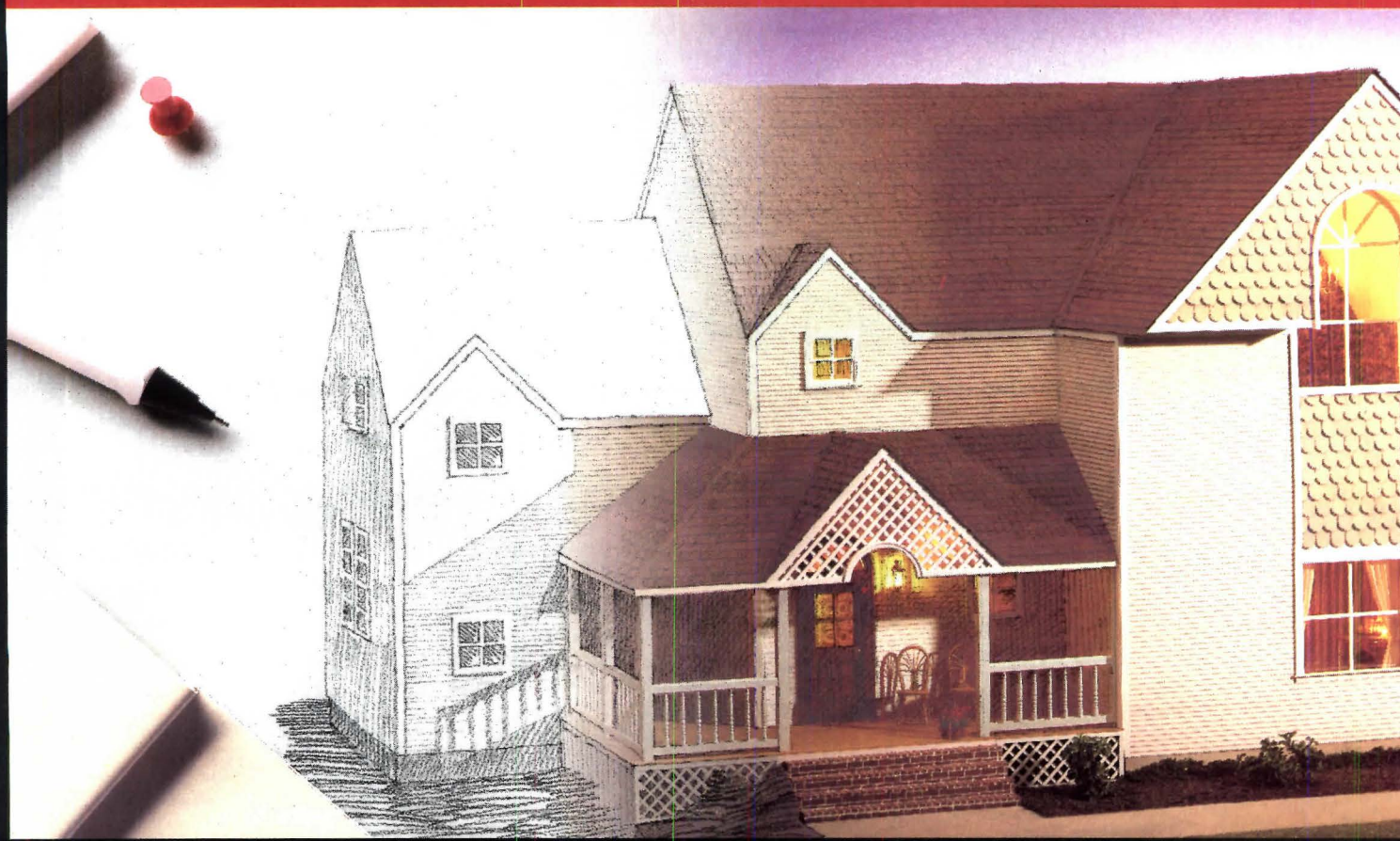
*NWMA I.S. 2-80

Come home to quality.

Andersen AW Windows · Patio Doors™

Andersen

Introducing Restoration® Vinyl.

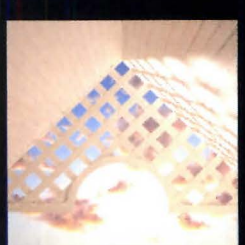


Everything You Thought Vinyl Could Never Be.

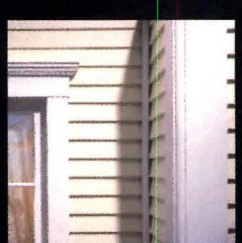
Used to be, vinyl siding looked like, well, vinyl siding. Most architects probably thought that this would always be the case. Not so.

Now there's Restoration solid vinyl siding. Restoration looks like real painted wood. You have to see it to believe it.

Budget and aesthetics often pull at a design from opposite directions. When a client not only wants the appearance of painted wood, but also the economy and durability of vinyl, Restoration solid vinyl siding provides the balance. It has all of the advantages of vinyl – lower cost, durability, low maintenance; plus all the aesthetic advantages of real wood.



The Restoration Collection includes beaded panel and lattice.

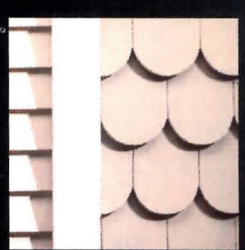


Faithfully detailed window moldings, trim and this extra-wide corner post.

Through sophisticated technology we've achieved a smooth low gloss finish on a panel that's guaranteed to last a lifetime.* To provide flexibility, we've created the Restoration Collection, a full line of architecturally accurate vinyl accessories.

For more information on the entire Restoration Collection, call *1-800-521-9020 (in Michigan, call 313-386-0800).*

After all, seeing is believing.



Restoration Collection Great Shapes.

RESTORATION COLLECTION™

Enduring Appearance, Uncommon Economy.

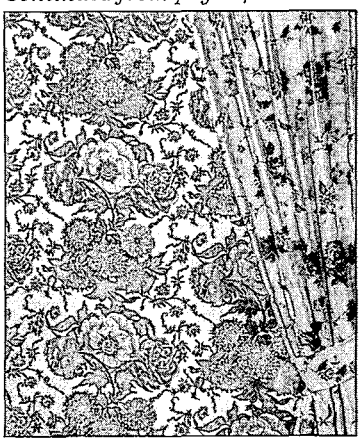
This Old House

As seen on "This Old House."

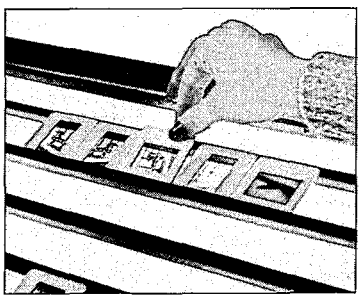
*A copy of the Lifetime Warranty is available by writing Wolverine Technologies Inc., 1650 Howard Street, Lincoln Park, Michigan 48146.

Circle 68 on inquiry card

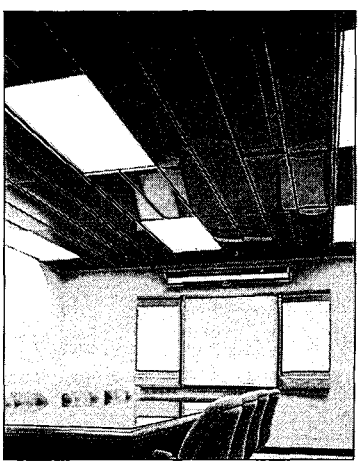
Continued from page 143



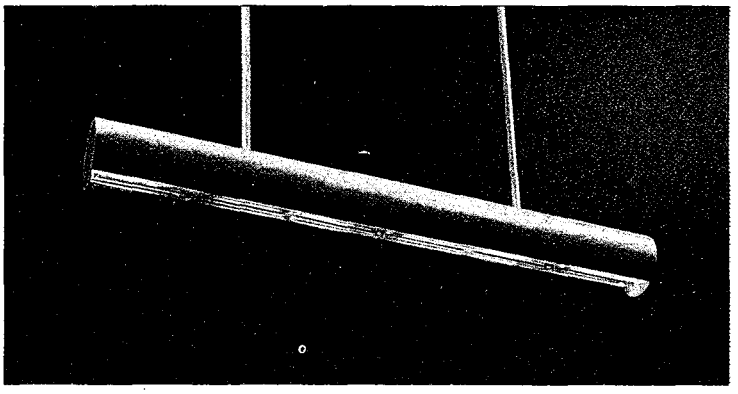
Printed fabric
The *Stately Homes Collection* of fabrics features an assemblage of five woven and five printed designs similar to those found in English country houses. The designs, some of which were rescaled and recolored, are made of 100 percent cotton glazed chintz and are available in 54-in. widths. Stroheim & Romann, Inc., New York City.
Circle 315 on reader service card



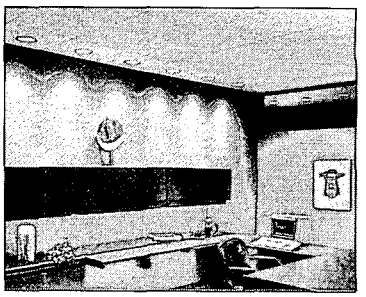
Slide sorter
The *Acculock 6012* slide sorter features a spot-welded steel frame and six removable grippers. The unit measures 24-in. wide by 14-in. deep, can hold 72 2-in. by 2-in. slides, and can be used with either 2- or 4-ft viewers. Bretford Manufacturing, Inc., Schiller Park, Ill.
Circle 316 on reader service card



Ceiling system
The *Panorama* aluminum ceiling panel system features smooth-surfaced panels that come with a concealed carrier system for use in commercial new-construction installations. The panels may be ordered in a 2- by 2-ft flush-fitting profile or a 1- by 4-ft profile with a reveal along the 4-ft side. Alcan Building Products, Warren, Ohio.
Circle 317 on reader service card



Lighting fixture
The manufacturer's stem-mounted fixture measures 4-in. in diameter and may be specified in any length or in continuous runs. The fixture is designed for wall wash or downlighting applications and features fresnel glass lenses. The unit can use tungsten halogen or other bulbs as necessary. Harry Gitlin Lighting, Inc., New York City.
Circle 318 on reader service card



Wall system
The manufacturer's *Full Height Wall System* features floor-to-ceiling panels that can be dismantled, moved, and reassembled as needed. The panels may be covered with four types of fabric or painted in any of three colors with a choice of six trim shades. Donn Corp., Westlake, Ohio.
Circle 319 on reader service card
Continued on page 159

TOP LEVEL INTELLIGENCE.

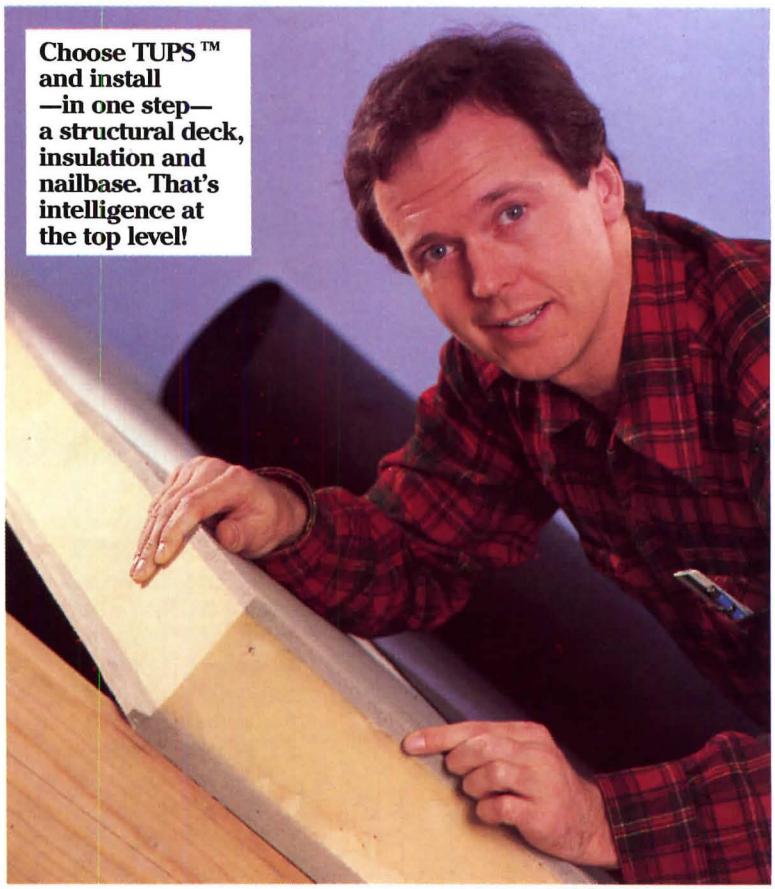
Build R/26 structural roof systems in one step with TUPS™: the smarter, faster way to build.

Smart architects have discovered an intelligent way to stay on top of current demands for higher energy ratings *and* lower costs.

They go to the very *top* and choose a structural, insulating roof system panel that can save energy, reduce cost, eliminate labor-intensive steps and cut time.

They choose TUPS.

Only TUPS features a load bearing, stress skin panel integrating structural Homasote 440 Boards with an insulating core of rigid polyisocyanurate foam.



In just one step, you can install an interior ceiling ready for paint or other finish. And an energy efficient layer of insulation. Plus a structural nailbase ready for shingles, slate, tile, BUR or single-ply membrane roofing system.

All with one-step TUPS roofing panels. That's intelligence at the top level.

For full details, call (609) 883-3300. Or write The Homasote Company directly.

Panels sizes, nominal 4' x 8', 10' and 12' with T & G Long Edges	Nominal Thickness 4"	5"
R-FACTOR AGED	19.2	25.48
R-FACTOR SYSTEM*	20.43	26.71
Lbs. per sq. ft.	4.2	4.4
Foam Thickness (nominal)	2½"	3½"

*Includes air film and asphalt shingles.

homasote
COMPANY
P.O. Box 7240, West Trenton, New Jersey 08628-0240

SMART ARCHITECTS CHOOSE HOMASOTE.

5666

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MOVEABLE FEAST.

The assignment: Redesign a decades-old Pullman sleeper into a rolling hotel for business travel.

The media: WILSONART Color Quest™ decorative laminates and Decorative Metals.

The designer: Thomas J. Bolin, ASID, Planning & Design, Inc., Minneapolis.

Bolin comments: "WILSONART surfacing products offered me both the color and surfacing finish choices and the easy-care, hard-wearing characteristics I had to have to pull off this assignment.

"I needed a comfortable, luxuriously appointed interior that wouldn't feel confining despite the space limitations (of an 85′ x 10′ car), while meeting the unusual functional requirements of outfitting a moving, smoke-spewing train. WILSONART gave me the solution."

Thomas J. Bolin, ASID
Planning & Design, Inc., Minneapolis

The dining/conference area (photo below) set the Art Deco design referent used throughout the car. The visual expansion is created with a color progression of Mauve Mist to Wildrose to Amethyst gloss decorative laminates on the inset ceiling.

The same palette forms table tops and decorative inlays on Northsea-clad cabinets, with gloss Black accents.

WILSONART Satin Brushed Natural Aluminum clads pocket dividers which open to pass-through service from the kitchen.

The results: A delighted client, whose goals have been fully realized through fine design partnered with WILSONART materials.

WILSONART Color Quest... color that keeps pace with your ideas.

HOTLINE:

If you have a project you think belongs in this space, please call on us.

For product samples, literature and technical information, call toll-free (within the continental USA):

1-800-433-3222

In Texas: 1-800-792-6000

Circle 71 on inquiry card

WILSONART®
BRAND DECORATIVE LAMINATE

Bringing new solutions to the surface™

Photo: Craig Anderson

For High Traffic Doors, Specify Von Duprin...

and get High Style in the Bargain!

When you need exit devices for high traffic doors, you don't have to give up style to get durability

Von Duprin offers you a choice of two attractive touchbar series — the 33 and 99. Both are exceptional combinations of design and value, giving you great flexibility, with latching applications that include mortise, vertical rod or rim type, for narrow or wide stiles . . . and options that let you custom design your job.

Both designs are UL listed for Accident Hazard and Fire Exit Hardware (A Label). And they meet handicapped access codes.

Smooth, easy-operating Von Duprin 33 and 99 series touchbar exit devices look so good you won't believe how tough they're built. If you looked inside you'd find the rugged construction and precision fit that show skilled craftsmanship.

At Von Duprin, door exit hardware is our only business. So when you need exit devices that will give your project style without sacrificing durability, give us a call . . . or write for complete information. Von Duprin, Inc., 400 W. Maryland Street, Indianapolis, IN 46225, (317) 637-5521

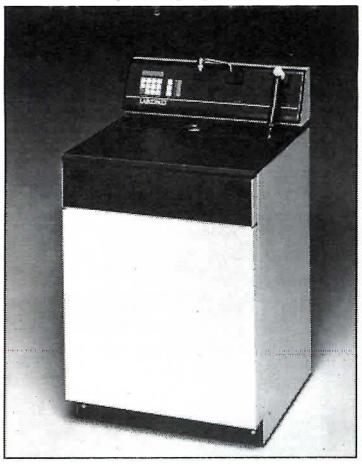
"The Safe Way Out"

VON DUPRIN

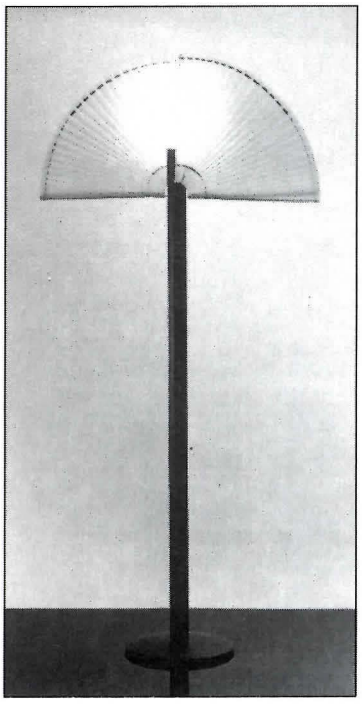
Part of worldwide Ingersoll-Rand

Circle 72 on inquiry card

Continued from page 155



Purification system
The manufacturer's *WaterPro Work Station* produces purified water using reverse osmosis and deionization technologies. The unit is fully enclosed in an insulated cabinet and features a touch-sensitive digital control panel that monitors the purification process. The *Work Station* is available in freestanding and undercounter models. Labconco, Kansas City, Mo.
Circle 320 on reader service card



Floor lamp
The *Butterfly* floor lamp, designed by Tobia Scarpa, features a weighted aluminum base, an anodized aluminum stem in black, gray, or yellow, and two elliptical glass panes. Light intensity can be varied by opening or closing the lamp's white fan-shaped diffusor and adjusting its dimmer switch. Atelier International Lighting, New York City.
Circle 321 on reader service card
Continued on page 171

REGISTRATION NOW OPEN

Forming Economical Concrete Buildings Third International Conference

November 19, 20, 21, 1986
The Westin Hotel, Galleria Dallas, Texas

IF YOU ARE ONE OF THOSE PEOPLE WHO NEED TO KNOW the **new,** the **now,** and the **how** in forming concrete buildings, take a moment to read on.

You're invited to register early for the Third International Conference on Forming Economical Concrete Buildings. "Economical" as in getting more building results for the money. Start getting results by registering early for the 2½-day conference with two luncheons and an industry reception included for **$280. The fee after September 15 goes up to $345.**

Topics include skip-joist forming, air-supported forms, pumping from the bottom, new formwork perspectives, architectural concrete, tilt-up, mixes, forming materials, accessories, techniques, strategies to accelerate construction. Conference speakers are tops in the field.

Sponsors and cosponsors of the conference include American Concrete Institute, Concrete Reinforcing Steel Institute, National Ready Mixed Concrete Association, Portland Cement Association, American Plywood Association, *Concrete Construction*, *Engineering News-Record*, *Architectural Record*, *Building Design & Construction*, *Building Economics*, cement associations of Australia, England, Colombia, Europe.

Complete the coupon to register or order additional information. Call Karen Gonzalez or Glen Simon, PCA, 312/966-6200 if you have questions.

To: Glen Simon, Forming Conference, Portland Cement Association
5420 Old Orchard Road, Skokie, Illinois 60077-4321

☐ I'm an EARLY BIRD. Enclosed is my check for $280.
Confirm and send package of information.

☐ I'm interested. Send details.

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Company _____

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City _____ State _____ Zip _____

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STAINLESS STEEL from stock

Dawson Metal introduces a new way to design stainless entrances, store fronts and interiors. The new way is: economically. Dawson's stainless steel stick system is created from standard components much like an aluminum system, so it's available from stock, factory to contractor, within days. Most importantly, because it is an off the shelf system, the high cost of custom fabrication is significantly reduced. But quality is not compromised. All frame sections and door parts are made from 16 gauge stainless, with satin or mirror finish. And factory supplied hardware is as rugged as any available today. For additional information on the stainless stick system that's easy to spec, order and install, call or write:

Dawson Metal

Dawson Metal Co., Inc. • 825 Allen St. • P.O. Box 0278 Jamestown, N.Y. 14702-0278

716-664-3815

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Beadex wants to keep you rom cracking up. . .

o Beadex is offering their tape-on trim!

adex Tape-On Corners are e floating. Unlike Nail-On rners, Tape-On Corners l not crack along the outer ges if stud movement or inkage should occur.

- Ease of application
- No nail pops
- Shallower bead means less shrinkage
- More rust resistant
- Better surface for joint compound adhesion
- Paint adheres better to bead portion than to bare steel
- Available in 90 degree and ¾" radius corners

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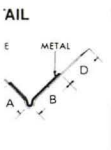
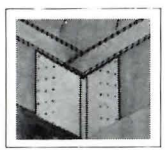
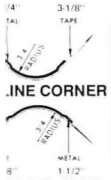
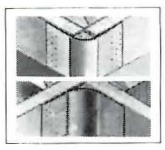




STYLE	DIMENSIONS A	B	C	D	DESCRIPTION
B-1	15/32"	23/32"	5/8"	5/8"	BEADEX OUTER CORNER Concealed Metal. Galvanized metal corner bead laminated to exposed paper tape offers an excellent bond for joint cement and paint. For use on any thickness of wallboard.
B-1W	19/32"	27/32"	13/16"	13/16"	
B-1XW	23/32"	31/32"	11/16"	11/16"	



.INE CORNER



BEADEX SOFTLINE

Softline corner and cove products help create the appealing, rounded inner and outer corners favored by many designers. Paper tape laminated to galvanized metal assures excellent adhesion. The ¾" radius adapts well to either ½" or ⅝" drywall.

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ıfactured under U.S. Pat. No's. 2,649,890, 2,593,859
r patents pending.

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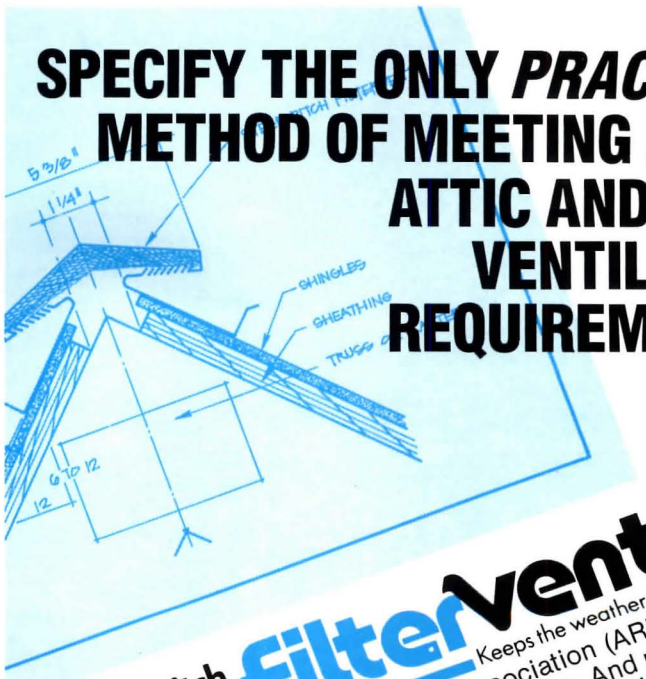
SPECIFY THE ONLY *PRACTICAL* METHOD OF MEETING ARMA ATTIC AND ROOF VENTILATION REQUIREMENTS.



AV steep pitch **filterVent**™ Keeps the weather out

The Asphalt Roofing Manufacturer's Association (ARMA) recognizes the importance of proper ventilation. And most shingle warranties *require* 1 square foot of net free ventilation per 300 square feet of attic floor. Filtervent provides proper ventilation on *every* pitched roof . . . even 12/12 pitch roofs.

SPECIFY THE BEST. FilterVent

AIR VENT INC.

4801 N. Prospect Rd., Peoria Heights, IL 61614

PHONE TOLL FREE 800/AIRVENT

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Merillat's all-new "WhisperGlide" system offers 30% more drawer space plus full-stop "WhisperGlides" on all slide-out trays.

Dramatic kitchens are yours for the specifying.

Beautiful kitchens that are durable, space-efficient, and still allow you creative freedom are possible with kitchen cabinetry from Merillat.

A perfect example is our new Springbrook kitchen cabinetry. Springbrook's traditional recessed-panel doors are finished in the natural oak style that's popular in today's new home designs.

Springbrook is available with Merillat's complete line of convenience accessories to make the best use of your available space. Lazy Susans, appliance garages and custom storage units build extra convenience into any kitchen design.

Springbrook is built with the Merillat quality your builders and homeowners expect. Wipe-clean "leisure-time" interiors, solid oak frames, tru-square corner gussets, slide-out trays, adjustable shelves and more are standard in all Merillat cabinetry. Plus, Springbrook includes Merillat's new WhisperGlide™ system, the most advanced side-mounted roller drawer guide in the industry.

And, like all Merillat cabinetry, Springbrook can be matched with modular shelving components to create any custom design you have in mind in any room of the house. This complete system is just waiting for your creative flair.

Before you specify your next kitchen or bath, write for our free literature kit. Then compare our price, construction and quality...we're confident you'll specify Merillat cabinets.

See our catalog in Sweets, the Source, Section 11.27c/Mer.

BUILDER'S NO.1 CHOICE

Merillat®

AMERICA'S CABINETMAKER™

Merillat Industries, Inc., Adrian, MI 49221

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The natural way to use prefinished siding.

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Availability is no problem.
Panel 15 is stocked by 12 of the Weyerhaeuser Distribution Centers and 68 distributors across the country. Often we can pull right from inventory. But you can always count on a maximum of 15-day delivery in *49 states. Even Alaska.*

The system is the *thing*.
With us, you work with a complete building system. Not just a single panel. Panel 15 comes in a wide variety of sizes, in five standard colors, and eight special order colors — all with color-matched accessories. The total system includes moldings, adhesives, calking, and nails. The works.

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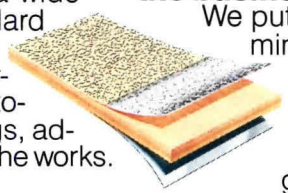

We put a 10 mil textured aluminum layer on one side and a 1.5 mil reflective insulating foil on the back side. The center is 5/16″ exterior-grade structural plywood. Fire rating: Class A.

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Weyerhaeuser

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As nearly all architects are now aware, TCS (Terne-Coated Stainless Steel) is chrome-nickel stainless coated on both sides with an 80% lead/20% tin alloy.

But the question may still remain as to why any coating of stainless is desirable.

In the first place, the application of such a coating creates an end product which is demonstrably superior to both stainless and copper in durability and corrosion resistance. Secondly, TCS weathers to an attractive and uniform warm gray. Stainless, on the other hand, retains its original bright finish indefinitely, while the weathering of copper has been highly unpredictable in recent years. TCS also solders perfectly without special preparation whereas copper must be pretinned, and stainless requires a time-consuming and relatively costly procedure to obtain a leak-proof joint. Furthermore, TCS, unlike copper, is neutral toward other metals.

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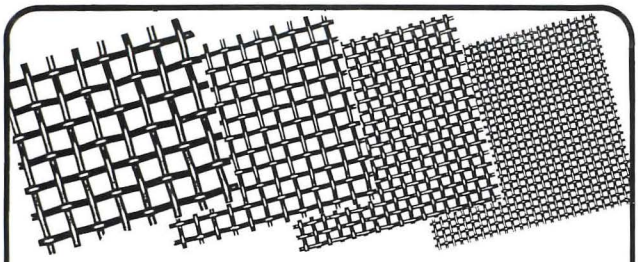

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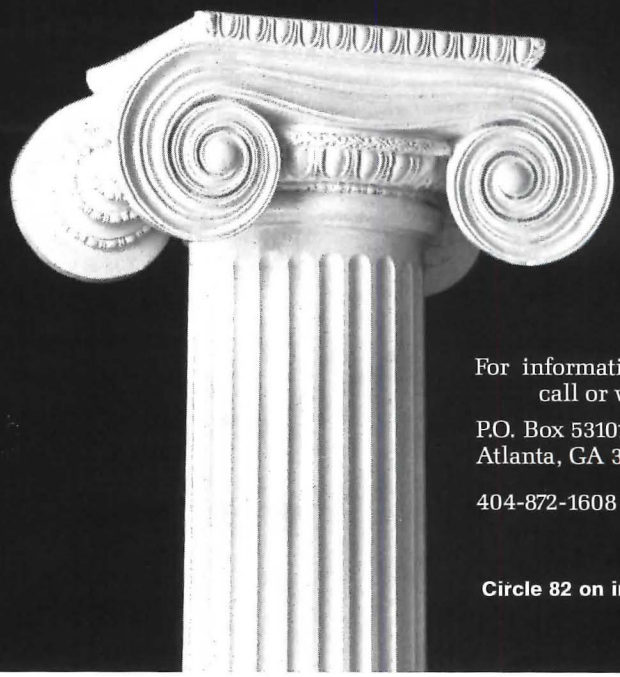

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Shakertown Siding helps you watch your waste.

The idea that you don't have to be concerned about how much waste a siding produces is just a bunch of garbage.

For starters, who do you suppose pays for all those scrap pieces that wind up in the dumpster?

But, what's even worse about waste is all the ime it wastes. Which is one of the best things about Shakertown.

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Shakertown comes in 8-foot lengths cut precisely o stud spacing. So your crews can spend their time ammering, not sawing.

And, since Shakertown is guaranteed to be 100% clear heartwood cedar, you won't have to perform surgery on any knotted, checked or warped pieces.

Shakertown has some other ways to make haste, as well. Like a self-aligning groove on the back. And direct-to-studs nailing where your building codes allow it.

But don't think our waste has gone to our head. There's still one far more important reason why you should side with us.

It's the way we look. And the way our look sells.

So, as it turns out, no waste not only makes haste. It also makes the sale.

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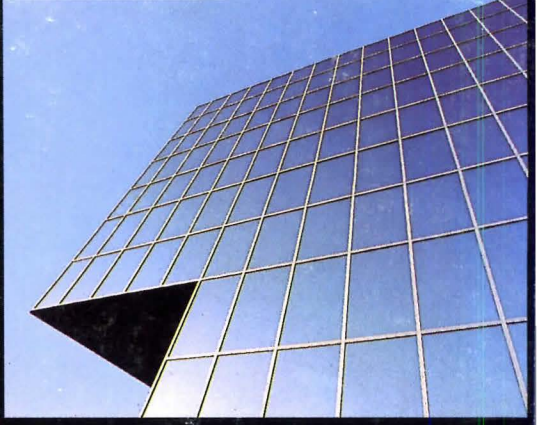

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