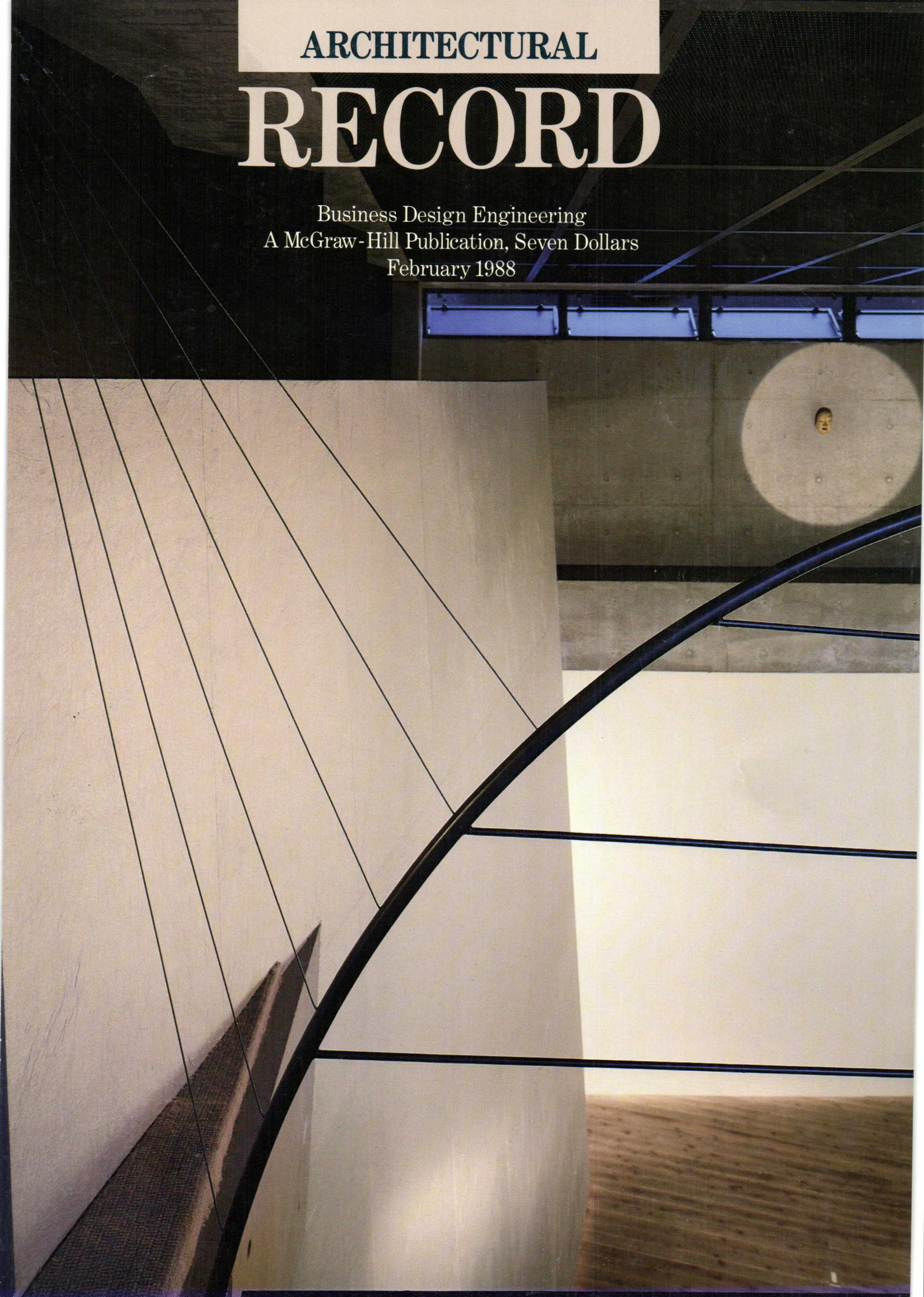
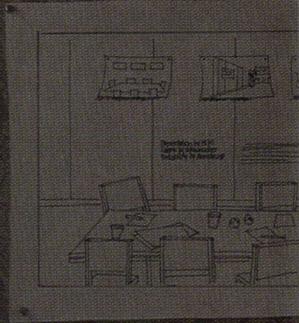


ARCHITECTURAL  
**RECORD**

Business Design Engineering  
A McGraw-Hill Publication, Seven Dollars  
February 1988



Presentation by ad manager. Fabric by Boris Kroll.



## Tackability and acoustics by Armstrong.

When covered with your choice of fabric, Armstrong custom wall panels introduce color and texture to a space. They visually soften hard surfaces.

But they also offer benefits uncommon to most fabric-covered walls.

Panel edge detailing. Acoustics. Tackability. Impact resistance. Features that make an Armstrong wall work harder.

So for an attractive blend of fabric and function, call 1 800 233-3823 and ask for Custom Walls.

Circle 1 on inquiry card

The Armstrong logo, featuring the word "Armstrong" in a bold, sans-serif font with a white circle around the letter "A".

Your editorial in the November, 1987 issue of ARCHITECTURAL RECORD, page 9, spoke of John F. Hartray's address to the National Institute for Architectural Education (NIAE) in which he questioned the success of university education and discussed the possible substitution of formal training with the apprenticeship system.

Now John Hartray is a wonderfully charming and disarming raconteur of why the old days were somehow better than present days. We do not live in the Middle Ages, however, nor in Hartray's and the editor's words, the age of "fearless youngsters" who began their careers by directly participating in the making of buildings." There are many craftsmen available today who can lay brick and block and stone, place reinforcing steel, assemble wall sections, place ducts and conduit, install glass and hang ceilings, but that does not make them architects—even though they are able to make buildings. There are many craftsmen who can create drawings that show how these pieces are to be assembled, but that does not make them architects. What architect "master" today does things the way his predecessors did? Today's architect must be able to understand and absorb new knowledge, apply it, and be able to converse intelligently with all who are a part of the building process in today's complicated building environment.

We would probably all like life to be simpler than it is. We would like people to show us how to do something and then go do it. But in today's world actions do not replicate themselves so easily. Apprenticeship is important, and it is being seriously addressed in the IDP program, which most architectural educators and professionals support. No educator would

argue that everything can be learned in the university. It seems silly to argue that the answer to educating architects who must cope with the complex realities of our time can be found by simply having them do as we do. It is tempting to grab for easy solutions to what is a most difficult problem, educating professionals for an uncertain future. Let's not add to the uncertainty by supporting simplistic solutions to the problem of education.

*John Thomas Regan  
President ACSA  
Robert M. Beckley, FAIA  
President Elect ACSA  
Washington, D. C*

*Neither John F. Hartray nor I stated or implied that architectural apprenticeship should replace formal university education in architecture. The editorial simply urged that apprenticeship once again become an option. Furthermore, neither of us suggested that apprentices as such should "do as we do." Nor do we support apprenticeship as a solution to the problems of architectural education. It would be hard to find anyone who would be that simplistic. —M. F. S.*

It was a great pleasure to read your editorial regarding the apprentice system.

Frank Lloyd Wright, recognizing the value of the apprentice system, started the Taliesin Fellowship in 1932, as an experiment in the education of architects. The idea has evolved over the past 55 years to become the Frank Lloyd Wright School of Architecture. Just as in Mr. Wright's time, today's students work side-by-side with professional architects directly participating in the making of buildings.

In August 1987, the school was accredited as a single-purpose

institution with the North Central Association of Colleges and Schools. This recognition was especially satisfying because it affirmed our special nontraditional approach to architectural education. Our Master of Architecture degree program is currently a candidate for accreditation with the National Architecture Accrediting Board.

As you noted, it is nearly universal that aspiring architects must be equipped with a degree from an accredited program in order to sit for the licensing exam. This all but eliminates the apprenticeship system of education. The Frank Lloyd Wright School of Architecture demonstrates that acquiring a degree and apprenticeship can be successfully combined.

*E. Thomas Casey  
Director of Education  
Frank Lloyd Wright  
School of Architecture  
Taliesin West,  
Scottsdale, Arizona*

## Correction

In the design news item entitled "New lights on old Broadway" [RECORD, November 1987, page 73], credit for the 1580 Broadway Building should have been attributed to Mayers & Schiff Associates PC, Architects in association with Schuman Lichtenstein Claman Efron.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, and WESTERN ARCHITECT AND ENGINEER) (ISSN0003-858X) February 1988, Vol. 176, No. 2. Title © reg. in U.S. Patent Office, copyright © 1988 by McGraw-Hill, Inc. All rights reserved. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science and Technology Index, Engineering Index, The Architectural Index and the Architectural Periodicals Index.

Every possible effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

*Executive, Editorial, Circulation and Advertising Offices:* 1221 Avenue of the Americas, New York, NY 10020.

*Officers of McGraw-Hill Information Systems Company:* President: Richard B. Miller, executive vice presidents: Frederick P. Jannott, Construction Information Group; Russell C. White, Computers and Communications Information Group; J. Thomas Ryan, Marketing and International. Group Vice Presidents: Frank A. Shinal, Dodge; Peter B. McCuen, Communications Information; Ted R. Meredith, Construction Information; J. Burt Totaro, group vice president and publisher, BYTE publications. Senior Vice Presidents-Publishers: Laurence Altman, Electronics; David J. McGrath, ENR. Vice Presidents: Robert D. Daleo, Controller; Fred O. Jensen, Planning and Development; Michael J. Koeller, Human Resources; Julia Lenard, Systems Planning and Technology.

*Officers of McGraw-Hill, Inc.:* Harold W. McGraw, Jr., chairman; Joseph L. Dionne, president and chief executive officer; Robert N. Landes, executive vice president, general counsel and secretary; Walter D. Serwatka, executive vice president, chief financial officer; Shel F. Asen, senior vice president, manufacturing; Robert J. Bahash, senior vice president, finance and manufacturing; Frank D. Penglase, senior vice president, treasury operations; Ralph R. Schulz, senior vice president, editorial; George R. Elsinger, vice president, circulation.

*Associated Services/McGraw-Hill Information Systems Co.:* Sweet's Catalog Files (General Building, Engineering, Industrial Construction and Renovation, Light Residential Construction, Interiors), Dodge Building Cost Services, Dodge Reports and Bulletins, Dodge/SCAN Microfilm Systems, Dodge Management Control Service, Dodge Construction Statistics, Dodge regional construction newspapers (Chicago, Denver, Los Angeles, San Francisco).

Subscription rates for personnel of Architectural, Engineering, Interior Design, Design and other directly related firms and students thereof, are as follows: U.S. and U.S. Possessions \$39.00; Canada \$39.00; all other countries \$125.00. Single copy price for Domestic and Canadian: \$7.00; for Foreign: \$12.00.

*Change of Address:* Forward changes of address or service letters to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 2025, Mahopac, NY 10541. Provide both old and new address; include zip code; if possible attach issue address label.

*Guarantee:* Publisher agrees to refund that part of subscription price applying to unfiled part of subscription if service is unsatisfactory.

*Copyright and Reprinting:* Title © reg. in U.S. Patent Office. Copyright © 1988 by McGraw-Hill, Inc. All rights reserved. Where necessary, permission is granted by the copyright owner for libraries and others registered with the Copyright Clearance Center (CCC) to photocopy any article herein for the base fee of \$1.50 per copy of the article plus 10 cents per page. Payment should be sent directly to the CCC, 21 Congress Street, Salem, MA 01970. Include code with request: ISSN0003-858X (\$1.50 + .10). Written permission must be secured for any other copying. Write Reprint Manager for such permission at address below, or to obtain quotations on bulk orders.

*Subscription List Usage:* Advertisers may use our list to mail information to readers. To be excluded from such mailings, subscribers should send a request to: ARCHITECTURAL RECORD, Mailing List Mgr., P.O. Box 555, Hightstown, NJ 08520.

*Publication Office:* 1221 Avenue of the Americas, New York, NY, 10020. ARCHITECTURAL RECORD (ISSN0003-858X) published monthly with additional issues in April and September by McGraw-Hill, Inc. Second-class postage paid at New York, NY and additional mailing offices. Postage paid at Windsor, Ontario, Canada. Registration Number 9617.

*Postmaster:* Please send address changes to: Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 2025, Mahopac, NY 10541. THIS ISSUE is published in national and separate editions. Additional pages or separate editions numbered or allowed for as follows: Eastern Section 32Ea through 32Ed. Western Section 32Wa through 32Wd. Sunbelt Section 32Sa through 32Sb.

Formica® brand 2000X® building products are cast, homogenous surfacing materials, consistent in color, texture and finish throughout their entire thickness. Available in six solid colors and characterized by a transparency resembling fine stone, 2000X building products inspire creativity in application and fabrication.

Formica Corporation is pleased to announce a competition, open to all professional architects, designers and students, to explore 2000X building products' design potential. Entries should be for the design of a conceptual

# FORMICA

## FROM TABLE TO TABLESCAPE

object—"From Table to Tablescape"—no larger than 2'x2'x2' or the equivalent

# CALL FOR ENTRIES

volume. The object must be created of or surfaced with 2000X

## the next material for the next generation

building products. Designs must reflect innovation and outstanding demonstration of 2000X building products' unique properties of texture, mass and coloration. Entries are due Wednesday, April 27, 1988.

Scale models of winning entries will be built and exhibited at NEOCON XX, June 14 - 17, 1988, along with designs by the following invited entrants:

**Dan Friedman; Steven Holt & Michael Pinkus; Mark Mack; Eric Moss; Brian Murphy; Patrick Naggar; George Ranalli; Jessie Reiser & Nanako Umemoto; Frederic Schwartz & Ross Andersen; Peter Shiro; Mark Simon; Bruce Tomb & John Randolph; Billie Tsien; Tucker Viemeister & Lisa Krohn; Simon Ungers, Laszlo Kiss & Todd Zwigard.** Formica Corporation will arrange for photography, publication and a traveling exhibition.

## PRIZES

1st Prize, \$5,000; 2nd Prize, \$3,000; 3rd Prize, \$2,000; Student Prize, \$1,000 plus a \$1,000 contribution to the student's school. Citations will also be awarded.

**MALCOLM HOLZMAN** Principal, Hardy Holzman Pfeiffer

**KATHERINE MCCOY** Co-Chair, Design, Cranbrook Academy of Art

**EDWIN SCHLOSSBERG** President, Edwin Schlossberg, Inc.

**MICHAEL SORKIN** Critic, *The Village Voice*

**JOSEPH VALERIO** Principal, Mastro-Valerio, S.p.A.

Judging will take place in early-May 1988. Winners will be notified, confidentially, before May 15. Jury decisions are final.

Open to all architects, interior, industrial, product designers and students enrolled in accredited American schools at time of entry. Entrant(s) may enter one or more ORIGINAL submissions. Designers must not be under contract to or in negotiation with any manufacturer for this design. Design is not to be submitted to any manufacturer until after winners are publicly announced. Designs must not have been executed for academic credit. Formica Corporation employees, consultants and their immediate families

important features, design assumptions, entrant's pseudonym and student status, if any. Submissions will be returned to all entrants. To maintain anonymity, no identification of the entrant may appear on any part of the submission, except on one 3" x 5" index card which must be sealed in an envelope labelled with entrant's pseudonym and attached to the back of the foam board. Information on the sealed card must include entrant's pseudonym, name, address, phone number, and student or professional status.

### ELIGIBILITY & REQUIREMENTS

are not eligible. Publication Agreement: Winning entrants agree to make available further information, original drawings or model photographs, as necessary, for publication and exhibition. Formica Corporation retains the world rights to first publication of winning designs.

Designer retains rights to actual design. Entries are due April 27, 1988. Drawing(s) and/or model photo(s) of the design should be mounted on one side only of one 14" x 17" foam board presented horizontally. No actual models will be accepted. Each submission must include a 5" x 7" index card mounted on the front side of the board with the following information typed on it: intended dimensions of the design, color, brief description of

Colors are limited to the 6 FORMICA brand 2000X building products colors. For free samples and a competition poster, call the following toll-free number 800/524.0159, 800/624.1914 (in NJ). Entrants are strongly urged to call for samples to fully appreciate this new material.

ADDRESS  
ENTRIES TO:  
**SUSAN GRANT LEWIN**  
DESIGN COMMUNICATIONS INTERNATIONAL, Inc.  
SUBSIDIARY OF FORMICA CORPORATION  
501 BROADWAY, SUITE 1519  
NEW YORK, NY 10036

Circle 3 on inquiry card

from table to tablescape

Formica Brand 2000X

Building Products The Solid that Shapes the Future

PHOTOGRAPH: GEORGE HEIN DESIGN: DRENTTEL DONTJE PARTNERS

# COLORFUSION™

## Ceramic-On-Steel Melds High-Tech With High Style.

Only AllianceWall makes COLORFUSION™ a unique breed of ceramic-on-steel panels as beautiful as they are functional. By a new, proprietary process, we can fuse a limitless range of colors, patterns or graphics into the wall surface.

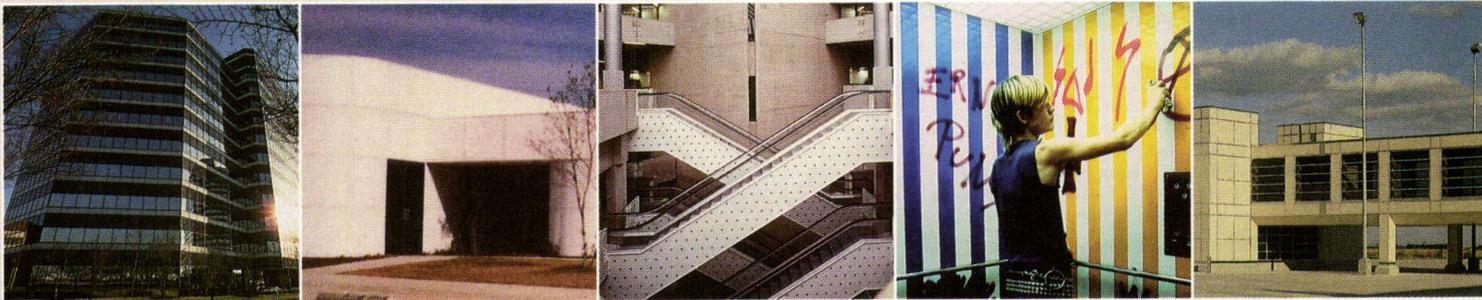
AllianceWall's COLORFUSION panels are virtually indestructible. They won't chip, crack, mar or fade, and they are scratch-, heat- and chemical-resistant.

They're easier and less expensive to install than conventional wall surface materials. And they're maintenance-free.

Nice to know that ceramic-on-steel now gives you endless design possibilities. And that it will keep your design intact...a long way into the future. Write or call for more information on American-made COLORFUSION panels.

AllianceWall Corporation • Box 920488 • Norcross, Georgia 30092 • (404) 447-5043 • TWX 810-766-0436 • FAX 404-446-5951

 ALLIANCEWALL®



AllianceWall's ceramic-on-steel panels, *left to right*: Exterior, Paragon Building, Houston; Exterior, CIGNA Regional Office Buildings; Interior applications and escalators, Liege Hospital, Belgium; Graffiti-resistant walls, Elevator Manufacturers Worldwide; Exterior and jetways, Cedar Rapids Airport.

Circle 4 on inquiry card

Editor  
*Mildred F. Schmertz, FAIA*

Managing editor  
*Carolyn De Witt Koenig*

Executive editor  
*Douglas Brenner*

Senior editors  
*Herbert L. Smith, Jr., FAIA*  
*Grace M. Anderson*  
*Margaret F. Gaskie*  
*Paul M. Sachner*  
*Charles K. Hoyt, AIA*  
*Darl Rastorfer*  
*Deborah K. Dietsch*

Associate editors  
*Karen D. Stein*  
*James S. Russell, AIA*

Assistant editor  
*Joan F. Blatterman, new products*

Design director  
*Alberto Bucchianeri*  
*Anna Egger-Schlesinger, senior associate*  
*Muriel Cuttrell, illustration*  
*J. Dyck Fledderus, illustration*

Design consultant  
*Massimo Vignelli*

Editorial production manager  
*Annette K. Netburn*  
*Adrienne FitzGerald, assistant*

Editorial consultants  
*George A. Christie, Jr.*  
*Jonathan Barnett, FAIA, AICP*

McGraw-Hill World News  
*Peter Gall, director*

Group circulation director  
*Richard H. Di Vecchio*

Circulation manager  
*Phyllis Josselson*

Director of business and production  
*Joseph R. Wunk*

Director of marketing  
*Camille H. Padula*

Assistant to publisher  
*Elizabeth Hayman*

Publisher  
*Ted R. Meredith*

*Inquiries and submissions of work for publication may be addressed to any editor, though the editors listed below have a special responsibility for the subject areas named:*

*Deborah K. Dietsch, interior design, houses*  
*James S. Russell, design news and competitions*  
*Charles K. Hoyt, business*  
*Herbert L. Smith, architectural education*  
*Darl Rastorfer, engineering*  
*Joan F. Blatterman, new products and product literature*

Letters/calendar, 4  
Editorial: Good for contractors, bad for owners, worse for architects? The new General Conditions (AIA Doc. A 201) appears to have problems, 9

## Business

News, 35  
Practice: The new AIA General Conditions—a flawed document that architects will use at their peril, 37  
Finance: Last year's stock crash will make 1988 construction tougher, but not disastrous, 45

## Design

News, 65  
Design awards/competitions, 76  
Observations/books, 79  
Brave new worlds, 80  
*By Michael Sorkin*

In this issue, 93

**Boys Club of Jersey City, New Jersey, 94**  
*Oppenheimer, Brady & Vogelstein, Architects*

**599 Lexington Avenue, New York City, 100**  
*Edward Larrabee Barnes, Associates, Architects*

**Three buildings in Japan, 108**  
*Atsushi Kitagawara + ILCD, Inc., Architects*

**Building Types Study 649: Housing, 122**  
*Portfolio by Davis, Brody & Associates, Architects*

## Engineering

**Roofing: a pressing need for commitment, 136**

**Computers: Technology, 147**  
*Software reviews for architects, By Steven S. Ross*

New products, 153  
Product literature: Roofing, 157  
Calendar, 173  
Manufacturer sources, 176  
Classified advertising, 181  
Advertising index, 162  
Reader service card, 165

Cover:  
395  
*Atsushi Kitagawara + ILCD, Inc., Architects*  
*Photographer: ©Paul Warchol*



# Power Tools

**N**ow you have the tools to build a desktop design solution that's easy to learn, fast, and *powerful*—thanks to three powers in the computer industry.

**Start with a Macintosh® II computer**—the most powerful, most expandable member of the Macintosh family. It can handle your most complex design tasks with ease. And, with access to thousands of productivity programs, it **still** takes care of business.

**Add VersaCAD®.** VersaCAD's "Macintosh Edition"—the first high-performance CAD

software written especially for the Macintosh—provides all the design power and flexibility you'll need. And it's so easy to learn, you can "point and click" your way through complex designs in no time at all.



2124 Main Street,  
Huntington Beach,  
CA 92648

**Finish with Hewlett-Packard.**

When high-quality input demands outstanding output, plug into an HP DraftMaster drafting plotter. The powerful DraftMaster delivers superior line quality on a variety of media—in just minutes.

**Power Tools.** The only hardware and software you'll need to build the most powerful, easy-to-learn desktop design system around.

For more building tips, just call **(714) 960-7720** and ask for our "Power Tools" brochure.

---

## Good for contractors, bad for owners, worse for architects? The new General Conditions (AIA Doc. A 201) appears to have problems

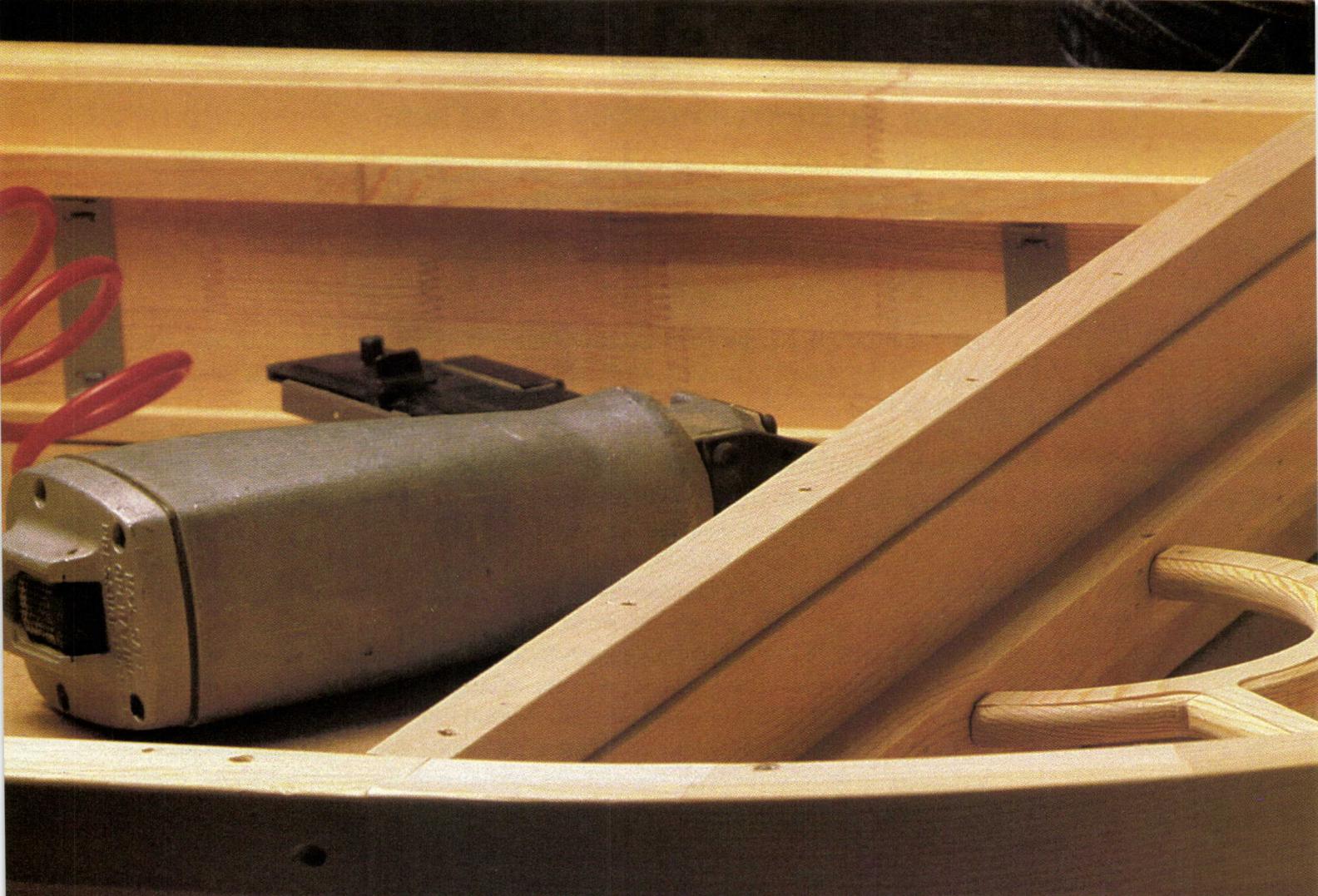
Attorney Carl M. Sapers, making his debut this month as a RECORD legal columnist (pages 37-43), takes aim at the 1987 edition of the AIA's standard forms of agreement for the construction industry. A201/87 fails in many significant ways, he asserts, "an event of grave concern to all of us connected with the design and construction of buildings in America." His criticism, elaborated in the precise language of a good lawyer, loses its subtlety in the following summary, but I nevertheless offer it as a lure to his text.

Whom does the 1987 edition fail, in Sapers's opinion, and how? The architect's client, for example, may be disserved by legal language that appears under certain conditions to give the general contractor the right to keep the owner off the premises. A201/87 may also unnecessarily complicate, to the owner's disadvantage, the sequence of procedures leading to the arbitration of disputes between owner and contractor. Furthermore, in the new edition, the owner loses his right to terminate if the contractor demonstrates insolvency, but the contractor may terminate if dissatisfied with the owner's evidence of financial resources for the project. It is now easier for a contractor, in trouble because he has seriously underbid the work, to void his contract with the owner. And in the current document the owner loses his protection against subcontractor liens. In Sapers's view, A201/87 creates confusion in its definition of the responsibility assumed by the general contractor, compounding misunderstanding as to the circumstances under which the contractor is required to indemnify the owner and architect.

The architect, disadvantaged by such injury to his client, could suffer additional setbacks. Unfortunately, earlier editions of A201, as well as the present one, provide documentary evidence for, in Sapers's words, "a court to support the proposition that the architect's duties are for the contractor's benefit and that therefore the contractor may sue the architect directly if the architect's performance injures the contractor." Not until the 1987 edition, however, has A201 gone so far as to enable even subcontractors and material suppliers to recover against the architect. According to Sapers, it would appear that the drafters of the new document have lost sight of the fact that the architect's duty "is to a client/owner, not to every other participant in the construction process."

Sapers believes that the 1987 edition's inconsistencies respecting the architect's responsibility toward hazardous materials expose him to liability in this regard. And that A201/87 increases the possibility that architects will be considered liable for workmen's injuries related to defective construction means and methods, including temporary lifts and scaffolding.

Sapers's meticulous critique is not the first the AIA has received, nor will it be the last. He and other defenders of the architectural profession are joined in urging the AIA to bring forth an improved edition of A201 in '88. Next month RECORD will publish a commentary on Sapers's arguments by the AIA. Architects should be looking forward to the Institute's rebuttal. *Mildred F. Schmertz*



# WHAT YOUR MIND CAN CONCEIVE, OUR HANDS CAN CREATE.

Marvin Round Top windows are available in more sizes and shapes than any other arched windows.

If you want a casement window with a Round Top, we'll build you one.

If you want an 18-foot high Round Top with true divided lites, we'll build you one of those.

Or, if you want an Oval Round Top six-feet wide, we'll build that for you, too.

---

EVEN WE DON'T KNOW HOW MANY KINDS OF ROUND TOP WINDOWS WE OFFER.

---

That's because our Round Top windows are made to order. And virtually every day, somebody asks us to build one in a new size or shape.

In fact, if we can't build the window you have in mind, it probably can't be built.

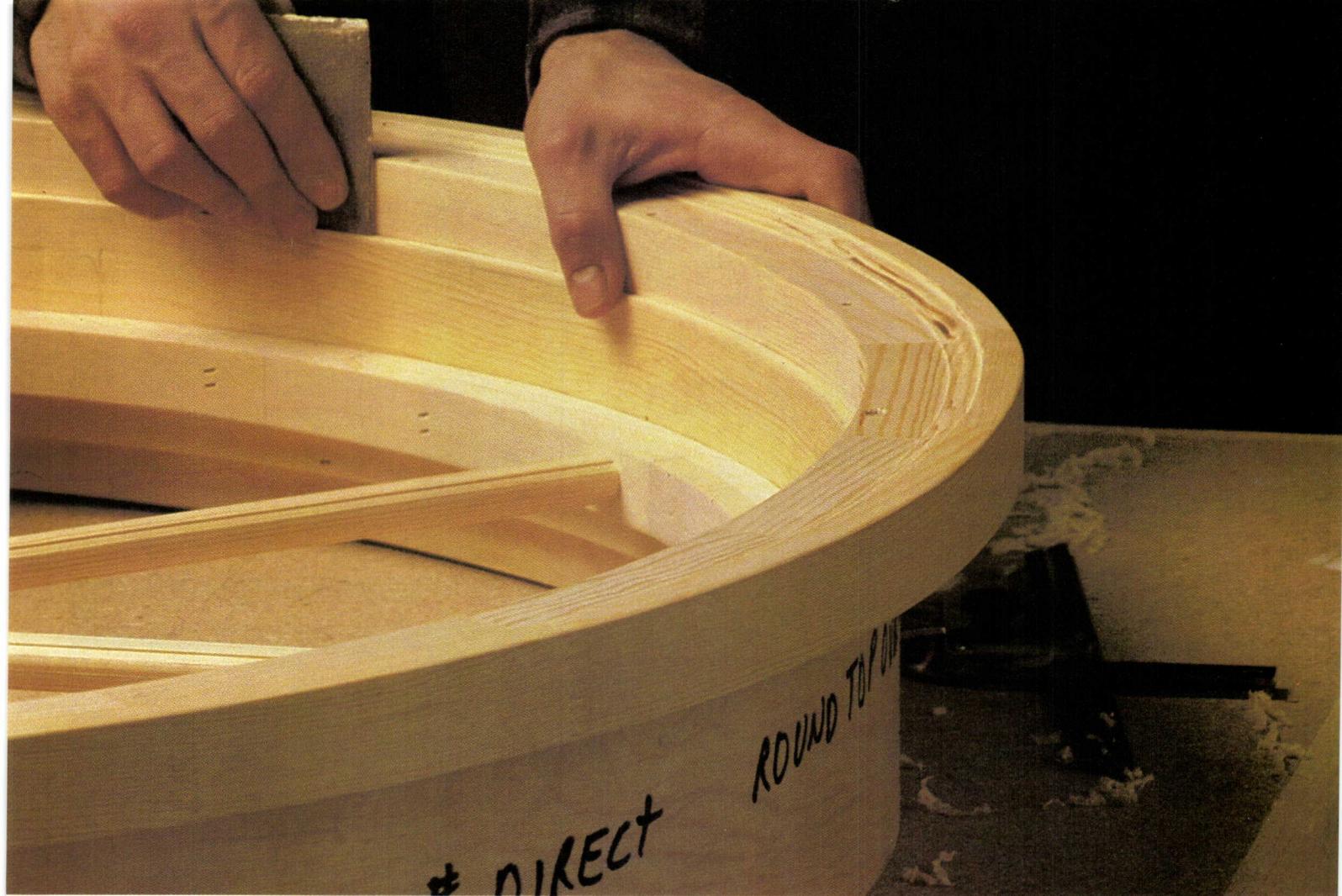
---

NO MATTER HOW DIFFERENT THEY APPEAR, OUR WINDOWS ARE ALL MADE THE SAME WAY.

---

Carefully. With much of the work done by hand.

Designs, such as Gothic true divided lites or a hub with spokes, are handfitted to ensure proper fit.



And matched pieces of Ponderosa pine are meticulously fitted together to form a sturdy arch that will accept a beautiful stain-and-varnish or

paint finish. A polycron exterior finish is also available. (This finish has been proven to last at least as long as aluminum or vinyl cladding.)

THEY'LL STILL SEEM BEAUTIFUL AFTER THE HEATING BILL ARRIVES.

They're available with either half-inch or one-inch insulated glass. We offer triple glazing for increased energy conservation. Storm sash are also available.

For more information, send us the coupon, or call 1-800-346-5128 toll-free. In Minnesota, 1-800-552-1167.

Send to: Marvin Windows  
Warroad, MN 56763

Name \_\_\_\_\_

Company \_\_\_\_\_

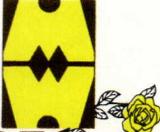
Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

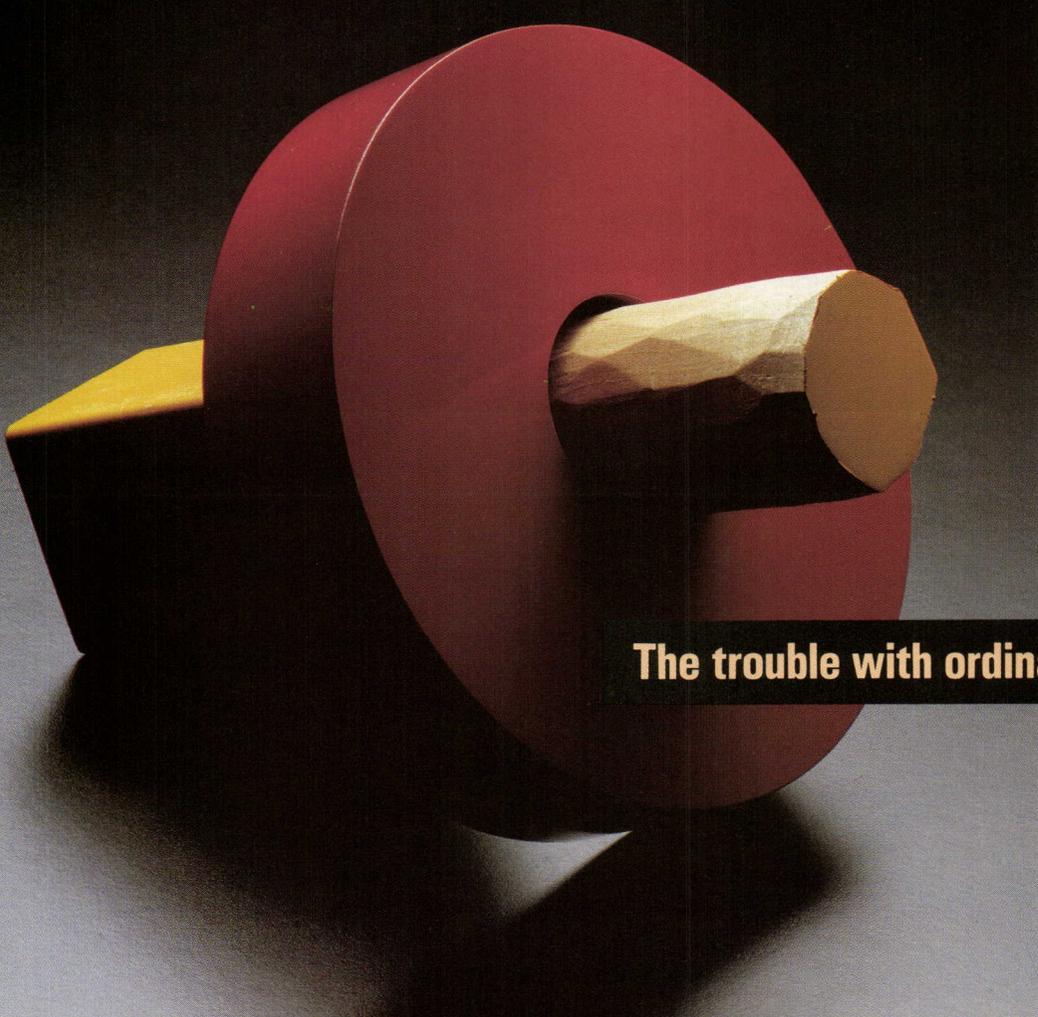
Zip \_\_\_\_\_

AR-4007-2

**MARVIN**   
**WINDOWS**  
**ARE MADE**  
**TO ORDER.**



Circle 7 on inquiry card



**The trouble with ordinary furniture systems.**

Your client wants one design statement throughout the office—on a tight budget. You know that's practically impossible, but...

Or, your client wants to merge three divisions into one and install a furniture system with a high-profile design statement—but keep all existing furniture. You can visualize the aesthetic disaster, but...

Or, your client thinks that by just putting a hot new look into a cold old building, you can transform it into a silk purse. You know better, but...

So you compromise, compromise, compromise.

No longer.

Introducing new **Elective Elements**.<sup>®</sup>

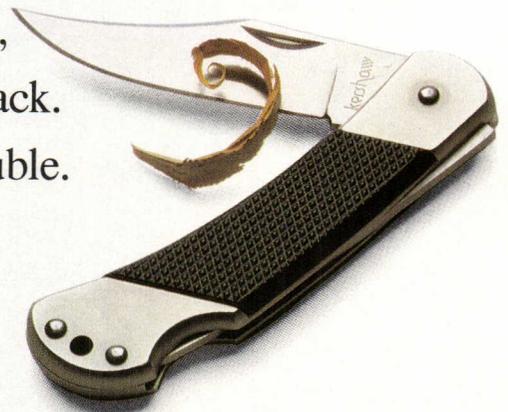
A furniture system that gives you literally thousands of combinations to play with. A choice of wood or non-wood components. A list

of surface materials that includes eighty-three fabric selections, eleven wood veneers, six laminates, and eight paint colors. Even the option of radial or rectilinear top caps and worksurface edges. Not to mention sophisticated wire and cable management. The result: unheard-of design flexibility.

The job of specification, installation, and reconfiguration is a cinch—in the Steelcase tradition. Also

worth noting: the price spread between wood and non-wood components means your clients can afford to use new **Elective Elements** top to bottom, front to back.

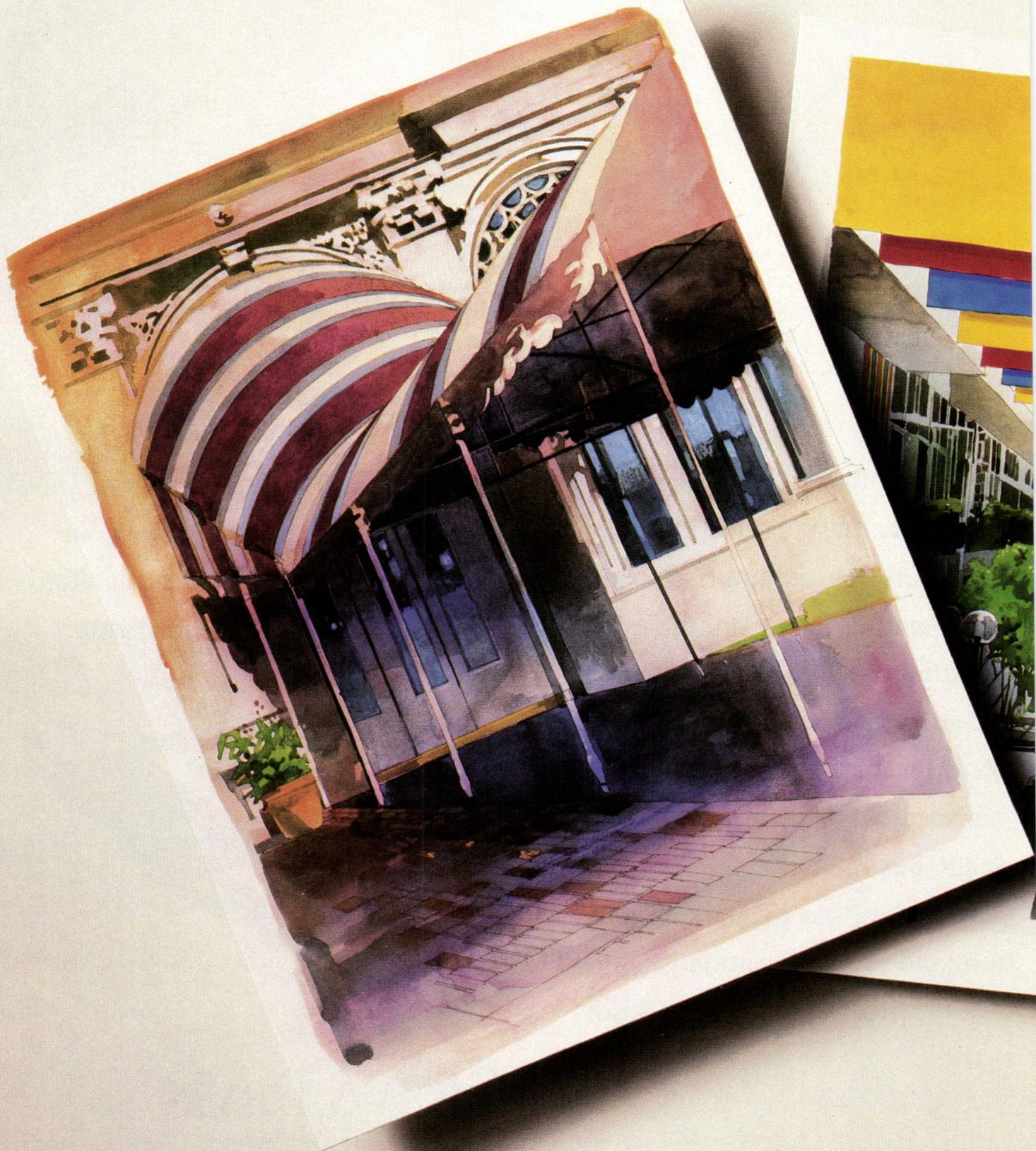
No trouble.



# Stow & Davis

*A Division of Steelcase Inc.  
The Office Environment Company*

# Sunbrella Firesis Designers' Bigg



# Takes Care Of t Hang-Ups.

Finding fabrics for awnings and other fabricated items hasn't been easy. Because any materials that have met commercial fire codes have been stiff, shiny and even plastic looking.

But with Sunbrella Firesist, you can have the look and feel of canvas you've wanted. Because our fabric hasn't been coated with chemicals or laminated with glossy resins. And it isn't made out of vinyl, either. Instead, it's actually woven from self-extinguishing fibers. What's more, these fibers are made of color-pigmented modacrylic. Which means they provide rich, saturated hues. Hues that are locked in so they can't be faded or washed out.

Even better, Sunbrella Firesist won't crack, peel, harden, mildew or rot. And it's highly soil resistant, too. In fact, we're so sure it'll live up to these promises, it comes with a 5-year limited warranty. And it has yet another advantage: It's highly breathable, making it very energy efficient.

Of course, Sunbrella Firesist also meets the toughest codes like the requirements of the National Fire Protection Association and the California Fire Marshal's test.

Which means you can put it up just about anywhere.

So find out about our wide selection of solids and patterns. Contact your local fabricator or Glen **Sunbrella Firesist**<sup>®</sup>  
Raven Mills, Inc., Glen Raven, NC 27215, 919/227-6211.



®Sunbrella Firesist is a registered trademark of Glen Raven Mills, Inc. ®SEF-PLUS is a registered trademark of Monsanto Chemical Company.

**I knew  
I should have  
specified Sloan  
the first time.**



He thought he was finished with this job. But the non-Sloan flush valves he originally specified didn't work right. They kept pulling loose at the stop and wouldn't stay in adjustment. They leaked at the handle, at the main seal, and they were impossible to regulate.

It's true he saved the building owner a few dollars on the substitute valves. But that really doesn't mean much now. All of the valves have to be replaced, and he's right back where he started. With one important exception, of course.

This time he specified Sloan flushometers, what he should have done in the first place. Unlike substitute valves, Sloan flushometers are built to last. And last.

In fact, today an increasing number of buildings equipped with substitute products are being refitted with Sloan flushometers. Because Sloan's rugged, tamper-proof flush valve design assures quiet,

dependable operation. Consistently. And with only minimal, routine maintenance, Sloan flushometers provide efficient service for years—an important consideration.

Because unless a flush valve says "Sloan," there's no telling how much time or money it will take to get the job done right. So why take a gamble on look-alike products? Put the odds in your favor, and specify Sloan. The first time.



**SLOAN VALVE COMPANY**

10500 Seymour Avenue, Franklin Park, IL 60131

*A Tradition of Quality and Pride*

Circle 10 on inquiry card

# Sooner or later, the quality that doesn't show, shows up.



*Precision engineered pre-fabricated flashings eliminate the need for caulking.*

**P**rofessionals know the real test of product value is performance. They know that there is no substitute for trouble-free installation and long-term client satisfaction. VELUX® roof windows and skylights prove their worth on every count:

- Competitive Prices
- Expertly Crafted for a Weathertight Fit
- Precision Engineered Prefabricated Flashings
- A Full Line of Sunscreening and Remote-Control Accessories
- No Annoying and Expensive Call-Back Problems
- On-time Deliveries

VELUX roof windows and skylights lead the competition on every continent. It's no wonder leading architects and builders around the world specify VELUX products for their most important projects.

You can give your work the quality it deserves with VELUX roof windows and skylights. They are available in prices ranging from just \$110.00 to \$500.00. Get all the facts from your local building supply, or send for "The Complete Guide to Roof Windows and Skylights," a FREE 28 page full color brochure with photos and technical information, and a price list.

**VELUX®** The world leader in roof windows and skylights.

©1987 VELUX-AMERICA INC. \* VELUX is a Registered Trademark.

Mail this coupon. We'll send you a free copy of "The Complete Guide to Roof Windows and Skylights," and price list within 24 hours.

VELUX-AMERICA INC.  
P.O. Box 3268  
Greenwood, SC 29648

VELUX-CANADA INC.  
16817 Hymus Blvd.  
Kirkland, P.Q., Canada H9H 3L4

FREE 28 page full color brochure

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

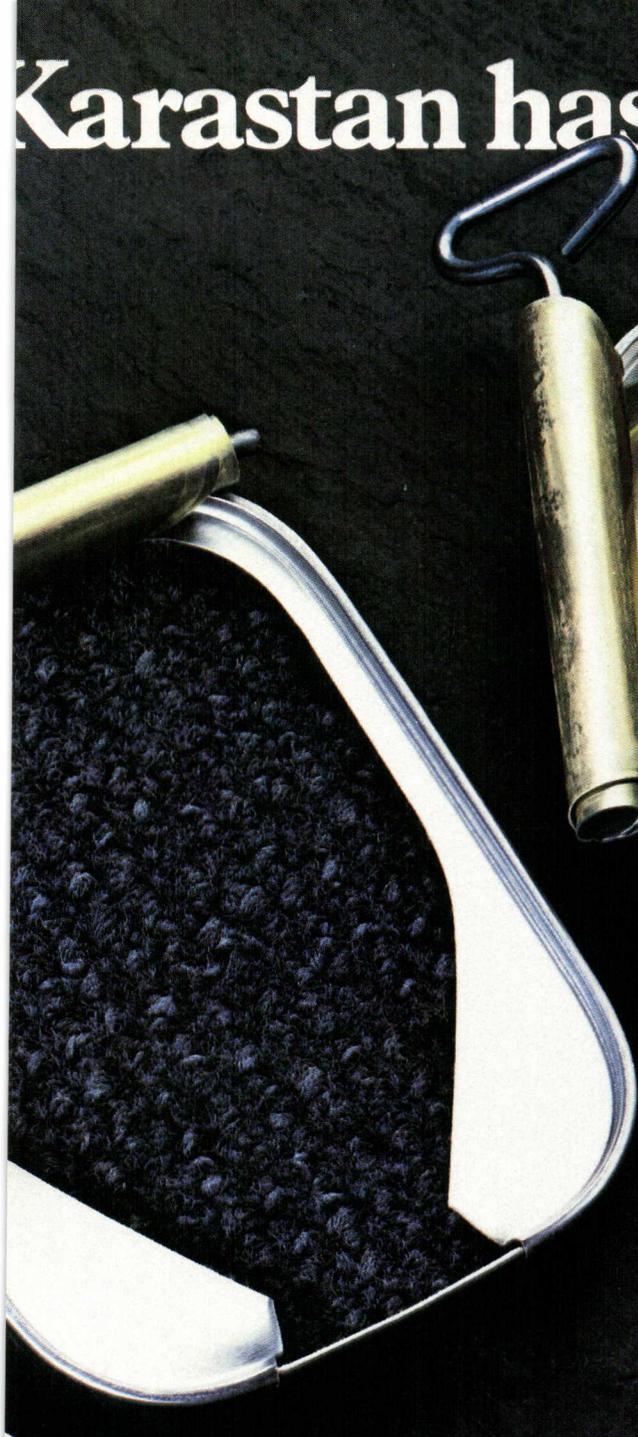


AR288.

Introducing the densest carpet



# Karastan has ever woven.



Karastan has woven over 119,000 tufts of yarn into each square yard of this extraordinarily dense new High Spec Series. The yarns used, DuPont ANTRON® and ANTRON® XL nylon, add static-control and soil-resistance to these outstandingly durable styles.

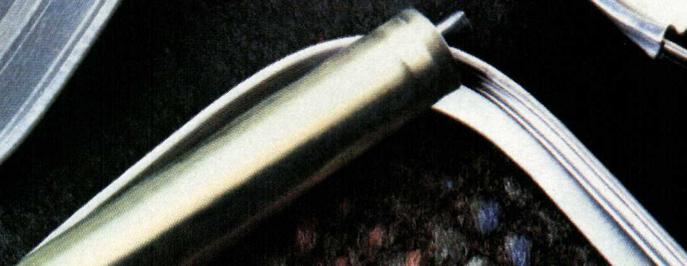
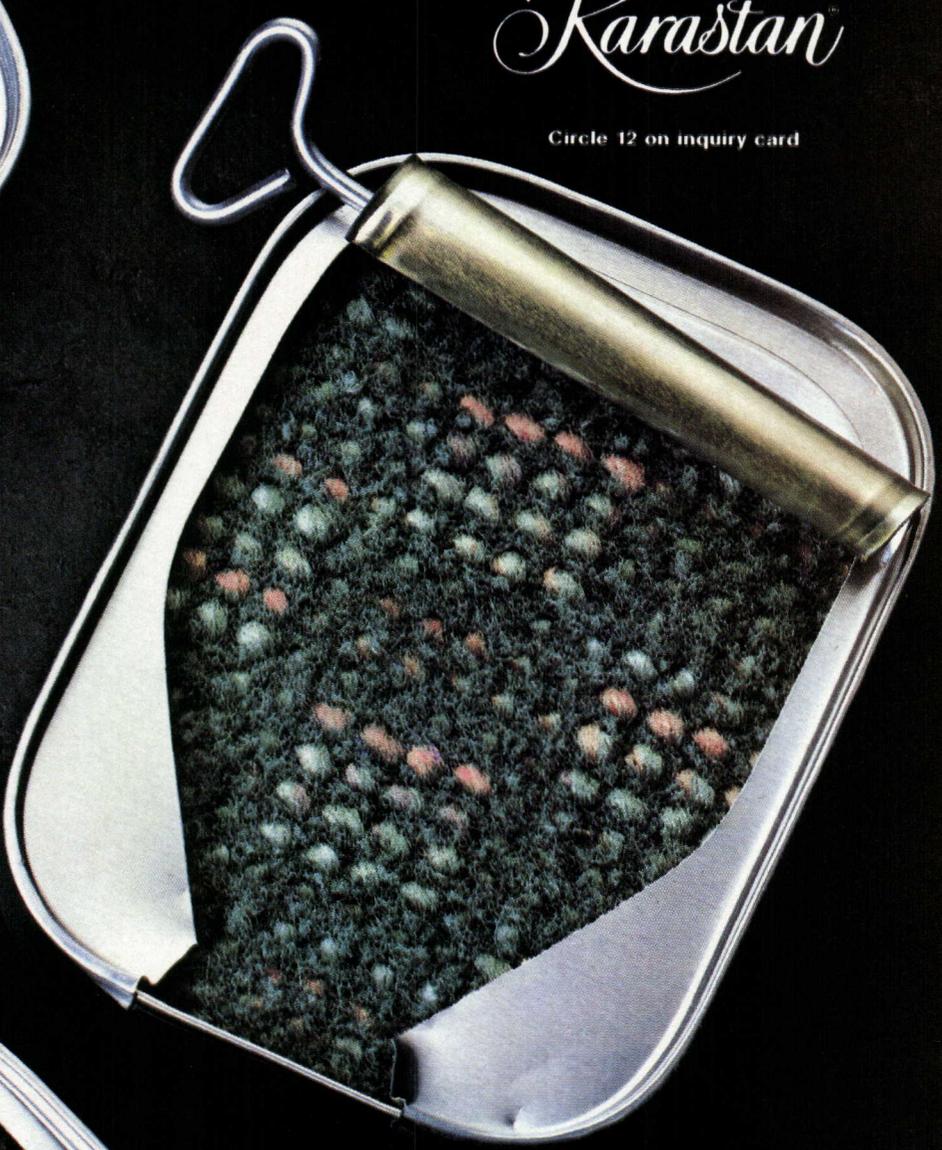
The rich, understated, coordinated colorings and tailored small scale designs work alone or with each other.

To put it more succinctly, never before has so much style been packed into so little space.

Karastan Rug Mills, a Division of Fieldcrest Cannon, Inc.

*Karastan*

Circle 12 on inquiry card



The beauty of Corian® is not  
but to your



# limited to the kitchen and bath, imagination.



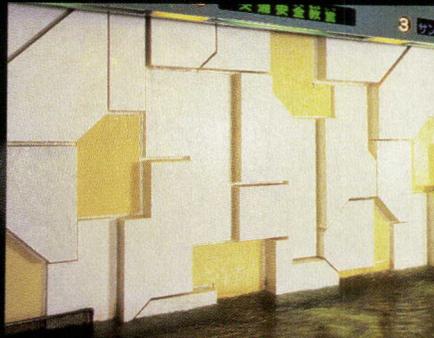
U.S. Post Office Station E, Chicago, Illinois  
Interior design by Loebel Schlossman and Hackl



The Inn at Morro Bay, Morro Bay, California  
Designed by Mabel Shults & Associates



Conference Table, Bayswater, Western Australia  
Designed by Christou and Vuko



Sun Piazza Aquarium, Japan  
Designed by Kodo Neriko

There's one solid surface product so extraordinary that it's even used by artists and sculptors.

It's CORIAN—made only by DuPont.

CORIAN can be carved like stone and worked like fine hardwood for total design flexibility. And your work can be ageless, because CORIAN has the elegance of marble, the permanence of stone yet is far more practical.

That's why you'll find CORIAN in hotels, offices, banks, hospitals, food service facilities and university housing.

And now, in addition to the classic CORIAN colors, there's the natural stone look of new Sierra, first in the CORIAN Designer Collection.

**A 10-YEAR WARRANTY. ONLY FROM DUPONT.**

CORIAN is the only solid surface product proven in commercial applications for over 15 years. It holds up so well that DuPont confidently backs CORIAN with an unprecedented 10-year limited warranty. Nothing compares with it in the solid surface category.

So to make a lasting impression—remember CORIAN. It stands up beautifully, even to the rigors of public use.

Let the artist in you come out. For free literature about designing with CORIAN, write to DuPont CORIAN, Room G-50810 Wilmington, DE 19801. **Circle 13 on inquiry card**

## CORIAN

The solid miracle from DuPont.



*The Newhouse Group*

FREESTANDING WORK SPACES

# An inspired definition

Newhouse Group furniture—mid-priced, freestanding furniture that makes it easy to create a space to fit the work habits of anyone on the organization chart.

Sixteen sizes of Table Desks (in laminate, re-cut, or full-cut veneers) coordinate with matching storage alter-

natives—Pedestal Drawers, Lateral Files, Side Cars, Credenzas, Bow Front Cabinets.

An economical option to paneled cubicles...

A way to introduce more space and openness to the office...

An innovative approach to

the problems caused by frequent reorganization...

Compatible with all Herman Miller open-plan products—the Action Office and Action Office Encore systems and Ethospace interiors...

Seating, systems, and now freestanding furniture—the beginning of yet another

trend in the art of furniture design. From the company that understands how people work in an office...

For more information call 1-800-851-1196 from anywhere in the U.S. or Canada.

1987 IBD Gold Award, Desk and credenza category

*of versatility.*





# Double dribble.

A leaky roof can floor you with repair costs and inconvenience. For a roof system that performs the way it's supposed to right from the start, come to the company with over 130 years' experience. Manville.

We supply the most complete systems package: membranes, insulations and accessories.

We train and support the Manville Approved Roofing

Contractors who will install these roof systems.

And we give you the option of the industry's most comprehensive guarantee program to back up your investment.

When it comes to shutting out the elements, nobody does it better. For more information, contact Manville, P.O. Box 5108, Denver, Colorado 80217-5108.

Keeping the water out.  
That's what this business is all about.

## Manville

# VULCRAFT EXPERIENCE SIM



As the only national company in the United States that designs and manufactures joists, joist girders and steel deck, Vulcraft works with the relationships between joists and deck every day. So, they have a depth of experience that can often simplify many seemingly complex problems.

The Woodfield at the Crossing office complex in Indianapolis, Indiana is a good example. The open web configuration of the steel joists was ideal for the use of suspended,



*5-foot spacing between Vulcraft joists permits easy installation and maintenance of heat pump units.*

energy efficient heat pumps. But, the 3' spacing between joists which is needed to support standard floor deck was not adequate for the installation and maintenance of the heat pumps. So, 5' spacing were initially specified wherever the heat pump units would be installed. However, varying the joist spacings would make construction complicated, time consuming and expensive. This is where Vulcraft was able to help.

# SOLVED A COMPLEX PROBLEM.



The Woodfield at The Crossing office complex in Indianapolis used 216 tons of Vulcraft joists and 169,000 sq. ft. of Vulcraft steel deck.

After reviewing the specifications and discussing the job with those involved, Vulcraft engineers came up with a solution that reduced the number of joists needed, sped up erection time, and stayed within budget. Drawing on their extensive application experience, Vulcraft recommended changing the joist size from the original "H" series to the "I" series in order to provide a uniform 5' spacing throughout the job. In addition, Vulcraft proposed using 2" composite deck instead of standard  $\frac{9}{16}$ " form deck. Thus, a deeper slab was created without using any more concrete and transitory vibration was reduced.

By taking advantage of Vulcraft's experience as well as their products, construction of the Woodfield office complex was greatly simplified. In addition, Vulcraft's recommendations added greater value and flexibility to the overall design.

For more information about 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 05100/VUL and 05300/VUL.

P.O. Box 637, Brigham City, UT 84302 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

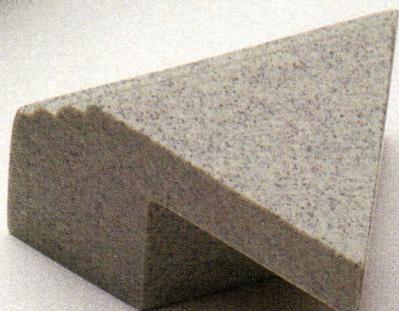
## VULCRAFT

A Division of Nucor Corporation

Owner: Phillip R. Duke & Associates; Contractor: Duke Construction Management Inc.;  
Architect: Cooper Carry & Associates, Inc.; Consulting Engineer: K. Gene Miller Inc.;  
Steel Fabricator: Ferguson Steel Co.



# ELEGANT LUXURY AND SOLID DURABILITY CAPTURED IN ONE REMARKABLE SURFACE.



INTRODUCING  
A BETTER  
MOUSETRAP..

## FOUNTAINHEAD™

BY NEVAMAR

Feeling trapped by the meek performance and plain appearance of conventional surfaces? Or the mousy colors and limited sizes of most solid surfacing materials? Catch Fountainhead...the most exciting new surfacing material in years!

Fountainhead is a solid, nonporous material specially developed by Nevamar with color and pattern throughout its thickness. Its soft translucence gives it a natural warmth and elegance. Yet Fountainhead is extremely durable with high resistance to heat, impact, mildew, stains and chemicals. It can be cut, drilled and shaped for all types of applications. It's easy to maintain, too. Incidental damage can be quickly and easily repaired to keep its new appearance indefinitely.

**A broad range of colors and patterns**—Fountainhead gives you a choice of rich patterns, including Black Matrix, Rose Matrix, Verde Matrix, Gray Mist Matrix and Medium Gray Matrix...plus elegant solids: Pewter Gray, Sand Beige, Classic White and Architectural

White. A soft, luxurious satin (matte) finish is standard. But the surface may also be buffed to a polished appearance.

**Unlimited edge possibilities**—Fountainhead can be routed and shaped: rounded for softness; squared or angled

for drama. It's beautiful used alone or in combination with other materials such as wood or metal.

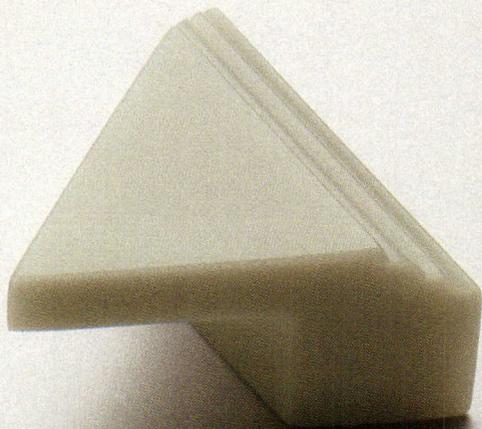
**Wide sheets cut costs**—Choose 30" or 36" widths, in ¼", ½" or ¾" thicknesses. (Matrix is available in ½" and ¾" thicknesses only.) Wider sheets minimize waste and often eliminate seams in large applications.

**Class I Fire Rating**—Fountainhead is accepted as safe for use in all public and private spaces.

**Escape to Fountainhead!** Don't be trapped by the limitations of other materials. Fountainhead lends a unique, subtle elegance to commercial and residential applications including countertops, vanities, tub and shower surrounds, tabletops, wainscoting, thresholds and more. For literature and samples, call 1-800-638-4380. In Maryland, call 1-800-233-9485. Or write: Nevamar Corporation, 8339 Telegraph Road, Odenton, Maryland 21113.

**NEVAMAR®**  
DECORATIVE SURFACES

Circle 18 on inquiry card





Streams Of Consciousness. It's time you got your feet wet



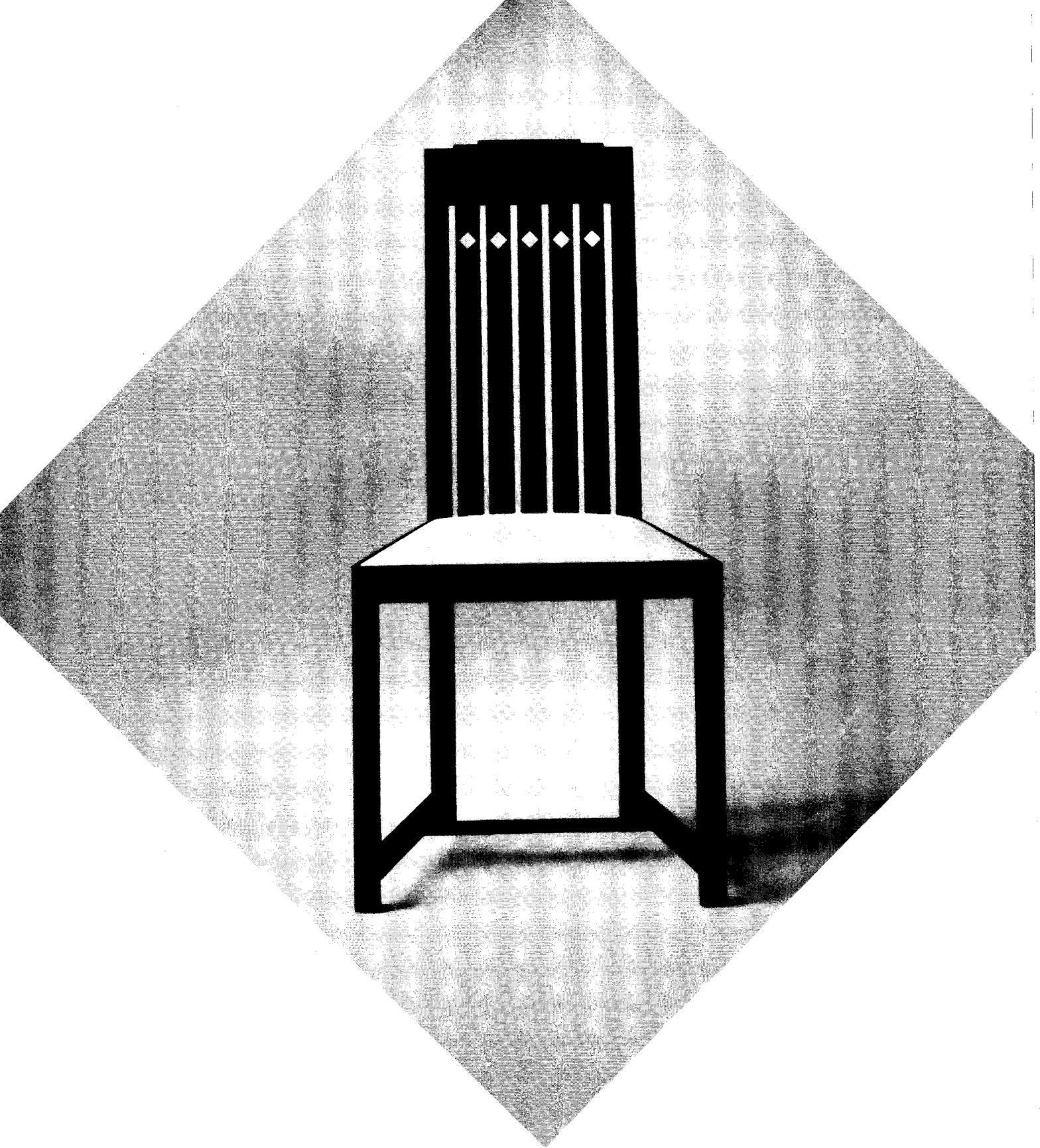
**DU PONT  
ANTRON**

Call 1-800-848-4400 (ext. 261) for the unequalled pioneer in custom pattern tufting.

**Circle 19 on inquiry card**

- Name/Title \_\_\_\_\_
- Firm/Address \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_
- For more information, call or write:  
Karastan/Bigelow® Commercial Carpet  
P.O. Box 9111, Cathedral Station, Boston, MA 02118
- AR 028M





### **BLOOMSBURY: THE DRAMA UNFOLDS**

Responding to critical acclaim, Ron Carter's stellar series now includes chairs, barstools, dining/conference tables, occasional tables and case pieces. Produced by Miles/Carter in England for Interna Designs in the United States.

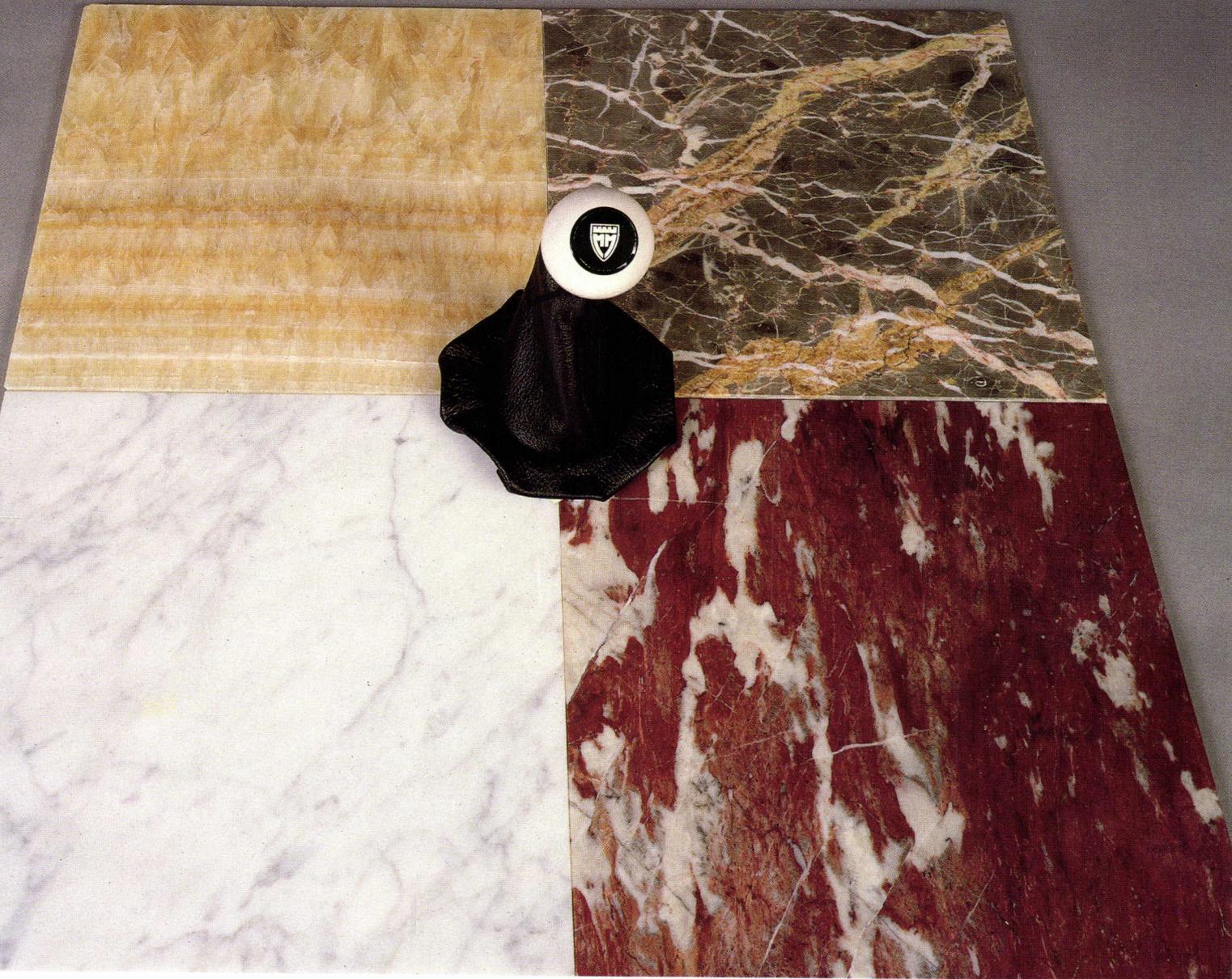
# INTERNA DESIGNS U.S.A.

6-168 Merchandise Mart, Chicago, Illinois 60654 1-800-INTERNA

Showrooms in Chicago, New York and Los Angeles; representatives in Atlanta, Boston, Cincinnati, Dallas, Denver, Detroit, Miami, Minneapolis, Philadelphia, Phoenix, San Francisco, Seattle, St. Louis and Washington D.C.

Circle 20 on inquiry card

## FOUR ON THE FLOOR



Marble Modes smoothly handles shifting styles. For over 30 years interior designers and architects have depended on Marble Modes products. Marble Modes manufactures and imports over 130 selections of travertine, granite, marble, slate and onyx from five continents. All can be seen at the new Marble Modes showroom. Call or write for more information today.

### **MARBLE MODES INC.** CONCEPTS START IN MARBLE

15-25 130TH STREET, COLLEGE POINT, NY 11356  
718/539-1334 TELEX: 428819 MAR MOD 

Circle 21 on inquiry card

Architectural Record February 1988 32Ea

# SHELTERING AMERICA FOR OVER TWO CENTURIES.

In the eyes of the world, Buckingham-Virginia Slate is the most highly regarded natural roofing material in America. Non-fading, this blue-black, grade A slate was specified by Thomas Jefferson, and is still selected by eminent architects our time for its permanence and natural beauty.

Because it blends with either contemporary or traditional architecture, and helps blend both, it's a natural, superlative choice.

for residential work, churches, schools, commercial and municipal jobs.

If you want to create shelter that will be around for generations to come, above all, use a permanent roof of Buckingham Virginia Slate.

**Buckingham-Virginia  
Slate Corporation**

4110 Fitzhugh Avenue • P.O. Box 11002  
Richmond, Virginia 23230 (804) 355-4355

*Robert E. Payne, Architect, Richmond, Virginia  
Generations will appreciate the distinctive, handmade quality, natural cleft and texture of Buckingham-Virginia Slate roofing products that make any roof enduringly beautiful. Call or write for our free catalog and specifications catalog today.*

Circle 22 on inquiry card

**Restoration vinyl siding  
isn't what it used to be.**

Some people are going to see the words "vinyl siding" and turn the page. Their loss. Because, in our view, the news that Restoration® vinyl siding now comes in five distinctive styles and profiles is pretty heady stuff.

Naturally, the more sensitive and perceptive among you who've used Restoration already know how well the smooth, low-gloss finish works with any good design. So we didn't re-invent it. We just gave it a deeper shadowline and made it stronger and easier to install, while we were at it.

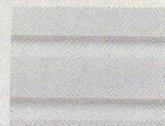
If that news alone doesn't make you want to run out and side something, think of how we've made the whole process of choosing Restoration a lot more interesting. Now when you want the industry's best-looking siding, you can choose 3" clapboard, 3" or 4½" Dutch Lap, 3" rolled edge, or even 6" beaded. It's all Restoration. All premium vinyl. All from Wolverine.

Of course, Wolverine's been giving builders and architects smart choices for some time. No news there. But now we're up to 18 siding panels in all. And siding's just the beginning.

There's a lot more to talk about – and one supremely easy, toll-free way to do it. Because Restoration may not be what it used to be, but our number is. 1-800-521-9020.



Cambridge 3"  
Clapboard



Cumberland Mill  
3" Dutch Lap



Stockbridge 4½"  
Dutch Lap



Monterey 3"  
Rolled Edge



Chapel Hill 6"  
Beaded

 **Wolverine Technologies**

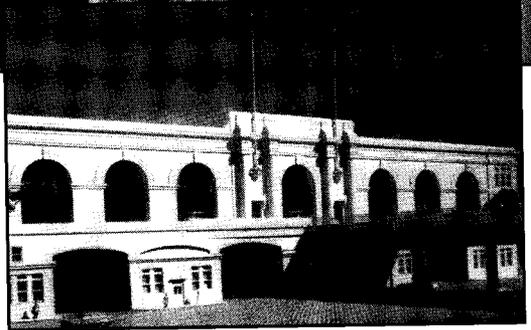
# 6th ANNUAL Northeast Construction Expo & Conference

**FREE  
ADMISSION**  
THIS IS YOUR FREE PASS. SAVE \$10!  
(PHOTOCOPIES ACCEPTED)

# THE BIG '88 SHOW



**March 22-24, 1988  
World Trade Center Boston**



- Over 500 Exhibits
- Commercial Interiors Showcase
- COM-STRUCT '88 Computers & Software
- WorkMatch Center™ - New Work Opportunities
- Free F.W. Dodge "Future Jobs" Report
- Exhibitors' Rebates, Discounts and "Show Specials"
- 30-Session Conference
- **BIG SHOW BONUS** - Sign-up to qualify for FREE edition of the 1988 Blue Book Contractors Register and subscription to Construction Products Review.



**BRING THIS PASS FOR FREE EXHIBITS ADMISSION**

**SIXTH ANNUAL  
NORTHEAST  
CONSTRUCTION  
EXPO &  
CONFERENCE**

*America's Biggest All-Construction Expo & Conference -  
The Construction Event of the Year!*

**March 22-24, 1988 - World Trade Center Boston**

Sponsored by *THE BLUE BOOK CONTRACTORS REGISTER,  
CONSTRUCTION PRODUCTS REVIEW* and *ARCHITECTURAL RECORD*

# THE BIG '88 SHOW

**FREE ADMISSION  
EXHIBITS ONLY**

(\$10 Exhibits Admission Without This Pass)

# VIP

**EXHIBIT HOURS**

Tuesday, March 22	Noon-8 p.m.
Wednesday, March 23	Noon-9 p.m.
Thursday, March 24	Noon-5 p.m.

No One Under Age 18 Admitted.

Compliments of Slater Publications, Inc. -- Photocopies Accepted

**THE BIG SHOW** Produced by  Slater Expositions, 1502 Providence Highway, Norwood, MA 02062 • (617)769-7676

# ONCE AGAIN, DRAMATIC OUTDOOR LIGHTING IS IN THE SPOTLIGHT.

## Announcing The Second Annual Night Beautiful Contest.

Beautifully lit buildings attract more attention. Especially when Florida Power & Light and the Illuminating Engineering Society stage their annual salute. Any building with exceptional lighting design in the FPL service area can be entered.

For information and entry forms that could put your building in the spotlight, call Dolores Puls, (305) 227-4323. Deadline: April 1, 1988. Sponsored by IES in cooperation with FPL.

**FPL**

**IES**

Circle 26 on inquiry card



Besteel relocatable modular classroom building completed 1974, Scottsdale, Arizona.



# There's more to a Besteel building than mere beauty.

Debating between conventional buildings and mobile-type units? Here's a third option.

A Besteel building gives you the best of both worlds: a "standard" building that's planned and constructed a different way.

**SHORT LEAD TIME, LONG LASTING TIME.** You'll be glad to know there's nothing flimsy about Besteel's metal modular systems. They've been used on campuses for 20 years and more—with far less deterioration than other types of buildings.

Yet Besteel structures can be ready in as little as 30-45 days



from the day permits are granted. There's much less disruption. That means less noise, less activity and fewer outsiders on site.

**CONTROLLABLE COSTS.** Even more important, Besteel buildings cost less than conventional buildings. You have excellent cost

control assurance because your cost options are clear before you begin. Compare that with conventional construction.

Yet cost control doesn't stop with construction. Besteel maintenance histories are better than those of conventional structures half their age.

**UNLIMITED FLEXIBILITY.** The size of Besteel buildings, along with roof lines, fascia, and exterior and interior finishes can all be customized to your needs. Very attractively, in fact.

Best of all, because Besteel buildings are relocatable, you don't have to be a fortune teller. When conditions change, Besteel buildings can follow the need.

And with Besteel's modular design, you not only have the choice of relocation, but you can easily add on, too—horizontally or vertically.

**GET MORE INFORMATION NOW.** For more information about Besteel modular school buildings,



including lease and finance assistance, mail the coupon below today, or to save time, call 1-(800)-BESTEEL

**CALIFORNIA:** 1199 So. Fullerton Road, Industry, CA 91748

**SOUTH CAROLINA:** 320 Recold Road, Walterboro, SC 29488

**TEXAS:** 3421 No. Sylvania Avenue, Fort Worth, TX 76111

Please send me information about Besteel's modular building systems. Our target completion date is approx. \_\_\_\_\_

I  am  am not interested in leasing.

Name \_\_\_\_\_ Title \_\_\_\_\_

School or System \_\_\_\_\_

Address \_\_\_\_\_

City/State/ZIP \_\_\_\_\_

Telephone (\_\_\_\_) \_\_\_\_\_

Mail to Besteel, 1199  
So. Fullerton Rd.,  
Industry, CA 91748



CALL: 1-(800)-BESTEEL

# QUALITY ROOFS BY DESIGN CARLISLE

## Unique design considerations make Carlisle's Fully-Adhered Roofing System Max Klein's choice.

"Design A" follows the irregular contours of the roofline—and fits them like a glove.

Call it unique, exciting or striking. When Max Klein, a major plastics housewares products manufacturer decided to build a new corporate headquarters, he resolved it would be unconventional, beautiful and memorable.

Designed by Detroit architect, Harvey Ferrero, the Southfield, Michigan structure is all of these.

The inventive architectural concept is difficult to describe. Its spirals, curves, slopes and angles flow with an irregular but fluid geometry.

And the first-class-plus building required a top-of-the-line roofing system. One flexible enough to follow the intricate geometry of the roofline. A system strong and reliable enough to perform outstandingly under Michigan's rigorous weather conditions. A system that is fully adhered to hold fast for thousands of tomorrow's.

### They chose Carlisle's "Design A" Fully-Adhered Roofing System.

Owner, Phil Brodak, Brodak Roofing of Wixom, Michigan observed "The roof has more angles than I've ever seen. It is flat, circular, barrel-shaped and juts in every imaginable direction.



Architect: Harvey Ferrero  
Roofing Contractor: Brodak Roofing & Sheet Metal  
Carlisle Manufacturer's Representative: Holmes Associates

And because the roof is visible, it had to have a smooth, perfect, solid black surface."

Concluded Brodak, "The Carlisle 'Design A' system is the only roof I know that could perform well under such design considerations. It was the perfect solution. Its fully-adhered roofing system allowed us to go wherever the roof went." Carlisle's roofing membranes include the standard EPDM and a new polyester reinforced EPDM. Both are available in designer colors—basic black Sure-Seal® or the innovative white-on-black Brite-Ply™.

Next time you need a roofing system try a Quality Roof by Design . . . try Carlisle.

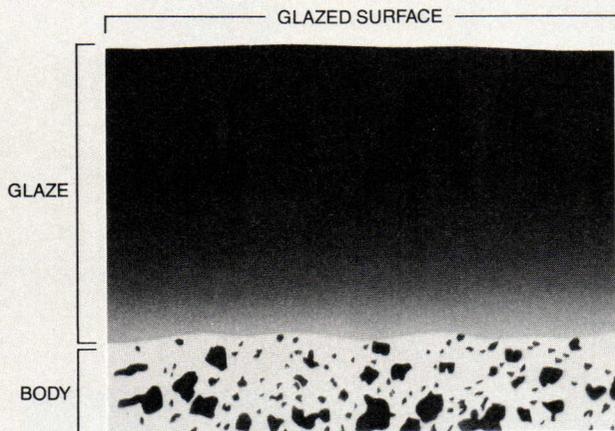
### Need more information?

Call a Carlisle representative/distributor. Or call Carlisle SynTec Systems toll free at 1-800-233-0551. In Pennsylvania, 1-800-932-4626. In Canada, 1-416-673-5557. Or write Carlisle SynTec Systems, P. O. Box 7000, Carlisle, PA 17013.

**CARLISLE**  
Carlisle SynTec Systems

© 1988 Carlisle Corporation

# MARAZZI CHALLENGES TIME



Microscopic Cross Section of Tile

**Traditional single-fired technology captures microscopic gas bubbles in the glaze. As the surface wears, these pores open and dirt becomes trapped within. Marazzi's new process allows these gases to escape and a completely dense glaze results. Resistant to acids, solvents and detergents, "Marazzi Enduro" doesn't harbor dirt and can be completely cleaned with common detergents and water. After years of wear, "Ocean" and "Gloss" can actually be re-polished to their original luster with normal maintenance equipment.**

*We'll be bringing the timeless beauty of "Marazzi Enduro" to your area soon in the form of a technical luncheon. Call American Marazzi Tile for details.*

Marazzi challenges time where foot traffic is heaviest. Where elegance and beauty must be matched with extreme cleaning ease.

The challenge is met with "Marazzi Enduro<sup>®</sup>," the product of a new technology in the making of glazed ceramic tile. This unique single firing process applies the glaze, a special molten and vitreous material, to the incandescent body after the inherent gases have escaped. The result — a perfectly hard and dense glaze that is completely fused to the body and easily maintained.

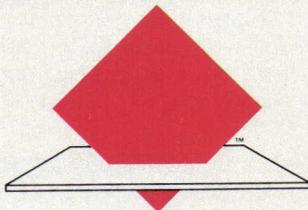
Specify "Marazzi Enduro<sup>®</sup>" for airports, mass transit facilities, shopping malls — the toughest commercial installations — and we'll back it with a 10-15 year warranty.

The "Gloss" and "Ocean" Series together provide 12 colors with a high-gloss finish in a 12" x 12" size. The "Matt" Series offers 4 natural colors, each available with a smooth or "Grip" finish in a 12" x 12" size. Cove base trims are offered for "Gloss" and "Matt."

To receive detailed technical information about "Marazzi Enduro<sup>®</sup>," the glazed ceramic tile that challenges time, call the American Marazzi Tile Marketing Department at (214) 226-0110. For immediate reference turn to section 09300/AIA in the Sweet's General Building & Renovation File.



## MARAZZI ENDURO



AMERICAN  
**MARAZZI TILE**

359 Clay Road  
Sunnyvale (Dallas), Tx. 75182  
(214) 226-0110

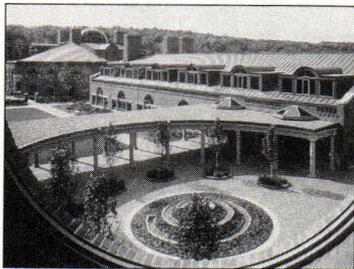
Circle 29 on inquiry card

## Conference examines how design can further corporate goals

The Boston-based Design Management Institute explored ways architects can help corporations achieve their goals in a recent conference entitled "Corporate Strategy Made Visible by Design." According to the institute's director, Earl N. Powell, the conference aimed to bring together experts in strategic planning and design to discuss, "building, enhancing, and controlling the visual equities of a business enterprise."

This is not the first time that the 11-year-old institute, composed mainly of corporate design directors, has offered architectural presentations. Says Powell: "Our goal is to help corporations orchestrate the messages they give to their publics through the design of their products, communications, and environments."

Speakers included partner Fred Koetter of architects Koetter, Kim & Associates and Thomas Walton, associate



professor of architecture and planning, The Catholic University, Washington, D. C.

Koetter discussed the impact on work of the shift from the urban to the suburban workplace. He described the thinking that went into his design for the Codex World Headquarters Building in Canton, Mass. [RECORD, November 1987, pages 120-131].

"Historically," said Walton, "while Gothic cathedrals stand as quintessential symbols of religious zeal, their beauty depended on a region's economic rather than spiritual blessings." He compared the sails of fortune

emblazoned on the walls of Florentine structures commissioned by the Runcellai to the giant aluminum radiator caps that adorn the corners of New York's Chrysler Building: "In both cases, the motivation was a dynamic blend of prestige and profitability."

Responding to the criticism of London designer Wally Olins that much corporate architecture today is, "bombastic and offensive," Walton said: "The challenge is to discover the decision-making processes that allow executives to exploit the full potential of the design resource." He told how architects had helped businesses increase productivity, define their corporate culture, express employee values, control costs, achieve the environmental flexibility to respond quickly to new-product or management demands, and even to address their social responsibilities.

On the subject of productivity, Walton said: "The work space must be as thoughtfully developed as the work tools. . . The bottom-line rewards can be tremendous considering that, over the life of a building, more than 90 percent of the operating costs are personnel expenses."

And on the subject of corporate culture and employee values, he pointed to The Hillier Group's design for The Beneficial Management complex in Peapack, N. J. (photo). "The wooded campus of red-brick office buildings, formally arranged around plazas and courtyards, stresses the notion of corporate community and the hierarchical nature of this financial-services company."

The next institute conference will take place in San Diego April 10-13. It will include a presentation by architect Takuo Hirano on managing multidisciplinary design teams. For more information, contact the institute at 777 Boylston Street, Boston, Mass. 02116-2603 (617/236-1315). *Natalie Gerardi*

## New head for College of Fellows



Perkins & Will vice chairman C. William Brubaker has been invested as the chancellor of the AIA College of Fellows, replacing S. Scott Ferebee, Jr. He is a past president of the Council of Educational Facility Planners and is on the boards of numerous planning organizations.

## National Computer Graphics exposition scheduled

The ninth annual conference and exposition of the National Computer Graphics Association will be held in Anaheim, Calif. on March 20-24. The association consists of individuals and companies interested in promoting and improving computer graphics in business, industry, government, science, and the arts, including architecture and engineering. Systems integration will be a major focus of some 300 speakers in the 128 tutorials and technical sessions planned. One demonstration will show information exchange using only stock systems. Other subjects include artificial intelligence, computer art, and animation. College-student volunteers are sought to help with registration, clerical work, phones, and monitoring conference sessions. For more information, contact the association at 2722 Merrilee Drive, Fairfax, Va. 22031 (703/698-9600).

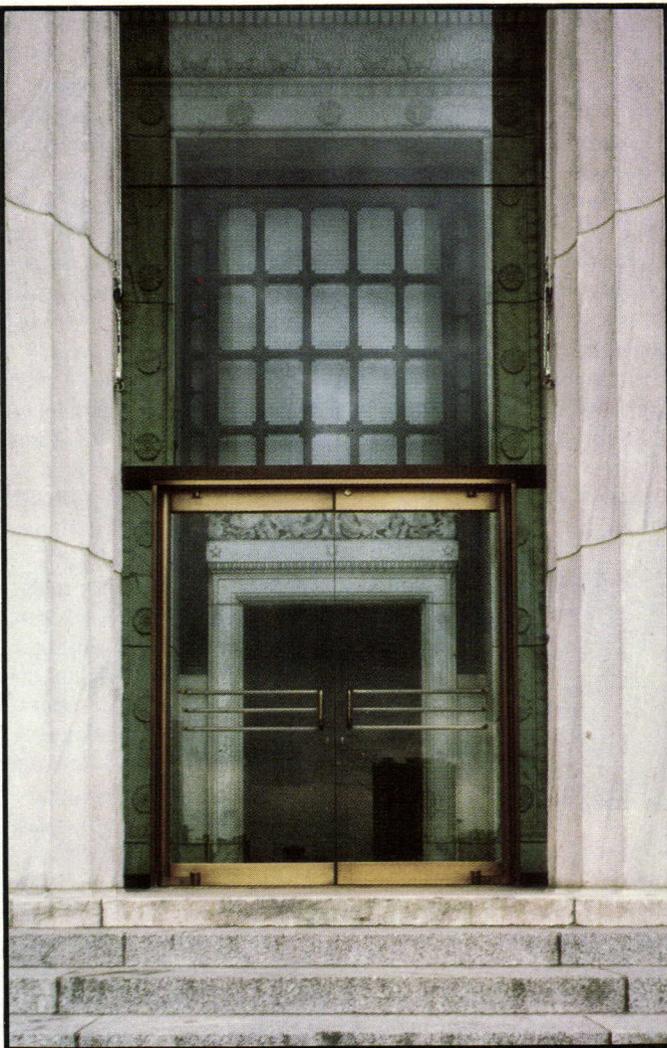
# THE BALANCE OF POWER

## Ellison Doors Put Force In The Hands Of The People

**B**efore Ellison there was no balanced door. So the act of opening a door was a one-sided contest which invariably left people on the losing end. But rethinking the weighty principles of how a door swings changed the balance of power and put physical forces where they belong — in the hands of the user.

The solution to the problem was so widely accepted it's now taken for granted. And yet we all know the difference when opening a heavy swing door and a heavy balanced door. All things being equal, it takes half the energy to open a balanced door in a 20 mph wind. The principle at work becomes evident when the door begins to open and the hinge stile swings inward. The effect of exterior wind or interior suction is greatly diminished by this movement, rendering the door amazingly easy to open.

The balanced door is a convenience for most of us. It can represent



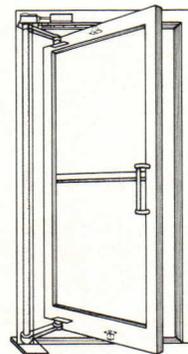
something much more valuable to the physically challenged.

There are other benefits of course. Ellison balanced doors save space. They move in an elliptical arc. Because travel is confined, lobby space can be saved and sidewalk obstruction is reduced.

There's more. Ellison balanced doors are particularly well suited where building design requires

a large or heavy door. Consider the advantage of reduced wear and tear on hardware in addition to the obvious operational benefits.

Ellison Balanced Doors. Long respected for their custom craftsmanship in bronze and stainless steel, are now available in economical aluminum designs. Call or write us for more information on the doors that put power in the hands of the people.



## ellison

Ellison Bronze Co., Inc.

125 West Main Street • Falconer, New York 14733  
716-665-6522

Circle 30 on inquiry card

## Practice: The new AIA General Conditions— a flawed document that architects will use at their peril

By Carl M. Sapers



Since it first published standard forms of agreement for the construction industry in 1911, the American Institute of Architects has profoundly influenced the manner in which buildings are built in America. The General Conditions (AIA Document A201), which describes in detail the responsibilities of the owner, the contractor, and the architect on a construction project, has often been described as the keystone in the arch supporting the vast expenditure on public and private construction. When a new edition is published—the 1987 edition is the 14th—it is an event of great importance. When a new edition fails in as many significant ways as the 1987 edition does, it is an event of grave concern to all of us connected with the design and construction of buildings in America.

Lawyers are trained to worry about language, its clarity and precision. Lawyers are trained to deal with controversy and often uncover the potential for controversy where architects and others see harmony. As my criticism of the 1987 edition unfolds, the reader must take into account how natural it feels for a lawyer to carp, challenge, and undermine. The Japanese long since observed that architects build things while lawyers divide them up. Yet for all of that, the problems of the 1987 edition are serious problems and, in my judgment, we use the new A201 at our peril.

*Mr. Sapers is a partner in the Boston law firm of Hill & Barlow. His clients include architects, engineers, the National Council of Architectural Registration Boards, and the Massachusetts chapters of the AIA. In 1975, he was awarded the Allied Professions Medal of the AIA, the first lawyer so honored.*

*An eminent attorney argues that A201/1987 has serious conceptual problems so bad as to require a new edition that carefully and effectively deals with them.*

### **A201/1987 and the owner's interest**

It is a long-standing criticism of A201 that owners are not participants in the analysis and drafting, even though it constitutes the working parts of the contract between an owner and a contractor. Billions of dollars are spent each year by owners who rely on A201 as a fair document which takes the owner's interest into account. But does it?

One problem emerging from the 1987 edition is who controls the building site. Historically, the site is the owner's, as are all the improvements made upon it. The basis for statutory liens arises from the fact that the mason loses title to his brick when it is permanently fastened to the building wall; that is why he is given a lien against the real estate for the value of the brick. Many contractors talk, in error, about "turning the building over" to the owner; but the common law views the owner as always having the right to possess the premises, subject to a license he has given his contractor to go on the site to build the building. Contract language could change all that, of course, and the authors of the 1987 edition seem intent on doing so. Section 9.3.3 now says that title to work done on a building passes to an owner "no later than the time of payment," while the 1976 edition provided that title passed by incorporation of the work in the construction or by payment, whichever first occurred. This is a technical point bearing chiefly on rights after bankruptcy; but, taken together with 3.16.1 (which for the first time sets forth the owner's right of access to the work, a permission most of us never thought necessary) and 9.9.1 (a new section barring the owner from occupying any portion of the work without agreement from the contractor, public authorities, and the builder's risk

insurer), a careful reader can only conclude that the authors really believe that the owner has somehow given up his possessory right to the premises. It is particularly galling to an owner's counsel to read in the document that public authorities must approve the owner's move-in; obviously, certificates of occupancy may be required, but that is a matter for the owner to deal with and not a condition to be put in the owner's contract with his general contractor.

### **When does fully responsible mean not quite?**

A second problem arises from the puzzling variation in the long-established responsibility assumed by the general contractor under A201. If, as the agreement itself says, "the contractor shall perform all the work required by the contract documents," it should follow that he is responsible for that performance whether done by his own forces entirely or by anyone in the pyramid of subs, sub-subs, material suppliers, and others, all of whom have been engaged on some portion of the work. Back in the 1950s, this relationship was clear. But the intervening editions have confused matters enormously. Section 3.3.2 makes the contractor responsible for the acts and omissions of his employees, subcontractors, their employees, and "other persons performing portions of the work under a contract with the contractor." Since any person "performing a portion of the work at the site" under contract with the contractor is a subcontractor (5.5.1), the third reference in 3.3.2 to "other persons performing . . . under a contract with the contractor" must be to folks who perform work off-site—a steel fabricator might be an example, but only if the steel fabricator is under contract with the general contractor rather than the steel

*I cannot think of better documentary evidence for a court to support the proposition that the architect's duties are for the contractor's benefit and that therefore the contractor may sue the architect directly if the architect's performance injures the contractor.*

1976 edition, and two of the three new ones reflect a subtle change from earlier editions.

Traditionally, the contractor could not void the contract unless the owner failed to make payment or public authorities effectively suspended the work; the owner could delay the contractor, suspend the work, or substantially change the work without risking a contractor's termination although, in all of those circumstances, the contractor was entitled to additional compensation for the owner's action. In the new edition, if the owner interrupts the work and thereby doubles the contract time by 100 percent or fails to fulfill the owner's obligations (other than payment obligations) so as to interfere with the progress of the work, the contractor may terminate.

Is the change significant? It is to a contractor who seriously underbid the work and wants to unload his improvident obligation to the owner. Previously, he could only recover the cost to him of the owner's interference. Now he can get out from under his contractual undertaking.

The third new cause for termination by the contractor is all the more surprising in light of the removal of the contractor's insolvency as a cause for an owner to terminate. In the 1987 edition, a contractor may terminate if the owner "fails to furnish to the contractor promptly upon the contractor's request reasonable evidence that financial arrangements have been made to fulfill the owner's obligations under the contract." While Ben Franklin might have applauded so severe a stricture against spending beyond one's means, it is not clear how real estate-developers will react. It is one thing to introduce a requirement that an owner disclose to a contractor the owner's financial resources for the project (2.2.1), but to grant the contractor the right to

terminate the contract if the disclosure gives him insufficient satisfaction is quite another. If a national trade organization representing developers had participated in the drafting of A201/1987 rather than Associated General Contractors of America, the resulting document would, no doubt, have been different.

**And A201/1987 poorly serves the architects' interests as well**

Architects who have read the foregoing are no doubt concerned with a document which does so much injury to their clients to whom they have a fiduciary obligation. As for themselves, they assume that the American Institute of Architects would never issue a document which inadequately protects their interests. Regrettably, even the interests of American architects fare badly under A201/1987.

In recent years, architects have been plagued by suits from contractors who claimed that the architects owed them a duty which was not fulfilled. Architects responded by inserting in previous editions the unequivocal statement that nothing in the contract documents "shall be construed to create a contractual relationship of any kind between the architect and the contractor" (1.1.2.). Unfortunately, at the same time, recent editions of the general conditions have contained language that undermines any benefit which the quoted clause might confer. The new Sections 4.1.2. and 4.1.3 seem effectively to sink any benefit found in 1.1.2. Section 4.1.2 states that duties, responsibilities, and limitations of authorities of the architect may not be changed without the contractor's consent. Section 4.1.3 gives the contractor a veto right over the appointment of a successor architect. I cannot think of better documentary evidence for a court to support

the proposition that the architect's duties are for the contractor's benefit—and that therefore the contractor may sue the architect directly if the architect's performance injures the contractor.

The language referred to will be cited by a general contractor bringing suit against an architect. But until the 1987 edition, nothing in A201 purported to create an obligation on the architect's part to subcontractors and material suppliers. Now, Sections 9.6.3 and 9.6.5 give the architect a new obligation to account to subcontractors and material suppliers about amounts requisitioned by the general contractor and about payments made to the general contractor by the owner. If the architect makes a mistake in that accounting and a material supplier or a subcontractor relies on that mistake to his detriment, the latter will have a sure path to recover against the architect.

No one entering the profession of architecture expects that his practice will be free of risk, but we all hope that the risk runs with a duty unfulfilled, and that that duty is to a client/owner, not to every other participant in the construction process.

**And what about hazardous materials?**

One hears a lot these days about the extraordinary risks involved in the removal of hazardous materials. The 1987 edition produces some quite remarkable and perplexing results for the architect. In 9.8 of the owner/architect agreement (B141), the architect has *no responsibility whatsoever* respecting hazardous materials. That disclaimer makes good sense because architects cannot get insurance coverage if they undertake responsibility with respect to hazardous materials. Section 10.1.2 of A201, however, takes quite a different turn.

Here, the architect is assigned the duty to render a judgment (absent an agreement between the contractor and the owner on the subject) that the project area is free of asbestos or PCB or that, if the project area earlier contained those materials, the asbestos or PCB has now been rendered harmless. Thus, while in the owner/architect agreement, the AIA draftsmen insisted the architect was to have no responsibility, in the owner/contractor general conditions, the architect is assigned frightening responsibility.

Those who have studied A201 will say that there is no need to worry, for in 10.1.4, the owner agrees to indemnify both the contractor and the architect from any loss arising out of injuries to anyone employed in the performance of the work on account of the existence of asbestos or PCB or the fact that the asbestos or PCB has not been rendered harmless. The architect, notwithstanding that he is not a party to the general conditions, is named as a beneficiary of this indemnification agreement.

The problem remains, however, that the indemnification is limited to injuries suffered by persons who are injured in the performance of the work, which would exclude any persons subsequently using the premises or any person who casually appears on the premises while the work is going on. Moreover, the indemnification is "only to the extent caused in whole or in part by negligent acts or omissions of the owner." This is a tangled web which, when unwoven, has less to it than first appeared. The owner and the contractor, by way of example, have a dispute as to whether or not the asbestos in the project site has been rendered harmless. The contractor contends it has, and the owner contends that it has

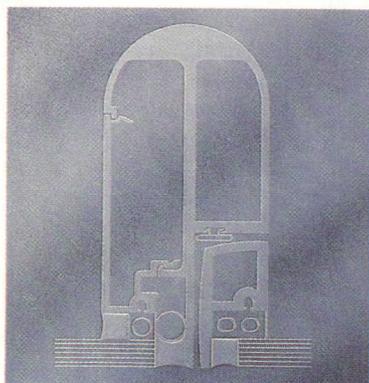
# C R Y S T A L I N E

Entrance and Framing System



## A glass smooth exterior.

On the outside, new Crystalline from Kawneer presents uninterrupted aesthetic appeal. Four-sided silicone glazing in the door and framing system puts all the glass on the same line for the look of a continuous reflective expanse. Readily available in stock lengths with the design flexibility of  $\frac{1}{4}$ " and  $\frac{3}{8}$ " glazing or the thermal performance of 1" insulating glass. For storefronts, one-story office buildings and even interiors, Crystalline is the total system no matter how you look at it.



**Kawneer**  
The designer's element.

Kawneer Product Information • Kawneer Company, Inc. • Department C  
Technology Park-Atlanta • 555 Guthridge Court • Norcross, GA 30092  
Circle 31 on inquiry card

*If a national organization of developers had participated in the drafting of A201/1987, rather than the Associated General Contractors of America, the resulting document would, no doubt, have been different.*

erector. A lumber yard that sells green lumber to the contractor is not an example, since the lumber yard does not "perform a portion of the work." If the contractor has taken responsibility for all of the work, it is quite puzzling that the contractor has no responsibility for the green-lumber supplier or the wrong-gauged steel sent to the site by a fabricator under contract with the erector.

The issue becomes more confusing in Article 14, where the contractor appears, in 14.11, to bear responsibility for sub-subcontractors, while in 14.1.3, in a parallel wording, sub-subcontractors are omitted.

In 3.18.1, the contractor is required to indemnify the owner and the architect for claims caused in whole or in part by acts or omissions of anyone for "whose acts [the contractor or a subcontractor] may be liable." Do we then look to 3.3.2 to discover that the contractor is not liable for sub-subcontractors and most material suppliers?

#### **Reaching arbitration is a confusing process**

A third problem arises from the convoluted twists and turns required by the 1987 edition to resolve disputes between owner and contractor. Arbitration was introduced as the dispute resolution method in the second edition in 1915. The AIA has always believed that arbitration "can be carried out expeditiously and cheaply," and arbitration remains the dispute-resolution method in the 1987 edition, if you can find your way there.

As in the past, there is a general rule that all claims must go to the architect for a decision before invoking arbitration. The 1976 edition contained a single, straightforward rule stating that arbitration could be commenced when the architect had rendered a decision, or 10 days after evidence had been or could have been presented to the architect,

whichever came first. Section 4.5.1 of the new edition contains a general rule that arbitration may be commenced 45 days after the claim has been referred to the architect, but 4.5.4 provides for five other events which, if earlier, will permit the commencement of arbitration. Additionally, arbitration may start without any recourse to the architect, if "the claim relates to a mechanics' lien" (4.3.2).

When a claim is filed with the architect, he must take one of five specified actions within 10 days (4.4.1). The claimant must then take one of three actions (4.4.3). Does the architect then make a decision? No, not until he takes the time to write to the parties to tell them that he will make a decision "within 7 days." He is then instructed to render a decision "upon expiration of such a time period."

There is some utility in the quasi-arbitral role of the architect if the architect's decision is accepted by both parties and further proceedings are thus avoided. The architect's ability to make his decision stick has always depended upon the authority, equity, and dispatch with which the decision is made. As a practical matter, virtually all architects' decisions to which strong objection is made are finally resolved by either negotiation or arbitration between the owner and the contractor.

It should be simple, not complex, to obtain an architect's decision. It should be easy, not difficult, to appeal an architect's decision to arbitration. The 1987 edition of A201 has made the process virtually impossible to understand, much less administer. What an informed contractor would do seems clear to me; if he files a mechanics' lien at the same time he invokes arbitration, he can avoid the time delay and the confusion altogether (4.3.2). But the owner has no such escape hatch.

#### **The contractor gets to hold a stacked deck**

If the third problem is brand new in the 1987 edition, the fourth problem has grown inexorably over the years by virtue of the extraordinary influence of the insurance industry on the AIA forms. Observe that owners have no representation at the drafting table, but the influence of the insurance industry has profoundly affected AIA documents for 20 years.

The project is a 100,000-square-foot office building. The contractor was half finished under a maximum-price contract for \$18 million when a fire wiped out everything. The owner asks the contractor how much it will now cost to finish the project. Because of inflation, and the costs of cleaning up the charred remains, the contractor quotes a new maximum price of \$22 million. The owner, who has \$9 million left under his construction loan and \$9 million in insurance recovery, decides that the project is not feasible at \$22 million and, besides, he cannot raise the extra \$4 million. So he pays the contractor for work to date, uses the insurance proceeds to pay off his mortgage and calls the project off. Wrong!

All owners must read AIA Section 11.3.9 closely; in the circumstances stated, the owner's only choice (absent a "special agreement" with the contractor) is to rebuild and to issue an "appropriate change order." If the insurance is not adequate to fund the change order, the owner is out of luck; he can't call the project off.

Finally, the new edition worsens the owner's position materially if the owner and contractor reach an ultimate impasse and one or the other seeks to terminate the contract. For many years, the contract draftsmen have allowed an ironic inconsistency: if a contractor claims a \$10,000 "extra," he must submit his claim to the architect

before invoking arbitration, but if a contractor wishes to terminate the contract altogether for one of the six causes set forth in 14.1, he need not first seek a ruling from the architect. The owner, on the other hand, must obtain the architect's certification that "sufficient cause exists to justify" termination before he may terminate the contract.

The owner, by the way, has only four causes set out in the document as grounds for termination; in 1976, the owner, as a fifth ground, could terminate if the contractor was bankrupt or otherwise took an action evidencing insolvency. The deletion of the owner's right to terminate if the contractor evidences insolvency is serious and apparently reflects erroneous legal advice about the bankruptcy code.

One owner's cause for termination—the failure of the contractor to make prompt payment to the subcontractors, in A201 since at least the 1950s—has now been substantially narrowed to "[failure] to make payment to subcontractors . . . in accordance with the respective agreements between the contractor and subcontractor." The draftsmen seem to have forgotten the reason behind the cause: the owner's concern that subcontractor liens could be asserted against the owner for amounts unpaid by the contractor. The new language ties the issue to the terms of the subcontract which the owner never sees. If the subcontract says that a subcontractor will be paid in full only upon completion, the general contractor may bank all of the monthly payments for the sub's work, while the sub asserts a lien against the owner.

I observed earlier that the contractor is given six causes for termination in the new edition. These are three more than were conferred on contractors in the

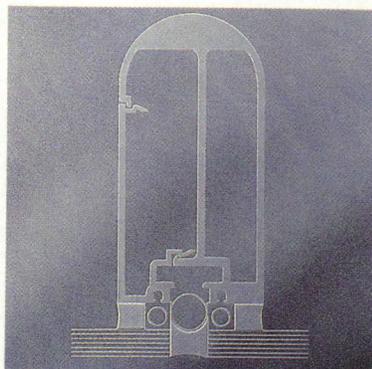
# C R Y S T A L I N E

Entrance and Framing System



## **A softly sculpted interior.**

Inside, new Crystalline from Kawneer presents the rounded profile of radiused horizontal and vertical framing members only 2" wide and 4" deep. Snap-on head/sill members facilitate installation of interior trim, carpet, and ceilings. A full palette of color finishes including the traditional anodized makes Crystalline the choice for versatility. And the visual drama increases with through-the-glass mounted Architects' Classic Hardware from Kawneer for single-source aesthetics. Crystalline. For a great look that depends on where you're looking.



**Kawneer**  
The designer's element.

Kawneer Product Information · Kawneer Company, Inc. · Department C  
Technology Park-Atlanta · 555 Guthridge Court · Norcross, GA 30092

Circle 32 on inquiry card

# MBCI Metal Roof System Adds a Touch of Warmth and Beauty to Medical Facility

Designer T. A. Fairhurst and his client were seeking a warm and inviting building. Their goal was to avoid the "cold feeling" of many medical facilities while creating a distinctive, high quality appearance.

Read how this was accomplished. Contact the nearest MBCI plant for Project Report No. 1031187. You can rely on MBCI for quality preformed metal roofs, walls, fascias, and soffits. Call today.



Houston 713/445-8555  
 Lubbock 806/747-4291  
 Oklahoma City 405/672-7676  
 San Antonio 512/661-2409  
 Dallas 214/988-3300  
 Atlanta 404/948-7568  
 Tampa 813/752-3474  
 Richmond 804/526-3375  
**Circle 33 on inquiry card**



**PROJECT REPORT**

No. 1031187

---

**Designer Prescribes MBCI Craftsman Series Roof System To Achieve Warm, Friendly Appearance for Medical Facility Complements Surrounding Environment**

Medical office buildings do not have to be cold and uninviting. The design by Terry A. Fairhurst for the 8600 square foot OakHill Medical Plaza in Longview, Texas, proved just that point.

Fairhurst said he and his client wanted "a distinctive high quality appearance while avoiding the cold look of many medical facilities." Fairhurst is the principle of T.A. Fairhurst & Associates, a Tyler, Texas, building design firm.

Metal roofing was selected in the initial planning phase of the building design, according to Fairhurst. "Metal has long-term cost-efficiency and offers the high quality

appearance we were after," he said. "Energy consumption also was an important factor in the selection of a metal roof," he added. "Summer months are extremely hot in East Texas and a metal panel that reflects heat will help keep energy costs down."

Fairhurst specified and used the MBCI Craftsman Series SB16.5 panel in 24 gauge, preweathered Galvalume™. The panel is a 16½" wide pan panel with a ½" wide and 1" high snap-on batten. The Craftsman Series has a concealed fastening system for added weather-tightness.

The design called for custom cut

and formed panels for use on the rounded turret roofs. Management (continued on other side)

**Project Facts**

Project Name: OakHill Medical Plaza  
 Location: Longview, Texas  
 Roofing Contractor: Cannon Construction, Whitehouse, Texas  
 General Contractor: Snyder Construction, Trapp, Texas  
 Designer: T.A. Fairhurst & Associates, Tyler, Texas  
 MBCI Preformed Metal: Craftsman Series SB16.5, 24 gauge, preweathered Galvalume™



This medical facility creates a warm, inviting appeal as patients enter.



Practice continued

*Regrettably, even the interests of American architects fare badly under A201/1987.*

not. The architect is then required to issue a judgment and issues the judgment in favor of the contractor. It turns out that the architect and contractor were wrong, and someone is injured as a result of there being asbestos on the site. The owner did not cause the problem in whole or in part, the indemnification does not fasten, and the architect is exposed to liability.

**Before A201/1987, architects were not held responsible for injuries to workmen**

For 20 years, the AIA General Conditions and skilled counsel have turned the tide on the efforts of workmen's compensation insurers to recover payments made to injured workers by suing the project designer. With some early exceptions, the courts now clearly uphold the contract language to the effect that: "The architect will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety programs in connection with the work . . ." (4.2.3). But consider 4.2.7, which now allows a possibility that the architect may be approving construction means, methods, etc., when he reviews submittals. Similarly, 3.3.1 repeats that the contractor is responsible for construction means and methods, etc., but adds the unwanted exception: "unless contract documents give other specific instructions concerning these matters." From the point of view of careful defense counsel, the two clauses go far enough to give the plaintiff the right to reach a jury on the question of whether either the contract documents or statements made by the architect indicate that the architect was in fact taking some responsibility for means and methods.

In a similar vein, the definition of "work" in 1.1.3 raises the mischievous possibility that the architect may become responsible for the safety of temporary structures like lifts and scaffolding. In earlier editions, "work" meant the completed construction required by the contract documents. In the 1987 edition, "work" includes all temporary structures such as lifts and scaffolding. Since the architect assumes an obligation to examine the way in which the work is being performed, to reject work which does not conform, and to endeavor to protect against defects and deficiencies in the work, a much clearer case lies against the architect for injuries resulting from faulty lifts and scaffolding.

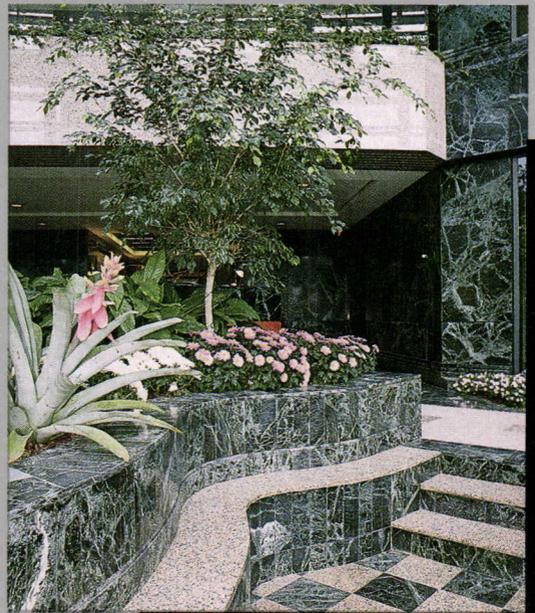
The foregoing observations about A201/1987 are not nit-picks, though plenty of nits could be picked, running the gamut from typographical errors and inconsistencies to an ill-thought-out new concept, "construction-change directives," which adds length and confusion to A201. The comments discussed here, however, go to the heart of serious conceptual issues raised by the 1987 edition. Unlike the typographical errors and inconsistencies, they cannot be easily eradicated by a carefully drafted set of supplemental conditions. It is this author's hope that the AIA will respond to the criticisms it has already received by authorizing a 1988 edition of A201 that carefully and effectively deals with these problems.

*A commentary from the AIA will appear next month.*

# Innovative Marble and Tile, inc.



The Stone Specifier®



ONE BOCA PLACE, BOCA RATON, FLORIDA ARCHITECTS: SMALLWOOD, REYNOLDS, STEWART, STEWART AND ASSOCIATES, INC.

## Produces results.

To find out more about Innovative Marble and Tile and our patented stone specifier program, or to sample our library featuring the largest selection of marble, granite and man-made dimensional stone, quarried worldwide, contact our New York headquarters.



**New York**  
470 Smith Street  
Farmingdale, NY 11735  
(516) 752-0138  
Fax# (516) 752-0411  
1-800-62 STONE

**California**  
8436 West Third Street  
Los Angeles  
California 90048  
(213) 653-5533  
1-800-62 STONE

W.U. Telex. 880145 INNOVATIVE  
Circle 34 on inquiry card

# SHEATHING IS SHEATHING... UNTIL IT RAINS.

## INTRODUCING DENS-GLASS.™

**NO WARPING, NO SAGGING,  
NO DELAMINATING, NO PROBLEMS.**

**GUARANTEED.** Ordinary paper-faced gypsum sheathing just can't handle bad weather. The paper peels away, and the panels sag or warp. It's not pretty, and can cost plenty in replacement time, labor and dollars.

That's why Georgia-Pacific developed new Dens-Glass™ gypsum sheathing, a unique panel with fiberglass faces front and back on a water resistant core. This design makes Dens-Glass the only gypsum sheathing panel offering a six-month limited warranty<sup>1</sup> against the damaging effects of weather. And no paper means improved fire resistance. In independent tests Dens-Glass produced zero flame spread and zero smoke developed.<sup>2</sup>

Superior dimensional stability and resiliency make Dens-Glass the smart choice for a variety of exterior applications—sheathing, soffits and exterior ceilings.

For exterior insulation facing systems, insulation can be applied directly to Dens-Glass without mechanical fasteners. And Dens-Glass sheathing is just one of the innovative products from the Dens-Glass family. There are also Dens-Glass products for commercial roof decks and tile base applications in high moisture areas.

New weather-resistant Dens-Glass. One of the many commercial building products available through over 140 Georgia-Pacific Distribution Centers and Sales Offices nationwide.

For complete Dens-Glass exposure test results, product information, warranty, samples and the location of the Distribution Center nearest you, call 1-800-225-6119—in Georgia, call 1-404-521-5716. Or write: Georgia-Pacific, 133 Peachtree St., N.E., Atlanta, GA 30303.

*Check Sweet's for other G-P building products: 9985-  
Prefinished Panels; 9250-Gypsum Wallboard; 7460-  
Siding; 7310-Shingles.*

**Georgia-Pacific**



**AMERICA BUILDS ON OUR NAME.™** Remes

<sup>1</sup>See warranty available from Georgia-Pacific for its terms, conditions and limitations.  
<sup>2</sup>ASTM E119 Fire Test of Building Construction and Materials; ASTM E84 Surface Burning Characteristics of Building Materials.  
Dens-Glass and "America Builds On Our Name" are trademarks of Georgia-Pacific Corporation.  
© 1987 Georgia-Pacific Corporation. All rights reserved.

Circle 35 on inquiry card for literature

Circle 36 on inquiry card to speak with a sales representative

## Finance: Last year's stock crash will make 1988 construction tougher, but not disastrous

By Joseph Spiers

If you're absolutely convinced the crash of '87 is like the crash of '29, there's no use in reading this article. The only thing to do is lay in your store of apples to sell in the coming depression. For if there is a depression, work for architects will plunge precipitously: Between 1929 and 1933, spending on housing declined 85 percent and outlays on nonresidential structures tumbled 80 percent. Not until the 1940s did construction regain its 1929 level.

Last October's market debacle was indeed serious. But that a 1930s-style economic implosion will follow does not seem

possible. Hence architects should think about aftershocks on their firms falling far short of that.

A key reason to discount a rerun of the 1930s is federal insurance of bank deposits. Don't forget, the Great Depression was deepened by a run on banks, which resulted in people losing their life savings. Also, back then, the Federal Reserve Board made a major blunder by tightening credit, a blunder that today's Fed is sure to avoid. Another contrast between today and 1929 is that speculation was more rampant because people could borrow a lot more unsecured money to buy stocks.

So depression does not seem a major worry. In fact, most economists do not even forecast a recession in 1988. Rather, the prime worry is a possible slowdown in economic growth to perhaps 2 percent—compared with 1987's nearly 3 percent.

Slow growth or recession would occur because consumer confidence was undermined by last October's crash—and because people lost a lot of money. But a lot of the losses were strictly on paper. What's more, by the end of 1987 the stock market still showed a gain for the year as a whole. So, while certain individuals obviously lost a lot by buying just before and selling just after the debacle, investors on the whole—those who had been in for the long haul—did not lose money.

### Construction wasn't going to be that hot anyway

Even if a recession does hit in 1988, it would not be a disaster for architects, keeping in mind that prospects for the year even before the crash were not very good. F. W. Dodge, for example, had been predicting a 4-percent decline in the value of nonresidential building contracts and a 2-percent drop in residential contracts in 1988. And, through October, construction outlays for

nonresidential buildings had fallen 5 percent compared with a year earlier, and housing starts about 9 percent, according to the U. S. Commerce Department.

The commercial-construction market has already felt the impact of tax reform. Through the 10 months ended last October, office construction was down 12 percent from a year earlier. Other commercial and hotel building was also declining.

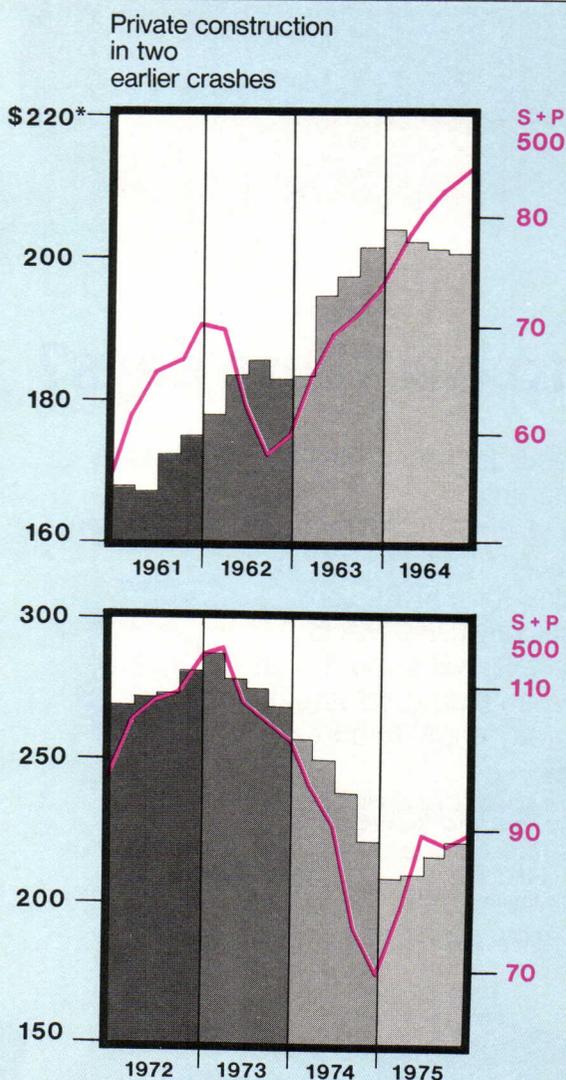
The fact is that, after five years of good times, the construction cycle had already peaked by Black Monday. A recession resulting from the crash would make things tougher this year, but it probably wouldn't drastically alter the course of events.

### Lower interest rates could even help housing

In one way, the crash could even help architects because interest rates dropped significantly as investors pulled money out of stocks and put it into bonds. As a result, mortgage interest rates (which reflect conditions in the bond market) fell a full percentage point in the wake of Black Monday, putting some hope back into housing.

Shortly after the crash, William M. Moore, president of the National Association of Realtors, said falling rates created "a window of housing opportunity for the American public." And the chief economist at the Federal Home Loan Mortgage Corporation, Robert Van Order, said the net effect of the crash could be good for housing. True, some potential buyers will exit the market because they lost money, or because they fear for their jobs. But many potential buyers will be helped by the availability of lower mortgage rates.

Van Order predicted that housing starts in 1988 will, at worst, slip just slightly below 1987's level of 1.6 million units. The realtors' association



\*Construction in billions of 1982 dollars



## Who says nothing is made to last these days?

It's not likely we'll see one of our planters wear out. That's because Mother Nature and Sitecraft have been working together for generations to produce planters and other site furnishings that not only last, but look beautiful doing so. One reason Sitecraft site furnishings are so durable is the materials we choose. Clear, all-heart California Redwood, South American Ipe and Purpleheart, Philippine Mahogany, Red Oak and Western Yellow Cedar are among the most durable woods on earth. Another reason is craftsmanship. We've been molding, shaping, finishing and protecting

these woods for professionals like you for a long, long time.

If you've got an upcoming project and you want beauty that lasts, call or write today for a FREE copy of our Sitecraft IDEA BOOK. With Sitecraft, what you design today, your great, great grandchildren may enjoy tomorrow.



40-25 Crescent Street Long Island City, NY 11101  
1-800-221-1448 Toll Free (In NYS, 718-729-4900)  
Circle 37 on inquiry card

**Who says imagination doesn't grow on trees.**



*The stock shock is likely to leave at least a residual fear, causing businesses and consumers to proceed with caution.*

predicted housing starts will fall 8 percent this year to 1.5 million units. DRI/McGraw-Hill has a similar outlook, but the forecasting firm actually lifted its 1988 starts forecast after the crash because of lower rates.

With new-house building expected to slip, architects in this field might turn their attention to alterations and additions, for which spending tends to rise through thick and thin. One reason such spending goes up is that the housing stock keeps getting bigger, so there are more houses needing improvement. In 1988, the decision to improve rather than move may be particularly easy to make while house owners worry about fallout from the crash.

#### **But there may be unhappiness at housing's high end**

For some owners, of course, the fallout has already come. Brokerage firms have laid off thousands, and other Wall Street workers are receiving much lower income than they were used to. For architects in major financial centers, especially New York and Chicago, upscale residential upgradings could thus be in a bear market. To make things worse at the high end, a new tax law ends interest deductions on home-equity loans above \$100,000.

While it is still early for much data to have accumulated, there is some evidence that upper-middle-income people reined in spending after the crash. Almost immediately, for example, U. S. sales of luxury European autos plummeted. And mortgage banker Lomas & Nettleton said brokers in some markets reported difficulty selling homes in the \$200,000-to-\$800,000 range.

Also feeling a direct hit from the crash will be the vacation-home market, according to Freddie Mac. Those who buy second homes are also those who buy stocks . . . and those who sell stocks. So Freddie Mac sees an

end to the vacation-home boom that stretched out of Wall Street to New Jersey and Maine.

Some analysts believe real estate of all kinds will become more attractive to investors soured on the stock market. But the new tax law that became effective in 1987 slashed the benefits of real-estate tax shelters. In addition, for high rollers, another tax measure signed last December disallows interest deductions on mortgage debt exceeding \$1 million. That includes a taxpayer's total debt—primary residence plus other homes, as well as some assets such as boats.

The combination of the bear market and tax measures could therefore interrupt the long-term trend of new houses becoming bigger and more luxurious.

#### **The worst-case scenario would develop from mainly psychological factors**

For example, if the market crash slows consumer spending, retail store and restaurant chains will delay expansion plans, creating further weakness in construction of new malls and shopping centers. A slowdown in vacation spending would further hurt new hotels and motels.

Taking into account that 1988 was not shaping up as a great year for new construction anyway, the crash created the fear that things could turn out much worse. But as life went on after October 19, interest rates fell, and the economy turned in an acceptable performance, fears abated somewhat.

Still, the stock shock is likely to leave at least a residual fear, causing businesses and consumers to proceed with caution. One cautious tactic is to delay major outlays such as construction projects. So while architects need not order up apples and barrels, they should brace for what could be the softest demand for their services in recent years.

## **Construction doesn't always follow stocks**

A stock-market slump doesn't necessarily lead to an economic or a building slump.

Consider, for example, 1962, which some Wall Street pundits see as analogous to 1987.

In 1962, the Standard & Poor's 500 index dropped a hefty 26 percent in the first half of the year (chart 1, page 45). The market then recovered somewhat in the second half, but was still down more than 11 percent from early 1962.

Yet the economy grew in 1963, and housing-construction expenditures in 1963 jumped nearly 11 percent. Outlays on nonresidential structures also picked up a little in 1963, and then rose sharply in 1964 and 1965.

Some analysts, however, worry about parallels between 1987 and 1973-74, when the economic consequences were severe. (Chart 2, page 45.)

By the end of 1974, the stock market was down 43 percent from early 1973. And in 1975, construction of all kinds slumped badly.

But looking at stocks and construction alone ignores the surge in inflation resulting from OPEC's quadrupling of oil prices in 1973-74. Skyrocketing oil prices led to extraordinarily high interest rates and to lower corporate profits. All this exacerbated the market decline and caused a recession in 1974-75 that clobbered construction.

The market crash of 1987 is probably more akin to 1962 in its consequences than to 1973-74. As in 1962, inflation today is reasonably under control, in part because OPEC is no longer the fire-breathing dragon it was in 1974. Hence there's no need for the Fed to unduly tighten credit. Also as in 1962, the economy was growing nicely going into the stock crash.

True, interest rates today are much higher than in 1962, with

long-term rates now at roughly their 1973 level. But rates before the October 19 crash were low compared to a few years ago, and the crash brought them down further.

The wild card in this latest crash is that it all happened so suddenly. From August 25 to October 19, the S&P 500 entered into a 33 percent free fall—in two months, that is, the market plunged faster than it did in six months in 1962. But at least by the end of the year the market rebounded by 10 percent; and the economy continued to look good in 1987's fourth quarter.

The economy, since 1982, has enjoyed a record-long peacetime expansion, which, even before October 19, left many wondering how much longer it could last. The crash increased the chances of a downturn. But as the 1962 experience shows, a 1988 recession is not the necessary consequence of the Crash of '87.

*Mr. Spiers is an economist and assistant managing editor of the McGraw-Hill News, a financial news service.*

# The new surface anodized can't match.



What you see here is a brand new building material. Commcoat™  
Fluoridize® Coil.

The remarkable finish is made by bonding a Fluoridize coating  
to our finest aluminum substrate, right in our rolling mill.

Commcoat looks a lot like anodized aluminum. Only better.  
And it comes in seven exciting colors. (Extrusions, too.)

For a price no higher than  
anodized.

But the difference is, Commcoat  
Fluoridize Coil keeps on looking good

year after year. With far less weathering, fading or staining than  
anodized.

Nor does its color vary from panel to panel. Or crack when  
sharply bent.

To get your hands on some, call any of these distributors:  
Petersen Aluminum Corporation, Wrisco Industries or Idéal Métal  
Inc. Laminated panels are produced  
by Alucobond Technologies.

Or call us at 1 (800) 556-1234, Ext. 174.  
In California, 1 (800) 441-2345, Ext. 174.

 **COMMONWEALTH  
ALUMINUM**

Commcoat is a trademark of Commonwealth Aluminum Corp. Fluoridize is a registered trademark of DeSoto, Inc.

Circle 38 on inquiry card

# Announcing SuperProject Expert. The Most Advanced Project Management Software Ever.

Leading project managers from key industries have this to say about SuperProject® Expert:

**Aerospace:** "SuperProject is the best . . . outstanding features like Earned Value Reporting and Work Break-down Summarization give me complete control over my projects. Expert's graphics make impressive presentations." *Barry Feeley, Technical Manager, Ford Aerospace.*

**Construction:** "Its familiar SuperCalc® and 1-2-3 menu system makes it really easy to learn and use . . . the way it handles multiple projects, networking and flexible report writing have opened my eyes. The multiple resource calendars and histograms manage resources very efficiently." *Ted Ritter, CEO, O'Connor Construction Co.*

**Data Processing:** "The Outliner allows me to quickly sketch critical installation schedules. I can add as much detail as necessary for each task. SuperProject Expert is way ahead of the pack." *D.W. Nesper, Regional Consulting Manager, Wang Labs.*

**SuperProject Expert** for presentation graphics and detailed control over multiple projects, large or small. There's nothing like it at any price. Utilizing Gantt, PERT, or CPM charts plus powerful new tools—the most advanced ever. Only Computer Associates gives you PC-to-mainframe connectivity. You can upload via CA-PLANLINKS™ and consolidate your projects within CA-TELLAPLAN™.

If basic project management is all you need, then SUPERPROJECT PLUS will make it easy for you. It contains essential task and resource management features and is fully compatible with Expert.

Which way should you advance?

Simply call one number:

**800-533-2070** and ask for

Terry Smith. Or simply send in the coupon below.



**Attn: Terry Smith, Computer Associates, Inc.  
2195 Fortune Drive, San Jose, CA 95131**

Please send me free information on SuperProject Expert and SuperProject Plus.

Please send me a demo diskette. AR 2-88

Enclosed is \$25 (refundable with purchase).

Check one:  SuperProject Expert  SuperProject Plus.

VISA  MasterCard \_\_\_\_\_ Exp. \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone: ( ) \_\_\_\_\_

© 1987 Computer Associates International, Inc.

**COMPUTER ASSOCIATES™**  
Software superior by design.

- World's leading independent software company.
- Broad range of integrated business and data processing software for mainframe, mid-range and micro computers.
- Worldwide service and support network of more than 70 offices.

Accounting • Spreadsheets • RDBMS • Graphics • Project Management • Resource & Operations Management

Circle 40 on inquiry card



# WALLSYSTEM

FIRE PROTECTIVE GLASS WALL



## SAFETY FOR LIFE

Interior wall system with **CONTRAFLAM®** for hospitals, universities, restaurants, shopping centers, department stores, corporate centers, and conference rooms.

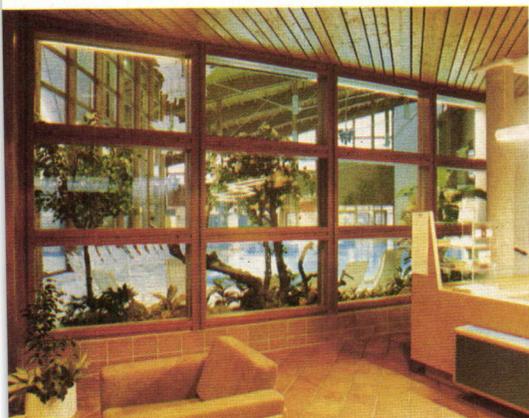
- UL classified and tested fire resistant glazing material 60-90 minute wall and door systems.
- Unobstructed vision, high light transmission (83%-85%) and reduced sound transmission (48-51 DB).
- Versatile modular construction, open clear glass, wood or metal mullion system, unlimited aesthetic choices.
- Integration of EFG systems into existing or new buildings.
- Maximum glass areas of 4' x 7'
- Offering greatest measure of fire protection. System of infinite lengths.
- High visibility in public areas provides full security.
- US patent no. 4,578,913/design no. U.S. 4,578,913

See our catalog in Sweet's 08400/EIC



USA, 3881 West 6th St.  
Los Angeles, CA 90024  
Phone (213) 381-7424, Telex 181-381-3991  
Telefax (213) 381-3991

**90** MINUTES PROTECTION AGAINST  
FIRE — HEAT — SMOKE



Spa

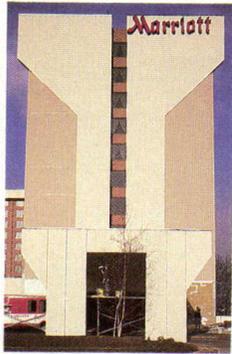


Reception



Project: La Guardia Marriott  
Owner: Mass. Mutual Life Insurance Co.  
Architect: Russell, Gibson, von Dohlen, Inc.  
Distributor: STO of New York  
Applicator: Westchester Wall Systems

**sto**



**The only exterior insulation system approved in L.A.**

*There's only one noncombustible wall system that meets every requirement of the Department of Building and Safety in Los Angeles, the most code-restricted city in the U.S. And it's STO's.*

*The STO Mineral Wool System was also the first and only wall system approved in New York City before the recent blanket approval of EIFS systems. As a result, it solved a multitude of code and building restoration problems on the La Guardia Marriott Hotel ... as no other system could.*

*Because STO is second to none in ideas, solutions and the technology to bring them to reality, our competitors have no choice but to follow our lead. And in L.A., we announce another "first."*

**STO INDUSTRIES, INC.**  
Quality Lane, Box 219  
Rutland, Vermont 05701  
Toll Free: 800-851-5533  
  
A Subsidiary of STO Corp., the  
Systems Technology Organization

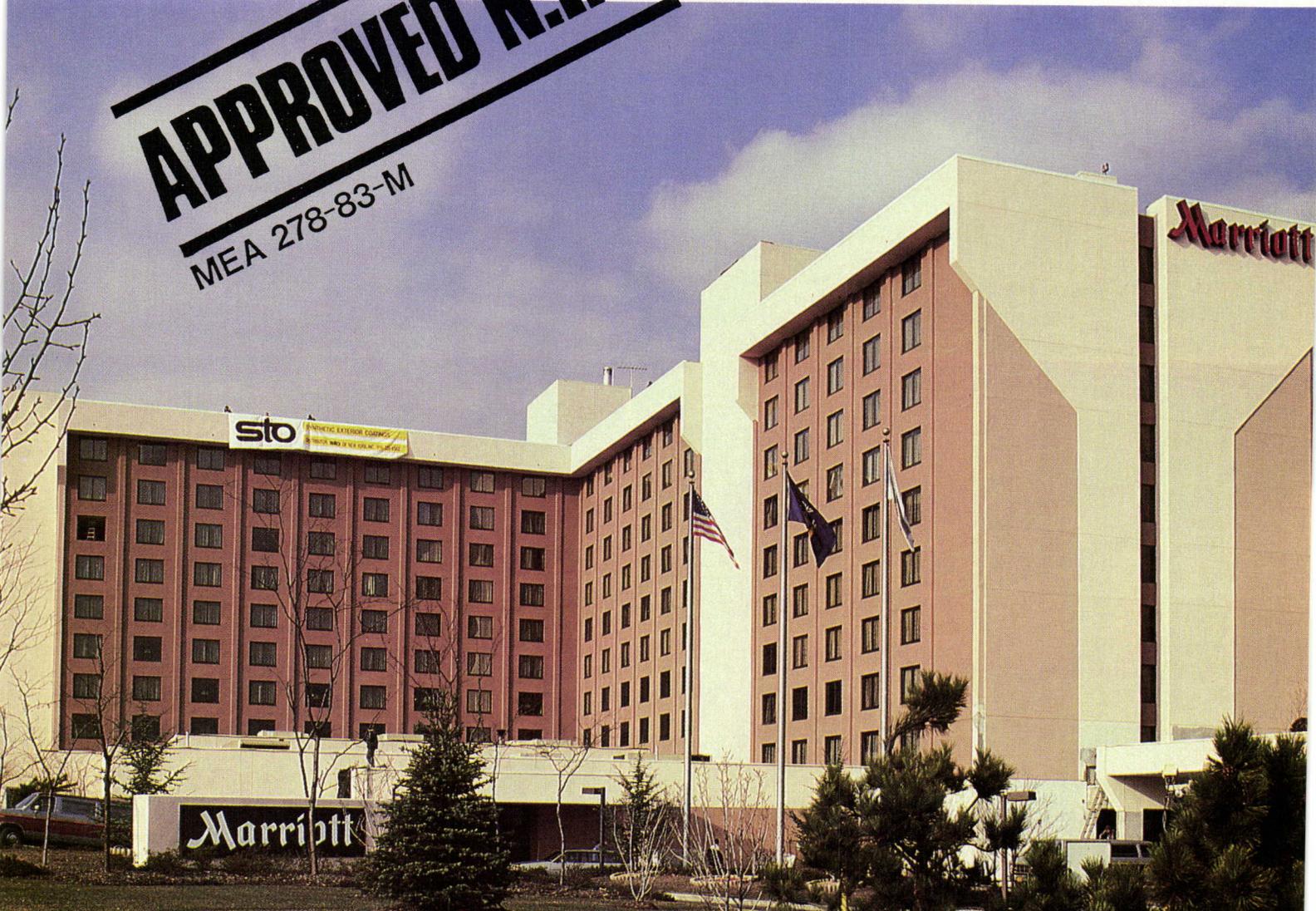
**Circle 42 on inquiry card**

**APPROVED L.A.**

RR 24791

**APPROVED N.Y.C.**

MEA 278-83-M





# The Marsh finds a center of balance on a challenging site. And Pella Windows and Doors prove physically fit.

The Marsh™ in Minnetonka, Minnesota, is called "A Center for Balance and Fitness." And everything about the building reflects this theme. In this unusually complex project, Hammel, Green and Abrahamson have created a balance of action and reflection, the solitary and the communal, a center for equilibrium of body, mind and spirit.

The building is oriented toward the protected view of a broad marsh to the north. The moment you walk into the Marsh, the feeling is one of calm, warmth and healing rest. You sense the openness and serenity of the marsh through soaring custom triangular Pella Windows and Pella Sliding Glass Doors. The feeling is carried out by deliberate residential scale and shapes, as well as by the carefully thought-out lighting, acoustics, colors and materials. So, indoors, no less than the warm wood beauty of Pella would do.

**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.

## Pella doors used as windows.

Exercise studios have 3000 square feet of spring-cushioned floors. And here, Pella Sliding Glass Doors are used rather than windows, to let in as much light and breeze as possible. An exercise bar mounted across these doors neatly redefines their function and provides safety.

These Pella Doors are extremely energy efficient, with Pella double glass providing up to ¾ inch of insulating air space between panes. Pella's gliding door panel is placed on the outside, so the harder the north wind blows against it, the tighter the door seals.

## Pella thermal control.

At the Marsh, where each area has a different mechanical system and where outdoor temperatures can vary 130°F in six months, Pella's exceptional thermal control is essential. Pella offers

seven standard glazing and shading options to save heating and cooling costs from Minnesota to Sarasota. One of these is Pella Type E Slimshade® blinds. Installed between the panes of the Double Glass Insulation System, these blinds help give Pella Windows a low U value of .23, actually outperforming triple glazing. And Pella Windows stop air infiltration up to 16 times better than industry standards.

**Pella custom shapes, sizes and clad colors** offer unlimited flexibility to suit the mood and scale of each project, with anything from monumental circleheads to integral muntins to your choice of colors in low-maintenance aluminum exterior cladding.

Your Pella distributor can tell you more. For information, look for Pella in the Yellow Pages under "Windows", call Sweet's BUYLINE or send the coupon below.

Please send me the latest literature on Pella for replacement and new construction.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_

## This coupon answered in 24 hours.

Mail to: Pella Windows and Doors Commercial Division, Dept. T31B8, 100 Main Street, Pella, IA 50219. Also available throughout Canada. © 1986 Rolscreen Co.

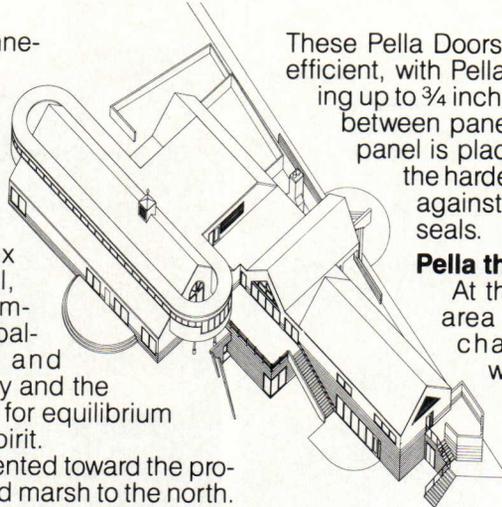
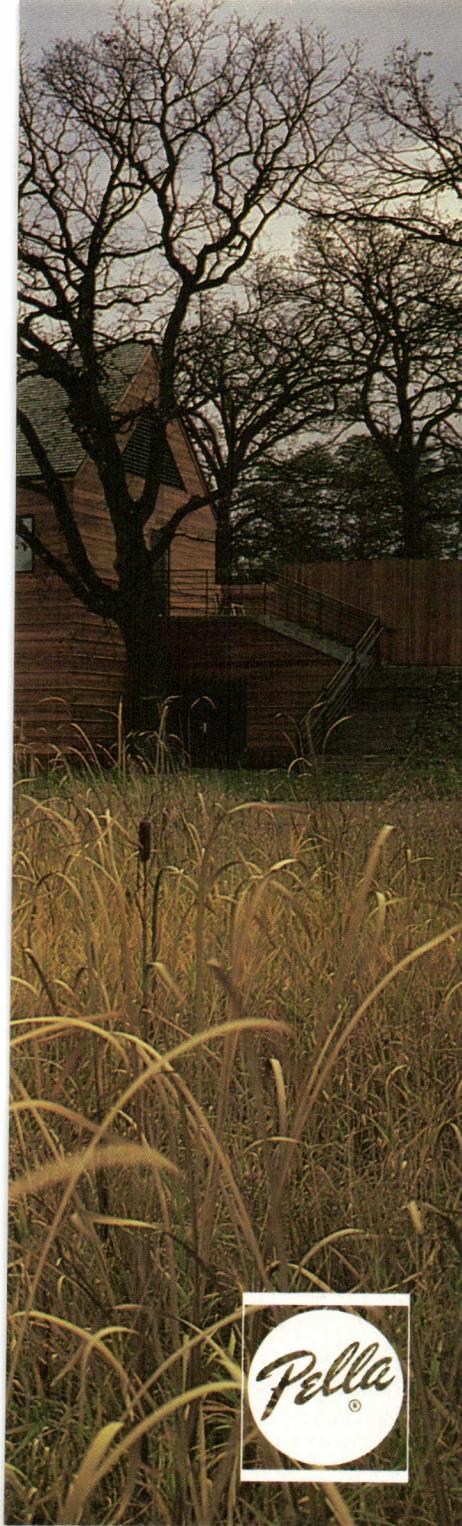
## The significant difference in windows and doors.

Ruth Stricker's The Marsh™  
Minnetonka, Minnesota

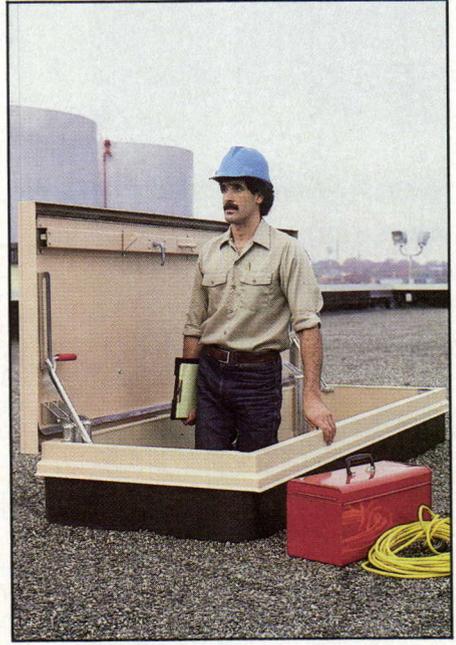
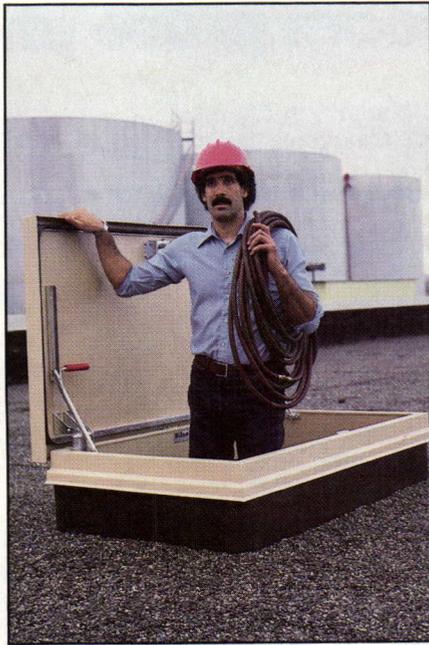
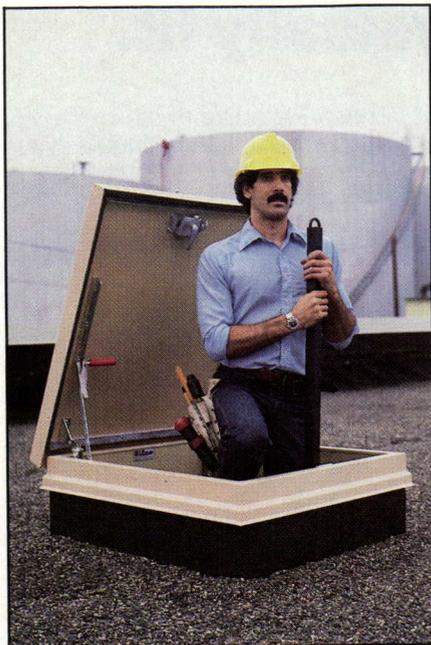
Architects  
Hammel, Green & Abrahamson  
Minneapolis, Minnesota

Contractor  
Crawford-Merz Company  
Minneapolis, Minnesota

Circle 43 on inquiry card



# three ways to come out on top...



## with quality Bilco Roof Scuttles

When your specifications call for performance proven Bilco roof scuttles in any size, standard or special, you call for the design, the workmanship and the ease of operation that are uniquely Bilco. Of heavy gauge material throughout, Bilco scuttles are insulated and gasketed for complete weathertightness. Their overall quality of construction combined with built-in compression spring mechanisms for smooth, easy operation assures your client's lasting satisfaction. Standard sizes shown in steel or aluminum are normally in stock for prompt shipment. Special scuttles can be fabricated in single or double leaf, in a wide range of sizes to meet your special needs.

### Type S for ladder access\*

Every building needs at least one ladder access size Bilco roof scuttle. It provides easy, safe, economical access to the roof in all kinds of weather.

Size: 2'6" x 3'0"

### Type NB for ship stair

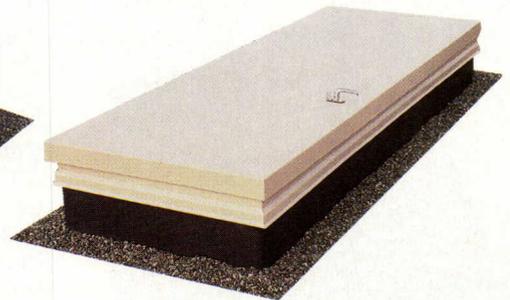
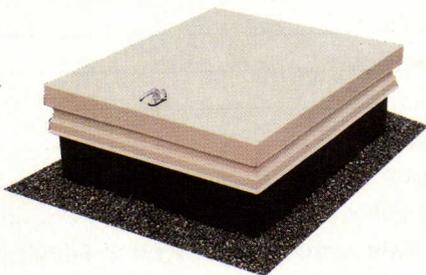
This size Bilco scuttle is ideal for installations where frequent use may be indicated. It permits easier movement of maintenance personnel, tools and equipment.

Size: 2'6" x 4'6"

### Type L for normal stair

The ultimate in roof access. This size Bilco scuttle allows a normal stairway. It takes the place of costly penthouse construction. Helps maintain a clean roof line.

Size: 2'6" x 8'0"



\* Shown with the new Bilco LadderUP Safety Post. For safer, easier ladder use.

For complete information, details and specifications see Sweets General Building, Industrial Construction and Engineering Files, or send for a copy.

**Bilco**®

DOORS FOR  
SPECIAL SERVICES

The Bilco Company, P.O. Box 1203, New Haven, CT 06505

Circle 44 on inquiry card

# Crown American builds shopping malls better and at lower cost with K-Series steel joists... whatever the weather.

Developers:  
Crown American Corporation,  
Johnston, Pa. and Wilmorite, Inc.,  
Rochester, N.Y.

Project Architect:  
Marc Weissman, A.I.A.  
Project Engineer:  
Ronald Samsel,  
Structural Engineers

Crown American Corp's. Senior Vice President, Nicholas Pasquerilla, credits K-Series steel joists and G-Series joist girders for saving over 6% of combined joist and girder costs.

He points out that the two products are ideally suited to the wide bays and deep roofs favored by Crown American in shopping mall construction. Also, they allow the contractor to pour the footers and erect joists and girders in spite of adverse weather.

Crown American locates H.V.A.C. and other mechanicals in the interstitial space provided by joists and girders. A suggestion by engineers and architectural staff to change the joist girders on Great Northern Mall in Syracuse, N.Y. from 30" to 60" deep, resulted in the cost savings.

Also the quick erection helped keep construction time to a minimum. The resulting wide bays were particularly pleasing to the retail tenants because of the extra roominess.

Send the coupon for your copy of New Specifications, Load Tables and Weight Tables.



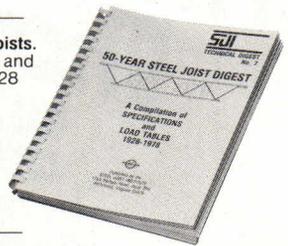
**NEW! 60th ANNIVERSARY issue.**  
64 pages of facts and figures with new instructions for designating and specifying the new K-Series joists.  
\$8.50 (\$9.50 outside U.S.).

No. of copies \_\_\_\_\_



**50 years of Steel Joists.**  
220 pages of specs and load tables from 1928 to 1978 to help you determine load capacities in existing structures; plus time saving tips.  
\$34.00 (\$44.00 outside U.S.).

No. of copies \_\_\_\_\_



Total enclosed \_\_\_\_\_ (Remittance with order, please)



Managing Director  
Steel Joist Institute  
Group A  
1205 48th Avenue North  
Myrtle Beach, SC 29577

Name \_\_\_\_\_

Firm \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Circle 45 on inquiry card



Duro-Last, the leader in single-ply roofing, wants you to see for yourself why the Duro-Last Roofing System is so much in demand.

**Duro-Last . . . A Cut Above**

As you can easily see, Duro-Last fabricates the entire single-ply roofing system . . . everything you need to meet all your new and retrofit roofing requirements.

**Duro-Last Saves You Time And Money**

Duro-Last's custom fabrication means 80% fewer field welded seams. Fewer field seams means you need to meet all your new and retrofit roofing requirements.

faster and easier installation. Research shows that the Duro-Last Roofing System will cut labor and installation costs up to 50%!

**Duro-Last Gets To You Exactly As You Want It**

- on site
- pre-measured
- pre-cut
- welded into sheets up to a maximum 2,500 sq. ft.
- with all fasteners, custom stacks, custom curbs and other accessories

**Duro-Last Gets To You Fast**

Your Duro-Last roof will be in production within hours of our receiving your order. And your complete roofing package will be on its way to you within days.

**Duro-Last . . . Lasts**

Duro-Last isn't afraid to put its money where its roof is. Your Duro-Last Roofing System comes with a 20 YEAR WARRANTY plus a \$6,000,000 LIABILITY POLICY on your building and its contents.

**No Matter How You Cut It . . .**

**Duro-Last Is Tops**

When you're ready for a new roof, call the roofing innovators first. Call Duro-Last TOLL FREE.

1-800-248-0280  
(Outside Michigan)  
1-800-752-8815  
(Michigan Only)

# A View From The Side Shows Why Duro-Last Is Tops



**DURO-  
LAST®**  
Roofing, Inc.

525 Morley Dr. • Saginaw, MI • 48601

UL Class A (New and Retrofit Construction); FM Class 1, I-60 and I-90. CODE APPROVALS: ICBO, SBCCI, BOCA, and Metro-Dade. MEMBER: NRCA, SPRI.

Charles Square, Suite 300  
Cambridge, Massachusetts 02138

Telephone 617 492-4000  
Telex 951650

Los Angeles, New York City, Philadelphia, San Francisco,  
Seattle, Washington, D.C.

## Make it or break it

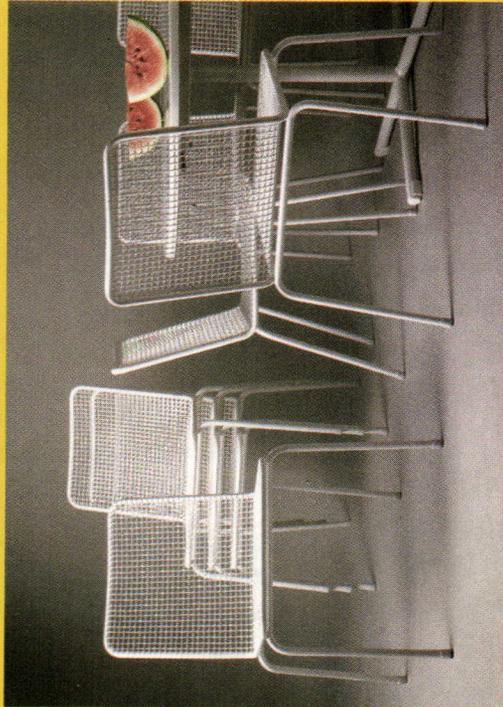
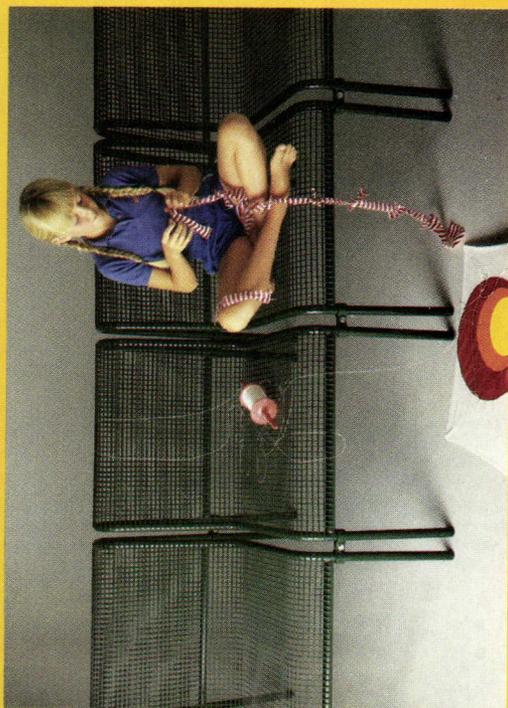
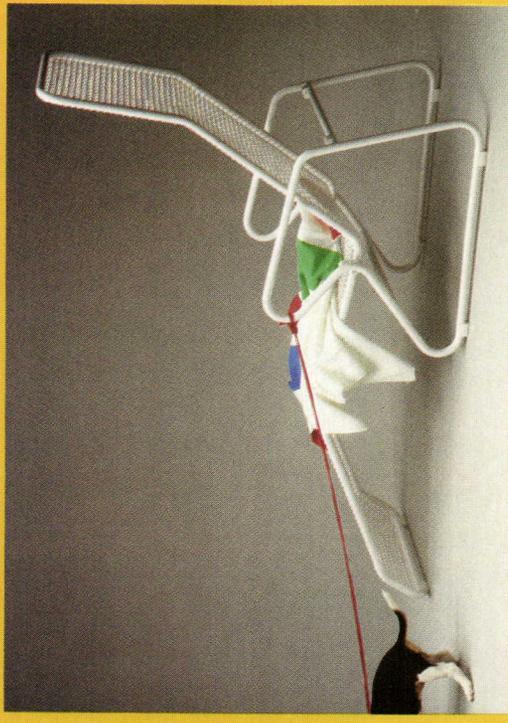
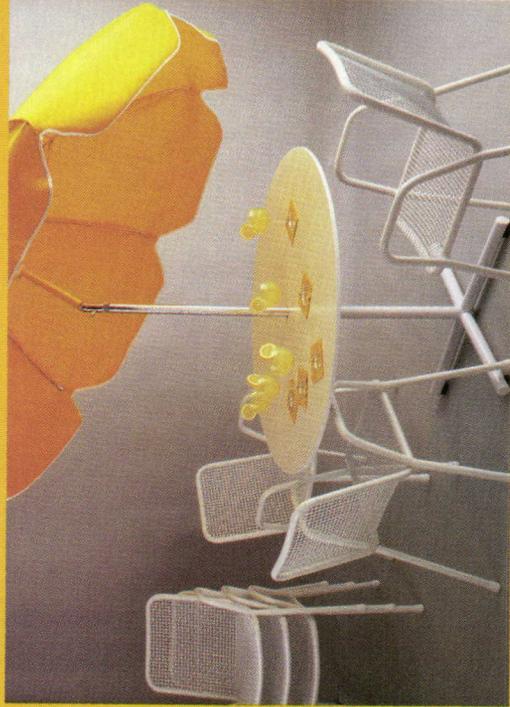
When it comes to outdoor seating, a lot of different manufacturers make it. And a lot of use usually breaks it. However, that's not the case with Kroin Garden and Park Furniture.

This collection of chairs, tables, bench seating and lounges is built to last. Through weather and heavy traffic abuse, it holds up and stands up to any extreme. Because no one makes seating with the kind of heavy tubular steel and fused

synthetic coating that we do. And it's appropriate for just about any site you can think of; from indoor malls, to outdoor plazas, to hotels and restaurants.

So, remember Kroin Garden and Park Furniture. It's the outdoor seating that could make or break the success of your next site.

*Circle 6 on information card.*



## **Tough Customers Deserve Tough Carpets.**

Carpets tough enough to take on the really tough jobs... airports, shopping malls, schools, and hospitals.

That's why we make Unibond® carpets. They don't ravel along seams and they don't delaminate. Use them in an office and you won't need chair pads. They're performance-guaranteed for 10 years. There's just no safer specification.

But safe doesn't mean boring. Unibond carpets don't have to look tough to be tough. In fact, they're downright pretty. Stylish new colors and patterns, unexpected accents and soft pastels. All in advanced generation Antron® nylon by DuPont, with soil and static protection built in.

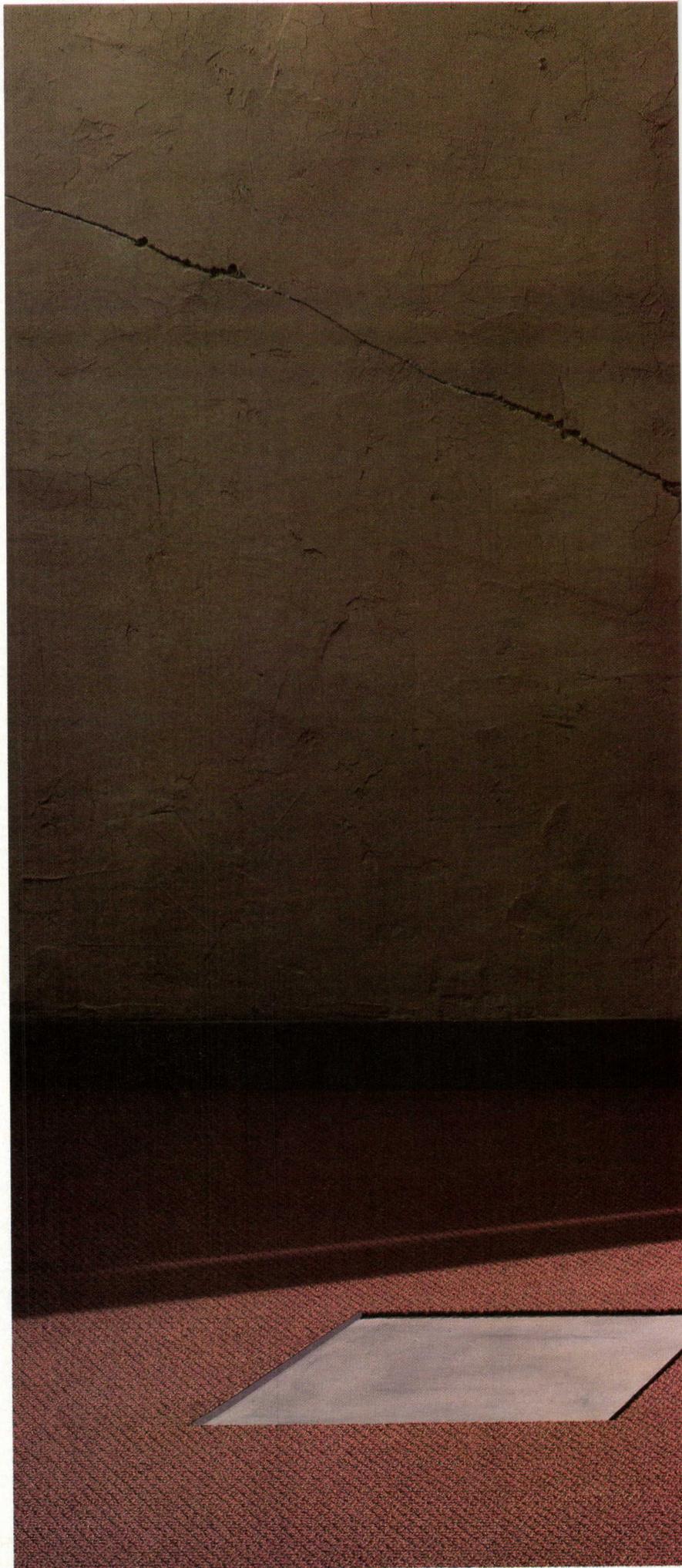
Unibond healthcare carpets offer Bioguard® permanent antimicrobial protection, incorporating Dow Corning's Sylgard® treatment. That makes them the ultimate tough carpets for hospitals, nursing homes, and other medical facilities.

For brochures, test data and specifications, call toll free 800/523-5647. From within Pennsylvania, call collect 215/666-9426.

**Lees  
Commercial  
Carpet  
Company**



A Division of Burlington Industries, Inc.  
King of Prussia, PA 19406





Unibond carpets in over 200 colors, all with coordinates in modular systems. Photography: Fred Schenk. ©1987 Burlington Industries, Inc.





# World Class Performance.



©1987 M. Buschert

Built on the University of Calgary campus for the 1988 Winter Olympic Games, this award-winning structure is the world's first fully enclosed 400 meter speed-skating oval. The intersecting concrete arches spanning the domed ceiling are finished with one of Thoro's architectural coatings.

Thoro System Products offers the highest quality materials for waterproofing, restoring and protecting all types of concrete and masonry surfaces. For over 75 years, these products have delivered world-class performance on thousands of major new construction and restoration projects all over the world. And they carry a full labor and material warranty.

For specific product information, contact:  
Thoro System Products, 7800 N.W. 38th Street,  
Dept. AR-2, Miami, Florida 33166.



**THORO**   
**SYSTEM**  
**PRODUCTS**

©1988 Thoro System Products



# We put holes in to keep it from

Generally speaking, the purpose of a roof is to keep what's outside a building from getting inside a building.

Which means the last thing you'd expect to want in your roof is a hole.

But that's exactly what we do with the most advanced single-ply roofing system you can buy. Put holes in your roof so it doesn't leak.

**The mechanically-attached Hi-Tuff™ roof. What goes down doesn't come up.**

To stick a single-ply membrane to the roof deck, some people use glue. Which works. For a while. But because glue can be sensitive to moisture, rooftop chemicals, and building expansion, the membrane can come unglued. And there goes the roof.

Others use ballast, or stones. Thing is, to keep a 100,000 square foot roof in place, you need a million pounds of stones on top of it. Now, is that something you want hanging

over your head?

Which brings us to the Hi-Tuff roof from Stevens.

We attach the scrim-reinforced, Hi-Tuff membrane to the deck with corrosion-resistant fasteners. We cover the fasteners with the next layer of membrane. And then we fuse the two layers together with a hot air welder. The result is a single, roofwide sheet of rubber.

**A Stevens roof isn't gone with the wind.**

Once installed, a Hi-Tuff roof resists destructive wind uplift forces. In fact, in Factory Mutual's wind uplift test, the Hi-Tuff roof received the highest available rating of 90 pounds of pressure per square foot, then exceeded it by 50 percent. Which means if there's a place on earth that's too windy for a Hi-Tuff roof design, nobody's discovered it yet. Or if they did, they got blown away.

**When the weather gets tough Hypalon\* gets tougher.**

The Hi-Tuff membrane is made

© 1987 J.P. Stevens & Co., Inc., Roofing Systems,  
395 Pleasant St., Northampton, MA 01061

\*Hypalon is a registered trademark of Du Pont.

# your roof leaking.

rom DuPont's Hypalon. Unlike other membrane material, Hypalon combines the best properties of both thermoplastics and rubbers. So after it's hot-air welded and fully installed, it self-cures to resist ultraviolet rays, rain, pollution, heat, and cold.

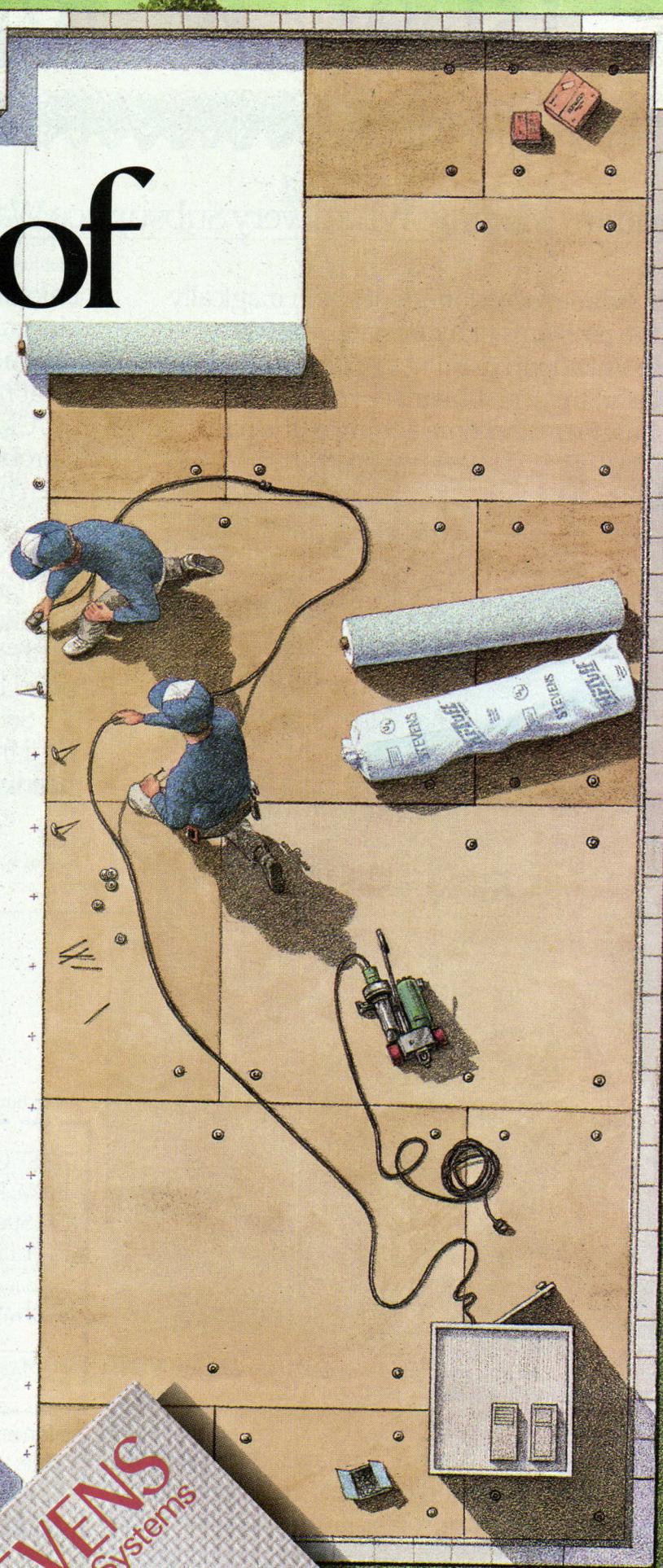
And Hypalon is white, so it reflects up to 78 percent of the sun's heat. Which makes your HVAC system work less. Which, in turn, saves you money.

**Our operators are now standing by.**

We could also tell you about Hi-Tuff's UL Class A rating, its resistance to aggressive chemicals, its low temperature flexibility, or its low burning characteristics. But, quite frankly, we're out of room.

So instead, we'll send you some product literature. But first, we need to know your name and where you pick up your mail. So give us a call at 413-586-8750. We'll take care of the rest.

Circle 49 on inquiry card



**STEVENS**  
Roofing Systems

Center and at Columbia's Graduate School of Architecture, Planning, and Preservation.

runners-up. Submission deadline is March 22. For more

call 202/626-7358.  
• Du Pont Carpet Fibers is

For more information, call 212/614-2962.



**Composition and form.  
Hardware classics by Sargent.**

The eye knows it; the hand confirms it. This is form and function perfectly integrated. This is Sargent, the mortise lock of choice for generations of architects and specifiers.

Craftsmanship, service and on-time delivery. For enduring qualities in mortise and bored locks, door closers and exit devices, choose the complete Sargent line. And get classic architectural hardware.

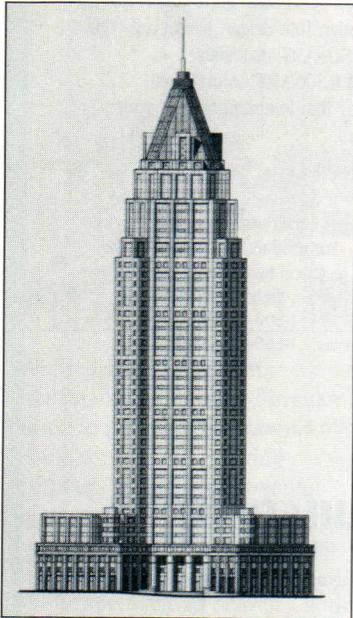
**SARGENT  
ESSEX**  
INDUSTRIES, INC.

Sargent, New Haven, Connecticut 06511  
Sargent of Canada Ltd.

Circle 52 on inquiry card

News briefs

Tropical sanctuary



**Skidmore, Owings & Merrill** has designed what will be the tallest building in Connecticut (1). The 42-story, \$200-million structure will occupy a site in downtown Hartford adjacent to the Civic Center and provide commercial and office space. Completion is projected for mid-1990.

**A tower currently under construction** in the Streeterville neighborhood of Chicago (2) will contain commercial space at street level, 399 rental apartments, and a rooftop swimming pool. Designed by Nagle, Hartray & Associates of Chicago, the faceted exterior of glass panels accented by dark green baked-enamel frames is meant to recall, according to the architect, the city's older apartment buildings.

**The largest downtown mixed-use venture to date undertaken** by the Rouse Company is beginning construction in Phoenix (3). Designed by Howard, Needles, Tammen and Bergendoff, and dubbed "Superblock," the \$515-million project will include 1.9 million square feet of office space, 450,000 square feet of retail shops, a 600-room hotel, and parking for 5,400 cars spread over the 18.5-acre site.

**PortAmerica**, described in promotional literature as "a new luxury port town," will be built on a 480-acre site along the Potomac River in Prince George's County, Md. (4). The \$1-billion scheme, designed by John Burgee Architects with Philip Johnson, will include a World Trade Center (comprising 1.8 million square feet of office space, a 200,000-square-foot trade mart, 80,000 square feet of retail space, 450 condominiums, and two hotels) and a waterfront parcel consisting of a 350-room hotel, a 500-boat marina facility, and 1,150 Georgian-style condominiums. Completion of the entire project is targeted for the year 2000.



A synagogue in Barbados built in 1654, one of the oldest Jewish houses of worship in the Western world, has barely survived neglect, abandonment, and tropical storms. Now, under the leadership of Paul Altman, member of a fledgling congregation of Jews who have recently returned to the island, the synagogue is being restored to its former splendor.

After a hurricane destroyed most of the 17th-century structure in 1831, congregants rallied to reconstruct the building according to its original design. The synagogue remained the focal point for the Jewish community, whose prosperity was linked to the flourishing sugar-refining industry, until sugar prices plummeted in the later 19th century and temple members began to emigrate. By 1900 only 17 worshippers remained, and in 1929 the synagogue was sold by the last Jew on the island—to be converted into offices.

Efforts to save the synagogue from oblivion were started by a Barbadian gentile, Eustace Shilstone, who sought to purchase the adjoining cemetery as a Jewish memorial. Barbados then had no national policy for preserving monuments, however, and in 1983 the government acquired the site for construction of a new Supreme Court building. The synagogue escaped demolition only through a campaign led by Paul Altman, with the aid of Barbados's newly empowered National Trust. Altman then solicited funds from Jewish communities in North America and Europe and from owners of vacation homes in Barbados. Island architect Andy Voss is currently overseeing both exterior and interior reconstruction. The project extends to the cemetery and grounds; a "Biblical" garden and an exhibition on the history of the Jews in Barbados are also planned. *Scott Gutterman*



*Interior and exterior of the Barbados synagogue prior to restoration.*

Westweek 1988 in the works

This year's Westweek, the combined contract-manufacturer trade show and design conference held at the Pacific Design Center in West Hollywood, is scheduled for March 23-25. Entitled "Overview: Expansion and Insight," the 1988 lecture program features astronaut Joseph Allen, New York performance artist Antoni Miralda, graphic designer Milton Glaser, and an international assortment of architects, including Gae Aulenti, of Milan, Richard Rogers, of London, Cesar Pelli, of New Haven, Frank Gehry, of Los Angeles, and Marco Zanuso, of Milan.

**CAESARS PALACE**  
LAS VEGAS, NEVADA



**THE OWNERS OF  
CAESARS  
PALACE  
WOULDN'T GAMBLE  
ON THEIR ROOF**

**U.S. INTEC, INC.**   
Roofing and Waterproofing Products

**THEY WENT WITH  
U.S. INTEC BRAI.**

Proven consistent quality. Quick installation with minimum inconvenience to business. Brai modified asphalt roofing membranes are being installed all over the nation. U.S. Intec is the world's largest producer of A.P.P. modified bitumen. Our Brai products withstand time and virtually all climatic conditions. And with Brai you get more than a tough roof. Pre-job conferences. Free warranties. And technical information a free phone call away. Do we make several roofing membranes for different applications and preferences? You bet.



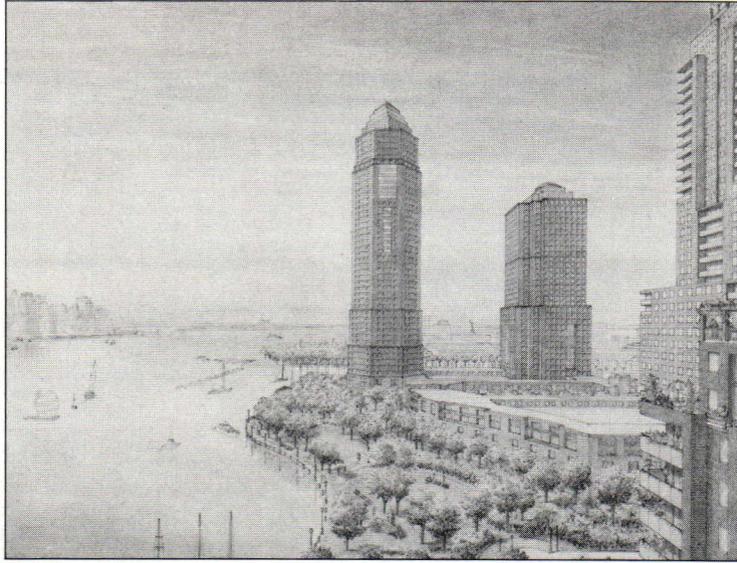
**WE'RE  
ON A  
ROLL.**

Regional Offices:  
Fort Worth, TX  
North Branch, NJ  
Redmond, VA  
Mesa, AZ

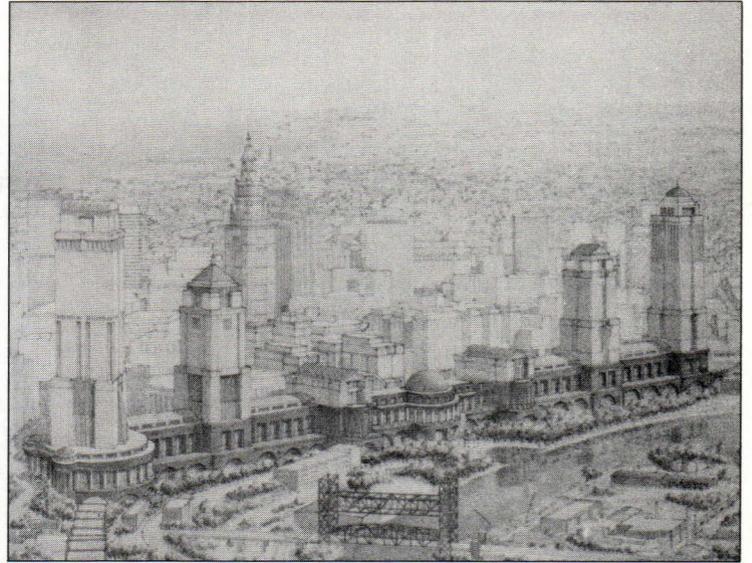
Texas 1-800-392-4216  
National 1-800-231-4631

Circle 54 on inquiry card

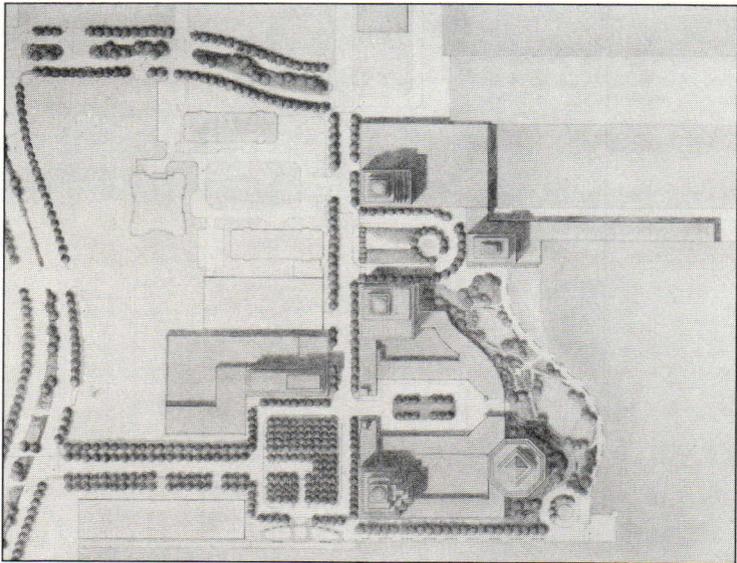
## A master planner moves on



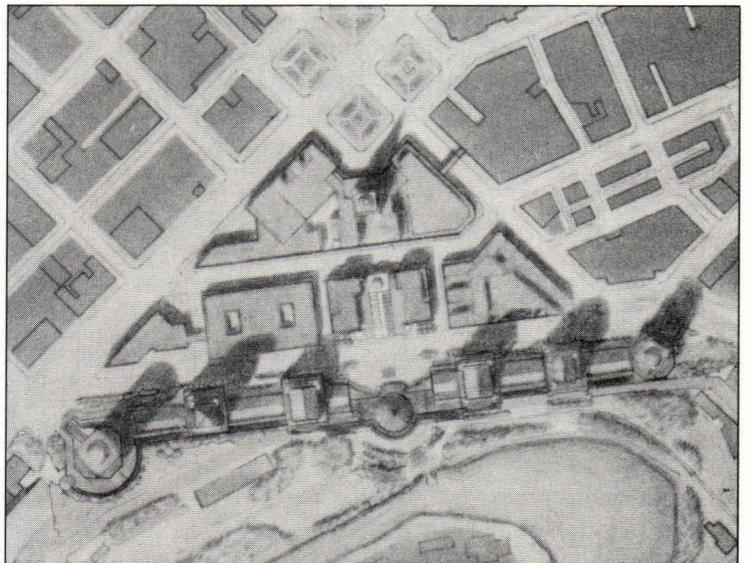
1



3



2



4

When Stanton Eckstut split with partner Alexander Cooper to join the Ehrenkrantz Group a year and a half ago, it was generally—and, as it turns out, correctly—assumed that the Ehrenkrantz Group & Eckstut would continue the urban-planning tradition of its new principal (with Cooper, he was responsible for New York's Battery Park City master plan, hailed in *RECORD* by critic Carter Wiseman as "the standard by which the success of any future urban design must be measured"). Two of the score of urban projects currently on the Ehrenkrantz & Eckstut boards—

the Newport Master Plan for Jersey City, N. J., (figures 1 and 2, above) and the Tower City Center for Cleveland, Ohio, (figures 3 and 4)—exemplify the firm's current approach to city planning, which is, in the words of project architect Michael A. Manfredi, "to design everything down to the benches." The proposal for the \$10-billion, 400-acre mixed-use Newport development, now under construction across the Hudson River from Battery Park City on the site of a derelict railroad yard, calls for low-, mid-, and high-rise buildings to be encircled by a "greenbelt" of

public parks and recreation areas. Eleven piers extending as far as 1,400 feet into the river will support town houses, which will be linked by arcades to shopping areas and transportation facilities. In Cleveland, a 34-acre tract along the Cuyahoga River at the city's southern edge will be transformed into Tower City Center. The focus of the Ehrenkrantz Group & Eckstut's proposal is a rotunda, located opposite the landmark Terminal Tower, to be flanked by low-rise buildings giving way to high-rises. Arcades will connect office, retail, and hotel space. *K. D. S.*

*1, 2. Newport Master Plan for Newport Associates Development Company, Jersey City, N. J.  
3, 4. Tower City Center for Forest City Enterprises, Cleveland, Ohio*

# It only looks like

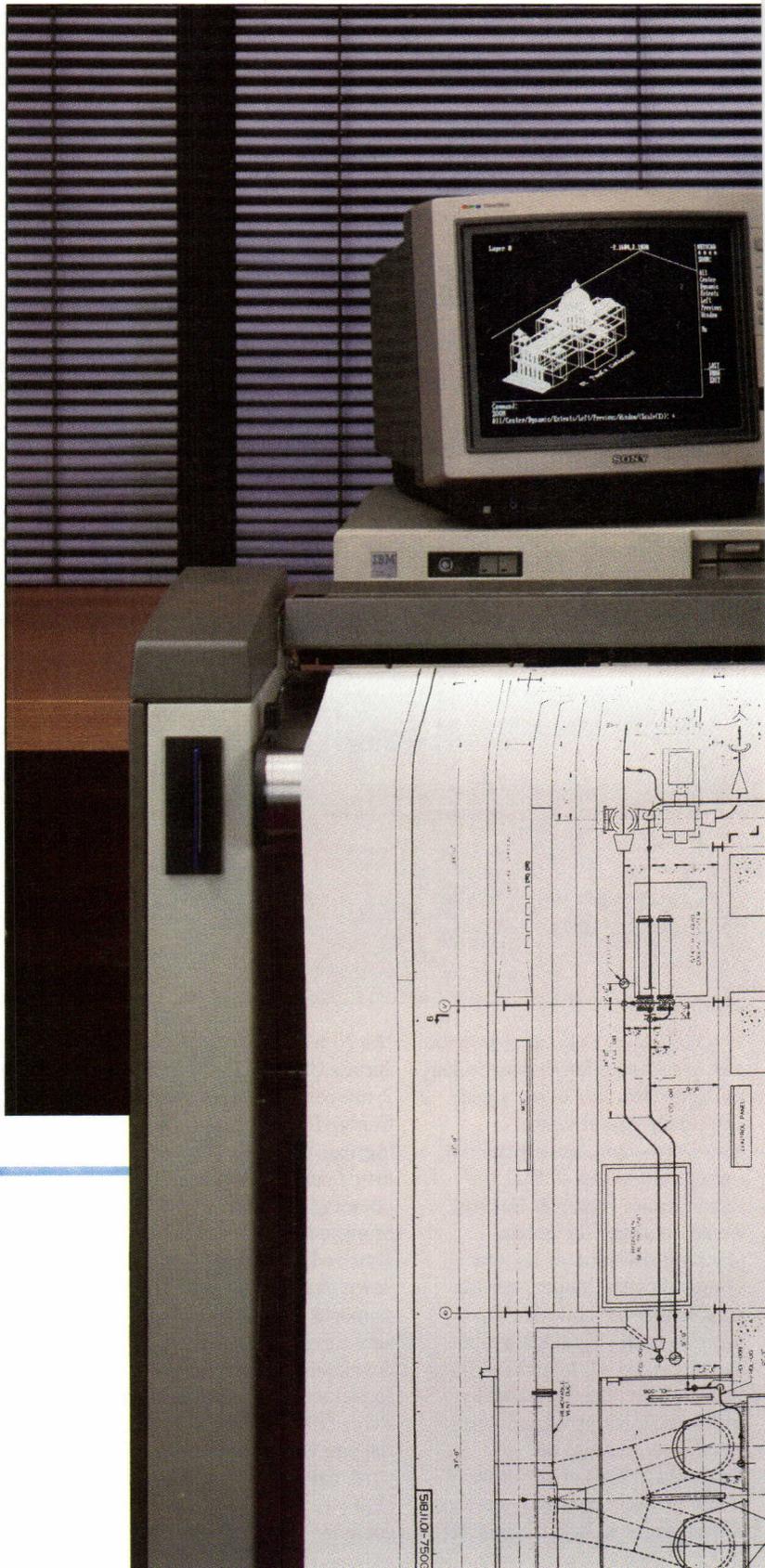
But look again. It emulates pen plotters, reading popular 906/907 and HPGL data formats. It comes in pen plotter widths – 24 and 36 inches. And you can use it with your favorite CAD packages, such as AutoCAD, VersaCAD, or MICRO CADAM.

But the Versatec 8500 series is like no pen plotter made. It is more reliable, because it plots with electrons, not pens. It's faster, plotting D or E size drawings in less than a minute. It can plot an unlimited number of vectors, variable line widths (to 1/2 inch wide), dashed lines, or text without reducing speed.

A built-in rasterizer and full-page buffer enable fast output at a constant rate for outstanding quality. Plot an original in fifty seconds. Make copies without retransmitting data. And plot over one hundred drawings without changing paper.

So fast you can share one plotter among several users. So quiet you can run this plotter at your desk. So reliable you can plot unattended at remote sites. This is the revolutionary new 8500 series of electrostatic plotters. Prices start at under \$20,000.

Circle our readers' service number or call toll-free 800/538-6477\* for a free product application brochure.



\*In California, call toll-free 800/341-6060

HPGL is a trademark of Hewlett-Packard. 906/907 is a trademark of CalComp. AutoCAD is a trademark of Autodesk. MICRO CADAM is a trademark of CADAM Inc. VersaCAD is a trademark of Versacad Corporation. Versatec is a trademark of Versatec, Inc. Xerox is a trademark of Xerox Corporation.

Plot data courtesy of Autodesk.

# pen plotter.



**VERSATEC**  
A XEROX COMPANY

See us at Spring National  
Design Engineering and NCGA

Circle 55 on inquiry card

*Spacesaver systems are performing in thousands of distinctive structures such as The Associates Center (Chicago) and the Mutual of Omaha Plaza (Omaha).*



## THE ART OF ACCOMMODATING SPACE.



We share your dream of uniting form with function.

More than a decade ago, we founded a company on the universal principle that the fundamental challenge of architecture is the accommodation of space.

How to occupy it usefully.

Efficiently.

And with beauty.

With Spacesaver high-density mobile storage systems, you won't have to sacrifice your desire to create a structure that is as aesthetically pleasing as it is useful

for your building's storage requirements.

No matter what type of facility you design— from libraries and law offices to hospitals and banks.

Spacesaver systems are engineered with your design goals in mind. They complement the environment you envision. They utilize available space more efficiently. They save up to half the room of stationary shelving. Or, they can double the storage capacity of the same area.

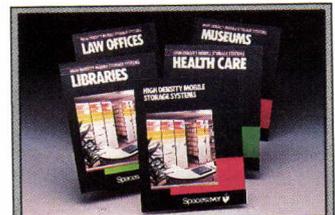
Either way, you gain the space and the freedom to design-in the architectural elements that unite form and function.

More room for atriums.

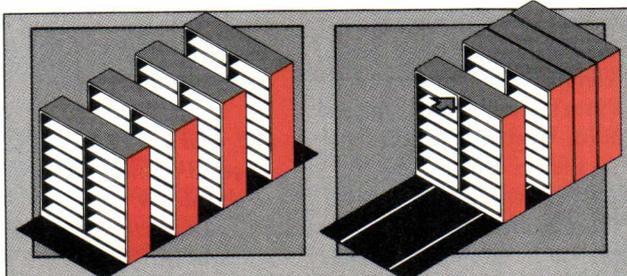
More room for terraces.

Even more room

for people.



Contact us today to receive your free Spacesaver Design Library 1-800-492-3434.



**Wasted aisle space VS. productive space.**  
By eliminating wasteful aisles, Spacesaver systems condense storage areas freeing space for other purposes.

**Spacesaver**  
When Performance Counts.

Spacesaver Corporation, 1450 Janesville Ave., Ft. Atkinson, WI 53538, Tel: 414-563-5546, TWX 910-260-3730

**Eileen Gray: Architect/Designer**, by Peter Adam. New York: Abrams, 1987, \$39.95.

Reviewed by Julie V. Iovine

It is perhaps predictable that Eileen Gray, one of the preeminent designers of her generation, was grossly overlooked during her life, only to be elevated to cult-figure status after her death. She probably would have scorned the publicity anyway, according to Peter Adam's thorough, if at times lackluster, biography. Gray, after all, was a tough-minded but exceptionally shy woman who had to face the lifelong indignity of seeing her work go uncredited or, in the case of her signature E-1027 house (one of only two houses she realized as an architect), misattributed to Le Corbusier.

Born to a wealthy family in County Wexford, Ireland, Gray moved to Paris in 1900 to study art, and quickly became part of the cutting fringe. She was a spirited autodidact who absorbed all influences. In the 1920s, for example, the lacquer cult was in full swing, and Gray, having mastered the technique under the Japanese artisan Sagawara, was at its center. She also took up rug design during this period, and while her lacquer screens clearly exhibit a lingering Art Nouveau sensibility, her rugs seem influenced more by Russian Constructivism. Quite early in her career, Jacques Doucet, the *éminence grise* of the fashion world, became one of Gray's major patrons. While Adam correctly notes that Doucet did not exactly "discover" Gray, as some have contended, a much later auction of Doucet's studio contents in 1972 did contribute significantly to her recent rediscovery.

Throughout the 1920s Gray managed, or mismanaged, a chic Paris shop called Jean Désert. Retailing for the carriage trade was not her strong suit, however, and she was far more preoccupied with her radical design of Madame Mathieu-Lévy's apartment, a four-year project that resulted in the creation of the memorable pillow-stuffed Pirogue sofa. Some additional recognition came in 1923 with Gray's first full-scale exhibition at the Salon des Artistes Décorateurs, where a fur-covered divan and a large lacquered screen shared top billing with several neo-primitive, gold-lacquer and blue-glass ceiling lamps. (One alarmed critic compared the room to the Cabinet of Dr. Caligari.)

Gray turned to architecture quite late in her career, and saw only two of her designs built. Her most significant commission was for Jean Badovici, editor of the short-lived *L'Architecture*

*Vivante* and doubtless the single most influential person in Gray's life. They made an odd couple: he, the lively Hungarian who enjoyed drinking with Le Corbusier, Léger, and Mondrian; she, the middle-aged working professional with no time for foolishness. It was Badovici who commissioned Gray in 1930 to design a house that might satisfy her desire to integrate architecture and furniture. The striking result, E-1027, is Gray's masterpiece. In some ways a casebook Modern house right down to its *pilotis*, E-1027 has fun with function, incorporating wit in its fold-up drawers, sliding dividers, and stenciled collages that show where the pillows go.

During the 1930s and '40s, Gray, her social consciousness stirred by world events, turned to the design of mass-produced housing and public buildings. Although none of these projects was ever built, Le Corbusier did occasionally include her plans in

exhibitions that he arranged, mostly of his own work. Meanwhile, Gray languished in her own studio (with very little company other than her ever-faithful maid, Louise Dany), working on new designs or perfecting old ones. She died in 1976 at the age of 92.

It was not until Gray's death that critics began to reexamine and praise her work. Within the past decade, she has been the subject of several major exhibitions, Andrée Putman has licensed individual pieces of Gray's furniture (most successfully, the chrome-and-glass table from the E-1027 house), and *The New York Times* has recently hailed her as "the first woman to achieve recognition as an architect." Adam's carefully considered monograph simply confirms this enigmatic figure's acknowledged place in the history of 20th-century design. The enigma herself deserves further study.



"I keep telling you, Harold—ask a stupid question and you get a stupid answer."

Julie Iovine is a freelance writer who contributes frequently to RECORD.

## Brave new worlds

By Michael Sorkin

When I look at the work of Lebbeus Woods, certain comparisons inevitably come to mind. The fantastic interiors of Piranesi. The soaring vistas of Hugh Ferriss. The latter seems especially resonant. To be sure, for raw delineating power, Woods is our greatest, our Ferriss. And, like Ferriss, Woods has long supported himself making other architects' work look good: it's the guilty secret of many offices that a rendering by Woods often accomplishes more by way of design than was there to begin with.

But it's the visionary side of Lebbeus Woods that is of concern here. For Woods is, as this portfolio attests, a creator of worlds. Like Hugh Ferriss, his territory of invention is the city. Over the past 10 years, Woods has produced an array of striking urban visions, the latest of which—"Centricity"—is presented on these pages. But, despite a certain kinship of *chiaroscuro*, the comparison to Hugh Ferriss is a limited one. Ferriss was the great extrapolator, setting out his astonishing views of what American cities (and especially New York) might be on the basis of ideas—whether of enormous buildings, traffic separation, or zoning—that had currency but lacked expression. Indeed, the power of his images was precisely in the way they concretized expectation. There was never any doubt that these things might be.

In this, Ferriss participated in a tradition of graphic polemic that was central to the Modern movement. Sant'Elia, Tony Garnier, Le Corbusier, and Frank Lloyd Wright a little later were all suppliers of imagined urban futures, corroborations of the larger workability of their

architectural projects. Of this particular set, perhaps Sant'Elia is a better model for understanding Woods. Unlike the city of Corb, Garnier, Wright, or Ferriss, Sant'Elia's was less a reproduction of feeble social theorizing than a deliberate attempt to break out into an unknown, a tool of research rather than propaganda. Here is Sant'Elia's own description, full of the peppy cadences of Futurism: "The problem of modern architecture is . . . to raise the new built structure on a sane plan, gleaning every benefit of science and technique, settling nobly every requirement of our habits and spirits. . . . Such an architecture cannot be subject to any law of historic continuity. It must be as new as our state of mind is new and the contingencies of our moment in history. . . . In modern life, the process of consequential stylistic development comes to a halt. Architecture, tired of tradition, begins again, forcibly, from the beginning."

In the mesmerizing, astonishingly wrought vision of Lebbeus Woods, we never have the sense of confrontation with a perfected version of the present, the architectural rationalization of suburban or skyscraper theory. We are plunged into unfamiliar territory, a world of architecture beginning again. Not that an aura of familiarity is wanting. The viewer grapples for some certifying comparison, riffing through oil refineries, the middle ages, 19th-century technical construction, to try to gain a visual handle. What we see, though, is none of this. We're not even sure that the scenes are terrestrial. Woods's structures betray no familiar routines of use or of inhabitation. Yet clearly there are activities accommodated here. The whole is suffused with the support of a mysterious technics, evident in the presence of strange alchemical apparatus

*In an extraordinary series of pen-and-ink drawings dubbed "Centricity: The Unified Urban Field," Lebbeus Woods reaffirms his position as our most fecund visionary—a futurist whose notions of the ideal city stretch architecture to its technological and philosophical limits. We*

and alluded to by Woods in his enigmatic captions.

This is an important clue. In many of Woods's drawings there is writing, sometimes legible, as often not. Like his architecture, the writing's about longing, about a straining after language. Woods has written, "We should build our buildings and then discover how to live and work in them." The drawings are his avenue of inquiry, his process for this discovery. And Woods continuously leaps ahead of himself: the utter clarity of his images defies any presently possible account of them. While the written texts may be mired in an aching unreadability, the drawings deliver an account—precise, measurable—of phenomena which, for now, exceed explanation. Woods's breathtaking images force fictions upon us, innumerable strategies of coherence, different assimilations of the raw data, fresh personalized hypotheses, lodes of unverifiable elegances.

The suffusing technical aura is also crucial. Woods's polemic is about science, about an architecture conceiving in the light of the Einsteinian revolution. Among their other agendas, Woods's cities are graphic models—metaphors—for the new physics. The connections are diffuse and undogmatic, to be sure. Nevertheless, they assert Woods's implicit belief that architecture, if it is to retain vitality, must be a part of this inquiry. While architecture may have long ago abandoned its position at the leading edge, he asserts that it must, at the very least, be conscious of science's findings.

This architecture is—not to resist a phrase—science fiction, a supple rhetoric of things to come. It abounds in sites for events, rituals, and techniques now only dimly imaginable but pregnant with expanded hopes. One with the greatest of imaginative expectations, it

invents the vernacular of a culture that's yet to be. At a time when the proprietorship of anticipation has been almost completely ceded by architecture, when visionary roles have been either co-opted or renounced, Woods shows nothing but bravery in pursuing his new worlds. And in Woods's sure hands, architecture begins to get one back from George Lucas and Ridley Scott.

I recently received a questionnaire that wondered whether the U. S. government should spend more on a search of the universe for extraterrestrial forms of life. I ticked the "no" box. Not that I'm uninterested in finding neighbors out there, just that the mode of inquiry—massive radiotelescope—seems to narrow rather than expand the field of speculation, imprisoning the future within the confines of a narrow wavelength, demanding that the unknown accommodate itself to the limits of our technology. Woods's search seems to offer far richer prospects, a genuine utopia, unequivocal about its *a*-geography, the mentalism of its mapping.

Yet Woods's work is engaged and critical, not just acquiescent babble. Some lines from Brecht's poem "1940" evoke the problematic: "The designers sit/Hunched in the drawing offices./ One wrong figure, and the enemies' cities/Will remain undestroyed." Brecht thought of bombers, but our architectural technique shares the calculus. Woods clearly enfolds the Janus of technology and terror in his vision, seeking to redeem science for the arts of the marvelous. He struggles to restore the very idea of the city to a humanizing terrain, implicitly criticizing its decay into a receptacle for the irrational. The epicyclical undergirding, the inevitability of return, offers the hope of life/  
*Continued on page 85*

publish Michael Sorkin's essay on Woods to coincide with a current exhibition of the architect's work, on view at the Storefront for Art & Architecture, in New York City, from February 19 through March 19.

*Woods*

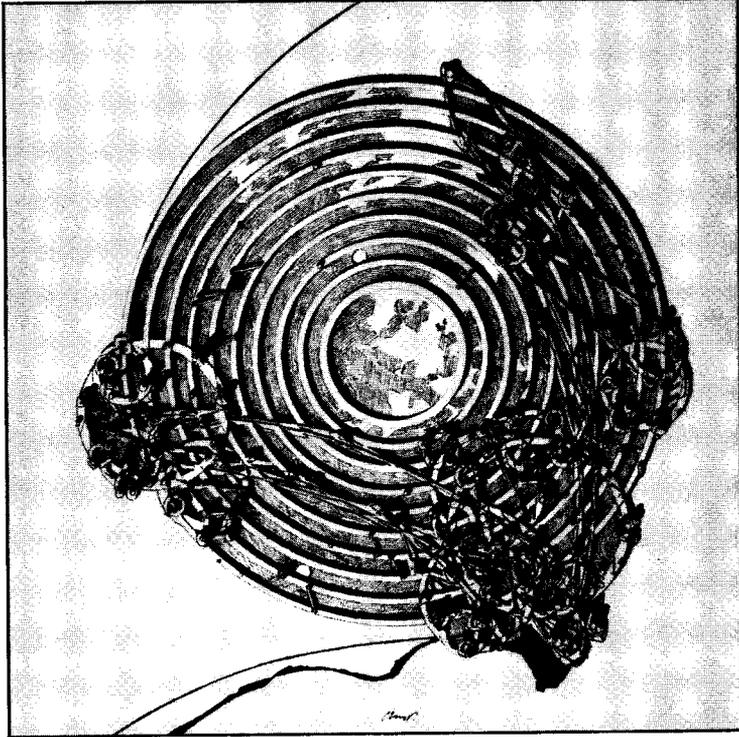
*Chris 5/11/88*



*Monogram - Dome - Wood - 895 Ave I East - 1907; Wood - 1907*

*"New patterns of urban form and living arise from the concepts of time and space considered as one," Lebbeus Woods has written. "The interplay of metrical systems establishing boundaries of material and energetic form is the foundation of a universal*

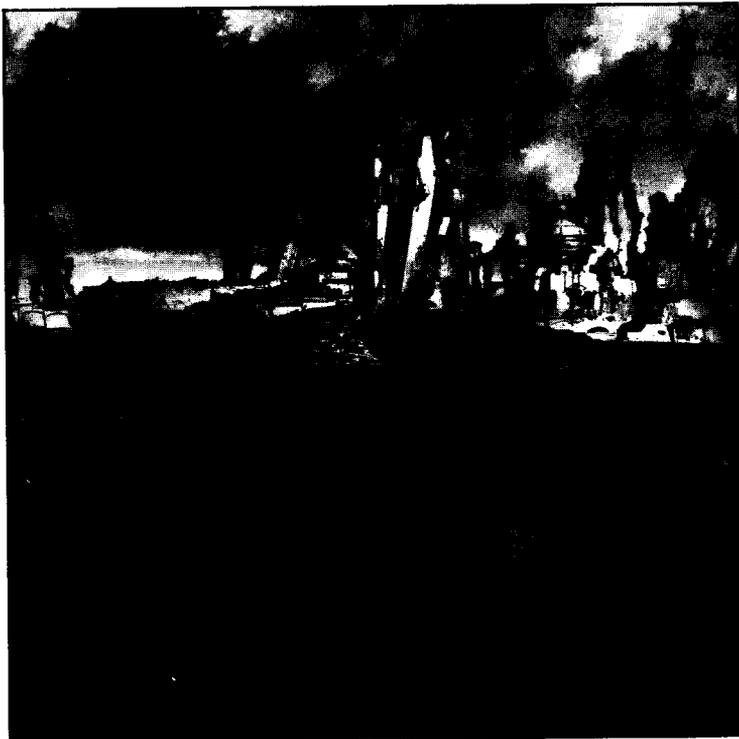
*science . . . whose workers include all individuals, whose principal instrument of research is architecture, and whose interactive field is centricity." The biomorphic and mechanomorphic forms that populate Woods's visionary world are, according*



1



2



3



4

to Michael Sorkin, "the vernacular of a culture that's yet to be."

Drawing page 81: Centricity Terminus

Drawings below:

1. Centricity: concentric field
2. Biomechanical tower
3. Citylimit: towers and rings

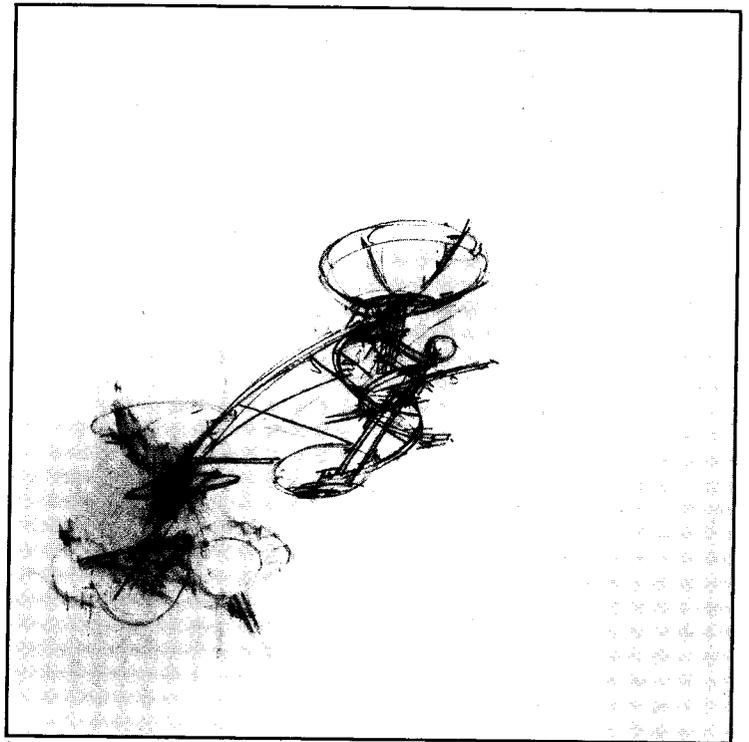
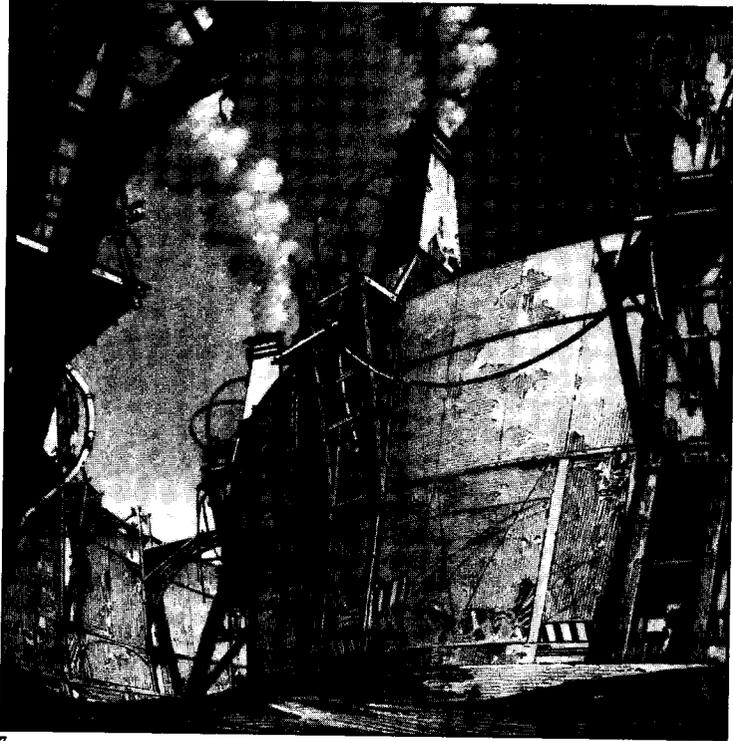
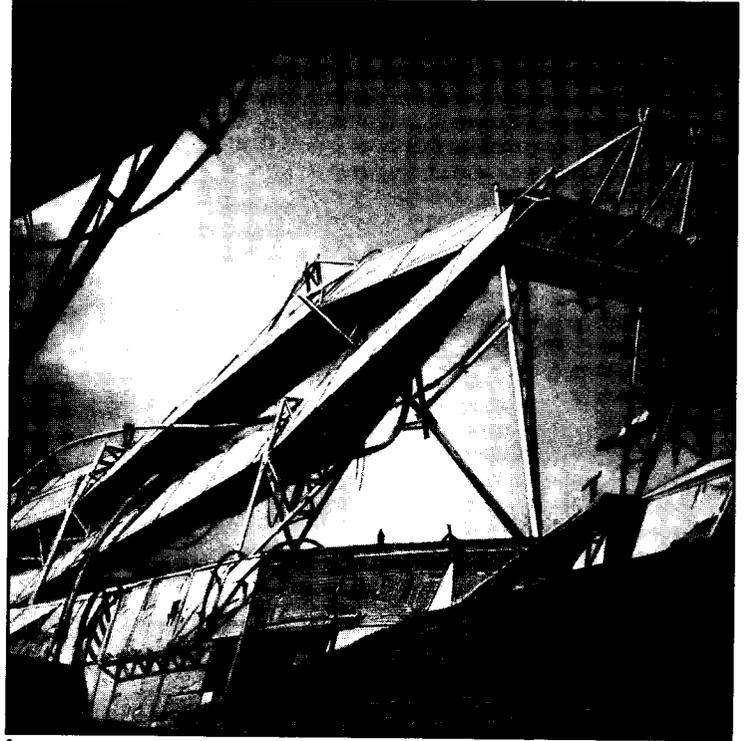
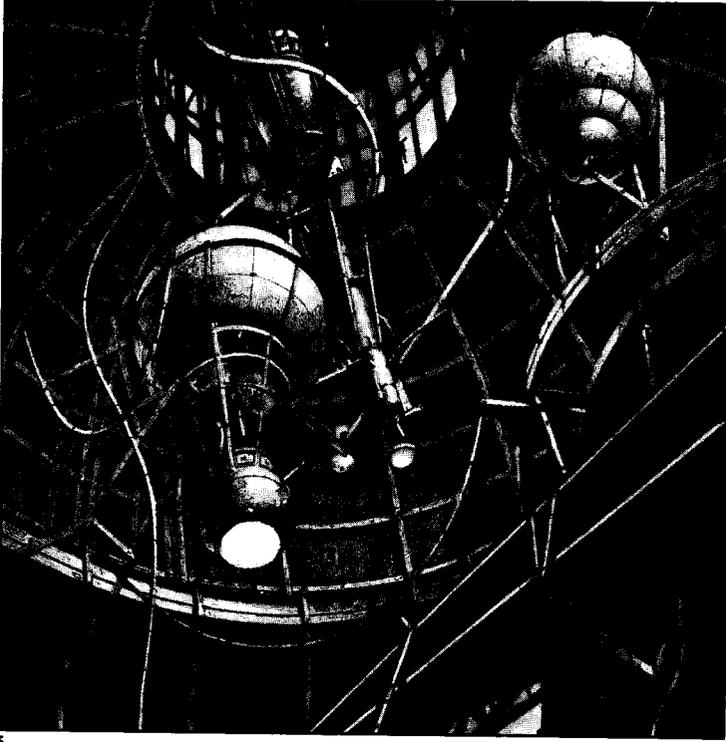
4. Quadrapolar 9A: square with geodynamic towers

5. Centrum chamber, with kinetic light machines

6. Citylimit: rings with accelerators

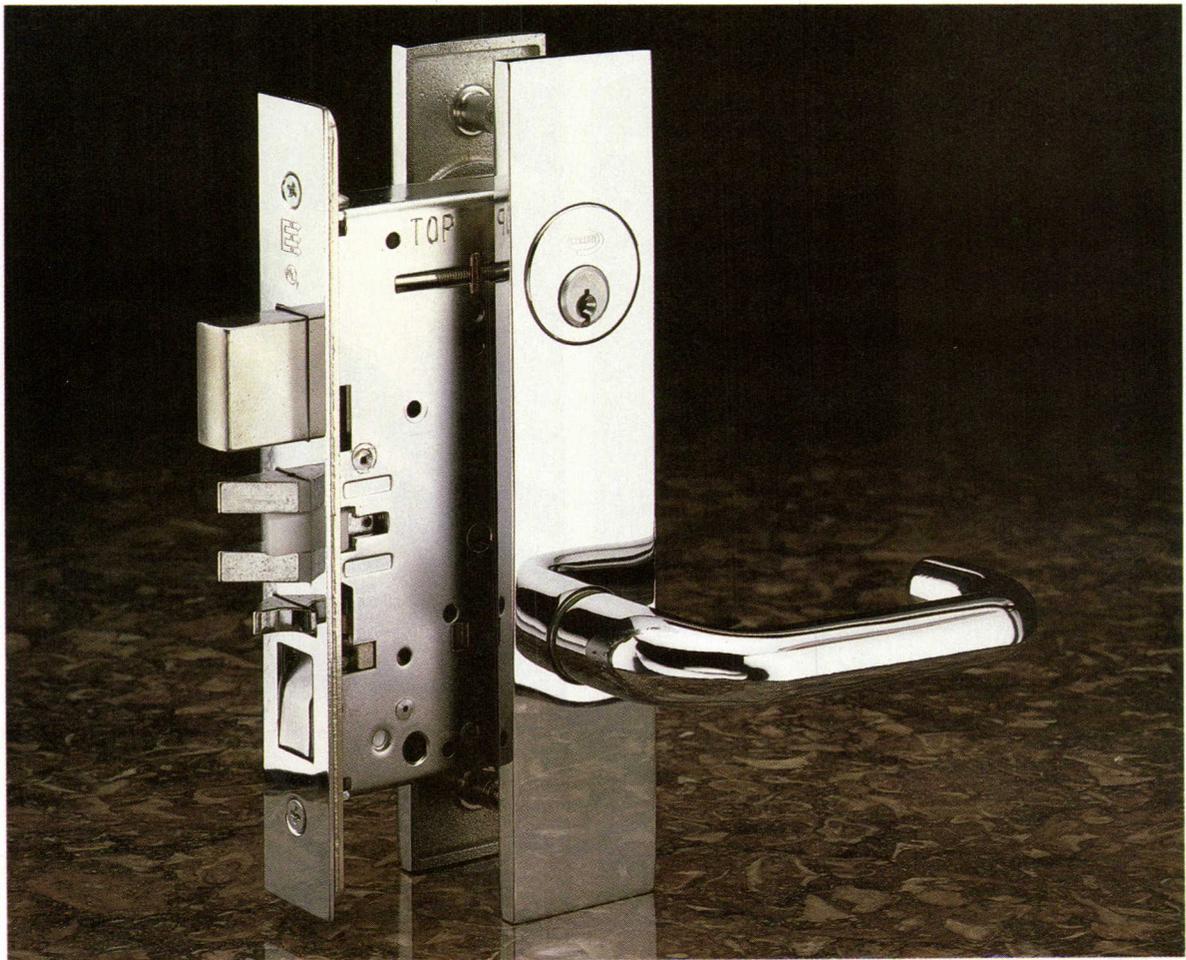
7. Acceleration rings, with geothermal machines

8. Freefield: freelight machine



# Corbin has no equivalent.

In form.

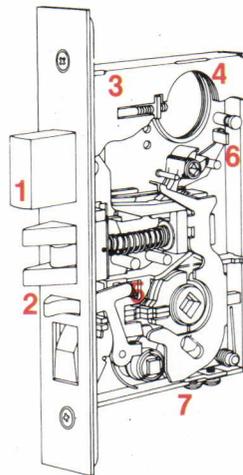


9500 Series Mortise Lock

## In function.

Form and function. Beauty and technology. The architect requires them. The contractor needs them. The building owner demands them. The choice is Corbin.

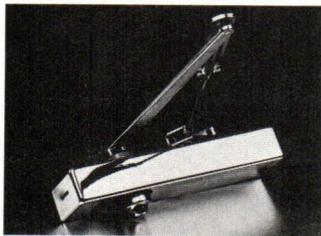
Corbin Mortise Locksets combine innovative design, elegant styling and quality materials in a wide range of functions and finishes — just what you'd expect from the leaders in mortise lock technology. That's why specifications read: "Corbin — no substitution." Write or call for complete information.



1. Solid, one piece, 1" stainless steel deadbolt exceeds ANSI Grade 1 strength requirements by 300%.
2. Sturdy 3/4" anti-friction latchbolt exceeds ANSI Grade 1 Bolt Strength Rating by 300%; much stronger than a reversible latch.
3. Heavy gauge 3/32" steel case — nickel/chrome-plated finish for added corrosion resistance.
4. Exclusive, total non-ferrous lock construction available for corrosive environments and marine applications.
5. Heavy-duty springs furnished standard to extend life and resist lever sag.
6. Thru-bolted trim for greater strength and easier installation.
7. All lever handle trims have a standard fusible link — to meet demanding UL "A" label requirements.



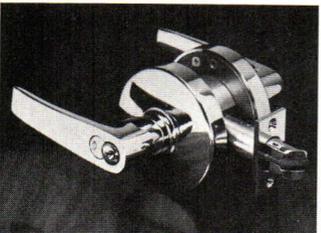
## In full line.



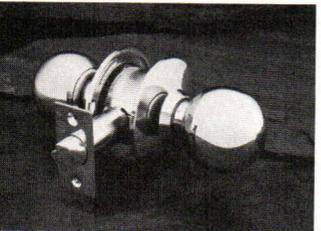
Closers



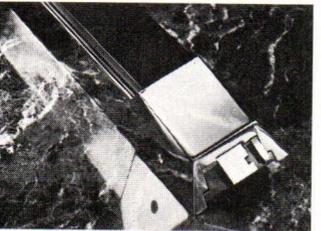
Mortise Locksets



SecurityBolt™ Locksets



Cylindrical Locksets



Exit Devices



HARDWARE GROUP

**EMHART**

Emhart Hardware Group  
225 Episcopal Road  
Berlin, CT 06037  
1 203 225-7411

Circle 57 on inquiry card

*Observations continued*  
cycle. The craft and casual decay of his urban fabric retain everywhere the evidence of the hand, not his alone but the unseen imagined hands of a citizenship. And, tech's sting is averted by architecture's privileging. Woods's vision assails the placelessness of mediated culture by mesmerizing us with location.

Late in the sequence of drawings for the Centricity, forms slowly metamorphose, sloughing off Euclid for more biomorphic shapes. Architecture is evolving here as Woods struggles to bring it to life. One sees the fervid inventor in his lab, commanding matter into a new order, making not just those cycling atoms and molecules but the orbits of the universe dance to an irresistible tune. Here's a glimpse of the grand Woodsian synthesis, the ultimate harmonizing of the spheres, the fresh totality. Mechanics, excited by light and genius, becomes biology. The final images of the Centricity—the "free-gravity" and "free-light" machines—loose architecture from its most primary constraints, barely materialized wisps of longing for an eventuality we know must come. Lebbeus Woods prepares architecture to soar from becoming to the incredible lightness of being itself.

It is a striking feature of contemporary architecture that the visionary style, once so prominent, so central, is now so lacking. Our avant-garde, such as it is, pursues inquiries that seem ultimately solipsistic—private investigations which, however poetic, long for no comprehending grandeurs. Part of this reticence is reactive, a retreat from the regulatory oppressions of a checkered history of great plans. Lebbeus Woods's bold imaginings are vital and restorative. His imaginary cities walk the visionary's inevitable fine line between coercion and fantasy with the elegance and grace of Philippe Petit. Centricity argues not for the superiority of some specific practical arrangement but for the liberatory prospect of imagining broadly, fervently. His ever-expanding discourse of the almost possible is an inspiration not just to build, but to think.

## HOW TO DRAIN A DECK WITHOUT DRAINING YOUR BUDGET.



Now it's possible to remove water from a deck without getting soaked.

New cost-effective Miradrain™ 9000 has a hydraulic capacity that's 4 times more efficient than a 6 inch layer of well-graded gravel on a deck sloped 6%.

And with a compressive strength of 18,000 psf, it can handle almost any type of traffic.

But best of all, Miradrain 9000 reduces your overall costs.

Because of its ultralight weight—just 4 oz/sq ft—structural costs and installation costs are minimized. In addition, 2 layers of fabric, gravel and, in many cases, protection board are eliminated.

Miradrain 9000 is also perfect for planters. It allows for more growing medium than gravel, and the woven geotextile resists clogging better than non-wovens for soils typically used in planter applications.

To find out more about Miradrain 9000 miracle drainage, contact your Mirafi Representative or call us toll-free. In the U.S., 800/438-1855 (704/523-7477 in NC, Hawaii, Alaska) or write Box 240967, Charlotte, NC 28224. In Canada, 800/267-0182 in Eastern Provinces (519/539-9877 elsewhere).

Miradrain 9000. A drain on your deck. Not on your budget.

**MIRAFI**  
Mirafi® and Miradrain™ are trademarks owned by Mirafi, Inc.

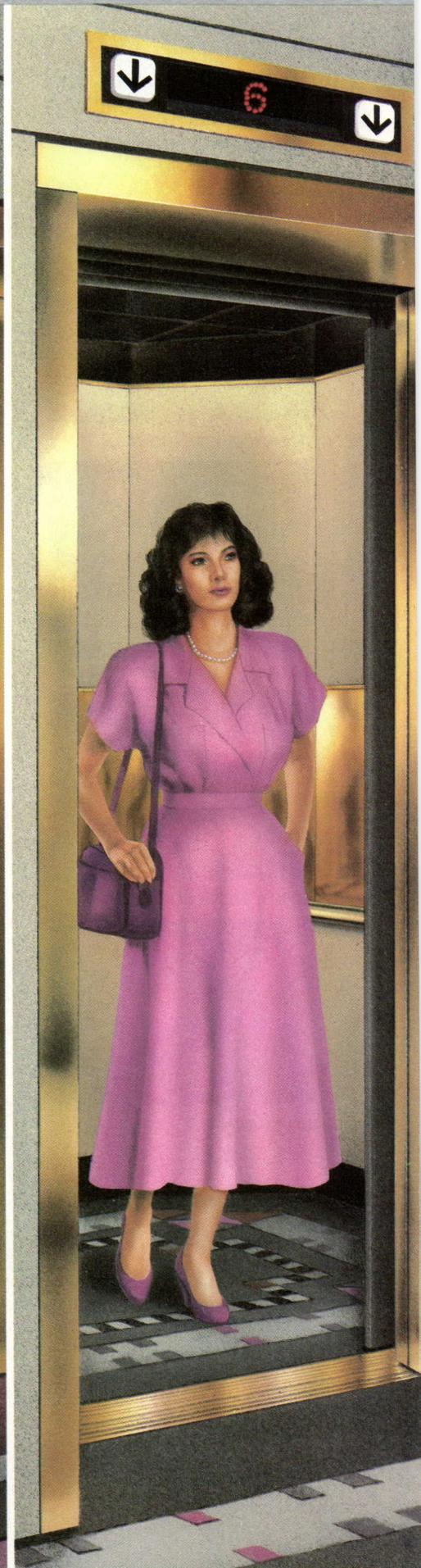
A member of the **DOMINION** TEXTILE group

Circle 58 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**<sup>®</sup>  
**ELEVATORS**

*Making more  
elevators makes  
Dover No. 1*



At the pinnacle of the Opryland Hotel Conservatory's lush indoor Victorian garden are angle bay windows, custom built for the hotel.

## *When Opryland Hotel asked Norco to design some special windows, the results were grand*



Some would call it a tall order...building windows for Opryland Hotel that are in perfect harmony with their Conservatory suites.

But Norco measured up and built custom windows, fine tuned on both the exterior and interior to capture the Conservatory's lush mood. The Conservatory is over two acres of architectural wonder – Victorian gardens with winding trails, bubbling brooks and tumbling waterfalls.

Crowning the Conservatory's elegance are Norco's custom Angle Bay Windows,

*Norco's sweeping angle bays complement the southern elegance at Opryland Hotel Conservatory suites and give guests a breathtaking view of the Conservatory.*

Designed with authentic True Divided Lites,  
evoking the rustic charm of the Old South.

**A high note for each suite.**

Each upper level suite is graced with one  
or more Norco Angle Bay Window, blending  
with the romantic appointments, giving  
each guest the impression he is staying in a  
stately Southern mansion. And each Norco  
Angle Bay Window was designed to create a  
floor-to-ceiling wall of windows, set precisely  
at the right angle to give a glorious view of  
the Conservatory.

**Grand results brought Norco back  
for an encore.**

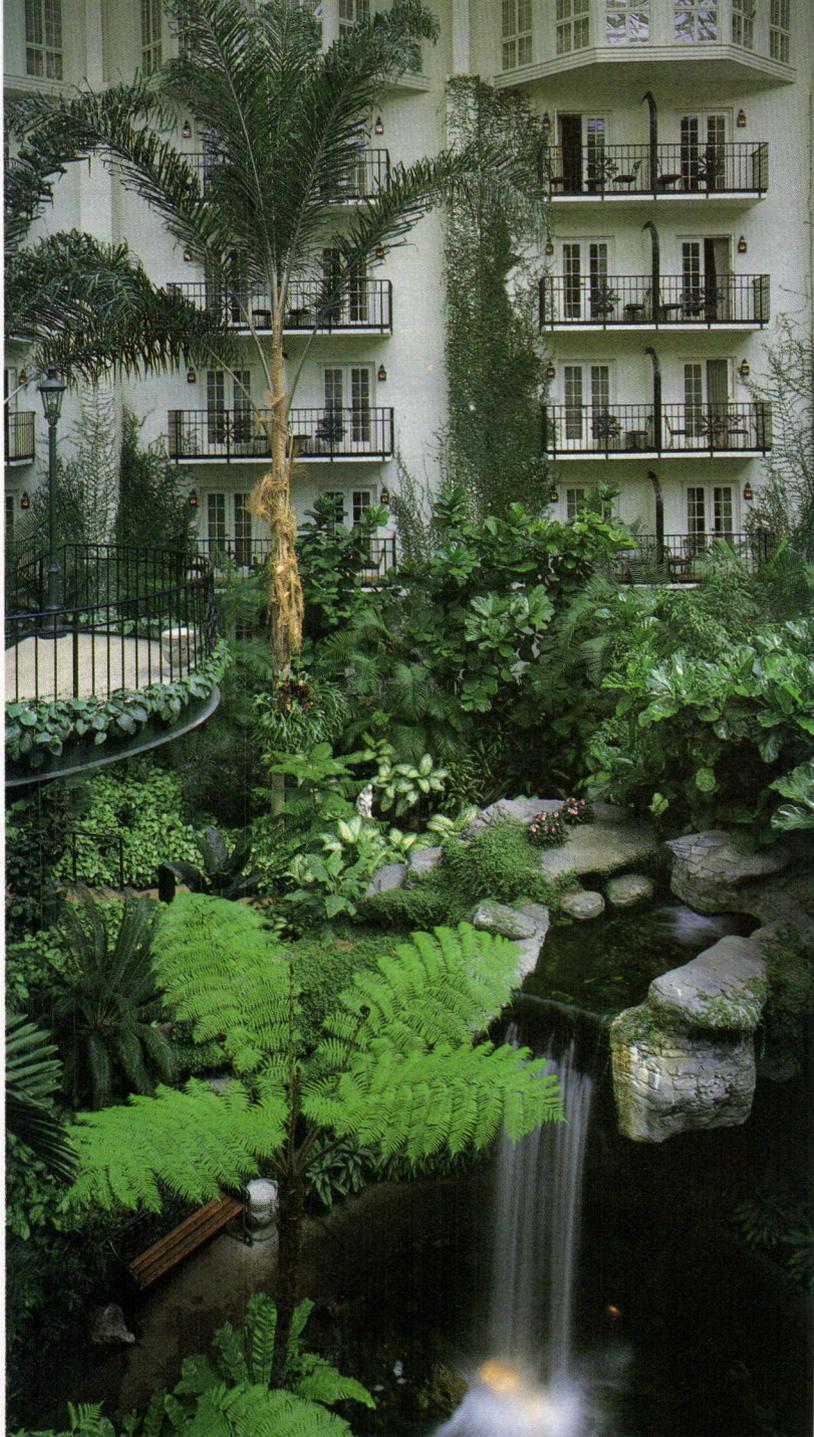
Opryland Hotel's newest expansion, the  
Cascades, is set for completion in 1988. It is  
another major, skylighted interior space even  
larger than the Conservatory. Its 839 additional  
rooms will enlarge the hotel to 1,896 rooms.

Norco's Custom Angle Bay Casement  
Windows will again be center-stage in  
the addition.

Norco's performance on the original  
construction phase was so impressive that  
Opryland Hotel brought Norco back for  
an encore.

Uncompromising quality, on-time delivery  
and Norco's capability to build windows to  
Opryland Hotel's exacting standards (at a  
surprisingly affordable price) are some of the  
reasons Norco windows are again at the top.

Norco can make your imaginative window  
designs a reality. Call or write today.



Besides meeting all the practical maintenance requirements  
of a modern hotel, the windows had to fit perfectly into the  
Conservatory's lush setting.



**Architects:**  
Earl Swensson Associates  
Nashville, TN

**Windows:**  
Norco Windows, Inc.  
Hawkins, WI

*Masterpieces in wood windows and doors.*



**NORCO®**

**WINDOWS, INC.**

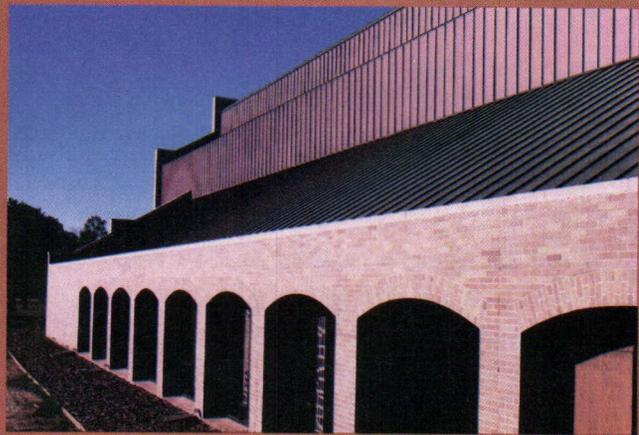
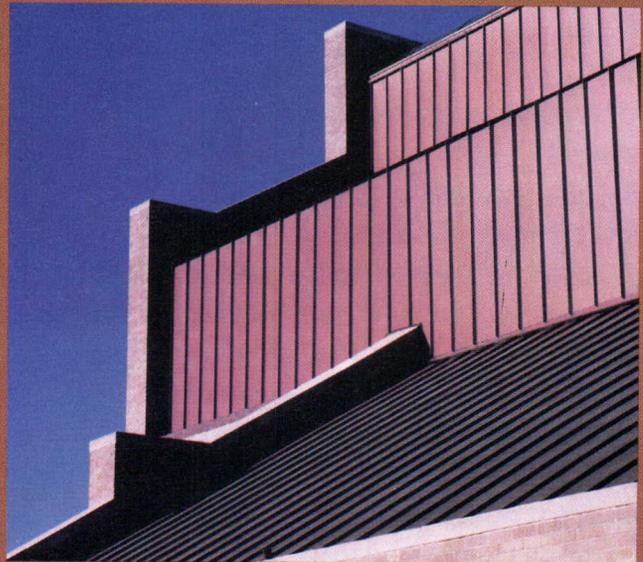
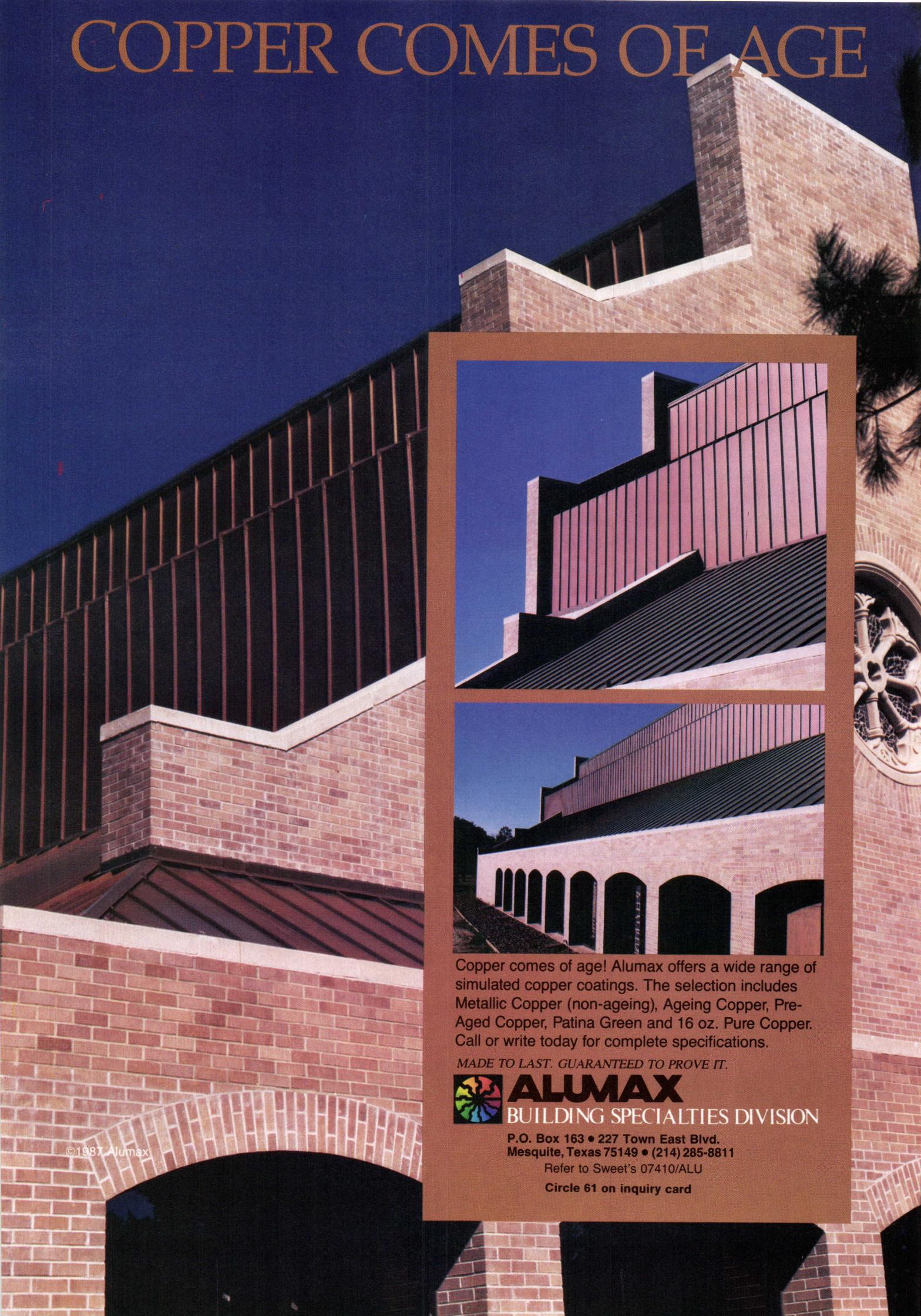
P.O. BOX 309 · HAWKINS, WI 54530  
PHONE: 715/585-6311



© 1987 Norco Windows, Inc.

Circle 60 on inquiry card

# COPPER COMES OF AGE



Copper comes of age! Alumax offers a wide range of simulated copper coatings. The selection includes Metallic Copper (non-ageing), Ageing Copper, Pre-Aged Copper, Patina Green and 16 oz. Pure Copper. Call or write today for complete specifications.

*MADE TO LAST. GUARANTEED TO PROVE IT.*



**ALUMAX**

BUILDING SPECIALTIES DIVISION

P.O. Box 163 • 227 Town East Blvd.  
Mesquite, Texas 75149 • (214) 285-8811

Refer to Sweet's 07410/ALU

Circle 61 on inquiry card

©1987 Alumax

# In this issue

The cool serenity of the room shown in our cover photo belies its location amid one of the densest, busiest cityscapes in the world. The interior is the Tokyo studio of Atsushi Kitagawara, a leader among the emerging generation of Japanese architects whose work deliberately echoes the contradictions of modern urban life. A portfolio of Kitagawara's three most recent projects, on pages 108-121, analyzes the counterpoint of calculated incongruities—sometimes pessimistic, always expressive—which the designer has described as “metropolitan automatism.”

This Japanese perspective is itself a telling counterpoint to the different vantage points on city living inherent in all the American projects we present this month. Paradoxically, and perhaps appropriately, given the multilayered history of the particular locales we have chosen to focus on here, our survey begins in an indeterminate future—forcefully realized in the visionary “Centricity” of Lebbeus Woods (see “Observations,” pages 80-85)—and concludes with a backward look at a not-so-distant past replete with lessons for the present. The latter article, on pages 122-135, examines the evolution of New York City housing through the work and commentary of two masters in this essential building type, architects Lewis Davis and Samuel Brody.

The buildings presented in our two other feature articles are also in the New York metropolitan area, a geographical proximity that only heightens the programmatic and esthetic contrasts between them. Edward Larrabee Barnes Associates' speculative office tower at 599 Lexington Avenue (pages 100-107) takes its place alongside one of Manhattan's best-known skyscrapers, with sleek Modern apparel and a tip of the hat to “contextualism.” Oppenheimer, Brady & Vogelstein's Boys Club of Jersey City (pages 93-99), which overlooks the Gotham skyline from the opposite bank of the Hudson, is a low-budget rehab whose tough, raw-boned ingenuity delineates the face of another urban reality.

Boys Club of Jersey City  
Jersey City, New Jersey  
Oppenheimer, Brady &  
Vogelstein, Architect



# True grit

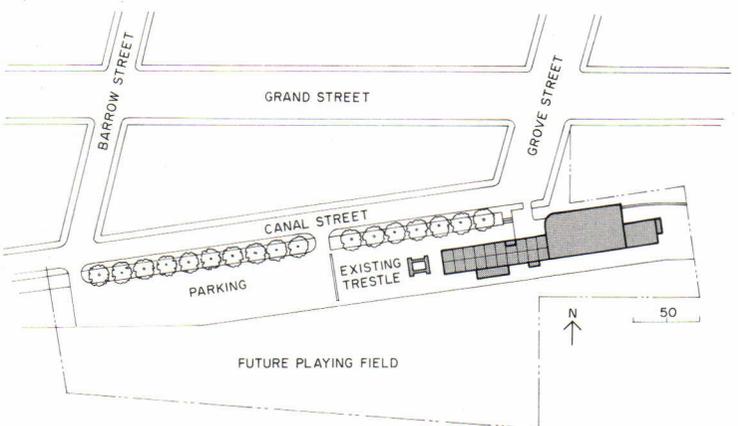
*With the ingenious conversion of an abandoned industrial relic into a public youth center, an inner-city eyesore has become a landmark of civic pride.*

The setting—Jersey City's drab industrial fringes, seen against the glittering backdrop of lower Manhattan—is straight out of a contemporary TV thriller. The story, however, might be the plot of a 1940s B movie. It begins nine years ago, with the Boys Club of Jersey City on the verge of extinction, its membership below 100, and its town-house headquarters hopelessly dilapidated. Enter a group of local businessmen, who decide to rejuvenate the board, hire a dynamic young director, and draw up a list of 20 possible locations for a new clubhouse. One overcast day in 1981, while the club's new director and his two architects are visiting a potential building site, they seek shelter from the rain in an abandoned coal-storage bunker, an artifact from Jersey City's gritty past. The architects, Herbert Oppenheimer and Charles Vogelstein, admire the 64-year-old bunker's sturdy, poured-in-place concrete construction, its segmental-arched vaulting, and its steel-framed train shed. The director, David Messier, likes the building's location on "neutral turf," bordering the patchwork of ethnic neighborhoods that make up central Jersey City but not actually in any one of them. Almost at once, the three men know they have stumbled on the ideal site for the club's new home . . .

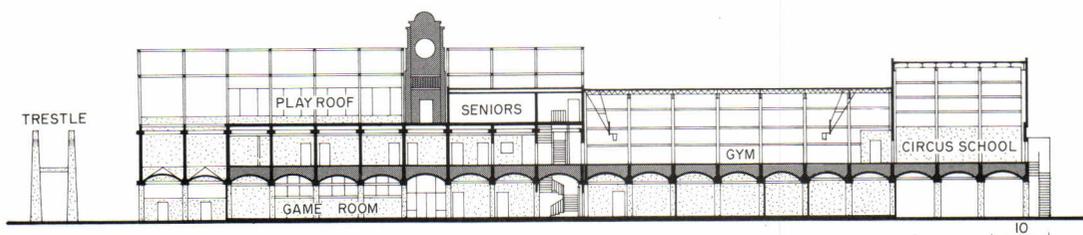
Four years later, the boys club moved into one of the more intriguing adaptive-use projects in recent memory—a 31,000-square-foot facility whose startling, almost surreal presence results from the architects' decision to strip away the train shed's deteriorated cladding and keep its structural-steel roof trusses exposed. Moreover, rather than overlaying some arbitrary historical mode onto what is essentially a styleless building, Oppenheimer, Brady & Vogelstein elected to retain the bunker's blue-collar simplicity. The architects left the exterior largely unaltered (except for punching windows through foot-thick concrete walls) and carefully preserved such key remnants as a pair of concrete pylons salvaged from the demolished trestle. The sole concession to style is a new reinforced-concrete-block clocktower, whose curving Mediterranean Revival parapet subtly acknowledges Jersey City's Hispanic and Italian communities. Seventy-five feet tall, the tower commandingly terminates the view along Grove Street, a major downtown artery (top photo).

In terms of program, the architects faced the difficult challenge of fitting the functions of a typical inner-city boys club—basketball and boxing gymnasiums, locker rooms, arts and crafts studios, a small library, a game room, and offices—into a highly atypical, 320- by 37-foot shell. With the addition of a reinforced-concrete second-story slab, the bunker proved remarkably adaptable: 16-foot-wide coal bins were the ideal size for offices and studios, and the architects devised a logical linear circulation plan simply by cutting a corridor straight through the bin walls. (To accommodate the two gyms, however, they had to widen a 110-foot section of the bunker by means of a new aluminum-sided addition.) The club's workaday interior represents a compromise between the architects, who envisioned rough concrete finishes throughout, and the client, who lobbied for dropped ceilings and gypboard walls, arguing that many of the boys using the facility came from the bleak, concrete-block environment of public housing. While the accommodation to visible comfort is probably just, the most memorable space at the club—the boxing gym—is clearly the toughest (page 99). A raw-boned concrete-block world adorned only by the ribs of the bunker's arched vaults, this room seems an apt architectural metaphor for the hard-won human victories achieved here. *Paul M. Sachner*

©Mick Hales photos

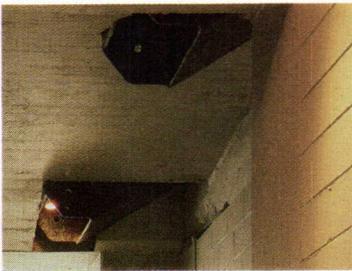
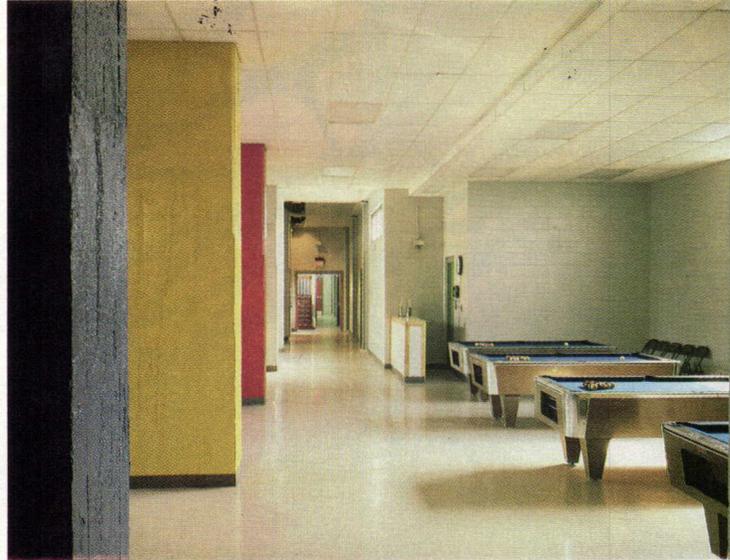


Jersey City's original coal-storage bunker, erected by the Lehigh Valley Railroad in 1917 and abandoned in 1946, was the terminus of a trestle that carried trains directly into a peaked-roof shed, where hoppers dumped their cargos into bins below (top right). In order to open up views of New York City across the Hudson River, and to reconnect Jersey City visually with its own reviving waterfront, Oppenheimer, Brady & Vogelstein removed the deteriorated exterior of the train shed and demolished most of the concrete trestle supports. They left two of the trestle pylons intact, together with the skeleton of the shed's steel roof trusses, to serve as reminders of the building's industrial history (bottom). More whimsical evocations of the structure's past are the train tracks painted onto the epoxy-resin surface of a rooftop play area (opposite) and, throughout the building, "chute lights," made by inserting incandescent spots into the bunker's old cast-iron coal slides (small photo page 98).





Two- by three-foot-thick piers that once supported coal bins line one side of the club's first-story game room (top right), whose bright paint job is courtesy of volunteer labor. In order to add a new wing housing two gymnasiums, the architects virtually sliced the bunker in two, revealing in the main basketball gym (below right) the section of an I-beam that originally bore the weight of coal trains. In the boxing gym, new steel columns brace concrete vaults that may have been weakened by the necessary removal of lateral walls (opposite).



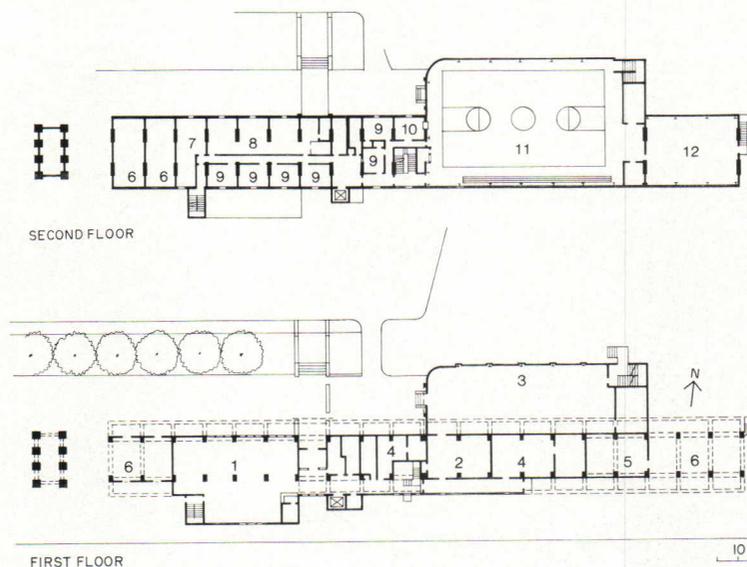
*Boys Club of Jersey City*  
*Jersey City, New Jersey*

**Owner:**  
*Boys Club of Jersey City*

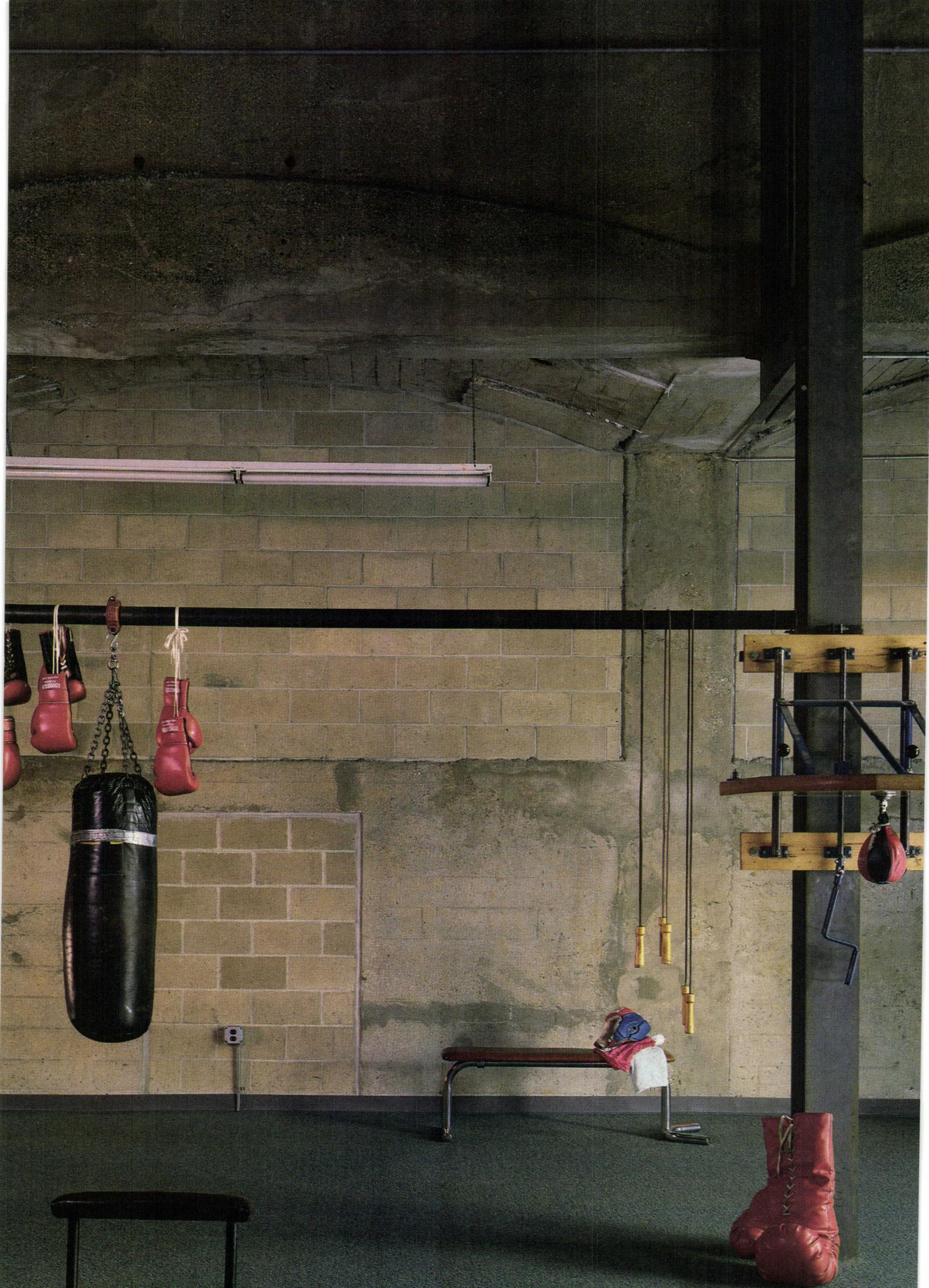
**Architect:**  
*Oppenheimer, Brady & Vogelstein—Herbert B. Oppenheimer, partner-in-charge; Charles Vogelstein, interiors; Frank Weiner, project architect*

**Engineers:**  
*Purdy & Henderson (structural); Kruse Associates and Zicherman & Bloome (mechanical)*

**General contractor:**  
*Louis Gargiulo Co., Inc.—Anthony Gargiulo, president*



1. Game room
2. Exercise room
3. Boxing gymnasium
4. Lockers
5. Boiler room
6. Unimproved area
7. Library
8. Arts and crafts
9. Office
10. Kitchen
11. Main gymnasium
12. Circus school



599 Lexington Avenue  
New York City  
Edward Larrabee Barnes  
Associates, Architects



# A paradoxical neighbor

*Though strongly individual in the bold  
prows and angles of its sculptural form,  
an elegant new office building shows a  
civilized approach to "contextual"  
speculative skyscraper design.*

It is quite a feat to design a major building that has individuality and yet also thoughtfully melds with the architectural grab bag of midtown Manhattan—and especially on a site flanking a one-of-a-kind landmark. Edward Larrabee Barnes Associates has succeeded remarkably in such a blending of presence with politeness for a new rental office tower at 599 Lexington Avenue, directly across the street from the assertive—and justly admired—slant-topped Citicorp Center.

Careful development of the new building's shape, skin, and amenities firmly established its own distinctive strength, while relating with discerning friendliness to neighboring facades and fenestrations, and to pedestrian life at street level.

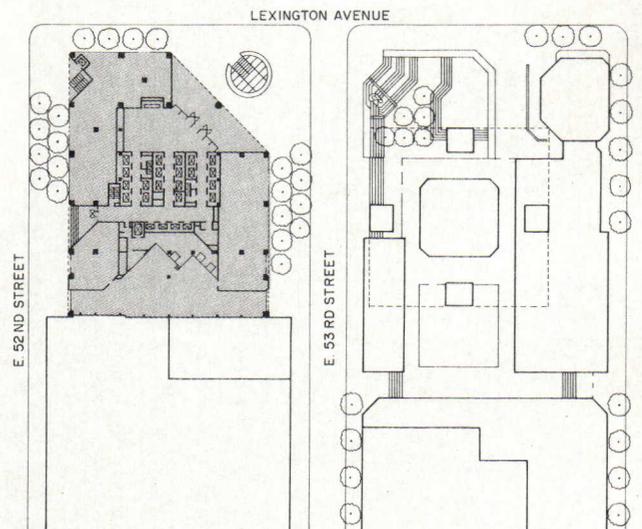
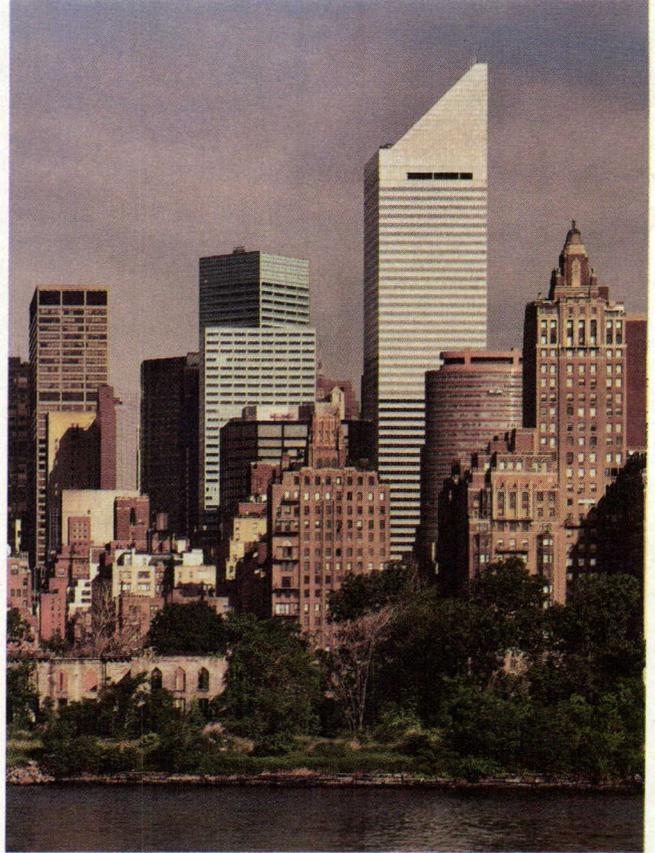
By using a lot of new angles—literally and figuratively—Barnes has come up with a new alternative to the "wedding cake" tiered setbacks of the standard zoning envelope. As the site is hemmed in on all sides, it was reasoned that an angled, or rotated plan, sliced away at heights relating to other structures, could offer significant advantages in light, views, and rentability. Working closely with the New York City planning department, Barnes and John Lee, the firm's principal-in-charge for the project, established that the subtractive massing of their scheme would give trade-offs equal to standard building setbacks—and achieve maximum allowable rental space for the site.

Added amenities obviously played their parts in getting city approval for the building: integrated subway entrances and concourse; through-block, off-street loading docks; and a small entrance plaza sliced into the corner to complement and bracket the larger one at Citicorp. All these, plus wide, tree-planted sidewalks, street-level shops, and a glazed, 50-foot-high lobby—elegantly clad in green and white marbles—and a giant Frank Stella painted relief—provide pleasure and convenience for city strollers, as well as for the building's occupants.

Though the curtain wall for 599 Lex above all reflects Citicorp's smooth, silver-gray-metal and clear glass banding, subtle variances and complexities help visually bridge the design to other, less sleek facades around. To help stress the fact that the new building is not an annex or part of Citicorp, structural elements of the skin are silver-green aluminum, glass is a light blue-green, and spandrels are glazed "shadow boxes," backed (six inches behind) by white panels for a sense of depth and sparkle similar to that of the windows. As Barnes comments, "One reads a structural rhythm, and everything between—windows and spandrels—is somewhat illusive." That resulting ambiguity of what is window and what is not, visually forms a transition from Citicorp's narrow regular bands to the motley fenestration of the other structures around. Effectively, it helps relate Citicorp itself to the neighborhood.

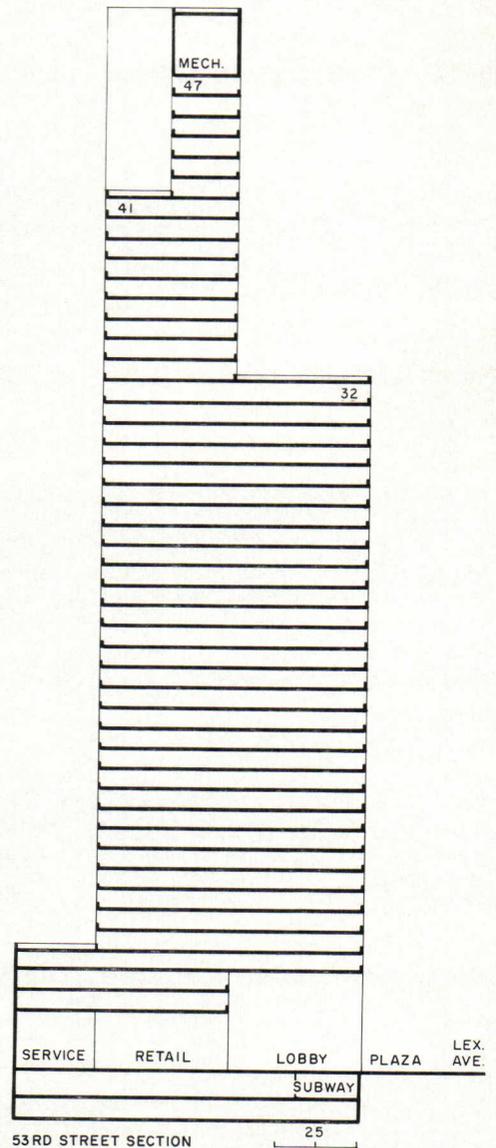
The angled corner plaza not only links visual space to the one at Citicorp, but closes the inset to reestablish the "building wall" at street level. Similar functions are achieved by the setbacks, with the lower levels aligning with other structures next door, and the upper floors of the tower with the Lexington Avenue facade of Citicorp. But 599 Lex is never a mere background building. The dramatic angles and prows created by the setbacks are proudly emphasized at night by lights from the various terraces, which make the building glow somewhat brighter than Citicorp. "After all," reason some of Barnes' staff, "it is a smaller building." And sometimes a smaller building, however elegant, needs a little help to hold its own. *Herbert L. Smith, Jr.*

©Steve Rosenthal photos, except as noted





As is immediately seen in the photos at left and on the preceding pages, the unorthodox angles and setbacks of 599 Lexington Avenue coalesce into a variety of strong and eye-catching, sculptural compositions—depending on one's angle of view. (Some perspectives looking up even mimic Citicorp's sloping top!) All this provides a pivotal or transitional function in the middle of a veritable Sweet's Catalog of curtain walls, setbacks, and zoning "trade-offs." The setbacks and alignments of 599 relate closely to adjacent structures, and the fenestration strikes a mid-point in complexity. The prow of the Avenue facade forms a sort of huge bay window, with views up and down the street. A main subway entrance is in a slant-topped glass kiosk in the plaza (far left); a second one is niched into the building and has an elevator (center left).



© Robert Miller



© Robert Miller



*From a glazed kiosk in the angled plaza (right), stairs lead down through a circular, stone-rimmed skylight to a bright and colorful concourse (above) linking major subway lines.*

*599 Lexington Avenue  
New York City*

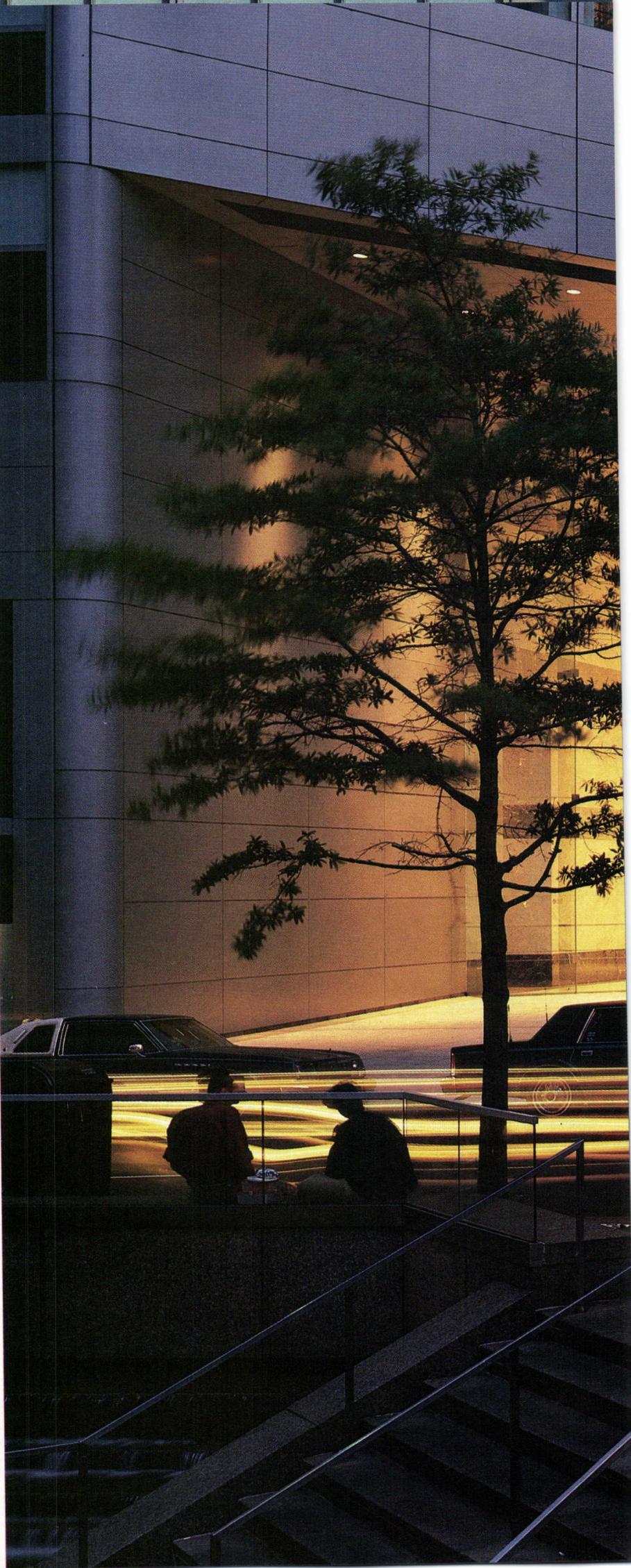
**Owner:**  
*Boston Properties, Inc.*

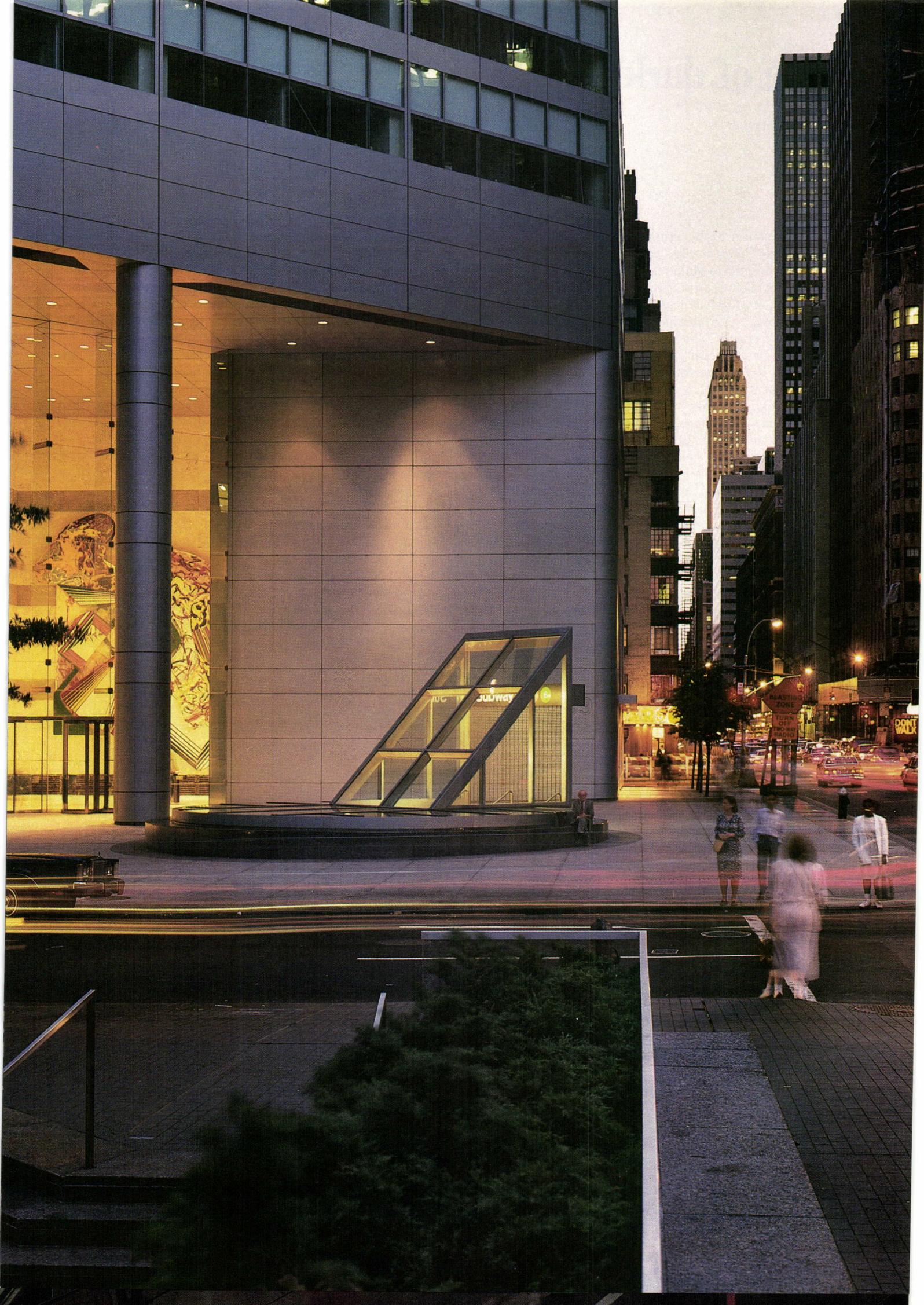
**Architect:**  
*Edward Larrabee Barnes Associates—John M. Y. Lee, principal-in-charge; Robert Segal, Siglinde Stern, Richard Ridge, Gajinder Singh (subway concourse), project architects*

**Engineers:**  
*Thornton-Thomassetti (structural); Jaros, Baum & Bolles (mechanical, electrical); Vollmer Associates (subway)*

**Consultants:**  
*Quennell Rothschild Associates (landscape); de Harak & Associates (graphics, tower); Chermayeff & Geismar Associates (graphics, subway)*

**General contractor:**  
*HRH Construction Corp.*





# Rise

The wildly disparate forms on the exterior of Rise obscure a simple parti. The building's movie theaters and restaurant are contained in a rectangular volume, and are separated from the undulating wall along Spanish Alley by a circulation zone. The staircase that leads to the upper-story cinema (opposite) exhibits Kitagawara's penchant for the expressionistic, kitsch, and surreal: a gilt-framed mirror hangs in splendid isolation on concrete walls, and a flying stair above the landing leads nowhere. In the movie theater (top right), cast-aluminum curtains mock their velvet counterparts, and brushed steel panels on the balcony walls simulate tufted fabric, recalling the incongruous imagery of a René Magritte painting. The mirrored wings above the stage modulate light during intermission (right).



## Rise

Tokyo, Japan

### Owner:

Taiwa, Inc.

### Architect:

Atsushi Kitagawara + ILDC, Inc. — Atsushi Kitagawara, principal-in-charge; Tomoyoshi Yonei, Toshihiko Yoshida, Toshihiko Mori, project team

### Engineers:

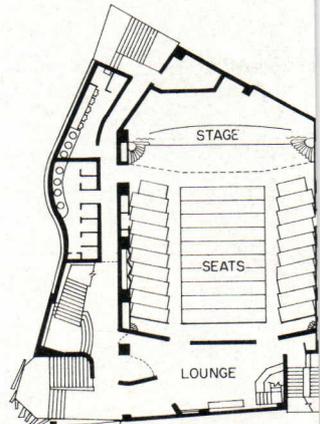
Ikeda Structural Engineering, Inc. (structural); Godai Engineering, Inc. (mechanical/electrical)

### Consultants:

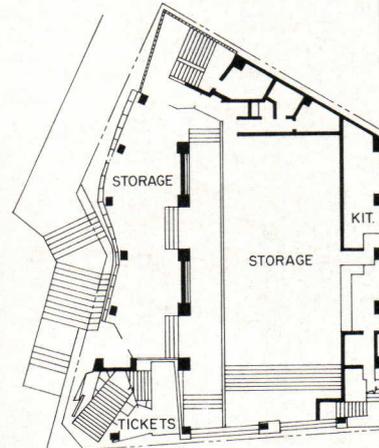
Nippon Gakki Co., Ltd.; Architectural Acoustic Laboratory (acoustics)

### General contractor:

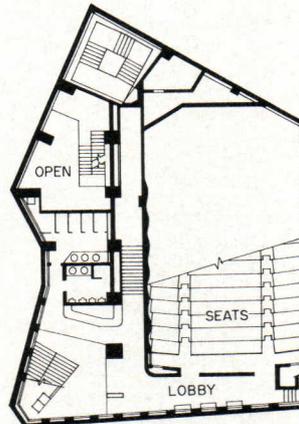
Ando Construction Co., Ltd.



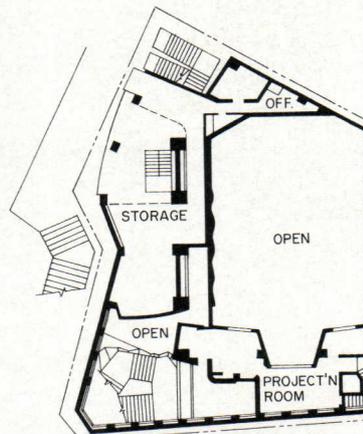
SECOND FLOOR



FIRST FLOOR



SECOND BASEMENT



FIRST BASEMENT



化粧室

この愛の物語



"I always propose underground spaces to my clients, a concept which isn't easily accepted in Japan," says Kitagawara, who demonstrates the merits of subterranean living in his offices on 395's basement level. Lighted by a clerestory, the architect's double-height studio is divided from the adjacent drafting room by angled, floating partitions (opposite and below), and connected to the conference room above (top right) by a spiral staircase. To enliven the raw concrete surfaces, Kitagawara installed a painting by contemporary artist Toshimitsu Imai in the conference room (top) and brightly patterned screens of his own design in the spaces below. The Noh mask that hangs in the studio (opposite and cover) once belonged to the architect's father, a prominent poet of the traditional Japanese school, who encouraged Atsushi Kitagawara's own interest in literature. Spotlit in a place of honor, the mask symbolizes the younger Kitagawara's art of concealment.

395, Tokyo, Japan

**Owner:**

Toyoko Okuno

**Architect:**

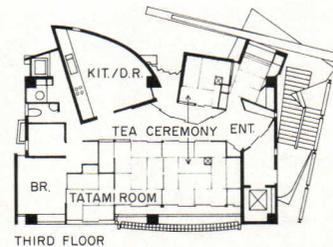
Atsushi Kitagawara + ILCD, Inc. — Atsushi Kitagawara, principal-in-charge; Yoshihiro Shinke, project architect

**Engineers:**

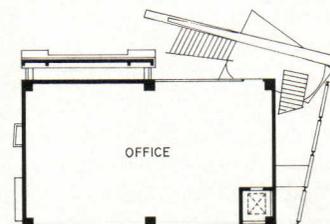
Ikedo Structural Engineering, Inc. (structural); Godai Engineering Office, Inc. (mechanical/electrical)

**General contractor:**

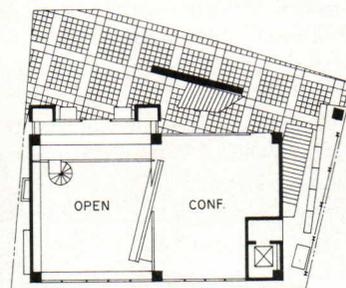
Moriya Shokai, Inc.



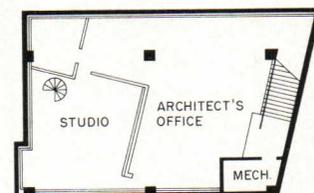
THIRD FLOOR



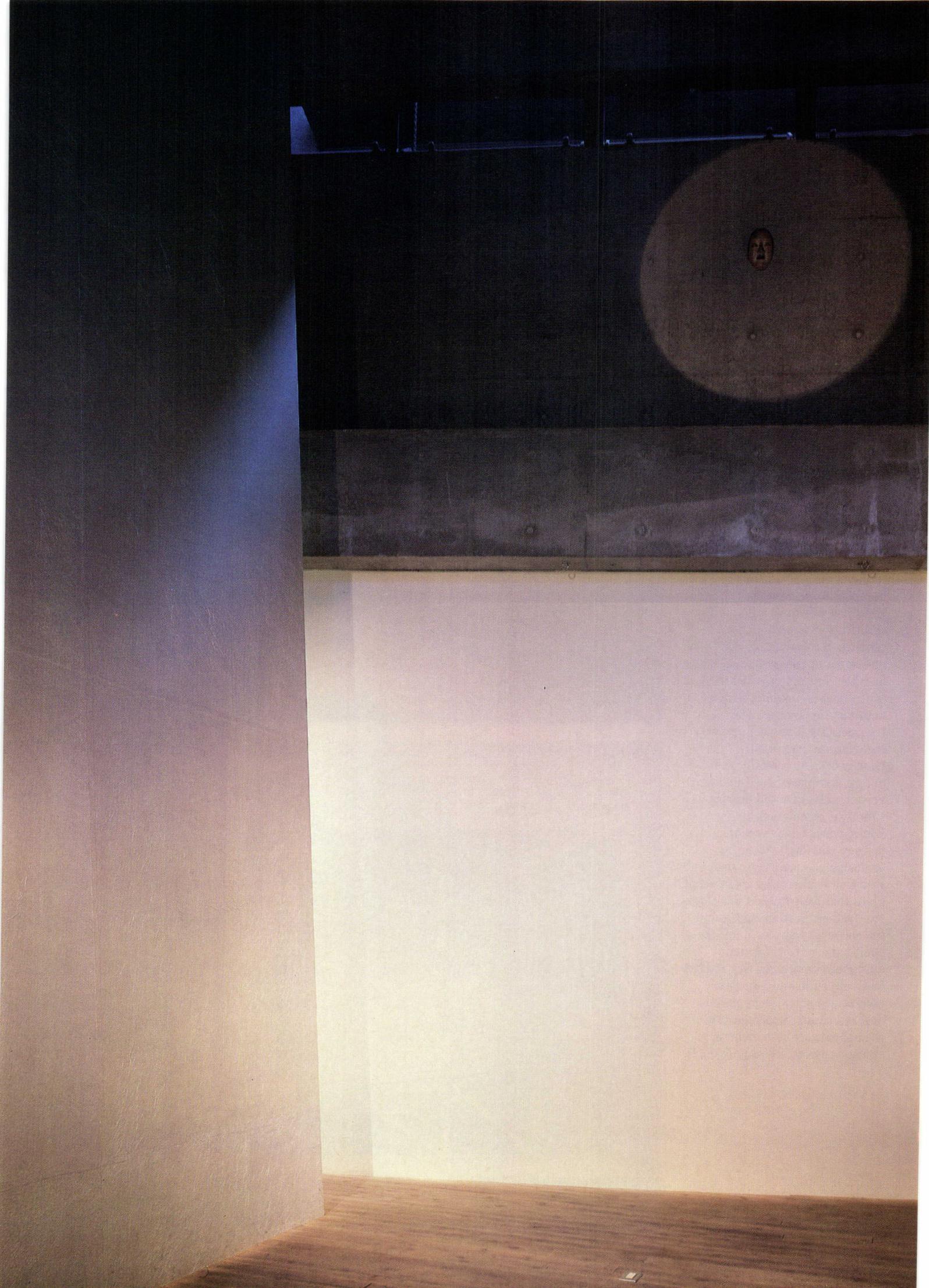
SECOND FLOOR



FIRST FLOOR

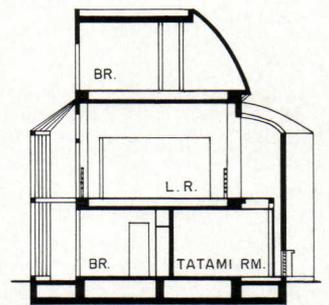
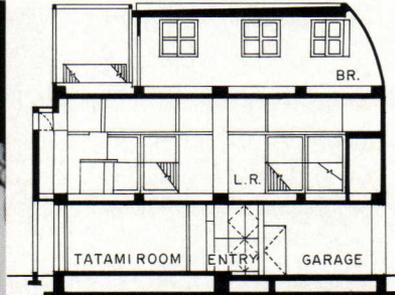
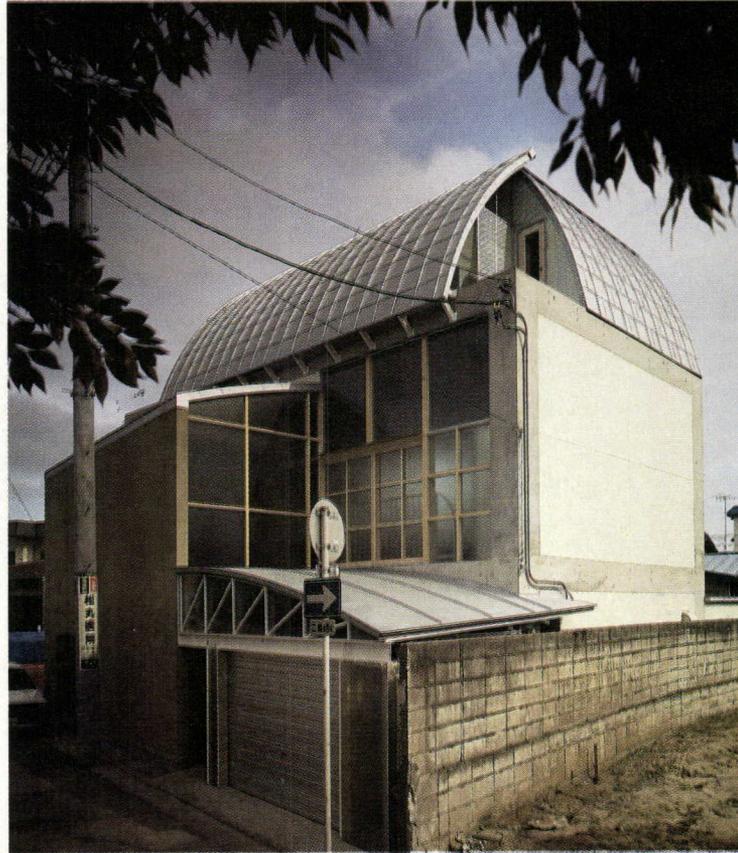


BASEMENT



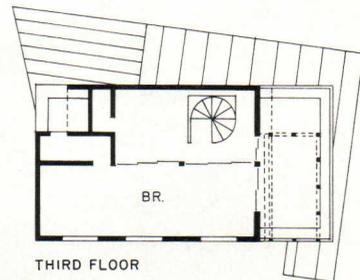
# Kamera

In honor of his clients, a young photographer and his family, Atsushi Kitagawara dubbed his most recently completed project Kamera (also a play on the Italian word for room, *camera*). The focus of the three-story house, located south of Tokyo in the Chiba province, is a sunlit, open space on the second floor, which is used as a living/dining room and photographic studio. Surrounding the simple rectilinear room are a series of vaulted accretions, which conform to the angles of the site, and contain the main staircase, bedrooms, and tatami rooms. Although Kamera conveys a more straightforward image than the outlandish Rise building, it too reveals Kitagawara's fascination with additive forms arranged to conceal, yet draw attention to, a building's uppermost spaces. The architect has emphasized the central concrete volume of the house as the anchor of his fragmentation by peeling away the surrounding wood framework. As a result, the different wings of the building appear to be exposed in various stages of completion. Kitagawara achieves both privacy and daylighting by enclosing the primary rooms and stairwell in sheets of translucent glass that accentuate their shoji-like frames (bottom right), and the secondary spaces in off-the-shelf panels of perforated aluminum (opposite). The rooftop bedroom suite and adjacent terrace are shielded by metal-covered vaults, which assume the appearance of a camera shutter open to the sky. *D. K. D.*

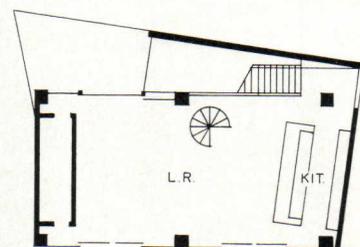




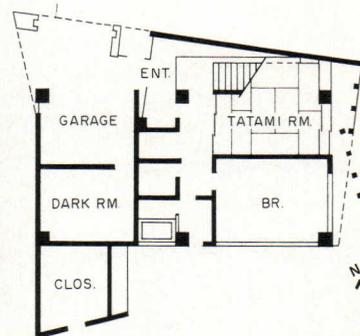
Light and air, precious commodities in Japanese dwellings, permeate the small spaces of Kamera. The centerpiece of the house is a combination living/dining room, flanked by shoji-like window walls, that also is used as a photographic studio (top right). Privacy in this main room is provided by curtains and a clerestory of translucent glass, a material that also encloses the entrance vestibule (bottom right). Kitagawara has detailed Kamera's simple concrete and wood-frame construction with characteristic precision, exposing a perforated aluminum-covered truss and ribbed vault in the kitchen (opposite). Both the dining-room table (top right) and floor lamp (below right) were designed by the architect.



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

**Kamera**  
Ichikawa, Japan

**Owner:**  
Masaru Mera

**Architect:**  
Atsushi Kitagawara + ILCD,  
Inc. — Atsushi Kitagawara,  
principal-in-charge; Kenta  
Nakanoh, project architect

**Engineers:**  
Matsumoto Structural  
Engineering (structural);  
Atsushi Kitagawara + ILCD,  
Inc. (mechanical/electrical)

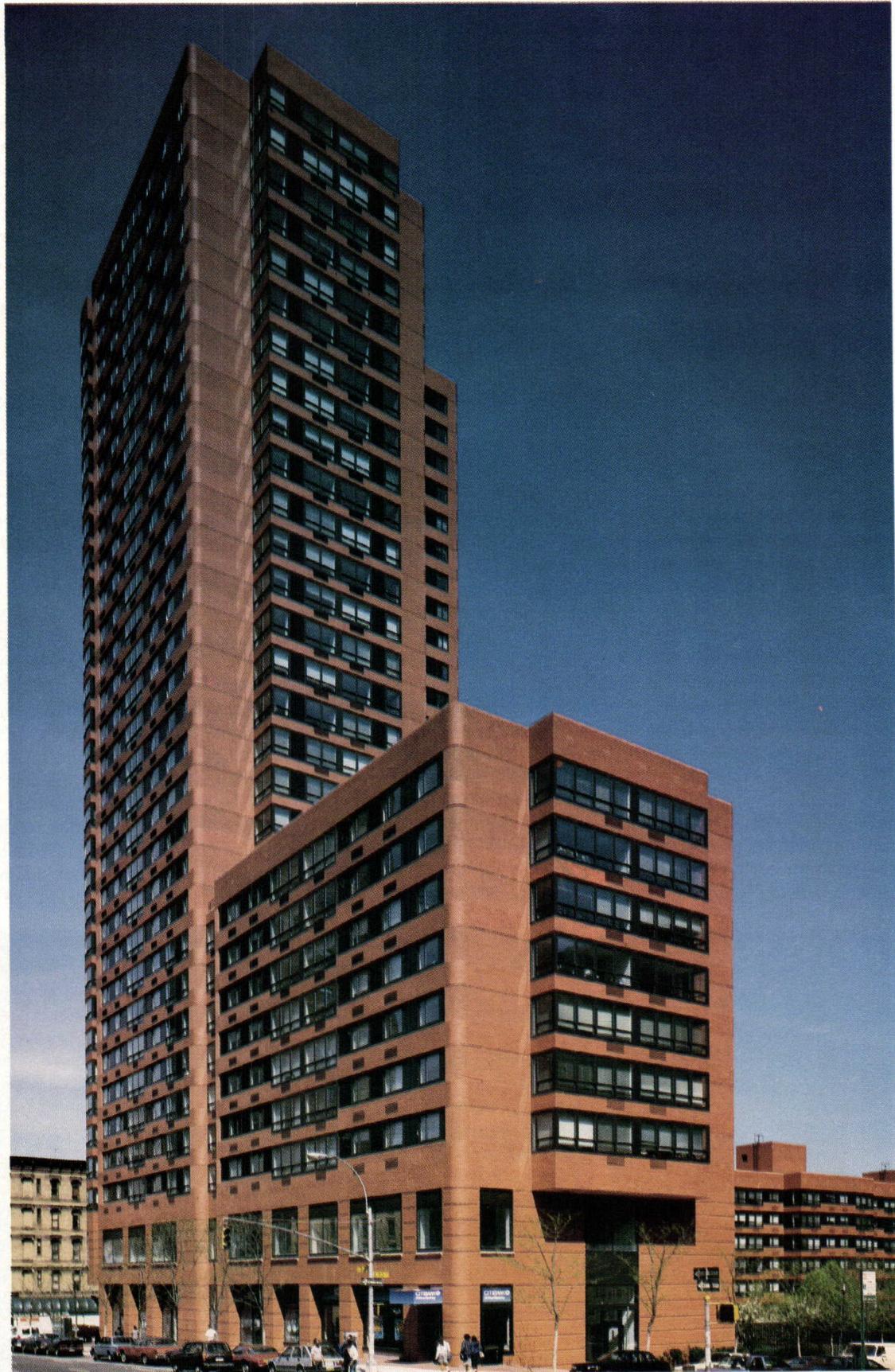
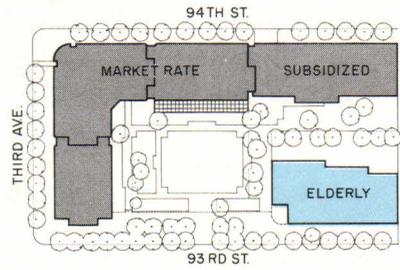
**General contractor:**  
Shin Komuten, Inc.



# Carnegie Park and Brown Gardens

The Carnegie Park complex, completed in 1986, marks Davis and Brody's—and Manhattan's—transition from subsidized middle-class housing to more luxurious upper-middle-class housing. Indeed, Brody calls it “the last hurrah of urban renewal.” The complex embodies the mix typical of the area, which in the days of the Third Avenue elevated train combined middle-class and blue-collar housing. Carnegie Park, built by The Related Companies, Inc., unites market-rate rental housing, which faces Third Avenue and turns the corner with a 30-story tower, and subsidized housing on East 94th Street (seen from the back at right in photo opposite bottom left). In addition, the site accommodates the more stringently budgeted Arthur B. Brown and Thomas Brown Gardens building, which contains housing for the elderly (opposite top right) sponsored by the New York Foundation for the Elderly. Happily, the two developers cooperated with each other, allowing Davis and Brody to design the projects as a coordinated whole around a *real* Manhattan luxury—an enclosed lawn.

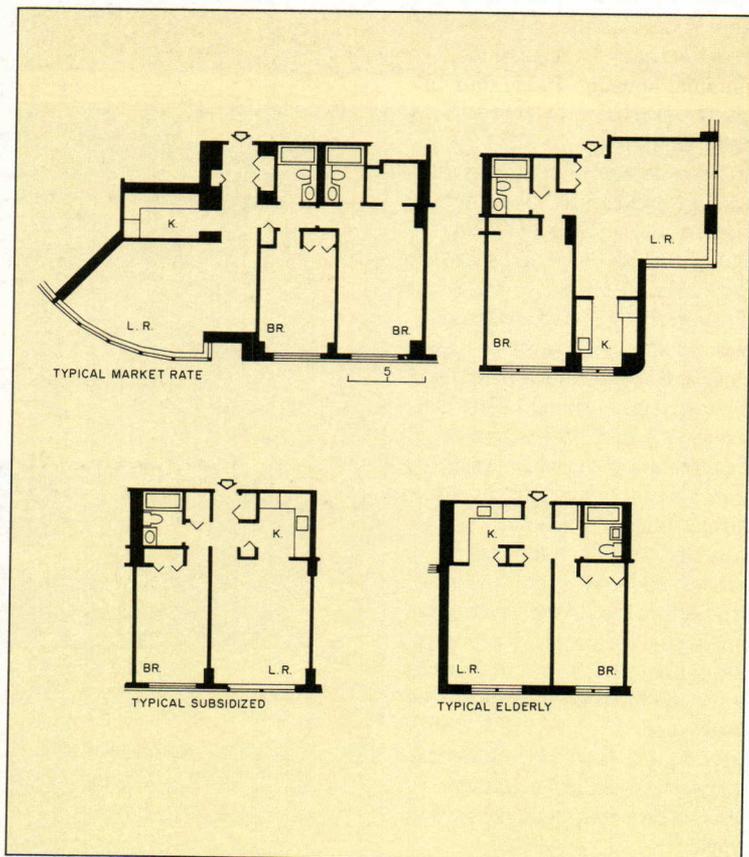
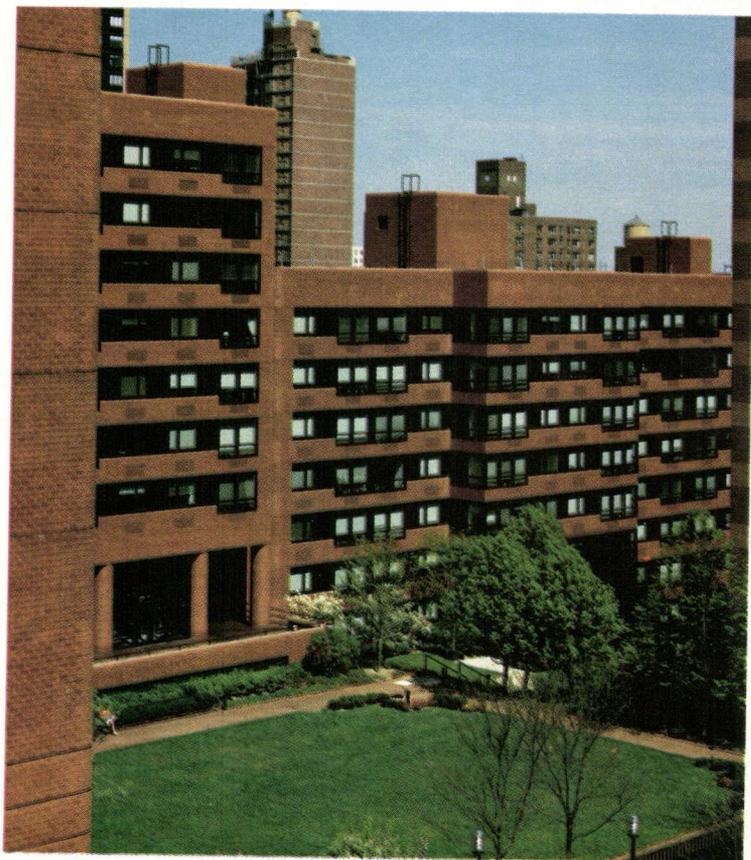
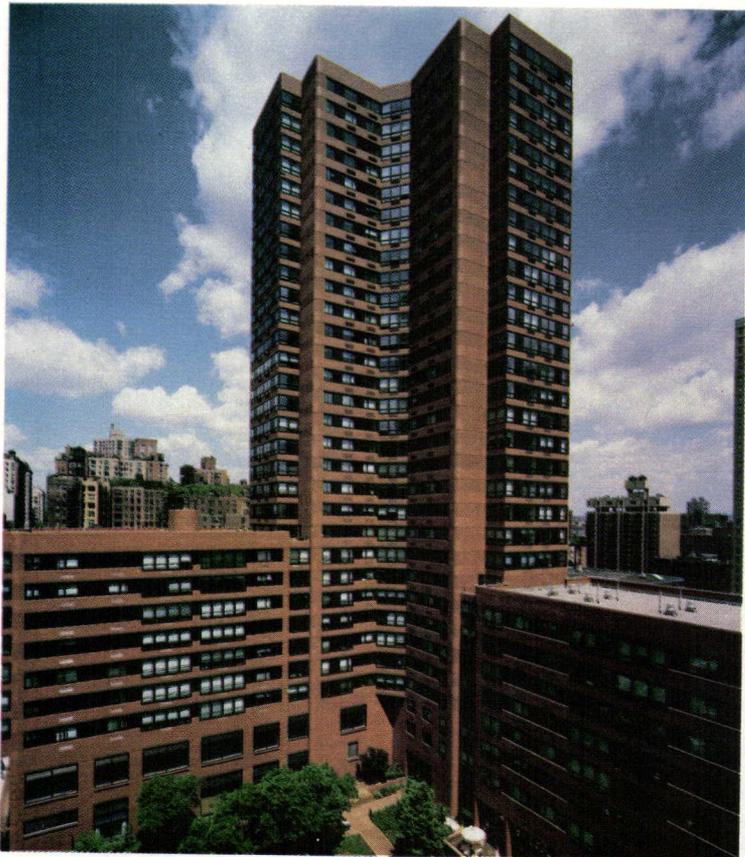
The walls of the complex's three components are subtly differentiated, from the shadowed stripes of vertically scored courses on Carnegie Park to the down-to-earth bearing walls of the Brown housing. But all are red brick to comport with other new buildings in the emerging neighborhood (including Davis and Brody's Ruppert Brewery housing two blocks south). Though in a sense the central lawn, overlooked by all three sets of apartments, is shared by all tenants, only the residents of Carnegie Park have pedestrian access. Residents of the Brown housing have a separate but adjacent patio downhill with a fine view of grass and trees. *G. A.*



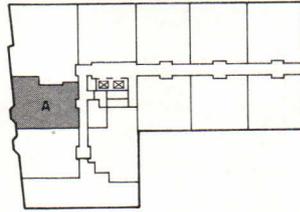
© Wolfgang Hoyt/ESTO photos

The three-part mixed-income complex, designed for two developers, includes three types of rental housing: market-rate apartments in the corner tower and the mid-rise wing facing Third Avenue (opposite), subsidized apartments in an attached wing (bottom left, at

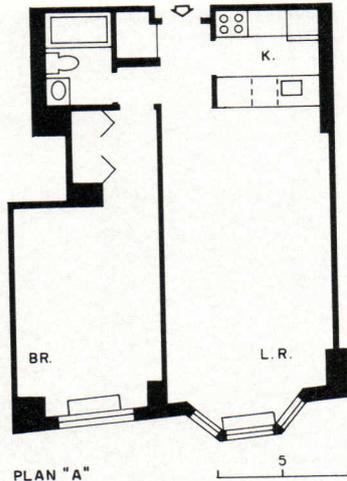
right), and separate low-cost housing for the elderly (top right). While the exterior is accordingly better or less-better finished and the economic hierarchy is discernible, the architects purposely blurred distinctions to favor a coherent appearance.



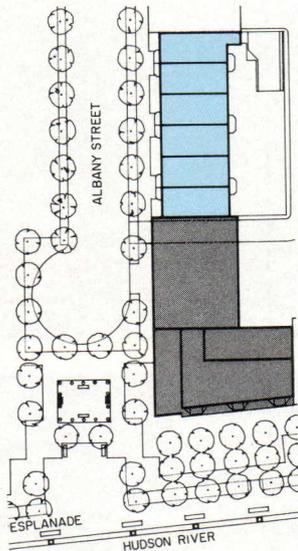
# Hudson Tower, Battery Park City



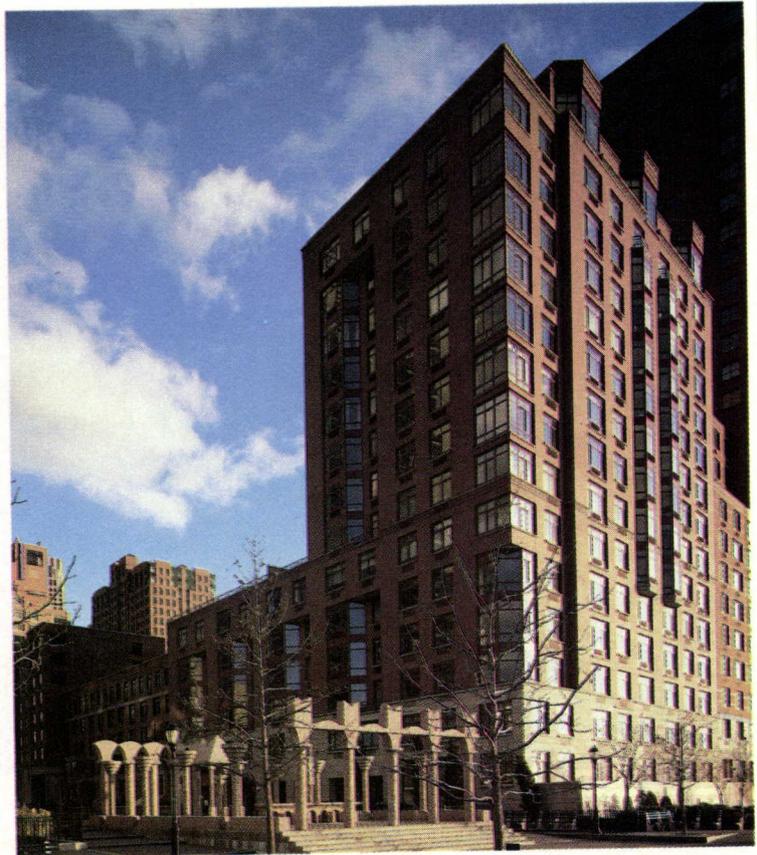
Battery Park City is not gentrified Manhattan but an entirely new neighborhood built on land that didn't even exist 15 years ago. A large number of office buildings and apartment houses now occupy a 92-acre landfill along the southern tip of Manhattan between West Street and the Hudson River. The architectural context may be a potpourri of '80s high style and glitz, but this is unmistakably a *neighborhood*. And it possesses a neighborhood treasure in the form of a riverside esplanade that New Yorkers immediately took to their hearts.



Though the site for Hudson Tower—a tower with 135 co-op units and six adjacent town houses—with its splendid river views, recalls that at Waterside (pages 126-127), Davis and Brody treated it quite differently: not an imposing complex proudly standing alone on the shore, but an intimate enclave on a vehicular dead end. Moreover, the apartment house and the adjacent town houses, all developed by the Zeckendorf Company, Inc., create an ineluctable Manhattan streetscape—the stone-based brick building, the red marquee, the town houses' stone steps and porches. The buildings' scale also echoes Manhattan streetscapes, with a tall tower on the major thoroughfare (the Hudson River) and low houses midblock.



Though the speculative development contains privately owned co-ops, the public, through the Urban Development Corporation, imposed a strict regimen of design guidelines and approvals. Among the requirements was a granite base of uniform height on all facades bordering the esplanade. Davis and Brody wrapped the granite around the street facade, too, as a rusticated stone base supporting a brick superstructure, thus furnishing a composition familiar on residential streets. G. A.



© Wolfgang Hoyt/ESTO photos

*To take maximum advantage of the views, bay windows look up, down, and across the Hudson River (plan opposite). On the Albany Street facade, however, apartments get only two-thirds of a bay window (below), the angled pane commanding a view of the*

*river. The town houses, at only four stories, have full bay windows on top of their porches (opposite bottom)—again, a typical Manhattan device. At the end of the street, a many-columned sculpture by Ned Smyth marks a belvedere (opposite top).*

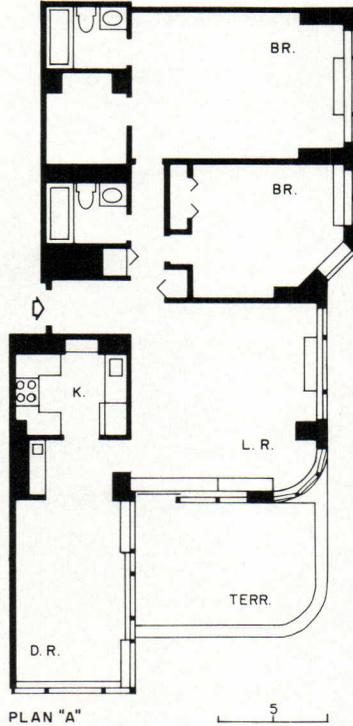
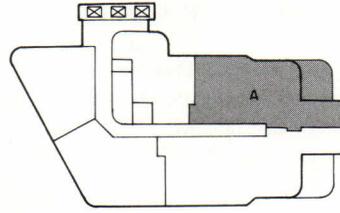


# The Copley

The Copley exemplifies a newly resuscitated—and updated—Manhattan building type: the luxury apartment on upper Broadway, a type moribund since well before World War II. An assortment of factors has encouraged this construction activity—among other things, the city's stimulation of building on the West Side, the powerful presence of Lincoln Center's theaters and concert halls at 65th Street (three blocks south of the Copley), and, of course, Manhattan's insatiable appetite for housing, affordable or not. Over the last couple of years, observers have remarked upon, even welcomed, this revival of a tradition dating back to the 19th century.

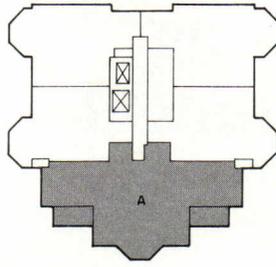
The Copley, designed for the Zuckerman Company, Inc., and now nearly complete, is in many ways the most conventionally sited of Davis and Brody's designs as seen in this study. A site on a major north-south avenue (Broadway qualifies despite its diagonal orientation) is normally built to the edge of the sidewalk and lives cheek by jowl with existing buildings; whether these buildings are architectural landmarks or unsightly services, they all have and exercise valid claims to their turf. Here, the site included two existing buildings—a church, in whose air rights the 150-unit limestone tower is built, and a supermarket, whose upscaled version now occupies the base of the Copley.

Even on a constricted site along upper Broadway, however, Davis and Brody contrived to indulge their concern for the tenant's visual release to the outdoors. Thus the windows on the Broadway facade have the benefit—unusual in Manhattan's orthogonal urban grid—of a diagonal view toward Lincoln Center to the southwest, while the cascaded windows at the back (right) look east toward Central Park. *G. A.*



© Wolfgang Hoyt/ESTO

# Central Park Place

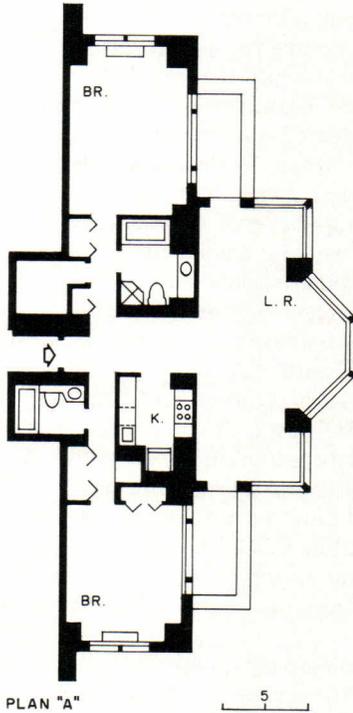


The gray aluminum curtain wall on the tower at Central Park Place epitomizes the distance New York City, Davis and Brody, and housing have traveled in 20 years. The partners, though by no means ashamed of this design, talk rather wistfully about the satisfactions of designing affordable family-oriented housing.

Their work these days, Davis says, is "called 'luxury' housing, although because of budget constraints the room sizes are not always luxurious." But one must remember that the definition of luxury has changed a lot in 20, let alone a hundred, years. Apartment dwellers do not often have large extended families, and they neither expect nor want servants' quarters. Luxury is parking space, a Jacuzzi in the bathroom, and a health club on the premises.

An unarguable luxury here is the view. Davis and Brody's luck with scenery holds—the East River, the Hudson River, and now Central Park. The angled turrets on the north face of the building (right) command a sweeping view of much of Olmsted and Vaux's landscape, as well as of the luxury apartments on Fifth Avenue. Because the vista is oriented diagonally across Columbus Circle, even gigantic development on the circle should not interrupt the prospect.

The apartment tower at Central Park Place is also the first housing for which Davis and Brody have used a curtain wall, a facing more typical of steel-framed offices than concrete-framed apartment buildings. The architects offer as reason for this departure from the norm the desire to speed construction, the developer's resistance to glass walls seen on other luxury apartments, and their own architectural wish to reduce the apparent weight of a very tall apartment house. G. A.



Jack Horner composite photo

# Roofing: a pressing need for commitment

By far, the leading source of malpractice claims brought against architects is for the premature failure of roofs. As claims continue to mount, so do architects' concerns for the ever-more sophisticated roofing technology at their disposal. Fortunately, architects do not stand alone. Most roofing contractors and manufacturers of roofing products share the architects' concern to give the building owner a roof that is appropriate and long-lasting. Indeed, it is imperative that all segments of the industry work together, and it is hoped that architects will come to take the leading role.

Acquiring the knowledge and skill to design, specify, and oversee the construction of sound roofs is not difficult, although it is initially time-consuming. The principles of good roofing have remained unchanged over the years. These principles are widely published in textbooks, pamphlets, and magazine articles, and are often outlined in manufacturers' product literature. To go beyond roofing basics, field experience and attendance at continuing-education sessions may be necessary. For the latter, a number of outstanding courses are conducted throughout the country and are open to practitioners. Best known is the Roofing Industry Educational Institute (RIEI) centered in Denver. A nonprofit educational corporation, RIEI was formed in 1979 by concerned individuals throughout the industry—architects, contractors, manufacturers—troubled by the current levels of roofing failure and litigation. The eight courses they have developed are offered throughout the United States and Canada. Another organization with an educational mission is the National Roofing Contractor Association (NRCA). It holds conferences on new roofing and reroofing throughout the year. To date, virtually all of the NRCA's programs have a contractor-oriented focus, but this may be more an advantage than a disadvantage to the architect. The major manufacturers of roofing components are heavily committed to research and education, and many offer training to the designer. One of particular note is BURS I (Better Understanding of Roofing Systems Institute), sponsored by the Manville Corporation. Regrettably, in recent years the AIA has not been allocating sufficient resources to technical education through its Professional Development Program, nor has it been involved in roofing research. Modest signs of a policy change are surfacing, however.

*Approximately one-third of the average building envelope is its roof. Because roofs endure more environmental and mechanical abuse than any other portion of the building envelope, they are particularly vulnerable to failure. Architects,*

The AIA will be joining forces with the NRCA to produce a series of audio-visual tapes that are scheduled for release later this year. It is hoped that the AIA will lose no further time in recognizing the grave need to improve roofing design, and make roofing-related educational material more readily available to its members.

Ironically, building owners do not seem adverse to spending their money on roofing, particularly after the benefits of a superior roof are compared to potential (if not inevitable) loss resulting from a mediocre system. On an average, roofing costs comprise only 2 1/2 percent of a building's overall construction budget. Convincing a client to hold that level of expenditure, or even increase it by 1 percent, would serve both the client and the liability-vulnerable architect very well indeed. As architect Robert Galloway, referring to roofing-design experience gained at Hellmuth, Obata & Kassabaum, explained, "In starting a project, I have often said to an owner that there are a lot of things we're going to do right; for one, we really want to give you a good roof. I have never found a client who objected to that. In fact, I have often told clients that the roof is a good place to spend a little more money, not a good place to compromise—I've never encountered a lot of resistance to that point either."

## Single-ply roofing

There is no single roofing material or system that is right for all buildings—not even for all minimum-slope commercial/industrial roofs. Regional climate patterns, local atmospheric conditions (particularly with respect to chemical pollutants), locally established construction practices, and use-patterns are among the design factors an architect must consider. Even though one of the major roofing types may be selected for a project—built-up roofing, single-ply, modified bitumen, metal—the generic details characterizing the system will need to be developed for an appropriate, site-specific application.

The general technical notes and drawings that follow pertain only to single-ply roofing systems incorporating EPDM membranes. Single plies have been selected for presentation because of their prevalence in the commercial-roofing market—in 1987, more than 50 percent of the dollars spent on roofing were for single plies—and because they are among the newest systems



1



2



3

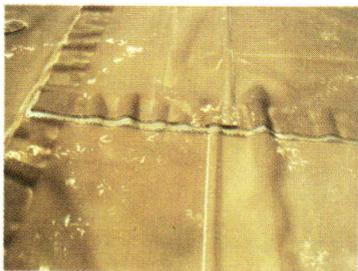
*Single-ply systems are most often characterized by their method of attachment: mechanical (figs. 1, 2, 6), ballasted (fig. 3), and fully adhered. Of the two mechanical attachment configurations—linear (figs. 1 and 2) and spot (fig. 6)—linear more evenly*

who at this time are unusually exposed to threats of litigation, need to take a more comprehensive, in-depth approach to roofing technology.

available. Furthermore, a disproportionately high number of problems have been credited to single-ply roofs. (In 1986, from an ongoing NRCA data base known as Project Pinpoint, respondents reported observing more than 1,100 problems on 695 roofs. Problems with single-ply roofs were reported most often, accounting for 63 percent of the problem jobs described in the report.)

Among single-ply materials, EPDMs have the majority of the market share. EPDM is an elastomeric compound synthesized from ethylene, propylene, and a small amount of diene monomer. It is generally used as a vulcanized (also referred to as "thermoset") material. A distinguishing characteristic of a vulcanized elastomer is that it can only be bonded to itself by the use of an adhesive because, once cured, new molecular linkages cannot be formed. Used as a roofing material since the early 1960s, EPDM sheets range in thickness from 30 to 60 mil and are usually black or white in color. EPDM's properties of resilience, tensile strength, elongation, and hardness are largely retained in aging tests at elevated temperatures. Resistance is excellent to acids, alkalis, animal and vegetable oils, and oxygenated solvents such as ketones, esters, and alcohols. On the other hand, exposure to aromatic, alogenated, and aliphatic solvents should be avoided to prevent swelling and distortion of the membrane.

There are three system types for single plies, categorized by their method of attachment: ballasted, mechanically attached, and fully adhered. Ballasted systems, which are the most economical, hold the membrane to the building by using the force of gravity from loosely laid materials. Stones and masonry pavers are typically used as ballast (fig. 3, below). Mechanically attached systems comprise both membrane-penetrating and membrane-nonpenetrating techniques. All nonpenetrating systems are attached at points (fig. 6); penetrating attachments are made either in bands (figs. 1 and 2) or at points. Mechanically attached systems are particularly popular in southern regions where lightweight-roof construction is feasible. The fully adhered systems, arguably the best overall method of attachment, bond the single-ply membrane directly to the substrate. Of course, they too are lightweight, but costlier than mechanically attached systems because their application is more labor-intensive.



distributes stresses caused by wind uplift. The non-penetrating attachment in fig. 6 shows the membrane movement caused by the wind, which can result in seam failure (fig. 4). Wind uplift can also redistribute ballast (fig. 5), leading to roof failure.

### Putting a system together

A roofing system starts at the deck. In its most basic form it consists of the structural deck itself, insulation, and the roofing membrane. For single-ply systems in most regions, a vapor retarder should also be incorporated. All components must be compatible if the roof system is to function properly. That, of course, is a design challenge which will necessarily involve research results from testing laboratories. Several manufacturers now offer pre-engineered systems. These are certainly worthy of consideration and have one particularly significant advantage: all components are covered under a single guarantee.

The jury is still out on single-ply systems. However, within the next several years, sufficient empirical data will take much of the guess work out of assessing the long-term quality of a system and its parts. As a proximate guide to alert the roofing industry of problem areas, in 1987, NRCA's Project Pinpoint conducted a study of single-ply roofs in which 794 problems were reported. The problems were categorized in the following way:

PROBLEM TYPE	% OF TOTAL PROBLEMS
Lap defects	24
Flashing defects	16
Shrinkage	12
Punctures	12
Embrittlement	7
Wind-related	5
Blistering	4
Other/combination	20

Most of the problems itemized above relate to application or misuse of materials. The drawings that follow highlight details that, for their given system, successfully address many of these problems. (Incidentally, these drawings embody a graphic standard that would serve all involved parties very well during the bidding and construction process.) Roof technology is a problem area for architects even though excellent roofing materials are available, the knowledge to successfully assemble them is accessible, and clients generally seem willing to cooperate. With so much at stake, how can architects afford not to take a leading role in roofing?

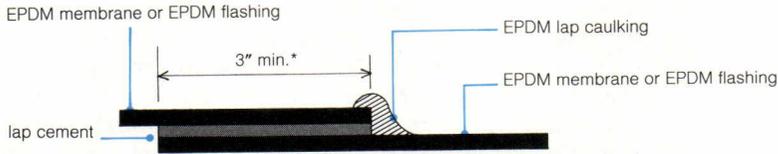
*Darl Rastorfer*

# Seams for EPDM single plies

EPDM's are the most popular single-ply membranes in today's market. They are vulcanized elastomers, which means that once the polymers are cross-linked during manufacturing, they do not change. Therefore, EPDM's can only be bonded to themselves by

use of an adhesive. The exemplary seam details below incorporate caulking at edge-laps. Admittedly a "belt-and-suspenders" detail, given an architect's legal vulnerability in premature roofing failure, such careful measures are recommended.

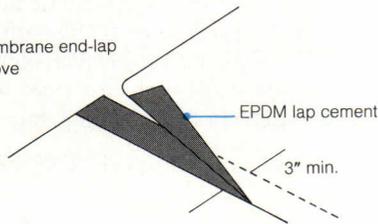
Drawings courtesy Manville Corporation



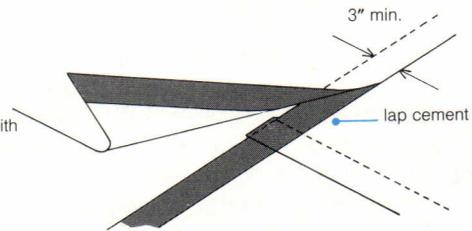
STANDARD ROOF LAP

\* FM class 1, 1-60 and 1-90 require 4" minimum for all cemented membrane field laps

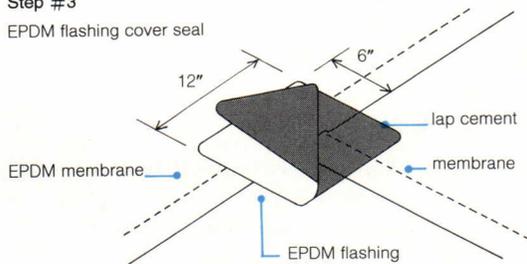
Step #1  
Standard membrane end-lap per detail above



Step #2  
Standard side-lap with adjoining sheet

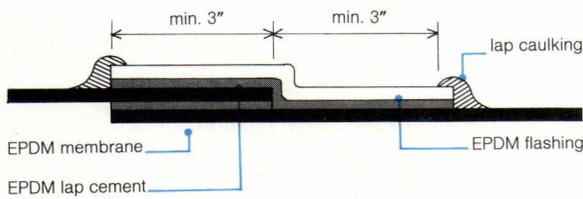
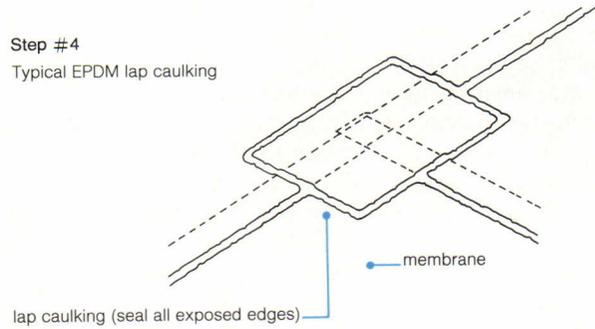


Step #3  
EPDM flashing cover seal

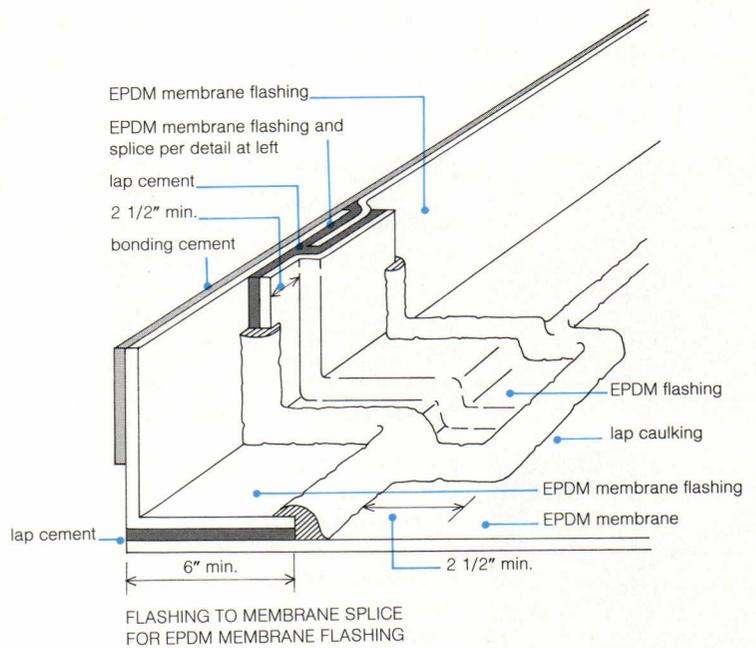


TEE SEAM INTERSECTION

Step #4  
Typical EPDM lap caulking



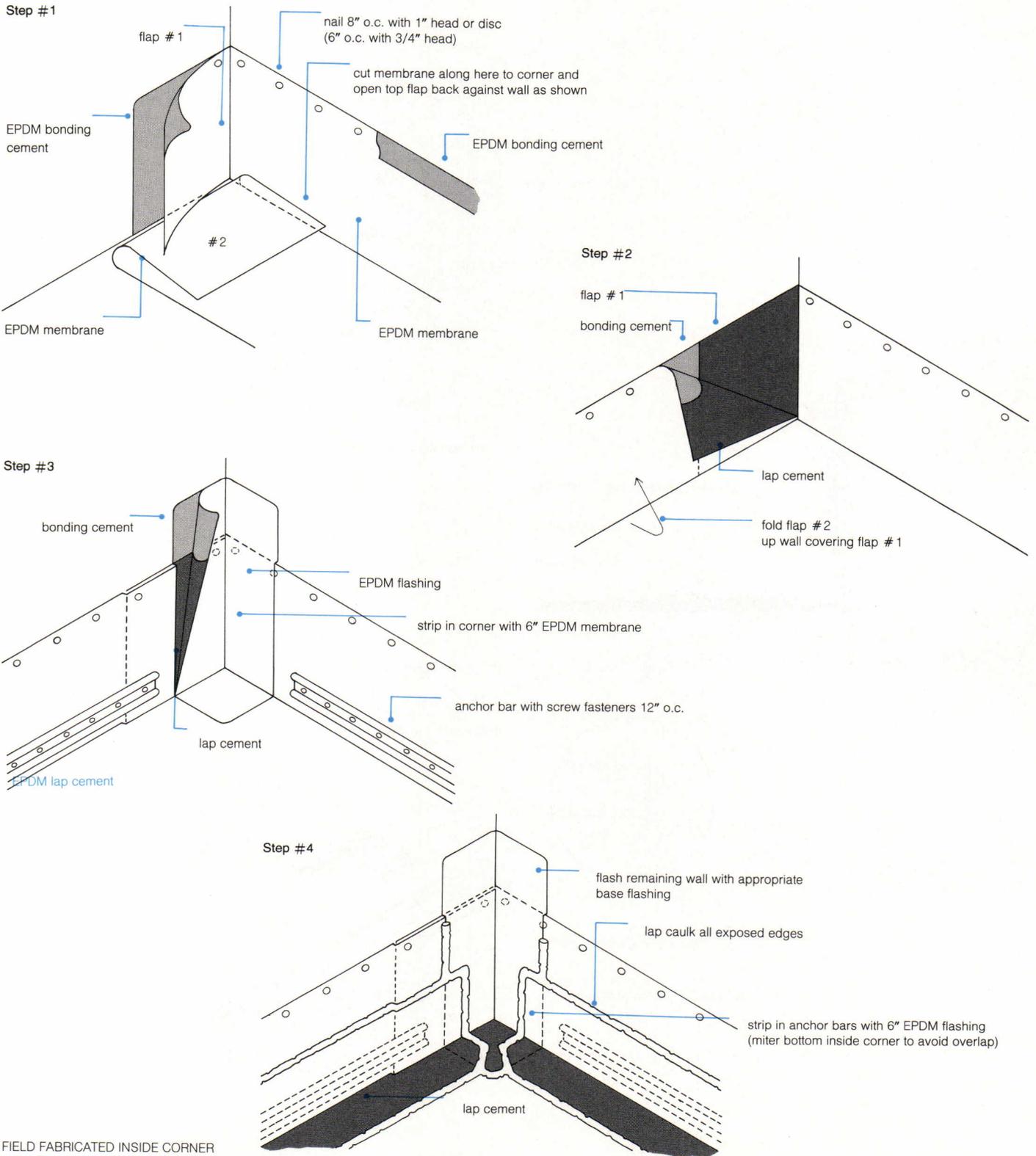
MEMBRANE LAP SEALED WITH EPDM FLASHING



# Field-fabricated inside corner

*Corners, penetrations, and terminations require exacting details, no matter what the roofing system. Making an inside corner using an EPDM membrane as the flashing material is shown sequentially below. Preparing a drawing series, to indicate a*

*construction process, is advisable whenever complicated cuts and laps are required for details made in the field. The inside corner detail incorporates an anchor bar for the base flashing. For full-base flashing detail, with anchor bar, see page 140.*

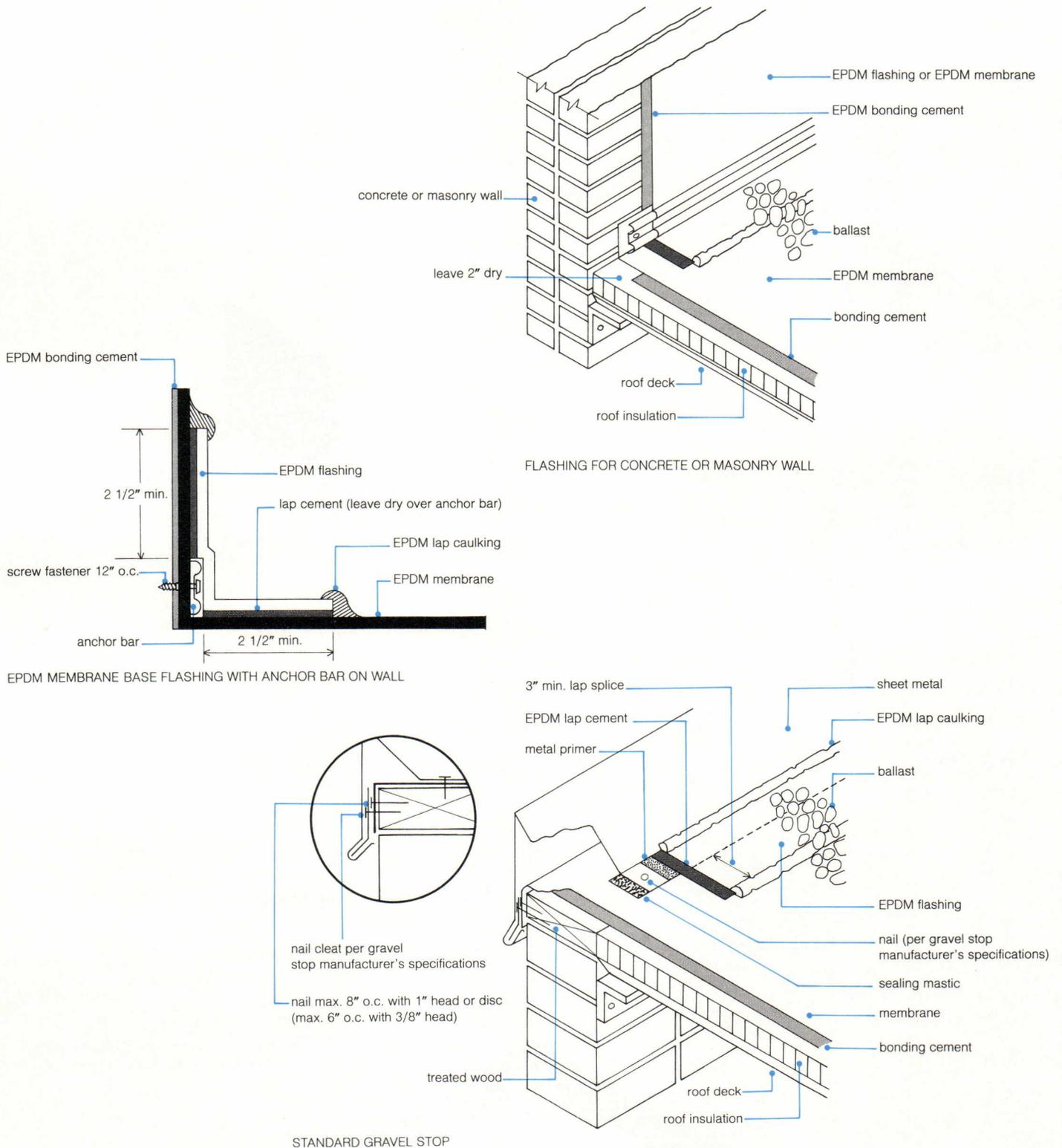


FIELD FABRICATED INSIDE CORNER WITH EPDM MEMBRANE FLASHING

# Roof-to-wall intersections

Flashing defects comprise a substantial portion of premature roofing failures. The details for single-ply systems shown below are competent designs for four common conditions: flashing where the membrane turns up to join a parapet wall; a gravel stop detail integrating a sheet-metal termination; flashing at an expansion joint where the deck is structurally independent of the building wall; and a simple drip-edge termination that approximates the details for gravel stops.

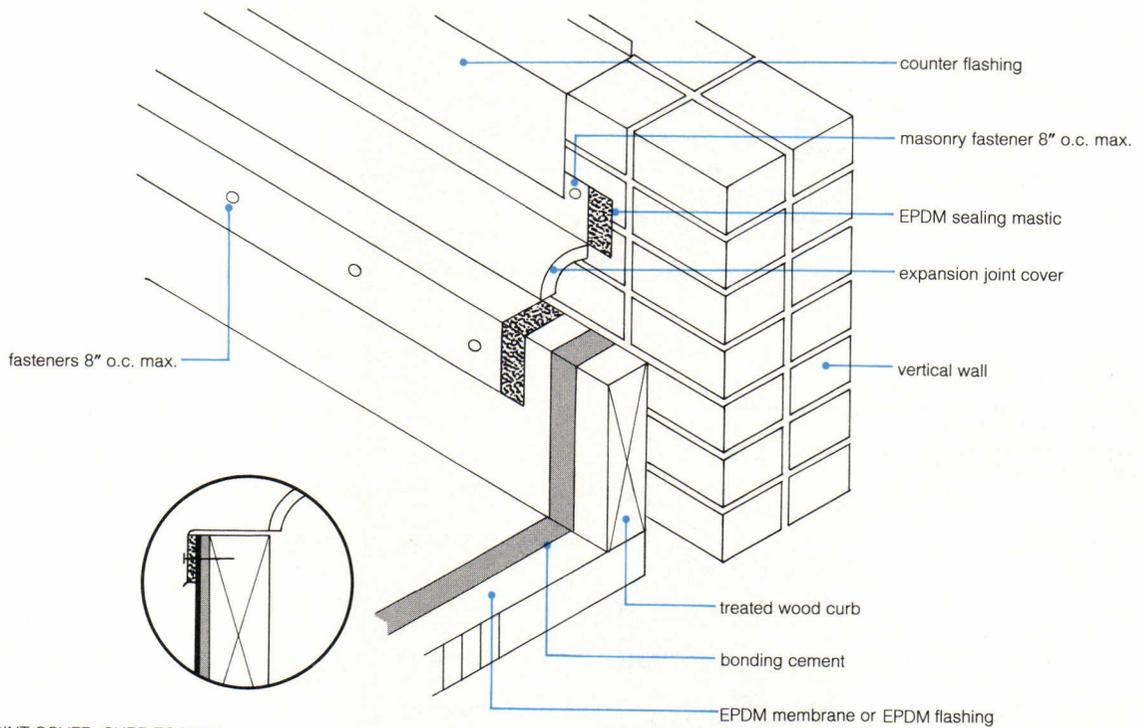
These details, with the



exception of the expansion joint, should be used only on decks supported by the outside wall, a configuration which assumes that the deck and the supporting wall move as one. When movement occurs, as it will on a daily basis, the elastic properties of EPDM allow it to

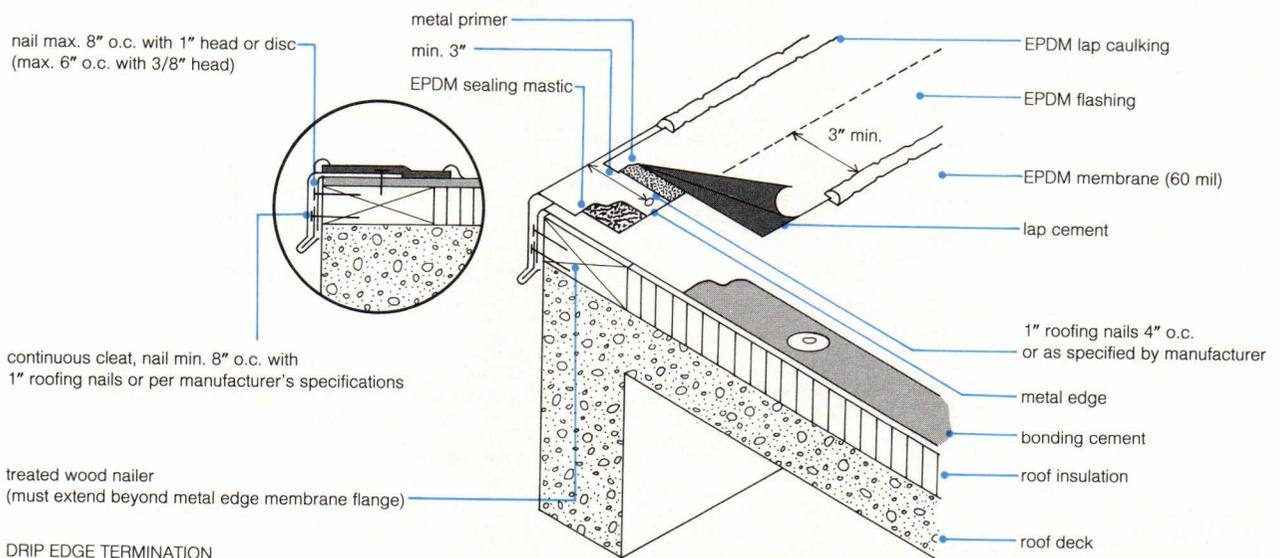
stretch and contract evenly throughout its cross-section. This will, of course, impose a moment couple (peel stress) at the membrane seams. All seams shown have been designed to accommodate peel stress. In these, as with all other details, specified lap

cements and caulks must be chemically compatible with the particular EPDM to be installed. It is recommended that lap cements be butyl-based (butyl-based cements are not affected by moisture).



EXPANSION JOINT COVER: CURB TO WALL

note:  
use with appropriate base flashing details



DRIP EDGE TERMINATION

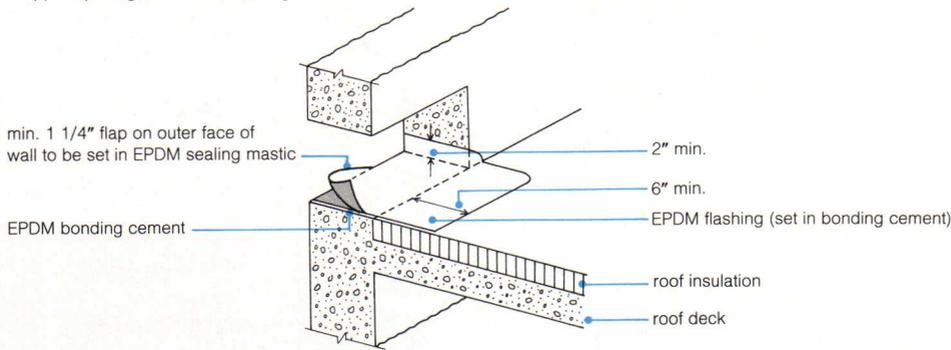
# Primary drain scupper with EPDM flashing

The three-step detail (left column below) and full section detail (below right) are appropriate for adhered (either fully adhered or plate-bonded) or mechanically attached single-ply systems. Naturally, these details are applicable only for decks supported by the

outside wall. The EPDM flashing used can be either cured or uncured. Uncured EPDM, in fact, cures in the field, and is more malleable than a cured membrane—a significant advantage when forming complicated configurations like the scupper drain below.

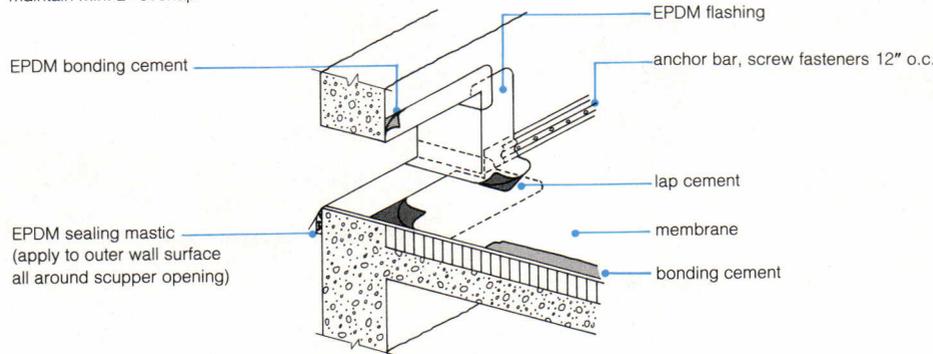
## Step #1

Line bottom and lower portion of scupper opening with EPDM flashing



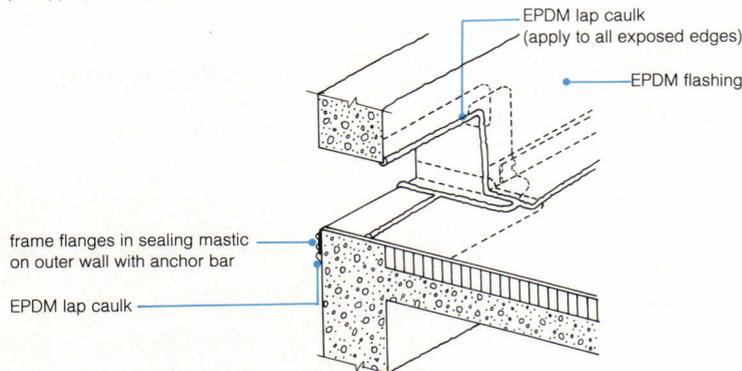
## Step #2

Position EPDM membrane and mechanically fasten at perimeter. Fasten to EPDM flashing with lap cement. Line sides and top of scupper opening with EPDM flashing, maintain min. 2" overlap.



## Step #3

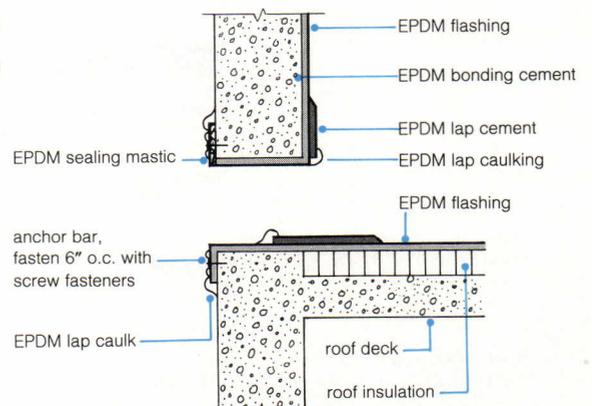
Flash wall with EPDM flashing per appropriate detail



### notes:

1. Use course section for rock retention with ballasted installations
2. Be sure to use EPDM bonding cement for attachment of flashing to substrate and EPDM lap cement for flashing to flashing or membrane

PRIMARY DRAIN SCUPPER WITH EPDM FLASHING

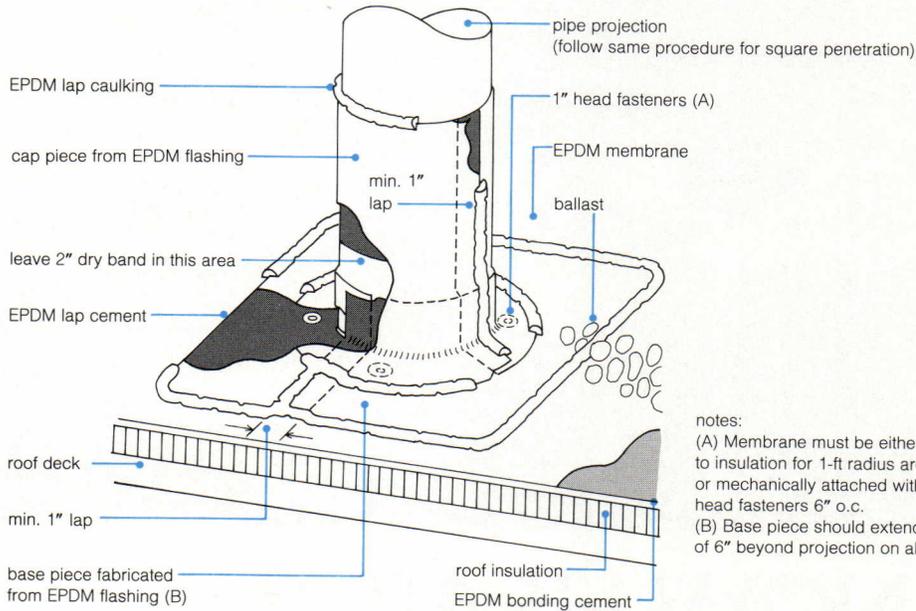


# Penetrations

EPDM penetrations around short pipe projections (top illustration below) should be flashed with an EPDM membrane to maintain the compatibility of all materials in the system. No projections should be located in valley or drain areas. The steel

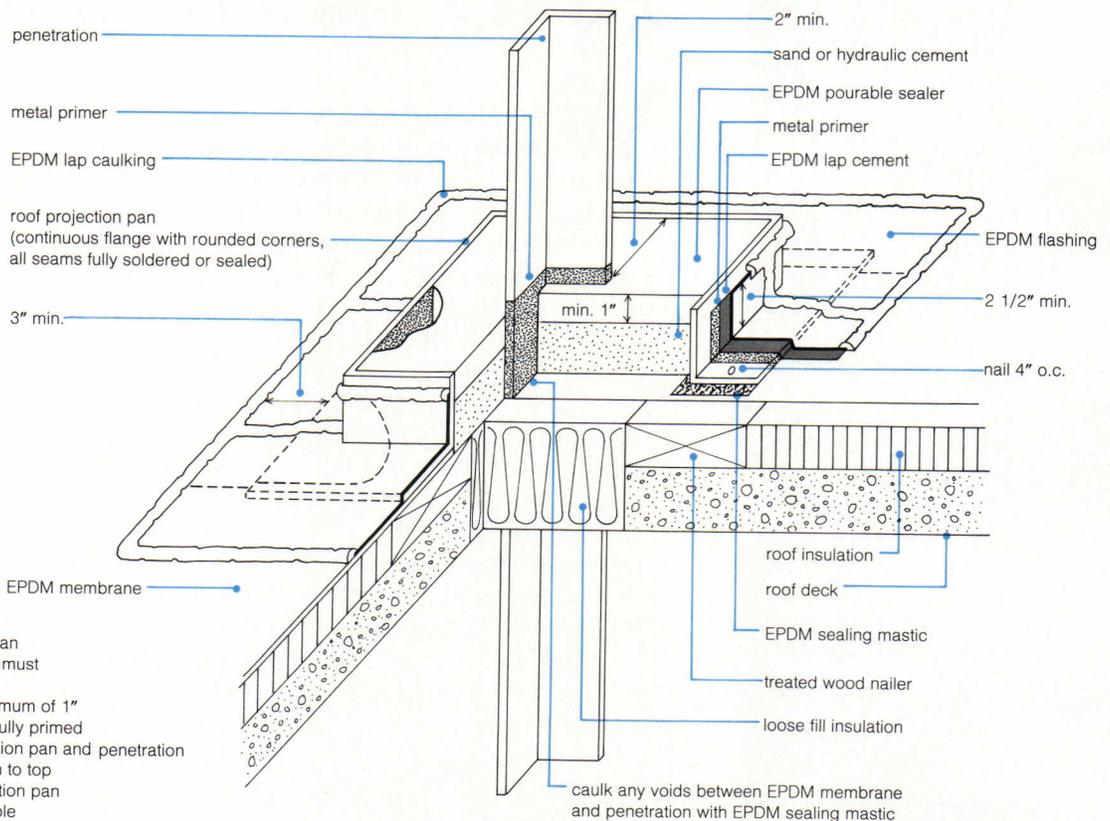
projection shown in the bottom drawing (a member typically used to support air-handling units or signage) incorporates a pitch pan. As a general practice, whenever possible, pitch pans should be avoided. However, when a projection is flexible, such as a

cable, or of an irregular shape and cannot be covered with a hood, a state-of-the-art pitch pan, such as the one illustrated, is recommended. The pan is attached directly to the deck. The poured sealer (a urethane) bonds to pans and projections.



notes:  
 (A) Membrane must be either fully adhered to insulation for 1-ft radius around projection or mechanically attached with min. 1" head fasteners 6" o.c.  
 (B) Base piece should extend a minimum of 6" beyond projection on all sides

FIELD FABRICATED PIPE FLASHING



Notes:  
 1. If vertical leg of projection pan is less than 3", EPDM flashing must extend up and over top edge and down inside of pan a minimum of 1"  
 2. All metal surfaces must be fully primed with metal primer (both projection pan and penetration)  
 3. Pourable sealer must fill pan to top  
 4. Flash corners of roof projection pan  
 5. This detail suitable for multiple penetrations through a single opening

ROOF PROJECTION PAN, FLASHING WITH NAILER



# NOW HEAR THIS — AND NOTHING ELSE!

**W**hen the Armed Forces Radio and Television Service (AFRTS) needed to control sound levels in their new Sun Valley, California, global broadcast center, they specified a solution that really flies high. Overly acoustical doors and vision lights.

With multiple 24-hour-a-day broadcasts—and 1.5 million Armed Forces listeners across a dozen time zones around the world—AFRTS needed to create sound barriers between control rooms, production facilities, and editing bays. Their orders called for a technically noise-free environment—and nothing else.

That's why they chose Overly. Our sound doors and vision lights are custom-designed and engineered for multi-complex, multi-use broadcast centers like AFRTS—where sound leaching would ruin broadcasts, and outside noise should never intrude.

So for radio and TV broadcasting studios, when you've got to get the message across specify the acoustical barrier that's certified by the Riverbank Acoustical Laboratories' most rigorous tests—and really gets you off the ground. Overly acoustical doors and vision lights.

Call or write for our latest acoustical door and window catalog, monograph, and guide specification. They'll tell you the rest of the Overly story.

**overly**  
MANUFACTURING CO.

(East)  
P.O. Box 70  
Greensburg, PA 15601  
(412) 834-7300  
TWX 510-468-0539  
FAX (412) 834-8221

(West)  
P.O. Box 947  
Fallbrook, CA 92028  
(619) 723-1105  
FAX (619) 728-7511

Circle 62 on inquiry card

# TIRED OF CURES THAT MAKE YOU SICK? SWITCH TO COOLTOP®!

Curing in roofing membrane is a real problem. Hypalon® (CSPE), for instance, cures from the instant it's manufactured. In fact, exposure accelerates curing. Even a short period—48 hours, for example—can result in poor seams, often making the difference between roofs that succeed and those that fail.

Since curing cannot be prevented, detected or controlled, seaming CSPE frequently leaves contractors no choice but to perform extra functions such as double applications of solvents and primers prior to heat-welding, thereby doubling—sometimes tripling—seaming costs. Unfortunately, the extra effort still can't guarantee the watertight integrity of the seam.

But there is a choice. The CoolTop Roofing System overcomes the inherent problems of CSPE because CoolTop

membrane is non-curing chlorinated polyethylene (CPE)\*. The CoolTop System, developed—and improved—in ten years of roofing installations nationwide, combines the heat welding characteristics of CPE with proven installation techniques for flawless, reliable seams.

Where CSPE curing creates problems, CoolTop minimizes risks. CoolTop's hot-air welded seams get their strength from the thermoplastic properties of CPE. Since CoolTop never cures, seams are fused together for a *complete* molecular bond that holds over time despite ultraviolet, ozone, wind, ponding water or other roof top conditions.

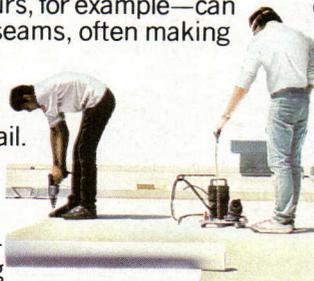
Installation is fast and efficient, with none of the uncertainties or liabilities of CSPE, which makes CoolTop the best medicine for industrial,

commercial and institutional roofs.

Find out just how reliable CoolTop is. Write for our free seam evaluation kit and see for yourself.

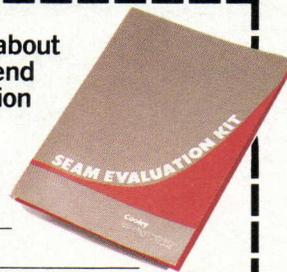
**Cooley**  
Roofing Systems  
ON TOP TO STAY! INCORPORATED

50 Esten Avenue, Pawtucket, Rhode Island 02860  
Tel: (401) 724-0490



Yes, I want more information about the seams that last! Please send me my CoolTop Seam Evaluation Kit immediately.

**FREE!**



NAME \_\_\_\_\_  
TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

AR

\* CoolTop is made from Tyrin® brand CPE manufactured by Dow Chemical USA.

† Hypalon is a registered trademark of DuPont.

© CoolTop is a registered trademark of Cooley Roofing Systems, Incorporated.

# ISICAD

## DESIGN SYSTEMS FOR THE REAL WORLD



Today's real world is one of changing schedules, tight deadlines and massive information coordination. That's why ISICAD is committed to CAD that's quick, flexible and capable of managing that information.

*PRISMA*, a complete turnkey system, offers advanced relational data base technology enabling you to reach beyond traditional drawings to project management and support. With modular 2-D and 3-D software and high-performance hardware, *PRISMA* provides high productivity at a surprisingly affordable price.

clean-up, parametric building grids, construction aids and an integrated data base manager for dBASE III®—that other packages



offer only as expensive extras. Supported by many third-party products, *CADVANCE* is the industry's easiest to operate PC-CAD package.

*PRISMA* and *CADVANCE* are more than products. . . they are compatible, expandable solutions that allow you to design *for* the real world instead of *around* it. More than 15,000 installations prove that these are solutions that work.

Call today for information on how ISICAD can meet your design requirements, **(800) 634-1CAD**. In California **(800) 527-4347**.

*CADVANCE* is a registered trademark of ISICAD, Inc. dBASE III is a registered trademark of Ashton-Tate.



*CADVANCE*®, a powerful design, production and presentation tool, is the fastest PC-CAD software on the market. Included in its low cost are features—such as intersection

ISICAD, Inc., P.O. Box 61022, Anaheim, CA 92803-6122, (714) 533-8910

**ISICAD**  
DESIGN SYSTEMS  
FOR THE REAL WORLD

Circle 64 on inquiry card

# Software reviews for architects

By Steven S. Ross

## VersaCAD DESIGN 5.3

A high-end CADD program with 3-D, shading, and bills-of-materials processing included. This newest version (November 1987) allows multiple views of a three-dimensional object on-screen at the same time. Works smoothly with a variety of graphics boards, inputs, and outputs. Each drawing can have up to 250 levels of detail.

**Equipment required:** IBM AT or compatible, or 80386-based computer, PC-DOS or MS-DOS 2.1 or above (3.1 or above for AT); 640K, fast-access hard drive. Two megabytes of extended memory strongly recommended. A wide range of graphics adaptors is supported, from crude CGA to PGA, Hercules, and Targa boards. Can output to a wide variety of printers and plotters, from the crude (dot-matrix Epson MX or IBM graphics printers) to LaserJet, with excellent control of pen color, size, and shading. Digitizer strongly recommended for input; software can store any number of custom digitizer overlays. Versions are available for Sun, Apollo, Macintosh, and Hewlett-Packard UNIX-based workstations.

**Vendor:** VersaCAD Corporation, 2124 Main St., Huntington Beach, CA 92648 (714-960-7720).  
**Price:** \$2,995 for license to use on a single workstation.

*Steven S. Ross is past president of CCM, an educational software company in New York City, and now teaches journalism at Columbia University, where he also runs a large computing laboratory for students. He is often consulted on quality-assurance matters; his latest book, Construction Disasters: Design Failures, Causes and Prevention, was published by McGraw-Hill in 1984.*

### Summary

**Manual:** Good; most of the material is in the form of tutorials. **Ease of use:** Good. On-line help is clear. Most operations are menu-driven. **Error-trapping:** Excellent. Literally every change made in a 2-D drawing can be undone.

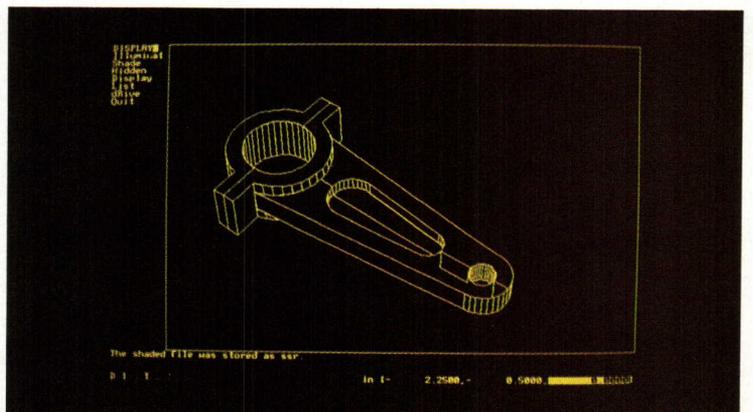
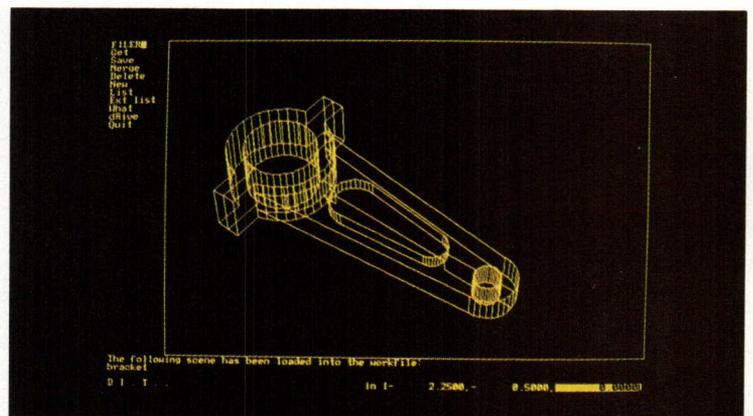
With version 5.3, VersaCAD, long number two to AutoCAD among architects, presents a strong competitive challenge. VersaCAD's prominent features include easy—almost intuitively easy—3-D modeling, portability of files to and from mainframe systems, and tight integration of shading and bills-of-materials processing.

All the features do not come without pain, however. The shading feature, while easy to use, doesn't quite have the flexibility of AutoCAD's \$500 add-in. It offers only one point

light source per scene (plus ambient lighting) rather than multiple lights, for instance, and focal length of the "camera" lens viewing the shaded object is approximated by choosing viewing angle and distance.

Shading and hidden-line removal take a long time, too, on a "conventional" IBM AT or clone with standard graphics cards such as the EGA or Hercules. In contrast, pans, zooms, and other 2-D manipulations, such as copying and rotating images in a plane, are fast—almost instantaneous.

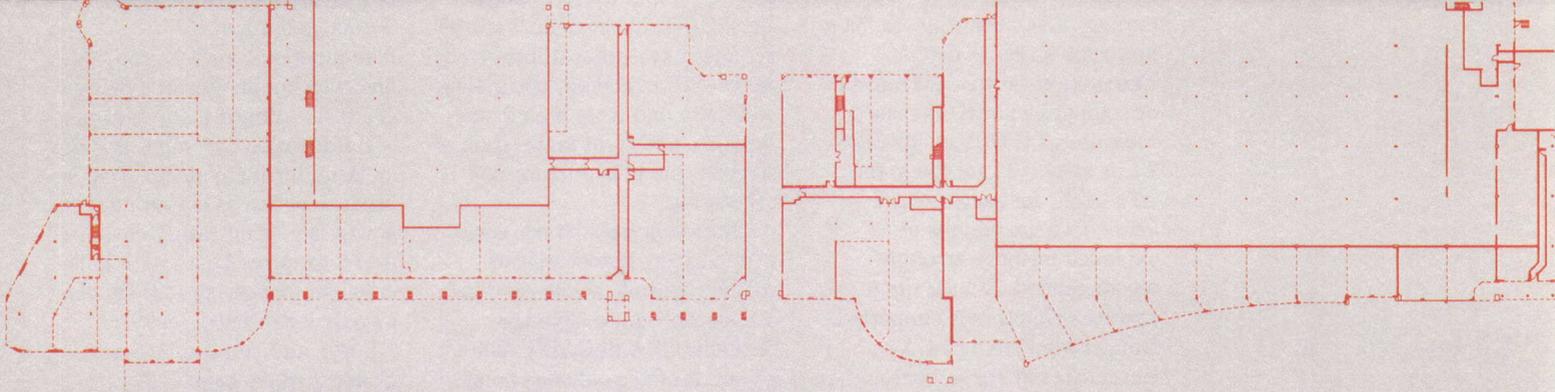
But speed is becoming less of an issue for many users. That's because desktop computing power is getting rather cheap. Add a graphics board with built-in image processing (\$2,000), two megabytes of extra memory (\$1,000), and you can increase  
*Continued on page 149*



Bracket with all lines visible (top) and with hidden lines

removed (bottom) using VersaCAD's new DESIGN 5.3.

# How to Go Shopping for CAD.



With personal computers becoming ever more powerful and affordable, there's never been a better time to look into the benefits of doing your design work on one.

At Autodesk, we've put together a few guidelines to help make shopping for a system a little easier.

## Draw Up a Plan.

First, consider the software. You don't want to spend months learning it (you've already spent enough time learning your profession). And you don't want to shell out a bundle, either.

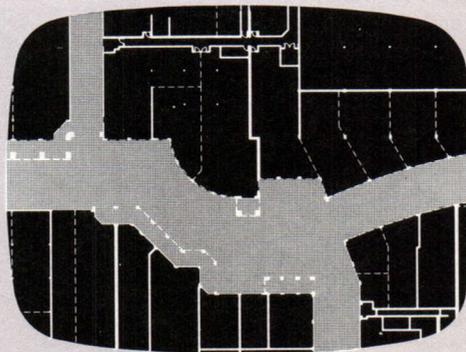
Consider AutoCAD AEC.<sup>®</sup> The name stands for architecture, engineering, and construction, and it works in tandem with our industry-leading AutoCAD<sup>®</sup> package. Which itself has introduced computerized drafting to over 90,000 people.

Put AutoCAD AEC on your choice of more than 30 popular microcomputers, and you can set up an entire system that's well within your budget.

## One-Stop Shopping.

Next, consider a system that gives you all the features that are important to your work. Starting with accuracy and speed.

With AEC, distances are dimensioned, and schedules generated, automatically.



*Detailed plan of center at the tower point.*

Routine drafting is faster. Even the process of transmitting plans is speeded up, reducing overall project time.

Customization is important, too. So AEC makes it easy for you to create your own specialized symbols.

All of which results in less time spent on drudgery, and more time trying out new ideas.

Which, after all, is what good design is all about.

## The Value of a Name.

There's a lot to be said for going with the leader in the field.

Like the comfort of knowing that nearly two out of three of your colleague doing microcomputer AEC applications are using AutoCAD products?

Or the confidence of knowing that most major architecture schools are teaching AutoCAD.

Or the security of knowing that with 9 authorized AutoCAD training centers across the country, there's sure to be one near you.

Want to see how AutoCAD AEC can help you? For a demonstration, just see your nearest AutoCAD dealer. Or call or write for the name of one in your area.

And see how easy shopping for CAD can be.



**AUTOCAD<sup>®</sup>**

AUTODESK, INC.

2320 MARINSHIP WAY  
SAUSALITO, CA 94965

(415) 331-0356

OR (800) 445-5415

TELEX 275946 ACAD UD

*Many users will buy VersaCAD because of its easy handling of 3-D work. It's easy to create multiple views of the object you're working on, with as many as 16 on-screen at once.*

processing speed six-fold. Spend an extra \$500 for a "turbo" AT clone and matching, extra-fast 20287 coprocessor when you first buy your computer and you'll double that—a 12-fold increase in speed. An extra \$3,000 in first cost buys a computer based on the 80386 chip and 80387 coprocessor, to triple the 12-fold increase.

In short, VersaCAD may lack something in the speed department, but the extra equipment needed to make VersaCAD run faster is not very expensive these days—and is getting cheaper.

Installing VersaCAD is easy. For me, the software worked almost right out of the box. Following clear instructions, I started (or "booted") the computer, switched to drive D (where I wanted to store VersaCAD), inserted disk 1 (of the 18 supplied) into drive A, and typed "A:INSTALL C:". Drive C is my "boot" drive, the place my computer looks first for files called CONFIG.SYS and AUTOEXEC.BAT.

The installation process automatically created the required subdirectories on Drive D and modified the boot-drive files to recognize the new DOS "path" to the subdirectories and to keep at least 40 files open at once.

The Install program automatically invokes a VersaCAD program called ENVIRO that is used to tell the software what monitors, graphics cards, digitizer, plotter, printer, COM ports and so forth are being used. ENVIRO then prompts the user to insert each floppy disk in turn, and copies the contents to the hard disk. If you change your equipment later, you can rerun ENVIRO without going through the entire installation procedure. VersaCAD takes from 5 to 6 megabytes of space on a hard disk, depending on the options being installed. In using the

program, I found one oddity. VersaCAD allows fast printing (or "dumping") of the on-screen image to a simple dot-matrix printer, when working in the 2-D mode. I have a laser printer and a dot matrix connected to the same printer port on my computer. I forgot to switch off the laser and switch on the dot matrix before trying the feature. Result: Blank and almost blank pages spewing from the laser! Turning the printer off froze the system and forced me to reboot the system.

Fortunately, I had set up VersaCAD to save each modification I had made to the drawing on disk, rather than to store the drawing only in memory. The drawing was all on disk waiting for me.

Because VersaCAD can be configured to save all changes on 2-D drawings, by the way, it

can "go back" and undo any change (not merely the last change). This feature can lead to huge drawing files, however. So there is a "crunch" feature that condenses drawings by removing all intermediate changes and leaving only the final version on disk. Intermediate changes are not saved to the permanent disk file when you are working in 3-D, by the way. They are, however, saved in the current workfile. Thus, you can undo a change in a 3-D file as you work on it, but not once it is saved.

Many users will buy VersaCAD because of its easy handling of 3-D work. So it seems wise to dwell upon how the program handles 3-D. To start with, you can draw something in 2-D, then import it into 3-D for further work. The imported drawing is set onto whatever plane you wish—a

floor plan would normally be set in the Z=0 plane, for instance, or an elevation into Y=0.

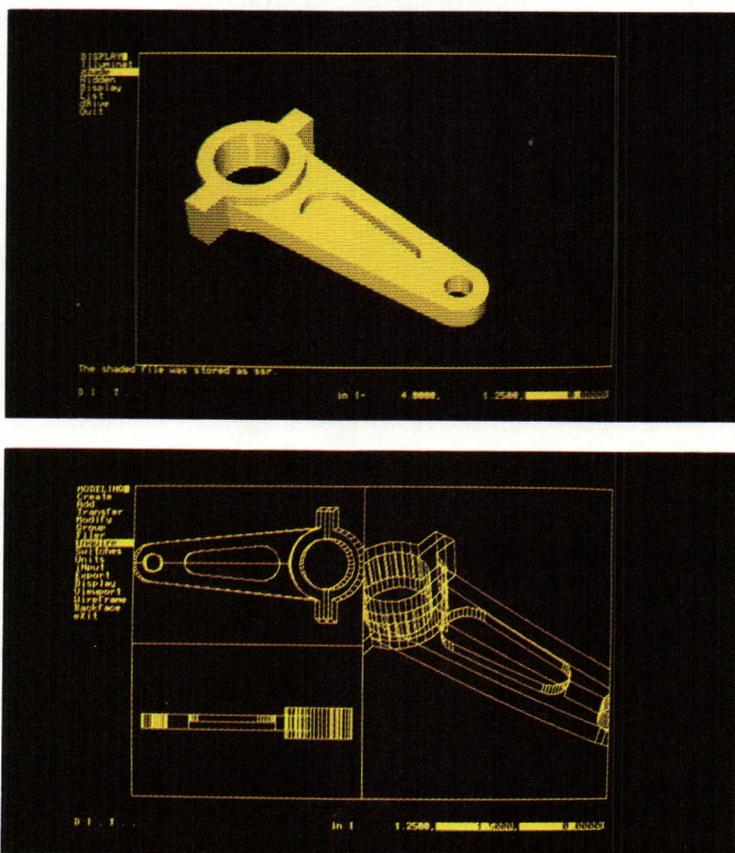
VersaCAD allows some time-saving tricks, however. Suppose you have a floor plan, for instance, and you want to use it as the basis for a 3-D view of the entire floor. You can import the 2-D floor plan with Z-bottom set at, for instance, 0, and Z-top set at 8 feet to represent an 8-foot ceiling height. VersaCAD automatically fills in the vertical surfaces. You can then modify the surfaces with doors, windows, or whatever. The amount of modification needed depends on the care with which the original floor plan was drawn. Experimenting, I found a 2-D door cutout extended to the ceiling, so it had to be modified in 3-D.

Once in 3-D, it is easy to create multiple views of the object you are working on. As many as 16 views can be on-screen at once, and the windows holding the views can be any rectangular shape.

Modifying the drawing in one window (VersaCAD calls the windows "viewports") changes the other views as well. Moving from window to window took a bit of getting used to; with multiple windows, you cannot simply position the cursor where you want to work on screen, and start drawing. You have to change menus, moving upward in the menu hierarchy to the modeling menu, down to the viewport menu, positioning the cursor on the window you want to move to, and pressing the F7 key. You then move back to modeling.

VersaCAD allows you to save and retrieve viewports easily. And, because only the instructions for recreating the view are saved—eyepoint, type of view (orthogonal, perspective, etc.), image size—any later changes in the drawing itself are automatically included.

*Continued on page 151*



*DESIGN 5.3 allows shading of bracket (top) and placement of three views on same screen, to help 3-D drafting (bottom).*

# CALL FOR ENTRIES

We're proud to present the second annual Du Pont HYPALON Excellence in Architecture Awards. You can qualify for a \$10,000 award for outstanding design that's given in two categories: New Construction and Reconstruction/Restoration.

The 1988 judges will include:

- ▷ Bernardo Fort-Brescia  
Principal, Arquitectonica  
Miami, Florida
- ▷ Thomas Hines  
Professor, UCLA  
Los Angeles, California
- ▷ Adele Naude Santos  
Chairman, Department of  
Architecture  
University of Pennsylvania  
Philadelphia, Pennsylvania

Any type of structure completed

within the last five years in the U.S. or Canada that incorporates a single-ply roofing membrane system based on Du Pont HYPALON synthetic rubber is eligible. Entries must be submitted by a registered architect.

Mail the entry form below to Du Pont by March 1, 1988. When we receive this form, we'll send you detailed contest information and a submission binder.

Submission binders must be received by April 18, 1988. Winners will be announced in May 1988, the week of the AIA Convention in New York City.

If you aren't eligible this year, mail the entry form to receive more information on Du Pont HYPALON, the durable roofing material that offers unlimited design versatility.

## ENTER THE 1988 DU PONT HYPALON® EXCELLENCE IN ARCHITECTURE AWARDS.

**WITH THIS ENTRY, YOU MAY BE ELIGIBLE FOR A \$10,000 AWARD  
IN EITHER OF TWO CATEGORIES FOR BEST DESIGN.**

I will submit \_\_\_\_\_ entries in the  New Construction  Reconstruction/Restoration category of The 1988 Du Pont HYPALON Excellence in Architecture Awards. Please send me a submission binder.

Name (please print) \_\_\_\_\_

Title \_\_\_\_\_

Firm Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

ZIP \_\_\_\_\_

Phone \_\_\_\_\_

This program is not affiliated with or sponsored by the American Institute of Architects.

Send to: The Du Pont HYPALON® Excellence in Architecture Awards  
Suite 300, 150 Monument Road  
Bala Cynwyd, PA 19004-1777



Circle 66 on inquiry card

# New products

For more information,  
circle item numbers on  
Reader Service Card



1



3



2



4

## Contract fabrics — pattern and texture

A new crop of contract fabrics marketed primarily for office applications combines color warmth and interesting pattern design with solid durability and flamespread ratings.

The Arc-Com Design Studio based the *Vienna* pattern on original Secession sources of the Wiener Werkstätte, incorporating the metallic overlay effect found in the works of Austrian artist Gustav Klimt. A small-scale design printed on an all-cotton velvet, *Vienna* (1) comes in the four colorways pictured.

Fabric designer Pat Green set stylized tulips on a two-toned background for *Burgeoning* (2), woven for Groundworks in West Germany of 53 percent cotton and 47 percent rayon. Suitable for both upholstery and vertical applications, the pattern comes in three colorways: teal, ochre, and viridian, a blue-green.

An Italian silk jacquard intended for both casement and fabric wall applications, *Garlands* (3) alternates a vertical satin stripe with clusters of woven flowers. Designed for Gretchen Bellinger's *Window/Wall* collection, the fabric comes in ivory, taupe, and beige.

Four distinct but soft patterns are offered in Jhane Barnes's most recent upholstery collection for Knoll International (4). Included are two contemporary tapestry patterns, *Maze* (bottom) and *Intaglio* (second from top), woven in Japan of wool and polyester on a cotton weft. *Fenestra* (second from bottom), a wool/rayon/cotton blend woven in the U. S., has a subtler design; *Pyramids* (top), also from Japan, has a random-textured geometric pattern of wool and rayon, with a touch of silk. All fabrics are 54-in.-wide and are suitable for a full range of office seating.

1. Arc-Com Fabrics, Inc., Orangeburg, N. Y.  
*Circle 300 on reader service card*
2. Groundworks, a division of Lee Jofa, Carlstadt, N. J.  
*Circle 301 on reader service card*
3. Gretchen Bellinger, Inc., New York City.  
*Circle 302 on reader service card*
4. Knoll International, Inc., New York City.  
*Circle 303 on reader service card*  
*More products on page 155*



## **“At last I have accurate color control.”**

*Mary McFadden, President, Mary McFadden, Inc.*

### **Introducing the PANTONE®\* Textile Color Selector with 1,001 code-identified cotton color swatches.**

Now fashion and home furnishings designers have an easy, accurate way to select, specify, communicate and control color. For Mary McFadden, an international leader in design of fashions and fabrics, the new PANTONE Textile Color Selector instantly gained its place as an important, long-needed tool of the industry.

The PANTONE Textile Color Selector contains 1,001 mounted, dyed cotton swatches, code-identified and capable of being matched in the production of textiles. This will enable a designer in New York, for example, to call a dyer in South Carolina and talk textile colors in precise terms.

Because this is a new color language that does not depend on words, it allows you to communicate color specifications just as accurately and easily to suppliers in Japan or Italy. In graphic design and printing,

the PANTONE MATCHING SYSTEM is the leading color standard in 95 countries. We believe that in the fashion and home furnishings industries the PANTONE Textile Color Selector will be of equal importance.

In addition to the selector, Pantone, Inc. will also supply replacement pages and 4" x 5" individual color swatch cards.

The PANTONE Textile Color Selector/Cotton is the first of a series of publications especially designed for specifiers of color in textiles.

The PANTONE Textile Color Selector is priced at \$450.00 and is available from Pantone, Inc. and selected distributors of PANTONE Professional Color System Products. To obtain more information, call our customer service representatives at (201) 935-5500.

It's the start of a whole new era of color communication for designers, manufacturers and users of textiles.

**To place your order, call toll-free at 1-800-222-1149.**



**PANTONE®**  
WHEREVER THERE'S COLOR.

\*Pantone, Inc.'s check-standard trademark for color reproduction and color reproduction materials. Process color reproduction may not match PANTONE®-identified solid color standards. Refer to current PANTONE Color Publications for the accurate color.  
© 1988 Pantone, Inc., 55 Knickerbocker Road, Moonachie, NJ 07074, (201) 935-5500

Circle 69 on inquiry card

## • Sloped roof retrofit

An adjustable structural system, *Var-I-Spacer* is described in a 12-page booklet as an economical, slope-inducing solution to flat-roof problems. Spacer members are placed over an existing, worn-out roof at heights designed to provide the desired pitch and direction of slope, and coated-metal *Total Performance Roof* panels are attached with a concealed clip assembly that allows the roof to expand and contract with thermal change. Re-roofing with the *Var-I-Spacer* system creates a cavity for easy installation of low-cost, low-density insulation, and is said to greatly improve the appearance of the building itself. H. H. Robertson Co., Pittsburgh.

Circle 413 on reader service card

## • Standing-seam roof

A 12-page technical brochure on the *Ultra-Dek 124* metal-panel roof system explains how the 3-in.-high snap-together seams eliminate any perforation of the flat part of the panel, said to be a major site of leaks in other panel systems. Drawings show eave, corner, ridge, and end lap details for masonry, wood, and metal building construction. *Ultra-Dek* panels are reversible end-for-end for use on either side of the roof ridge; no field notching or other adaptations are required. Metal Building Components, Inc., Houston.

Circle 414 on reader service card

## • CPE membrane

A 4-page specification brochure stresses the chemical- and ozone-resistance of *UltraPly 78* single-ply roofing membrane, made of *Tyryn* (chlorinated polyethylene) polymer reinforced with a polyester fiber scrim. A mechanically fastened system, *UltraPly 78* remains heat-weldable for the life of the roof, a characteristic said to facilitate repairs or roof modifications. Firestone Building Products Co., Indianapolis.

Circle 415 on reader service card

## • Flexible membrane

An architectural folder on the *PRM (Protected Roof Membrane)* system describes how the one-part compound, made of refined asphalts and synthetic rubbers, bonds to any sound concrete, masonry, steel, or wood deck, at temperatures down to 0 F, to form a 180-mil-thick waterproof membrane. Step-by-step photos show *PRM* installed as part of an inverted roof-membrane assembly, with ballasted *Styrofoam* insulation boards placed on top. The self-healing membrane bridges small deck cracks, and seals hard-to-flash roof penetrations easily, according to the manufacturer. American Hydrotech, Inc., Chicago.

Circle 416 on reader service card

## • Single-ply roofing

A data sheet introduces *Trocral Light SR-60*, a 60-mil-thick white PVC membrane reinforced with glass fiber, which is designed to be mechanically fastened to the roof deck. A chart compares test results for the new membrane with ASTM minimum standards for PVC single-ply sheets. Dynamit Nobel of America, Inc., Rockleigh, N. J.

Circle 417 on reader service card

## • Glazed roofing tiles

Vitrified Japanese-made *Toyo* tiles are shown in an 8-page folder, illustrated with photographs of roofs in colors ranging from maroon to bright blue and silver gray. There are four tile configurations: Japanese, a concave shape with a lip along one edge; S- and Spanish-style tiles with a pronounced overlap; and a flatter French shape. The frostproof glazed tiles have a water-absorption rate below 7 percent. DRG International, Inc., Mountainside, N. J.

Circle 418 on reader service card

## • Roofing panel systems

A new 8-page catalog on corrugated, ribbed, and standing-seam roof panels contains clear color drawings of specific valley, ridge, skylight, and transition details as installed on a large, multi-level retail complex. Text covers span lengths and finish options, and describes the *Energy Dome Skylight*, which fits within the *RS-18* panel. Steelite, Inc., Pittsburgh.

Circle 419 on reader service card

## • Wind-uplift data

One in a series of technical reports on the performance characteristics of *Hi-Tuff* CSPE-based roofing membrane, a 6-page *Tech Facts* folder explains the forces that generate wind uplift on a roof, and the various tests for wind resistance that are performed on membranes and fasteners. Text and photos compare the wind-uplift characteristics of ballasted, fully adhering, and mechanically-attached roofing assemblies.

J. P. Stevens & Co., Inc., Northampton, Mass.

Circle 420 on reader service card

## • Built-up roofing

A generic product and performance guide is available from the Asphalt Roofing Manufacturers Association to help specifiers select components for built-up roofing systems. Sections cover design considerations based on ASTM, UL, and FM standards; materials ranging from decks to flashings; and acceptable and recommended application procedures. There is a small charge for individual copies of the 24-page booklet. Asphalt Roofing Manufacturers Association, Rockville, Md.

Circle 421 on reader service card

## • Liquid roofing system

*Topcoat* water-based, self-curing roof coating is applied with an airless spray to form a flexible weatherproof membrane over a number of new and existing roof assemblies. A 12-page illustrated booklet explains the installation and product economies claimed for the coating system, and introduces *Topcoat Patina Green*, for re-roofing deteriorated copper. Topcoat, Div. The Major Group, Walpole, Mass.

Circle 422 on reader service card

## • Fiber-cement roofing slate

*Supra-Slate*, described on a catalog sheet as having the look and durability of natural stone, is manufactured in realistic slate colorations. Photos of roof projects suggest some of the architectural effects possible by blending shingles of different colors, or by staggering the butts. Supradur Mfg. Corp., Rye, N. Y.

Circle 423 on reader service card

## • Thermoplastic membrane

An 8-page brochure on *BondGrey* NBP polymer-blend single-ply roofing provides a sample of the membrane, and lists its physical properties with the test procedures used. Text and photos explain the fast, safe, and flexible installation techniques claimed for the hot-air welded, mechanically attached system. WestPoint Pepperell, Bond Cote Roofing Systems, West Point, Ga.

Circle 424 on reader service card

## • EPDM membrane

The *Sure-Seal* reinforced EPDM roofing membrane, an economical alternative to this maker's ballasted and fully adhering systems, is introduced in a color brochure. Step-by-step photos illustrate the attachment of membrane to roof with fasteners and plates, and the permanent splicing of roof seams with cement and sealant. Carlisle SynTec Systems, Inc., Carlisle, Pa.

Circle 425 on reader service card

# AMERICA'S MOST PRODUCTIVE FURNITURE FOR THE DESIGN PROFESSIONAL.

At Mayline we design for comfort. Because a comfortable chair, drawing board, organizational system and reference surface can improve a person's productivity. Even in CAD applications!

Mayline cost/benefit studies which compare price to strength, precision, reliability and practical design also bear out that Mayline furniture is comfortable in the

financial department as well. Want to learn more?

Call for our free mini-catalog, or send \$5.00 for our full-line catalog. Mayline Company, Inc., 619 N. Commerce Street, Sheboygan, WI 53081, 414-457-5537.



**MAYLINE**  
Comfort at work



Circle 70 on inquiry card



## SHAKERTOWN: THE SIDING OF CHOICE

As an architect you face many choices in specifying siding for your projects. You want a certain look at a certain price, that can be installed cost-effectively on your specific project.

Hard to do sometimes? Well, take another look at Shakertown Siding.

Watch this space for future details and we'll tell you why Shakertown is the Siding of Choice for successful architects. Or if you can't wait, call toll-free **1-800-426-8970** for our free 12-page brochure and design kit.

### SHAKERTOWN SIDING

1200 Kerron St., Winlock, WA 98596  
In Washington, (206) 785-3501

Architect: Harker Waterfront Residence; Chesapeake Bay, Eastern Shore; Charles Harker, AIA, Principal, The Martin Organization, Architects, Philadelphia.

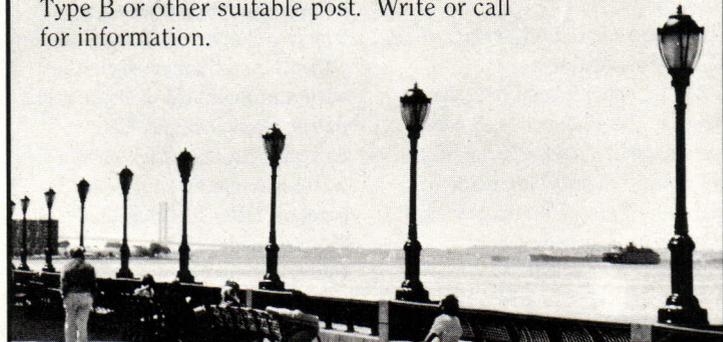
Circle 71 on inquiry card

## Sentry SBP



### The Traditional Luminaire of Battery Park City

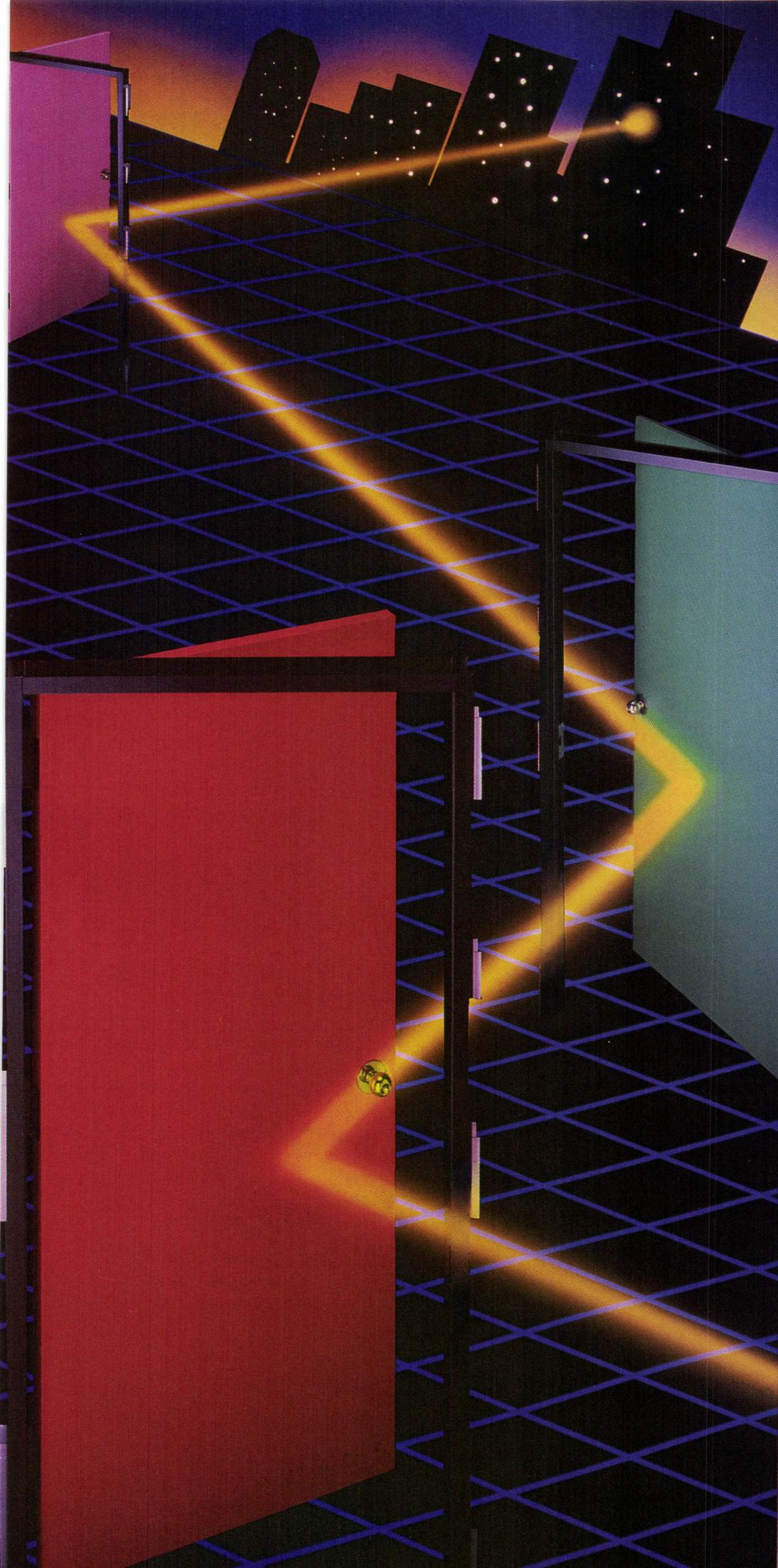
Sentry SBP luminaires stand along the Hudson River Esplanade of Battery Park City, evoking past eras to contemporary New Yorkers. At night the SBPs become energy-efficient H.I.D. light sources that extend the Esplanade's usefulness well into the evening. Indestructible polycarbonate globes make them virtually vandal-proof. Available with New York Type B or other suitable post. Write or call for information.



Sentry

Sentry Electric Corporation  
185 Buffalo Avenue  
Freeport, New York 11520  
516-379-4660

Circle 72 on inquiry card



## **A New Slant On the Openings Game**

We say: Commercial interior doors.

You say: *Pressed steel frames. Wooden doors. Dull. Drab. Practical. Essential.*

We say: Great design potential. Complete performance options. Enhanced life. Beauty. Economy. Special.

You say: *Impossible.*

We say: VT Industries

Get a fresh perspective on everything you need for interior openings design. From one very established source. With one very unusual attitude.

Start with PermaClad high pressure decorative laminate clad doors. With a literally limitless palette of colors, patterns, textures and design permutations.

Rethink wood with PermaClad premium veneer clad doors. In faces from bookmatched red oak through the spectrum of fine domestic and imported hardwoods.

Fill out your options with fire ratings. Sound Transmission Class doors. Lead-lined X-ray doors. Even Dutch and louvered doors, with louvers clad to match door faces.

Lean on our quality — every door meets AWI 1300 Quality Standards for premium grade.

Wrap it all in a Versatrac Interior Aluminum Framing System. And pay for it at the same rate you've budgeted for all that pressed steel. Or even less.

VT Industries believes time's up for the drab, look-alike contract opening. So we've made it our business to deliver fresh thinking. Innovation. And excellence. We're playing a new angle on a very old story.

To learn more, call us today:

Sweet's BuyLine: 1-800-521-2737

VT Industries: 1-800-882-7732

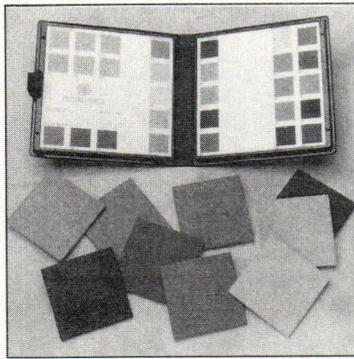
In Iowa: 1-712-368-4381



**PermaClad**<sup>™</sup>  
Interior Doors  
**versatrac**<sup>™</sup>  
Interior Aluminum Framing Systems

Circle 73 on inquiry card

©1987, VT Industries, Inc.

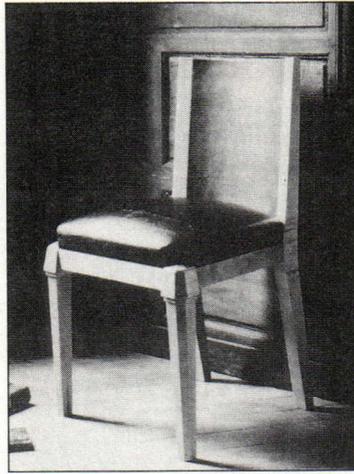


**Unglazed ceramic tile**

Made with optical-quality glass as the primary body material, new *Prominence* tile is produced on a roller-hearth kiln in six sizes and 29 colors. Tiles are said to be consistent in physical dimensions and color, so that various sizes can be used in a truly modular installation.

*Prominence* tile is available in groupings of complementary colors, ranging from light to very dark tones. For high-traffic installations, the frost-proof tile has no surface porosity, is abrasion-, slip- and stain-resistant, and is impervious to moisture. GTE Engineered Ceramics, Greenland, N. H.

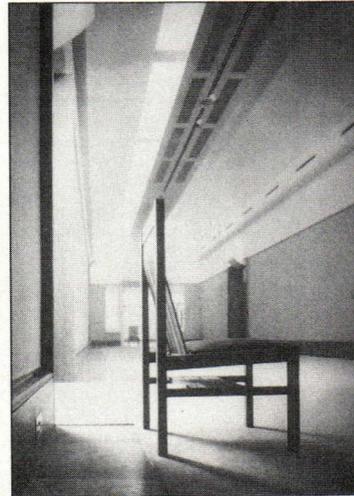
Circle 305 on reader service card



**Classic chair**

Designed and manufactured in France by Philippe Hurel, the *Cobra* chair has a crown detail capping the front legs and a concave-curved back inlaid with leather. The chair frame is made of sycamore. Interna Designs, Ltd., Chicago.

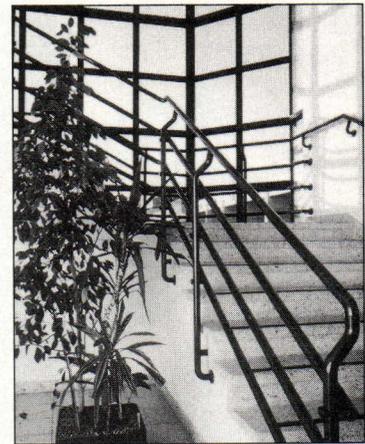
Circle 306 on reader service card



**Gallery chair**

Pictured on location in James Stirling's Clore Gallery, London, the *Tate Gallery Chair* was designed by Ron Carter to fill a particular requirement of the museum's guards: the underseat shelf holds a lunch box. The chair, made in England by Miles/Carter, is now available in a number of different woods and finishes for contract use. Interna Designs, Ltd., Chicago.

Circle 307 on reader service card



**Nylon-coated railings**

Now manufactured to custom design specifications, railing systems for interior and exterior applications are made of nylon-coated steel, available in 12 colors that coordinate with *Normbau* handles, grab bars, and locksets. Rails meet code requirements for commercial, residential, and institutional applications, and are shipped ready to install. Normbau, Inc., Addison, Ill.

Circle 308 on reader service card

# Technological GIANT

Now you can specify Thermospan's™ superior energy efficiency and durability in sizes to 40 feet wide

Only Wayne-Dalton, the leader in foamed core technology, can bring you a door this big and this good. Independent tests prove that Thermospan™ doors permit less heat transfer than competitive doors nearly twice as thick. Here's why:

Thermospan sections have high-tensile steel skins with roll-formed integral struts. Sections are bound together by foamed-in-place polyurethane insulation for increased rigidity.

A complete thermal break along joints and end caps reduces heat transfer between steel skins. Rubber bulb joint seals minimize air infiltration, as does the factory-installed



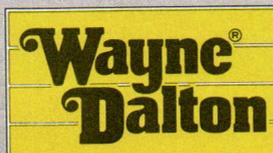
top seal. Integral vinyl jamb seals are attached to



the door and rise with it to retard seal damage.

The U-shaped bottom seal won't ice up, seals against uneven floors.

When you want doors that will stand up to the elements, in sizes to 40' wide, call on the leader. We'll provide test results and complete Thermospan specifications.



Wayne-Dalton Corp.  
P.O. Box 67  
Mt. Hope, OH 44660  
(216) 674-7015

Circle 74 on inquiry card

Technological leadership and the product line to prove it.



#### Lounge seating

The *Alexa* contract line includes this three-seat sofa and lounge chair, as well as a 70-in.-wide loveseat, upholstered in either

fabric or leather. Seating has pleated cushions attached to the curved arm and back. AGI Industries, High Point, N. C.  
Circle 309 on reader service card

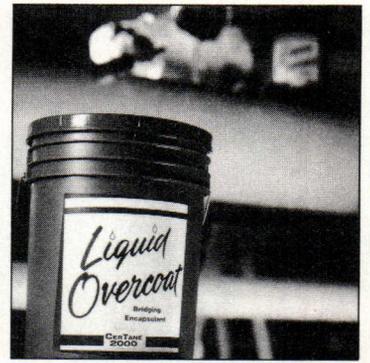
#### Sconce

Designed in stainless steel by Alex Forsyth, the *Theta* sconce provides a white light effect from a 300 W halogen bulb. The three-dimensional housing is formed of welded-steel sections, connected to the circular wall mount by a matching arm support. Fixture is UL-listed for contract and residential applications. Brueton Industries, Inc., Springfield Gardens, N. Y.  
Circle 310 on reader service card



#### Office storage

An extension of the *Roll-Out Conserv-a-file* line, freestanding *Architectural Companion Units* include storage cabinets with adjustable shelving, swing-door files, and a wardrobe over 5 ft high. Accent strips color-coordinate the steel storage units with the manufacturer's file system. Supreme Equipment and Systems Corp., Brooklyn, N. Y.  
Circle 311 on reader service card



#### Asbestos encapsulant

A polymer-based gel that can be sprayed or brushed over asbestos used for thermal or sound insulation, *Liquid Overcoat* is said to effectively stop leakage of asbestos dust and fibers, even in areas of wide temperature and humidity swings. In fire situations, the resilient coating becomes a glasslike ceramic fire barrier, and will not emit irritating or toxic gases. Offered in one-coat formulations for various asbestos applications, *Liquid Overcoat* may be colored; it cures at room temperature. Certified Technologies, Minneapolis.  
Circle 312 on reader service card  
Continued on page 166



D U P O N T



A N T R O N<sup>®</sup>



## CARPET OF ANTRON PRECEDENT<sup>®</sup> BRINGS MAINTENANCE COSTS DOWN TO EARTH.

The wrong carpet can turn out to be your worst enemy. Its looks quickly begin to fade, your cleaning bills soar. But not with Antron Precedent<sup>®</sup>. That's because Antron Precedent<sup>®</sup> resists soiling and stains better than any other commercial carpet.

So you can enjoy lower maintenance costs. And, because it keeps its texture longer, the beauty lasts

up to twice as long as many other carpets. Beauty, durability and lower maintenance costs. No wonder people are falling for Antron Precedent<sup>®</sup>.

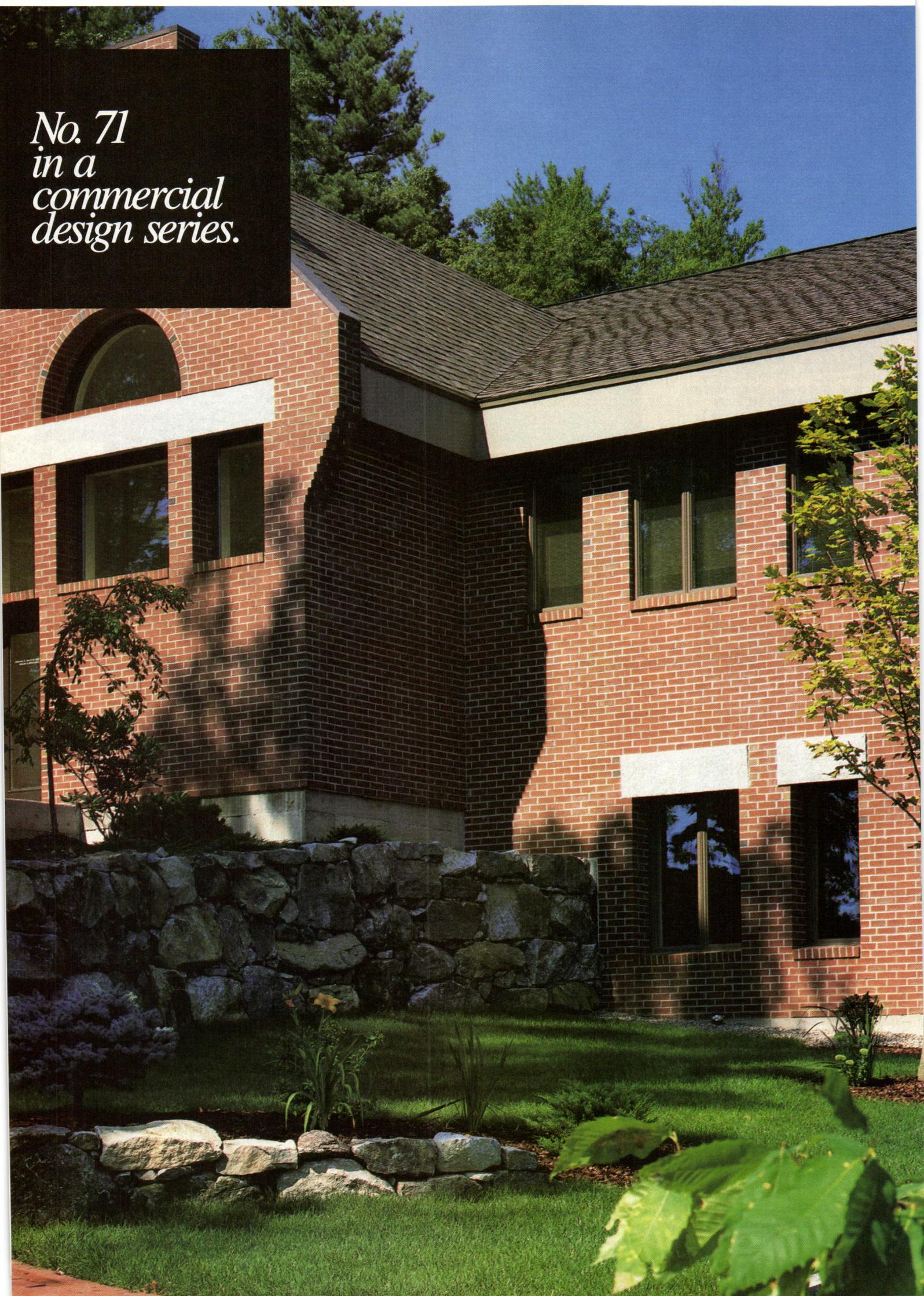
For more information, call 1-800-448-9835.

THE ANSWERS COME EASY WITH ANTRON<sup>®</sup>.

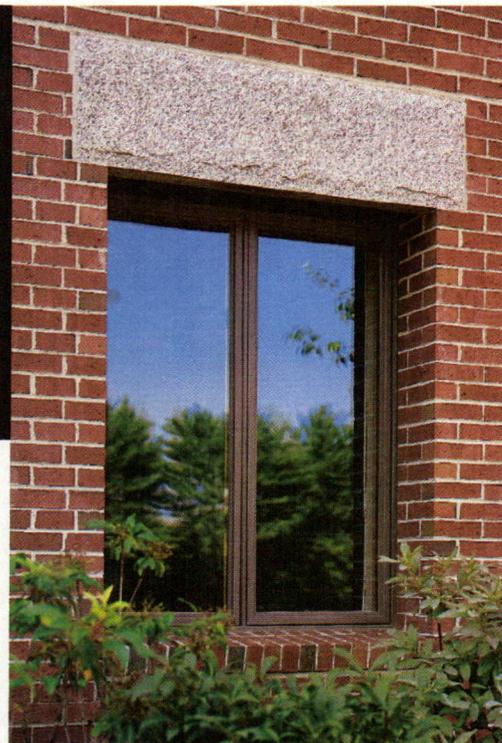


Circle 75 on inquiry card

*No. 71  
in a  
commercial  
design series.*

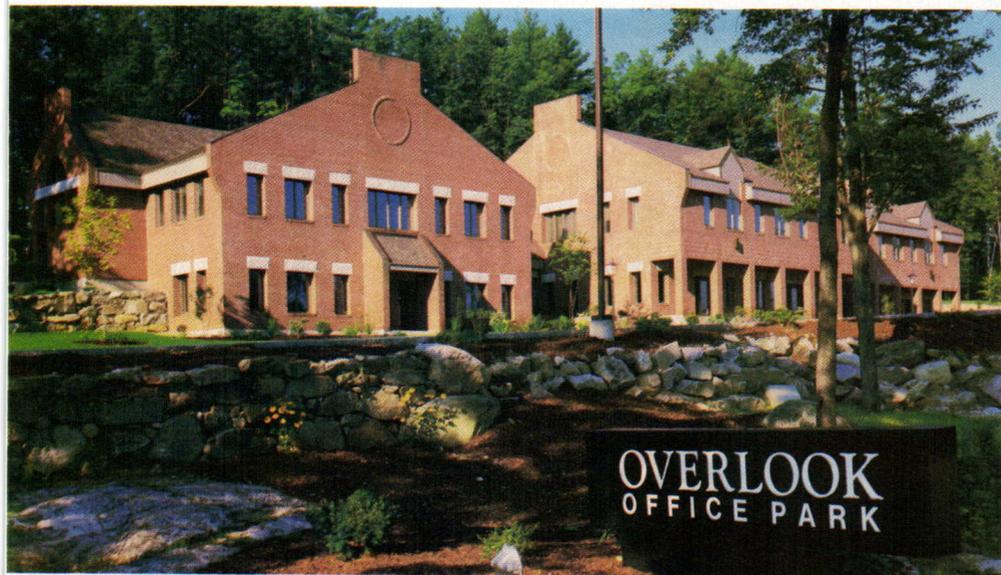


# ANDERSEN® WINDOWS ACHIEVE THE PERFECT BALANCE IN BUSINESS: STAND OUT, BUT FIT IN.



Specially designed hardware ensures smooth, trouble-free operation of the windows. And, thanks to the Perma-Shield® vinyl, they require little or no maintenance. They won't chip, flake, peel, or corrode. And they never need painting.

For more information, call your Andersen distributor, see Sweet's File 08610/AND., or write Andersen Corp., Box 12, Bayport, MN 55003.



OVERLOOK  
OFFICE PARK

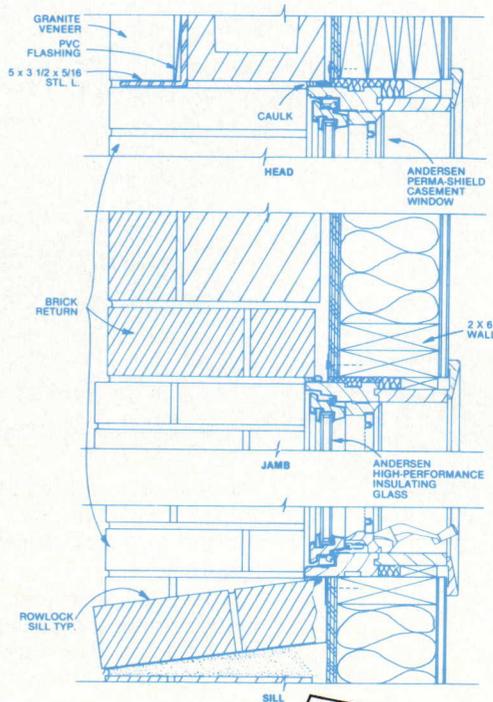
There's a delicate balance in business. It's essential to success. You've got to shine, but not glaringly so. You want to stand out, not stick out.

In Amherst, New Hampshire, Andersen® has once again struck that balance. The project is Overlook Office Park. The windows, Perma-Shield® casements.

As you can see, these windows work well with the impressive architectural design because of their clean, simple lines and earthy Terratone color. But at the same time, notice how they contrast with the granite lintels, the bold brick facades, and the back walls formed to the New England mill profile.

The owners couldn't be happier with the way the windows perform.

At Overlook Office Park, the casement windows are equipped with Andersen® High-Performance insulating glass, a computer-age glass more energy efficient than even triple-pane glass.



Overlook Office Park  
Amherst, New Hampshire

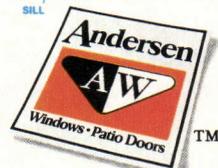
Architect: David White AIA and  
Peter Stewart of Architects Four  
Manchester, New Hampshire

Developer: Coldstream Associates, Inc.  
Bedford, New Hampshire

Printing limitations prohibit exact  
duplication of Terratone color. Use actual  
sample for building specifications.

87105 © 1987 Andersen Corp.

Come home to  
quality.



# Andersen

# FINALLY! A FLUSH POKE-THRU

## The Headless Poke-Thru is here.

If you're an architect or interior designer we just "made your day". We finally got rid of the electrical outlet "doghouse".

If you're a specifying engineer, you'll be happy to hear that Raceway has developed the first Flush Poke-Thru with full capacity... two services

in a single 3" hole; 15 or 20 amp, 125V duplex receptacle power. Plus two individual openings for low tension wiring for telephone, signal or data communications. **U.L. Classified and Listed.**

If you're a contractor, put this into your calculator. The Raceway Flush Poke-Thru comes factory pre-wired, terminating in a junction box which is integral to the fitting. (Perfect for renovation since it installs over

existing wires.) Just drill the hole... step on it... you're finished.

There are so many more exciting features. Color-coordinated choice of retainer ring... a sliding polycarbonate receptacle cover... but that's why we printed a brochure. It's all in there.

**Send for it. Join the rush to get flush.** Write or call Raceway Components, Inc., 263 Hillside Avenue, Nutley, N.J. 07110. 201-661-1116.



RACEWAY COMPONENTS, INC.



## NOW AVAILABLE WITH CONDUIT ADAPTER

The Raceway Flush Poke-Thru is becoming a family. Here's a new "baby" with special flexible conduit connections. For modular furniture connections you might just use the center  $\frac{3}{4}$ " connections for power. Or, you might want to use the two outside  $\frac{1}{2}$ " openings for low tension data or communications. Its completely flexible.

An exceptionally ideal application for the "conduit connection" is at the retail point of sale, allowing relocation of the kiosk while leaving behind a clean flush abandonment. There's the power connection to energize the register. One of the data lines runs to the mainframe for sale and inventory records. The other runs to credit check. Both are protected from disconnect and loss of data integrity.

Learn more about the Raceway Flush "Conduit Connection". Write or call Raceway Components, Inc., 263 Hillside Avenue, Nutley, N.J. 07110. 201-661-1116.



**RACEWAY  
COMPONENTS, INC.**

M

Circle 83 on inquiry card

## Calendar

### January 19 to February 28

*Long Island Modern: The First Generation of Modernist Architects on Long Island, 1925-1960*, an exhibition of photographs, drawings, and models; at the Octagon, 1735 New York Ave., N. W., Washington, D. C.

### February 4-6

Open meeting of the AIA Committee on Historic Resources, with a workshop in masonry restoration; in Washington, D. C. For information: Bruce Kriviskey, American Institute of Architects, 1735 New York Ave., N. W., Washington, D. C. 20006 (202/626-7452).

### February 13-14

*Theory and Practice: Bridging the Gap*, a conference discussing the restoration of sandstone and limestone, architectural terra cotta, and paint, presented by the Association for Preservation Technology, co-sponsored by Columbia University. For information: The Association for Preservation Technology, Post Office Box 1106, Lenox Hill Station, New York, N. Y. 10021 (212/744-6787).

### February 16 through May 18

An exhibit of the architecture of Frank Gehry; at the Museum of Contemporary Art, 250 South Grand Avenue at California Plaza, Los Angeles, Calif.

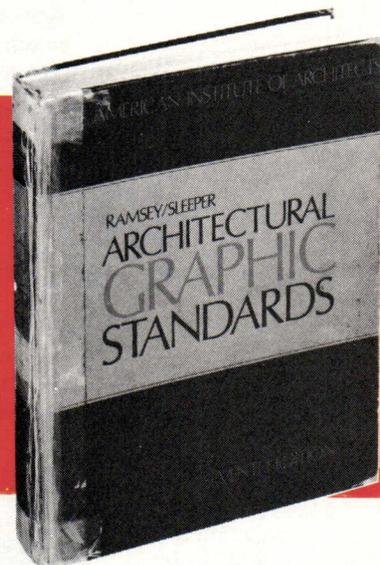
### February 19-21

Open meeting of AIA Architecture for Education Committee, sponsored in conjunction with the American Association of School Administrators; in Las Vegas. For information: Christopher Gribbs, American Institute of Architects 1735 New York Ave., N. W., Washington, D. C. 20006 (202/626-7589).

### February 20

Symposium on architecture and education, *The past twenty-five years and assumptions for the future*, sponsored by the  
*Continued on page 175*

## Don't look here



## for

racquetball courts  
solar optics  
Eames chairs  
commercial aircraft  
Nautilus training rooms  
Corinthian columns  
tilt-up concrete systems  
spiral stairs  
elastomeric membranes  
helicopters  
art deco lamps  
structural sealant glazing  
pipe organs  
stainglass windows  
open office furniture  
smart building systems  
50-meter pools  
security systems  
hang gliders  
fireplaces  
light frame construction  
PVC single-ply roofing  
glass block masonry  
sprinkler systems  
or clean rooms ...

# The Very Best of Today's Tapered Roof Insulation Technology

Pittsburgh Corning has developed new Tapered FOAMGLAS® Roof Insulation Systems which satisfy today's Performance Criteria and are Priced Competitively.

## FOAMGLAS® ROOF INSULATION PC PLUS SYSTEMS™

The FOAMGLAS® PC PLUS SYSTEMS™ take advantage of the best physical characteristics of Pittsburgh Corning's cellular glass and foamed plastic insulations.

The nucleus of PC PLUS SYSTEMS™ is FOAMGLAS® cellular glass insulation, the most moisture resistant insulation on the market. Its stability, strength, and impermeability help eliminate many causes of roof failure. Indeed, the All-FOAMGLAS® PC PLUS SYSTEM 1 is the wisest choice for long-term performance and reliability.

The other PC PLUS SYSTEMS™ contain underlayments of phenolic foam (PF) or polyisocyanurate foam (PI) insulations. These underlayments result in competitively priced systems with high "R" values. The top layer of Tapered FOAMGLAS® insulation overcomes the stability problems of many foamed plastic systems.

### PC PLUS SYSTEM 1

Tapered FOAMGLAS® with FOAMGLAS® insulation underlayment. This All-FOAMGLAS® system offers the highest resistance to moisture, ensuring constant thermal efficiency and maximum compressive strength. The tapered top layer provides slope to drain water and is compatible with built-up-roof or adhered single ply membranes.

### PC PLUS SYSTEM 2

Tapered FOAMGLAS® insulation with PF (phenolic foam) Underlayment provides the highest R-value available in these systems. The Tapered FOAMGLAS® insulation shields the PF Underlayment from extremes of thermal expansion and contraction and distributes loads evenly.

### Guaranteed Performance!

PC PLUS SYSTEMS® 1 & 2 offer 20-year insulation performance warranties. Copies of the warranties are available from Pittsburgh Corning.

### PC PLUS SYSTEM 3

Tapered FOAMGLAS® insulation with PI (polyisocyanurate foam) Underlayment produces a high R-value system. The Tapered FOAMGLAS® insulation reduces thermal loads on the PI Underlayment which results in a stable substrate for the roof membrane.

Your Pittsburgh Corning representative will recommend the PC PLUS SYSTEM that best meets your performance criteria and cost restrictions.

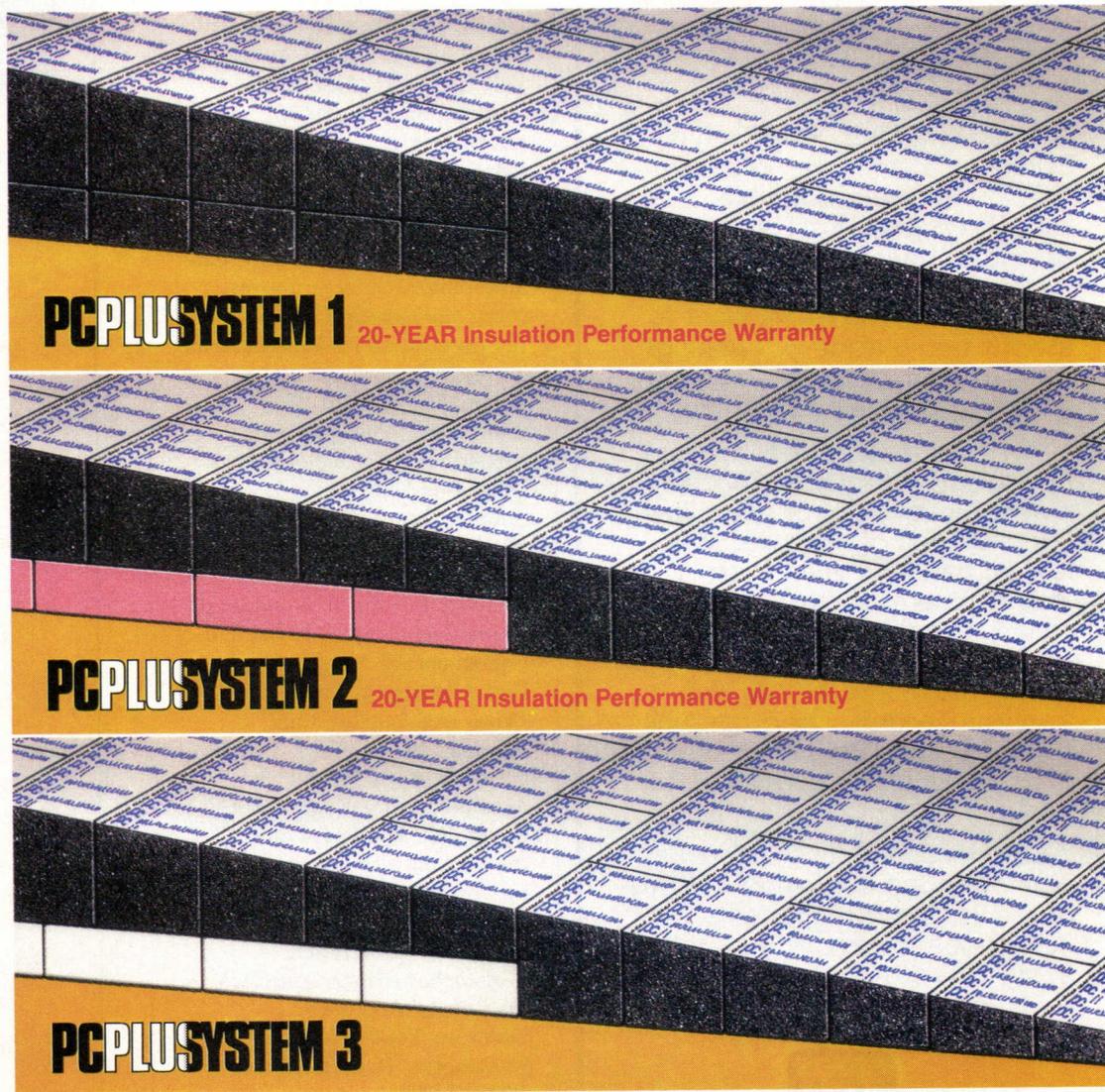


Illustration not to scale

For more information call our ARCHITECTURAL PRODUCTS HOTLINE at 800-992-5769 (in Pennsylvania, 800-992-5762). Or write Pittsburgh Corning Corporation, Marketing Department FB-8, 800 Presque Isle Drive, Pittsburgh, PA 15239. In Canada, 106-6 Lansing Square, Willowdale, Ontario M2J 1T5, Tel.: (416) 222-8084.

**PITTSBURGH**  
**PC**® **CORNING**  
**THE INNOVATIVE INSULATION PEOPLE**

**Calendar**

*Continued from page 173*

1	Exxon
2	General Motors
3	Mobil
4	Ford Motor
5	IBM
6	Texaco
7	E.I. du Pont
8	Standard Oil (Ind.)
9	Standard Oil of Cal.
10	General Electric
11	Gulf Oil
12	Atlantic Richfield
13	Shell Oil
14	Occidental Petroleum
15	U.S. Steel
16	Phillips Petroleum
17	Sun

**27 million Americans can't read. And guess who pays the price.**

Every year, functional illiteracy costs American business billions.

But your company can fight back...by joining your local community's fight against illiteracy. Call the Coalition for Literacy at toll-free **1-800-228-8813** and find out how.

You may find it's the greatest cost-saving measure your company has ever taken.

**A literate America is a good investment.**



Princeton University School of Architecture; at the Princeton University campus, Princeton, N. J. For information: Cynthia Nelson (609/452-5018).

**February 23 through May 15**

*Versailles: The view from Sweden*, drawings from the National Museum and the Royal Palace, Stockholm; at the Cooper-Hewitt Museum, New York City.

**February 26-28**

A conference focusing on marketing professional services, sponsored by the National AIA Interiors Group; at the Ritz-Carlton, Buckhead, Atlanta. For information: Ros Brandt (202/626-7589).

**Through March 6**

*Vienna/New York: The Work of Joseph Urban, 1872-1933*, showing Urban's theatrical designs as well as his architecture and decoration; at the Cooper-Hewitt Museum, New York City.

**March 1-3**

RHIDEC '88, The Restaurant/Hotel International Design Exposition and Conference; at Expo Center, Chicago. For information: National Exposition Company, 49 W. 38th St., Suite 12A, New York, N. Y. 10018 (212/391-9111).

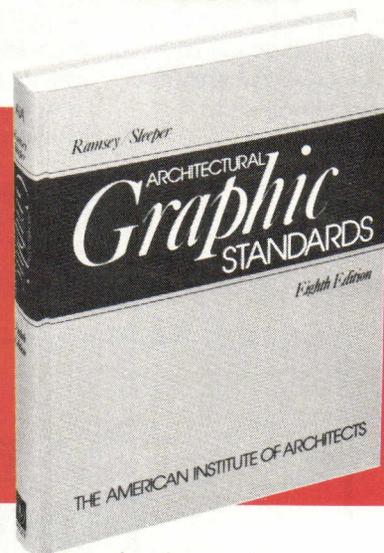
**March 3-5**

*Remaking Cities*, an international conference on economic, technological, and social changes facing industrial cities, sponsored by the AIA/Royal Institute of British Architects; in Pittsburgh. For information: Charles Zucker, American Institute of Architects 1735 New York Ave., N. W., Washington, D. C. 20006 (202/626-7532).

**March 8-9**

*Let there be light... and power*, an educational workshop and seminar on lighting solutions and power distribution in the Contract Furniture Industry; at Hotel Sofitel, Chicago O'Hare. For information: Professionals at Your Service, Ltd., 3316 Colfax St., Evanston, Ill. 60201 (312/475-0480).

**Look here.**



**In the brand new Eighth Edition of Architectural Graphic Standards.**

With new chapters on Historic Preservation, Sports Facility Design, and Energy Design—all for the first time ever in *Graphic Standards*—it's the most significant revision in the 56-year history of "the architect's bible."

- **LARGEST EDITION EVER—864 PAGES, 10,000+ ILLUSTRATIONS**
- **65% NEW OR REVISED**
- **FIRST *Graphic Standards* WITH COMPLETE CHAPTERS ON HISTORIC PRESERVATION, SPORTS FACILITY DESIGN, AND ENERGY DESIGN.**

Ramsey/Sleeper  
ARCHITECTURAL  
**Graphic**  
STANDARDS, Eighth Edition

Prepared by the American Institute of Architects  
John Ray Hoke Jr., AIA, Editor in Chief

- Available: March 25, 1988
- ISBN 0 471-81148-3 • \$150.00

ORDER TODAY FOR A 15-DAY FREE EXAMINATION!

CALL TOLL FREE **1-800-526-5368**

Use your VISA, MasterCard, or American Express to order.



John Wiley & Sons, Inc.  
605 Third Avenue, New York, N.Y. 10158-0012

## Manufacturer sources

*For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.*

### Pages 94-99

Boys Club of Jersey City  
Oppenheimer, Brady &  
Vogelstein, architects

**Pages 94-97**—Block masonry: Bayonne Block. Metal panel fascia: Nick Bouras Co. Built-up roofing: Manville. Clock: National Time. Hollow-metal interior and exterior doors: Commercial Door. Hopper windows and glazing: General Plate.

**Pages 98-99**—Ceiling-suspension system: Harry Rich. Vinyl flooring: Armstrong World Industries.

### Pages 100-107

599 Lexington Avenue  
Edward Larrabee Barnes  
Associates, architects

**Pages 100-104**—Aluminum-framed curtain wall: Cupples Products Div., H. H. Robertson Co. Finish: PPG (*Kynar*). Blue-green tinted spandrel and vision glass: Libbey-Owens-Ford. Membrane roofing: Gates Engineering (*Gracoflex*).

**Page 103**—Porcelain enamel panels: Petco. Floor tile: Gail International Co. Railings, glass and rail balustrade: Melto Metal.

**Page 104**—Recessed lighting: mcPhilben. Suspended glass assembly: Pilkington Glass Ltd. Revolving doors: International Door Co.

### Pages 122-135

Davis, Brody & Associates, architects

### Pages 128-129

Carnegie Park  
Brick: Glen-Gery Brick. Precast-concrete copings and sills: Steindl Cast Stone Co. Residential windows: SWS Industries, Inc. Site furniture: Kroin Inc. Pole-top lighting: Trimble House Corp. Bollards: Lightolier. Park fencing: A&T Iron Works. Custom entrance: fabricated by TEK Metal Industries.

### Page 130

Aron Residence, Mount Sinai Medical Center  
Brick: Merrit Brick Co. Curved glazed stairwell bays: Zimmcor Inc. Glass: PPG. Railings: Brooklyn Welding Corp.

### Page 131

Zeckendorf Towers  
Masonry: Glen-Gery Brick Co. Tubular pyramids: Space Structures International Corp. Storefronts: Lynbrook Glass & Architectural Metals Corp. Base and tower windows: Traco. Curved railings: Grossman Steel & Aluminum Corp. Straight rail: Sterling Factories, Inc.

### Pages 132-133

Hudson Garden, Battery Park City  
Stone: Miller-Druck, Inc.; Domestic Stone. Brick: Interstate Brick. Metal-framed bays: Acorn Windows. Grilles: Arrow. Cornice: Plasticrete. Street lighting: Battery Park City Standard. Building lighting: BEGA. Revolving entrance: Tubelite.

### Page 134

The Copley  
Brick: Merrit Brick Co. Stone: Petrillo Stone. Masonry trim: Landino Precast Concrete. Bronze entrance doors: Armet Metal Products. Railings: Sterling Factories, Inc. Operable windows: Acorn Windows. Curved bays: Skylights by Fisher. Louvers: Arrow.

# Sprayed Polyurethane Foam

can affect your  
bottom line today  
... and tomorrow!

Roofing  
Floatation  
Cavity Walls  
Storage Tanks  
Perimeter Walls  
Storage Vessels  
Pipeline Insulation  
Cryogenic Insulation  
Cold Storage Facilities  
Below Grade Insulation  
Controlled Atmosphere Buildings

The versatility of sprayed polyurethane foam makes it a practical and economical solution for many needs. Discover its performance advantages in our fact-filled folder. It's yours for the asking.

Write or call today ... or simply complete the reader service card in this publication.

**The Society of the Plastics Industry, Inc.**  
**Polyurethane Foam Contractors Division**  
1275 K Street N.W. - Suite 400 • Washington, DC 20005 • 800-523-6154



# TAKE THESE TWO GIANT REFERENCES FOR ONLY \$14.95

when you join the Architects' Book Club®  
A \$147.00 Value!

McGraw-Hill's Architects' Book Club offers a wide variety of books to help you in all phases of your work. For example, these two from the renowned *Time-Saver Standards Series* total some 2,000 pages of vital information for architects and planners — including professional building data, design procedures, facts, definitions, and practical examples. Both books will help you design better, more cost-effective buildings. They will also save you time and money — and they are **both** yours for **ONLY \$14.95** when you join the club.

## MORE REASONS TO JOIN TODAY!

**You get the best and newest books from ALL publishers!** Books are selected from a wide range of publishers by expert editors and consultants to give you continuing access to the best and latest books in your field.

**You get big savings!** Build your library and save money, too! Savings range up to 40% or more off publishers' list prices.

**You get bonus books!** You will immediately begin to participate in our Bonus Book Plan that allows you savings up to 70% off the publisher's prices of many professional and general interest books.

**You get the convenience you deserve!** 14-16 times a year (every 1-4 weeks) you receive the Club Bulletin FREE. It fully describes the Main Selection and alternate selections. A dated Reply Card is included. If you want the Main Selection, you simply do nothing — it will be shipped automatically. If you want an alternate selection — or no book at all — you simply indicate it on the Reply Card and return it by the date specified. You will have at least 10 days to decide. If, because of late delivery of the Bulletin you receive a Main Selection you do not want, you may return it for credit at the Club's expense.

As a Club member you agree to buy just three more books during your first year of membership. Membership may be discontinued by either you or the Club at any time after you have purchased the three additional books.

To join and get your books, call  
TOLL-FREE 1-800-2-MCGRAW.

Or fill out the attached card and  
mail today! If the card is missing,

write to:

**Architects' Book Club®**  
PO Box 582, Hightstown, New Jersey 08520-9959

## TIME-SAVER STANDARDS FOR BUILDING TYPES, 2nd Ed.

Edited by Joseph DeChiara and John Callender

- plans, dimensions, ideas and data for more than 100 types of buildings
- functional relationships of the components of each building type
- 1,277 information-packed pages with contributions by more than 90 top experts
- over 1,500 illustrations — including floor plans, diagrams, schematics, and tables of technical data

Publisher's Price: \$79.00

## TIME-SAVER STANDARDS FOR RESIDENTIAL DEVELOPMENT

Edited by Joseph DeChiara

- information on all aspects of residential planning and development
- comprehensive design criteria for all types of residences
- essential data for developing preliminary designs and proposals
- over 1,300 illustrations — including floor plans, scale drawings, tables, and specifications

Publisher's Price: \$82.50

584555-5



# SEND YOUR AD COPY FAST VIA TELECOPIER

To enable you to get your classified advertising typewritten copy into this section at the last possible minute, we've installed a XEROX 295 TELECOPIER (which also receives copy from other makes) in our New York home office.

If you have a telecopier, just call the number below to see if your equipment is compatible. If you don't have a telecopier, call and we'll help you locate the nearest one. It could even be in your own firm or building.

NOTE: The Xerox 295 cannot accept photos or art, but as always, there is no charge for typesetting and layout service.

## CALL McGRAW-HILL (212) 512-6800

### FACULTY POSITIONS VACANT

The Department of Architecture at Cornell University is seeking a Chairperson for a five year appointment at the rank of professor with tenure beginning 1 July 1988. The department requires a person who is a distinguished architect and experienced teacher with strong leadership and administrative skills to head an internationally known five year undergraduate architectural program and 2 year graduate programs in urban design, architectural design, architectural history, and architectural science. Interested persons should send a curriculum vitae to: John Miller, Chairman of the Search Committee, Department of Architecture, 143 East Sibley Hall, Cornell University, Ithaca, New York 14853. Applications should be received no later than April 1988. Cornell is an equal opportunity / affirmative action employer.

The University of Tennessee School of Architecture is searching for an Assistant / Associate Professor for a tenure track position to begin August 1, 1988. Persons who have engaged in substantial scholarly or professional activities supporting design work are needed to teach design courses in the 5 year Bachelor of Architecture program. There is a particular need for faculty to teach in first, second and third year design courses, and elementary computer applications. Candidates are required to hold the Masters of Architecture degree and license to practice or Ph.D. Send resume, names and addresses of three references and evidence of work to: Roy F. Knight, Dean, 217 Art/Architecture Building, 1715 Volunteer Blvd., University of Tennessee, Knoxville, Tennessee 37996-2400. Applications will begin to be reviewed March 1, 1988. UTK is an EEO/AA/Title IX Section 504 Employer.

Ferris State University — Two tenure track faculty positions in Architectural Technology open September 1988. Teaching responsibilities could include basic drafting, architectural presentation, working drawings and related subjects in established associate degree program. Faculty will also assist in development of baccalaureate programming in Facility Management. Professional degree in Architecture with significant architectural practice experience essential. Familiarity with computer graphics important. Information and application instructions may be obtained from James B. Shane, AIA, Head, Construction Department, Ferris State University, Big Rapids MI 49307, (616) 592-2360. Affirmative Action / Equal Opportunity Employer. FSU is a major unit of the Michigan college and university system and a leader in professional and technical education. The campus is located in the heart of a year round recreational and scenic area, an hours drive north of the state's second largest city.

### SPECIAL SERVICES

Models; Architectural, Engineering. Jurge Greenwich, 718/462-5379.

Cost Estimating, Quantity Surveys, Computer Applications, Corp, DOD, GSA, VA. Construction Cost Systems, Chicago, (312) 858-5441; Tampa — (813) 887-5600.

Architectural CADD Consultants — Objectively help you phase in computing for your architectural practice. 2106 Massachusetts Ave., Troy, NY 12180, 518-274-5600 / 518-274-5544.

### MATERIALS FOR SALE

Wanted: Photographs or perspective rendering houses that can be made available for plan sales. 500,000 circulation offers good royalty to architect. Write Country Living Magazine, Box 622, Princeton, New Jersey 08540, 609/924-9655.

# COMPUTER SOFTWARE

## GEOCAD<sup>®</sup>

THE ARCHITECTURAL CAD SYSTEM

GEOCAD is the most friendly and easy to master AutoCAD<sup>®</sup> based CAD program, because we are Architects and we created it to work the way we do: simply and logically.

It is available as a complete turnkey system, based on the **NEC** APCIV computer. GEOCAD software is also available separately.

Call us or write us to find out more about GEOCAD, also about GEOEST our Bill-of-materials-estimating Module and GEOVUE our new One-Point and Two-Point Perspective Module.



Rudolph  
Horowitz  
Associates  
Architects



P.O. Box 186 LAUREL ROAD  
POUND RIDGE, N.Y. 10576  
TELEPHONE 914 764-4072

## COMPUTER SOFTWARE KNOW-HOW

If you've got it,  
advertise it!

### Architectural Record's Computer Software Section

Post Office Box 900  
New York, NY 10108



#### 1988 ARCHITECTURAL RECORD COMPUTER SOFTWARE SECTION

Sizes		Material
1 Inch	7/8 x 2 3/8	Artwork or
2 Inch	1 7/8 x 2 3/8	film preferred.
3 Inch	2 7/8 x 2 3/8	Typesetting
4 Inch	3 7/8 x 2 3/8	free of charge.
4 Inch	1 7/8 x 5 1/8	

#### 1988 RATES

Unit	1X	6X	12X
1 Inch	\$154.70	\$147.00	\$139.25
2 Inch	278.50	264.55	250.65
3 Inch	394.50	374.80	355.05
4 Inch	495.05	470.30	445.55

Telephone Sales:  
Ilene Fader  
212/512-2984

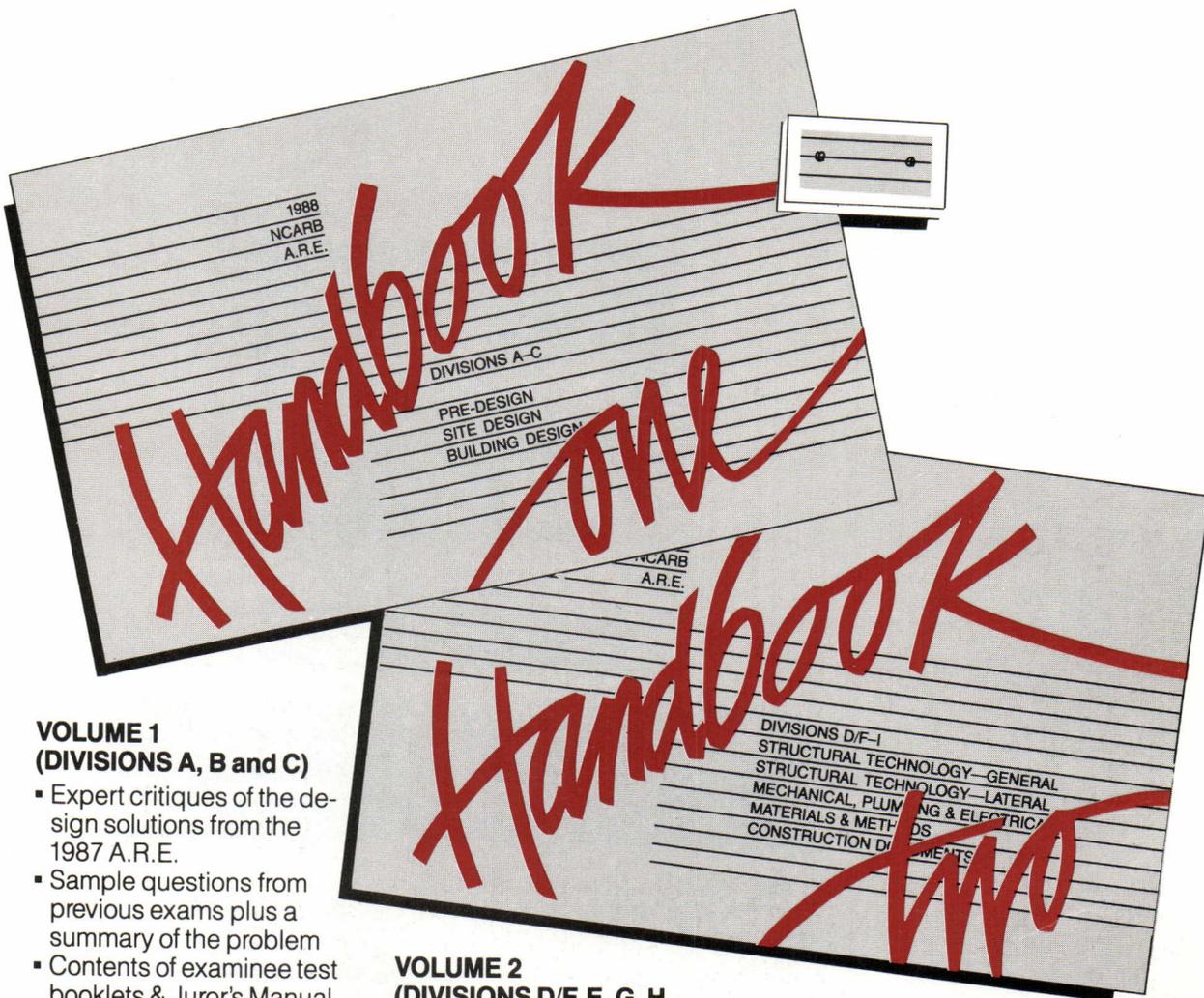
# 988 A.R.E. Candidates!

## NCARB Handbooks Contain Cassette Tape of Design Critiques

For the first time, NCARB produced an audio-cassette tape that accompanies volume one of the 1988 A.R.E. Handbook. This professionally produced tape offers practical applications of the grading criteria used by graders of the 1987 exam. Understand, point-by-point, the lengths of a solution as you follow along with the original solution in the Handbook.

The Handbooks have been revised to include completely new and up-to-date narratives that explain exam divisions and offer useful advice. The 1988 Handbook also addresses changes that have been incorporated into the June exam. Volume one covers Division A: Pre-Design; Division B: Site Design and Division C: Building Design. Volume two covers Division D/F: Structural Technology—General and Long Span; Division E: Structural Technology—General Forces; Division G: Mechanical, Plumbing and Electrical Systems; Division H: Materials and Methods and Division I: Construction Documents Services.

Order your Handbooks sending your check or money order in the correct amount with the order form to the address indicated. You may charge your Handbook on your Visa, MasterCard or American Express. Please specify a complete daytime address; do not use post office boxes.



### VOLUME 1 (DIVISIONS A, B and C)

- Expert critiques of the design solutions from the 1987 A.R.E.
- Sample questions from previous exams plus a summary of the problem
- Contents of examinee test booklets & Juror's Manual
- Practical advice on preparing for the June exam
- Updated bibliographies for Divisions A, B and C

### VOLUME 2 (DIVISIONS D/F, E, G, H and I)

- Sample exam questions from previous exams
- Official test information booklets
- Updated bibliographies for Divisions D/F, E, G, H and I

## Order Your 1988 A.R.E. Handbooks from NCARB!

Detach and mail payment to NCARB, Dept. 0618, Washington, DC 20073-0618. Make checks payable to NCARB. Delivery takes 4-6 weeks.

Name \_\_\_\_\_  
(Please print)

Company \_\_\_\_\_  
(If applicable)

Address \_\_\_\_\_  
(Daytime—No P.O. Boxes)

City/State/Zip \_\_\_\_\_

IDP Council record no. \_\_\_\_\_  
(If applicable)

QTY	VOL	PRICE*	TOTAL
_____	SET	\$95	_____
_____	VOL. 1	\$70	_____
_____	VOL 2	\$40	_____
TOTAL			\$ _____

\*Persons with active NCARB/IDP Council records pay: Set: \$80, Volume 1: \$60, Volume 2: \$35. Include your IDP number to qualify.

NCARB USE—DO NOT WRITE IN THIS SPACE	
D/R _____	CK/MO _____
IDP/OK _____	AMT _____
AUTH _____	DUE _____

- Payment enclosed  
 Charge my:  
 Visa    MasterCard    American Express

Acct. No. \_\_\_\_\_

Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_

# Introducing the two on earth.



## The new COMPAQ DESKPRO 386/20™

The world now has two new benchmarks from the leader in high-performance personal computing. The new 20-MHz COMPAQ DESKPRO 386/20 and the 20-lb., 20-MHz COMPAQ PORTABLE 386 deliver system performance that can rival minicomputers'. Plus they introduce advanced capabilities without sacrificing compatibility with the software and hardware you already own.

Both employ an industry-standard Intel® 80386 microprocessor and sophisticated 32-bit architecture. Our newest portable is up to 25% faster and our desktop is actually up to 50% faster than 16-MHz 386 PC's. But we did much more than simply increase the clock speed.

For instance, the COMPAQ DESKPRO 386/20 uses a cache memory controller. It complements the speed of the microprocessor,

providing an increase in system performance up to 25% over other 20-MHz 386 PC's. It's also the first PC to offer an optional Weitek™ Coprocessor Board which can give it the performance of a dedicated engineering workstation at a fraction of the cost.

They both provide the most storage and memory within their classes. Up to 300 MB of storage in our latest desktop and up to 100 MB in our new portable.

It simply works better.

# most powerful PC's and off.



## and the new 20-MHz COMPAQ PORTABLE 386™

Both use disk caching to inject more speed into disk-intensive applications and both will run MS® OS/2.

As for memory, get up to 16 MB of high-speed 32-bit RAM with the COMPAQ DESKPRO 386/20 and up to 10 MB with the COMPAQ PORTABLE 386. Both computers feature the COMPAQ® Expanded Memory Manager, which supports the Lotus®/Intel®/Microsoft® Expanded Memory Specification

to break the 640-Kbyte barrier imposed by DOS.

With these new computers plus the original COMPAQ DESKPRO 386™, we now offer the broadest line of high-performance 386 solutions. They all let you run software being written to take advantage of 386 technology, including Microsoft® Windows/386 Presentation Manager. It provides multitasking capabilities with

today's DOS applications to make you considerably more productive. But that's just the beginning. For more information, call 1-800-231-0900, Operator 43. In Canada, call 416-733-7876, Operator 43.

---

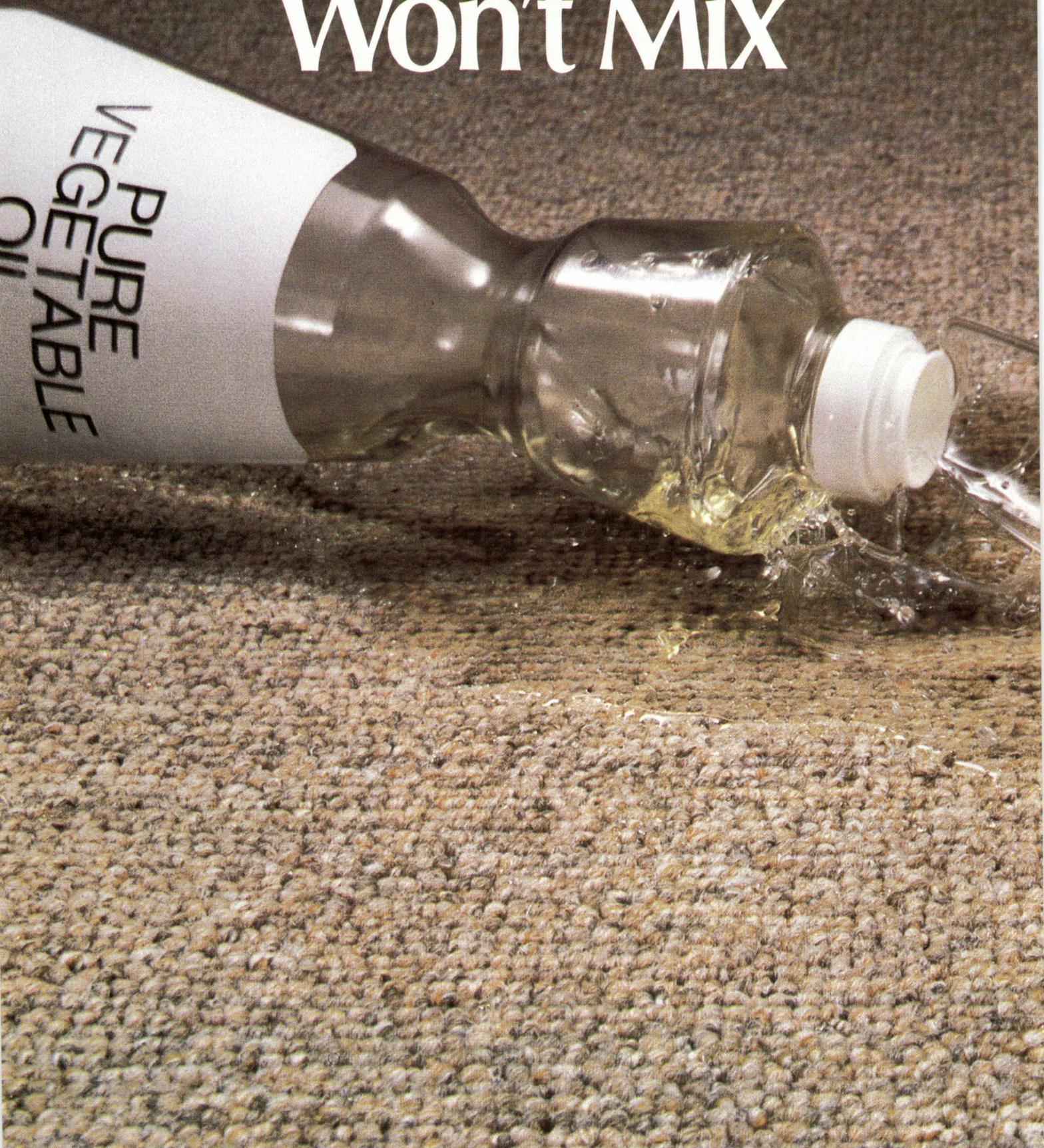
Intel, Lotus, Microsoft, and Weitek are trademarks of their respective companies.  
©1987 Compaq Computer Corporation.  
All rights reserved.

**COMPAQ®**

# Oil And Scotchgard<sup>®</sup>

Protector

## Won't Mix



# Marquésa<sup>®</sup> Lana

with  
**Scotchgard<sup>®</sup>**  
Protector

## THE CHALLENGE...

Take a great product and make it better.

## THE SOLUTION...

Add Scotchgard protector to Marquésa<sup>®</sup> Lana.

## THE RESULT...

A product resistant to both water-based and oil-based stains, such as salad dressings, gravy, medications, motor oil, or other oil-based stains.

Marquésa<sup>®</sup> Lana and Scotchgard protector... for contract and residential, it's the right combination.



Marquésa<sup>®</sup> Lana with Scotchgard<sup>®</sup> brand carpet protector resists oil-based stains.



Oil-based stains penetrate carpet made from Olefin yarn systems without fluorochemical treatment as shown above.

Scotchgard<sup>®</sup> is a registered trademark of the 3M Company.

Amoco Fabrics and Fibers Company makes fibers and yarn, not finished upholstery fabrics.

Marquésa<sup>®</sup> Lana is the registered trademark for bulked continuous filament olefin yarn produced by Amoco Fabrics and Fibers Company.

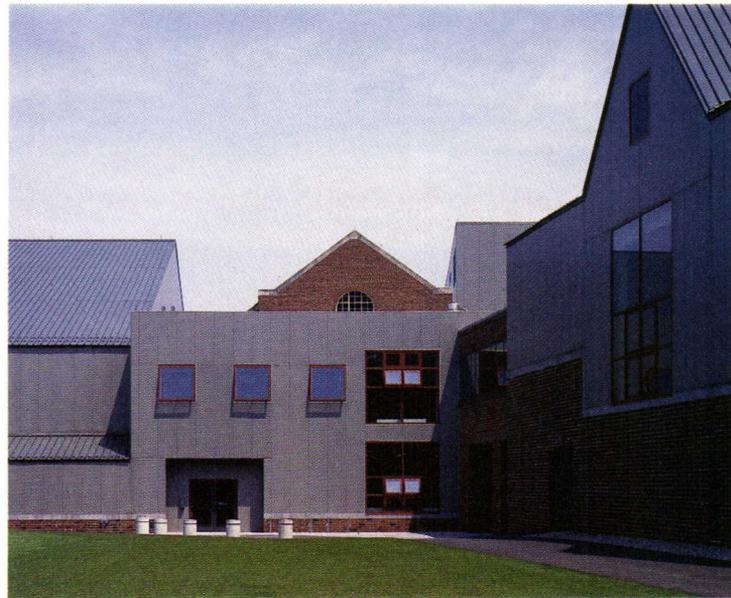


Amoco Fabrics and Fibers Company  
900 Circle 75 Parkway N.W.  
Atlanta, Georgia 30339

Circle 88 on inquiry card



When Charles King Hoyt  
writes about architectural business,  
architects take a  
professional interest.





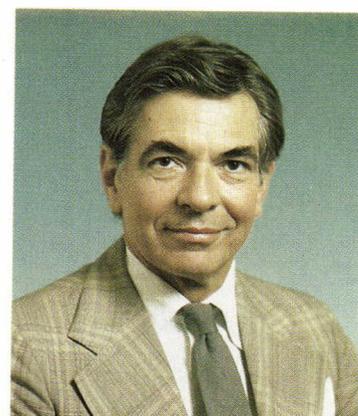
Registered architect, member of the AIA and of the National Society of Architectural Historians, author of five books on architecture and interior design, Charles King Hoyt is part of the largest, most experienced, most professional editorial team in architecture.



It's the team that produces architecture's best-read, most-used professional magazine.

You read Architectural Record because of editors like Charles King Hoyt. Advertisers use Architectural Record because of readers like you.

Architectural Record, it all begins with an editor.





Why The  
Nation's Leading  
Architects  
Specify

# Georgia Marble®

**Material:** Georgia Marble is ideal for exteriors or interiors. It is beautiful, Class A, and permanent.

**Craftsmanship:** is the best in the industry. Skilled craftsmen and modern equipment meet every demand.

**Experience:** Over a century of countless architectural design demands have shaped our expertise to meet any and all requirements.

**Service:** from our initial sales call through final erection of the marble, Georgia Marble specialists are there to serve your every need.

**Economy:** Georgia Marble is a unique marble, free of impurities that cause eventual staining and with an absorption rate much lower than other marbles and granites. This means very low maintenance costs over the life of the building.

Building:  
McDonnell Douglas Plaza Tower 17, Irvine, CA  
Architect:  
Herbert Nadel and Partner Architects  
Marble:  
White Cherokee and Solar Gray Georgia Marble

For more information and samples of  
Georgia Marble, call Toll Free:

1-800-334-0122

In Georgia: 1-800-342-1382

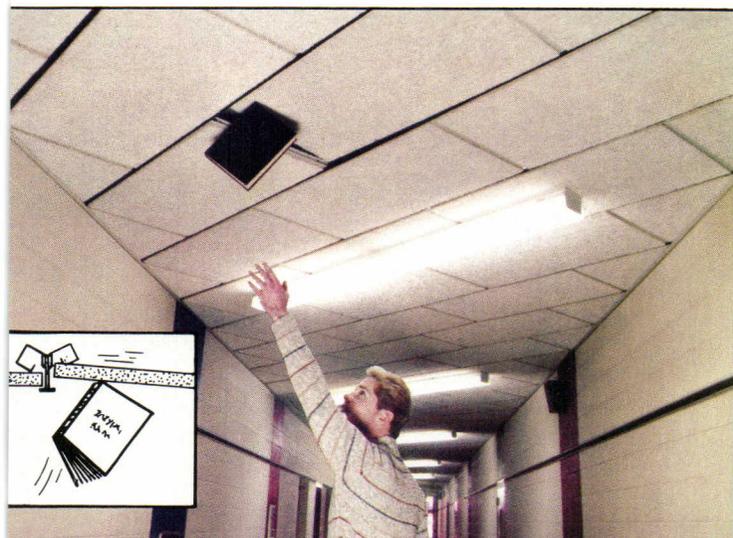
 **georgia marble**  
company  
structural division

nelson, georgia 30151 (404) 735-2559

a Jim Walter company

Reference Sweets, 04400/GEM

Circle 89 on inquiry card



**You won't have to replace this panel — it's a Tectum® panel**

**NOW WARRANTED 10 YEARS!**

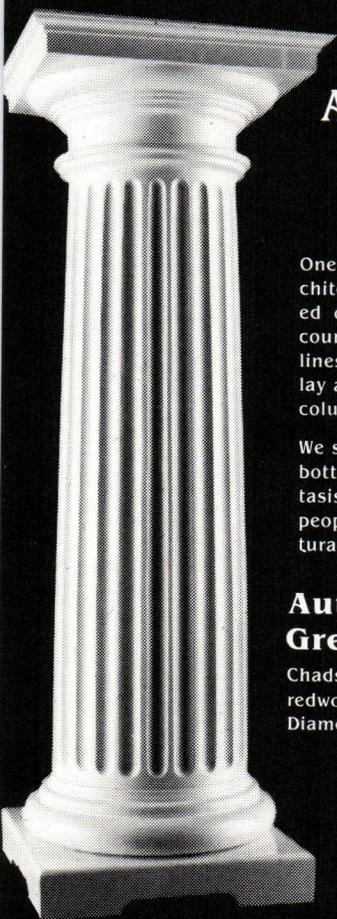


**Tectum Acousti-Tough® Ceiling System — WARRANTED AGAINST BREAKAGE FOR ~~FIVE~~ YEARS!**

Specially designed to take abuse in school halls, gyms and other areas where ceiling tile damage is a problem, this suspended acoustical ceiling system features Tectum panels, the only hard surfaced, durable panels that can take repeated blows from basketballs, volleyballs and soccer balls without cracking and breaking. The integral Tectum Keep Clip allows a panel to rise when struck and then reposition itself. Each system comes with a limited ten-year warranty on panels cracking, breaking or falling out of the ceiling. Call, write or see Tectum in Sweets Architectural File.

**TECTUM INC.** 105 S. Sixth Street • P.O. Box 920  
Newark, Ohio 43055 • (614) 345-9691

Circle 90 on inquiry card



**TRUE ARCHITECTURAL COLUMNS ENTASIS**

One distinguishing feature of a true architectural column. The entasis is the curved or bowed outline of the shaft which counteracts the optical illusion of straight lines which appear to lean inward. Simply lay a straight edge along the length of our column and note the slight entasis.

We show not only the top half but also the bottom half of our column so that the entasis can be shown. This is one reason more people are choosing Chadsworth architecturally correct columns.

**Authentic Replication of Greek and Roman Orders**

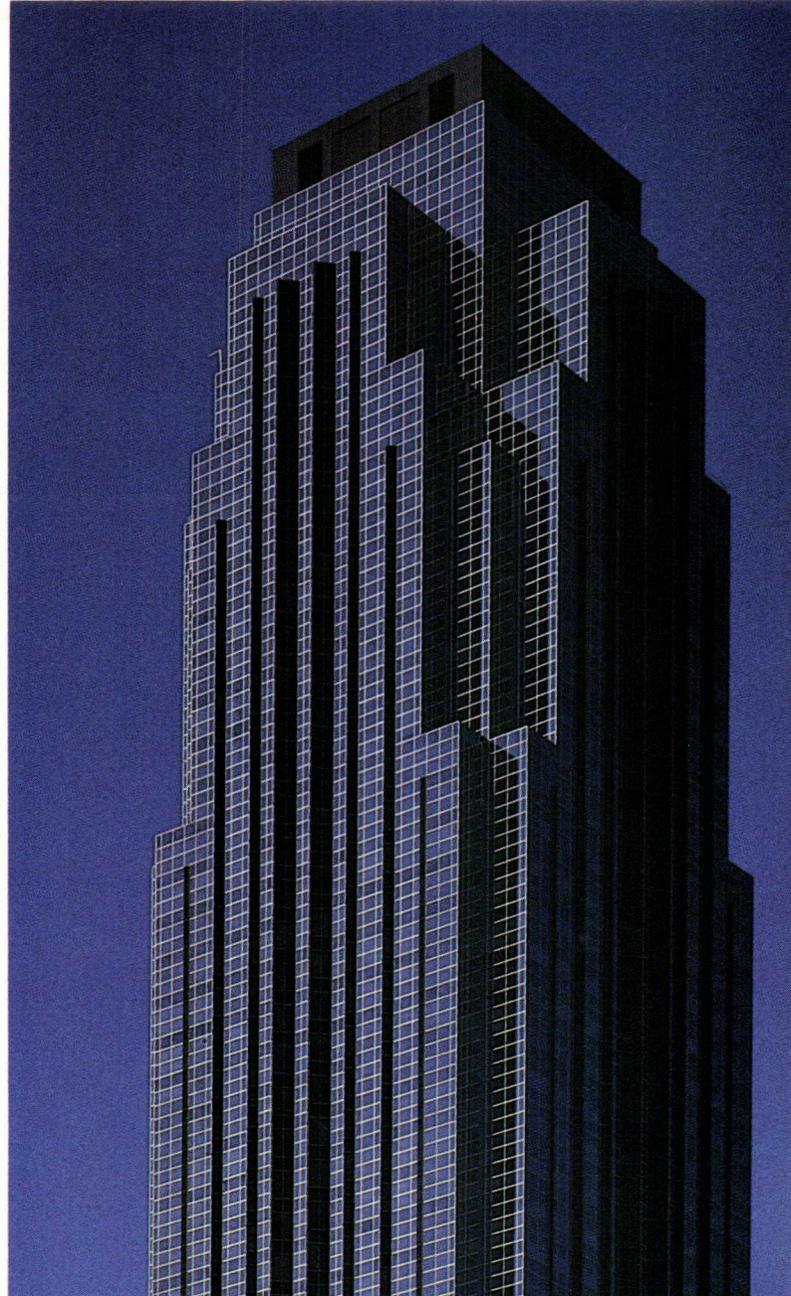
Chadsworth Columns and Capitals available in redwood, pine and other species.  
Diameters — 6"–36" Heights — 18"–40"



For information and brochure:  
P.O. Box 53268  
Atlanta, Georgia 30355  
404-876-5410  
Catalog \$1.00

Roman Doric Order

Circle 91 on inquiry card



**The Technical Spectrum**

Thermopane® insulating glass has provided clear solutions to widely differing technical problems for decades.

Now it's more versatile than ever. Consider, for example, Thermopane with an outboard light of Vari-Tran® solar control glass. It offers the dual benefits of reduced air-to-air heat transfer plus solar radiation control. Which means enhanced visual and thermal comfort for the people within.

Or consider Thermopane with a neutral Janusite® low-emissivity coating, which admits high levels of visible light, yet blocks longwave infrared radiation. It provides unparalleled reduction of air-to-air heat transfer, along with an uncoated appearance.

For more information on today's Thermopane insulating glass, contact Spectrum Glass Products, P.O. Box 408, Clinton, NC 28328. (919) 592-7101. Telex: 910 380 9098.



Circle 92 on inquiry card

# DRAIN WATER, NOT YOUR BUDGET



Armco STRIPDRAIN 75 drains more water than a 14'-thick sand or 17"-thick gravel drain.

**Armco® STRIPDRAIN™ 75** is the cost-efficient alternative to aggregate drainage systems for foundation walls and footings and retaining walls. It combines a geosynthetic filter fabric with a high-density, flexible polyethylene core for superior drainage, high compression resistance and long-term durability. Because it's so lightweight, it's quick and easy to install, which results in much lower excavation and installation costs.

STRIPDRAIN is designed, manufactured and distributed by Contech Construction Products Inc. (formerly Armco Construction Products).

**FREE CATALOG.** Send for a free copy of the Armco STRIPDRAIN Catalog. Contact your local Contech Sales Engineer, or write Contech Construction Products, Dept. 1808, P.O. Box 800, Middletown, Ohio 45042. Or call toll-free **1-800-338-1122 (in Ohio: 1-800-752-8899).**



Circle 93 on inquiry card

# CIRCULATING SECURITY.

Secur-Vent™ rolling doors have patented 50% screening

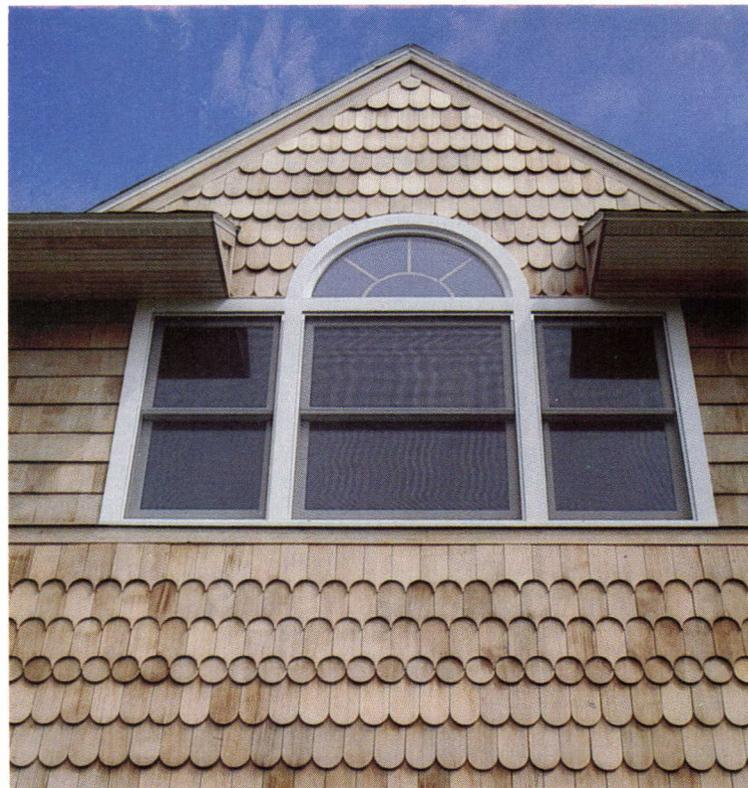
With rugged 22 gauge galvanized steel slats. Up to 16' X 16'

Optional stainless steel or aluminum, and all our features.

Get the catalog!  
(614) 294-4451.  
1191 Fields Ave.  
Columbus, OH 43216

DOOR  
WAYS TO **KINNEAR**  
THE DIVISION OF HARSCO CORPORATION  
FUTURE

Circle 94 on inquiry card



## EUGENE HOPKINS SPEAKS WITH AN ACCENT

"As an architect I work with a wide range of products. In designing my own home I knew Shakertown Siding would provide the cedar shingle effect I was looking for. And Fancy Cuts allowed the exterior to be as creative and fun as well as adding detailed eye-appeal."

— Eugene Hopkins, AIA, Architects F

### SHAKERTOWN FANCY CUTS®

Call now toll free 1-800-426-8970 for a free template and design kit.  
Or write P.O. Box 400, Winlock, WA 98596.

Circle 95 on inquiry card

# Big Savings. No Waiting.

Thousands of brand name drafting, print and plotter supplies at 20-50% off with same day shipment.



- Same day credit approval
- Huge in-stock selection
- Satisfaction guaranteed

**FREE CATALOG**  
**800-227-6191**

**DATAPRINT®**  
Drafting, Print and Plotter Supplies

Corporate Office: 700 S. Claremont St.  
P.O. Box 5910, San Mateo, CA 94402  
Distribution Centers located throughout the U.S.

Circle 96 on inquiry card

## The Space-Saving Alternating Tread Stair.

- Ergonomically designed alternative to vertical ladders, ship's ladders, steep conventional stairs, spirals.
- Unique alternating tread design provides more useable tread depth than ladders or steep conventional stairs requiring the same amount of floor space.
  - Proven in thousands of applications worldwide.
  - Available in 56° and 68° steel, 68° aluminum, and 56° wood.

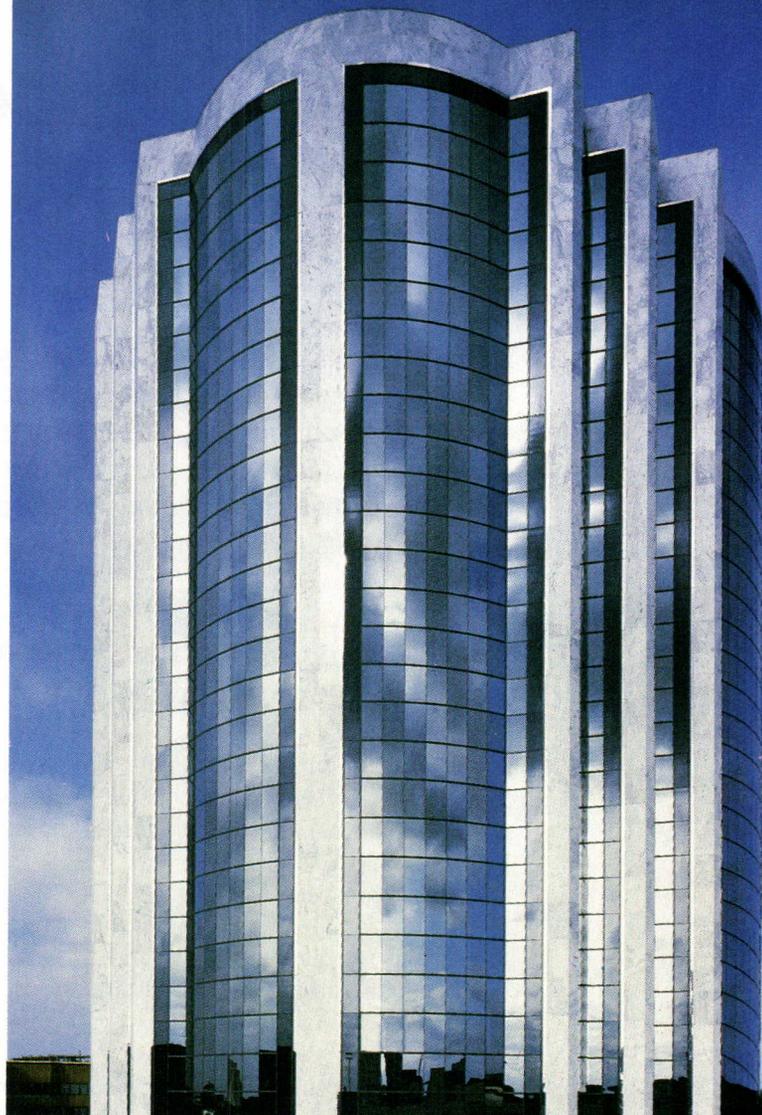
Call toll free for more information, or to order. We need only one accurate dimension: lower to upper floor height, to give you price and free dimensional drawings.

**1-800-535-7631**

**LAPEYRE  
STAIR®**

LA. Res: 504-733-6009  
Telex: 6821268  
New Orleans, LA.

Circle 97 on inquiry card



# The Architectural Spectrum

Spectrum's wide array of high performance glass products could be instrumental to resolving your fenestration problems.

Select Thermopane® insulating glass with neutral Janusite® coating to enhance thermal performance, but retain the aesthetics of uncoated glass. Or choose from 34 varieties of Vari-Tran® solar control glass, ranging from bright and shiny to dark and subdued. Coatings include Antique Silver, Sterling Silver, Sapphire Blue and Burnished Bronze.

Design spandrels with glasses which closely match the appearance of vision areas. Or band the building subtly or in a bold expression of color.

For further details on the complete array, call or write Spectrum Glass Products, P.O. Box 408, Clinton, NC 28328. (919) 592-7101. Telex: 910 380 9098.

 **SPECTRUM**  
GLASS PRODUCTS  
Circle 98 on inquiry card

# In the Public Interest

ARCHITECTURAL RECORD announces **In the Public Interest**, an annual awards program aimed at encouraging and recognizing excellence in the design and planning of public architecture. Each year RECORD's editors will select a relevant building type and solicit entries in that category from architects, private developers, government agencies, private/public development consortiums, and community design centers for building projects completed during the past three years.

The building type for 1988 is **HOUSING**, which includes, but is not necessarily limited to, the following categories:

1. Government- or privately sponsored low-income housing;
2. Subsidized mixed-income housing (if the project includes market-rate units, at least 50 percent of the development must be reserved for low- or middle-income tenants);
3. Shelters for the homeless;
4. Shelters for victims of abuse;
5. Housing for the blind, the elderly, or the physically disabled;
6. Housing for the mentally disabled;
7. Residential drug- or alcohol-treatment centers.

#### **Eligibility:**

All entries must be new or remodeled construction designed by registered architects and completed since January 1, 1985. Work previously published in other national design publications will be considered.

#### **Submissions:**

More than one project may be submitted. There are no entry fees or forms, but each submission should include color photographs of the completed project, reproductions of plans, and a one-page project description—all bound firmly in an 8 1/2- by 11-inch folder. A brief statement from the client or user, a report from a civic body, and articles from local newspapers attesting to the significance of the project to the community may be included in support of the submission.

#### **Deadline:**

All entries must be postmarked no later than **May 1, 1988**.

Submissions should be mailed to:

Paul M. Sachner  
ARCHITECTURAL RECORD  
1221 Avenue of the Americas  
New York, N. Y. 10020

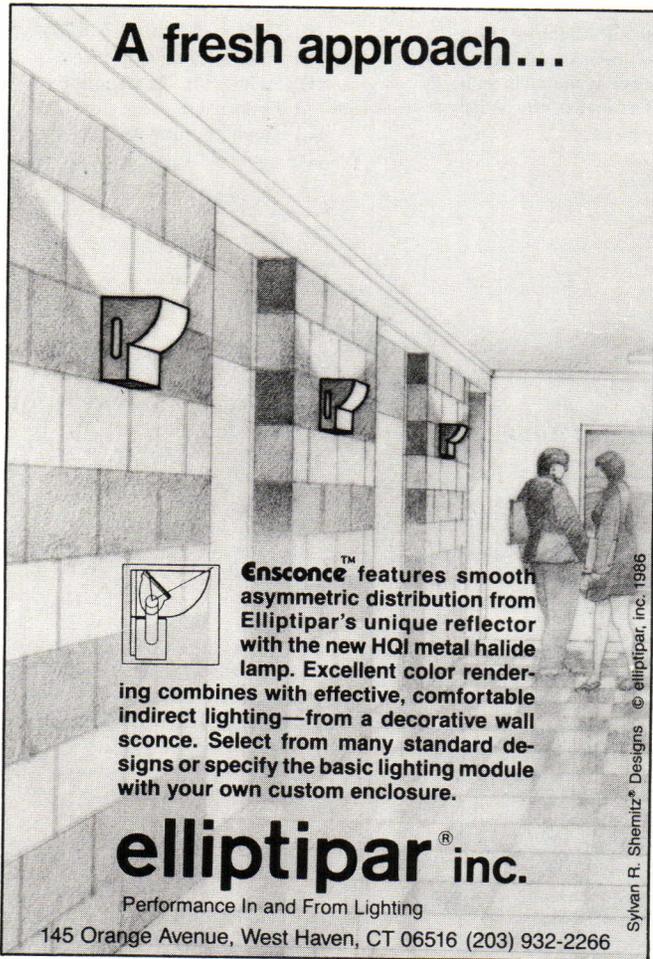
#### **Publication:**

Winning entries will be featured in the November 1988 issue of ARCHITECTURAL RECORD. Other submissions will be returned or scheduled for a future issue.

For additional information, call Paul Sachner at 212/512-3088.

ARCHITECTURAL  
**RECORD**

A fresh approach...

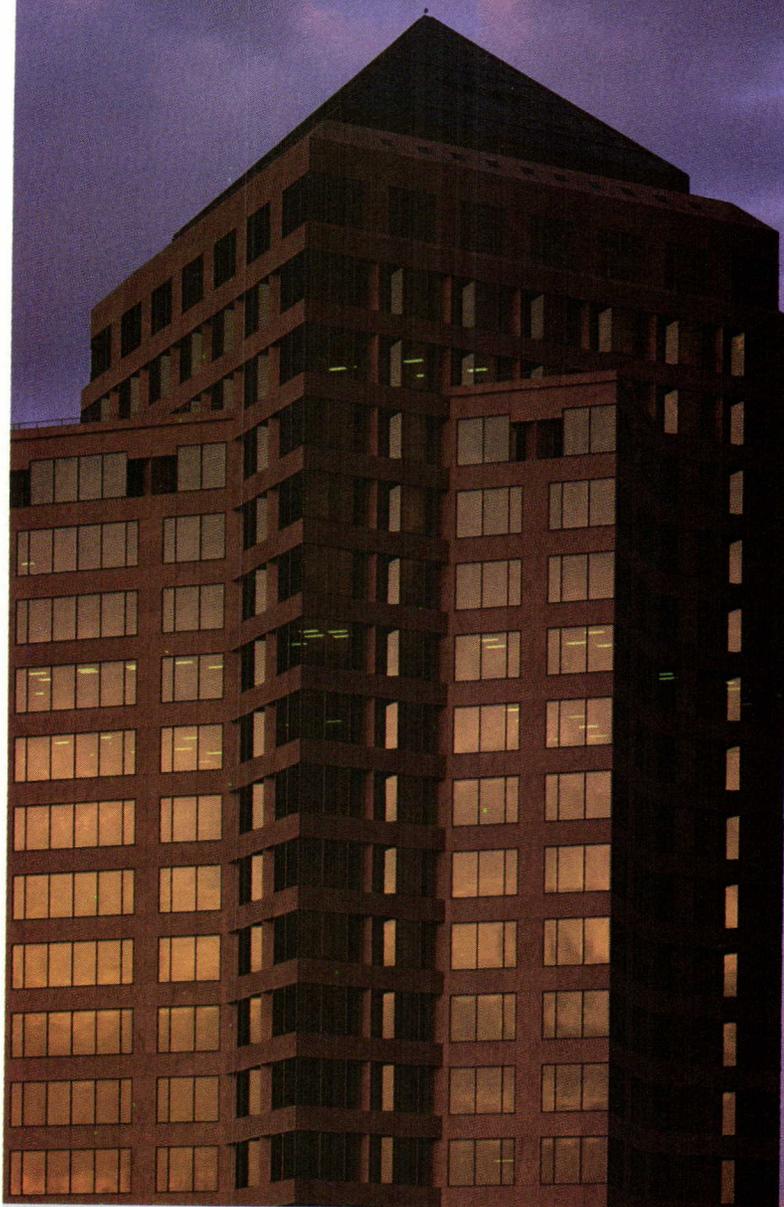


**Ensconce™** features smooth asymmetric distribution from Elliptipar's unique reflector with the new HQI metal halide lamp. Excellent color rendering combines with effective, comfortable indirect lighting—from a decorative wall sconce. Select from many standard designs or specify the basic lighting module with your own custom enclosure.

**elliptipar® inc.**  
Performance In and From Lighting  
145 Orange Avenue, West Haven, CT 06516 (203) 932-2266

Sylvan R. Shemitz\* Designs © elliptipar, inc. 1986

Circle 99 on inquiry card



# The Performance Spectrum

When your design calls for high-performance solar control glass, specify Vari-Tran® metallic coatings from Spectrum.

Our four distinct series of coatings encompass a wide variety of glazing applications. Each functions to minimize solar heat gain, reducing air conditioning requirements and operating costs.

Daylight transmittances range from 20% to less than 10%; shading coefficients to 0.15.

For more information on the entire Vari-Tran family, or for information on our full line of products, call or write Spectrum Glass Products, P.O. Box 408, Clinton, NC 28328. (919) 592-7101. Telex: 910 380 9098.

 **SPECTRUM**  
GLASS PRODUCTS

Circle 101 on inquiry card

## Especially for Single-Ply Roofing

**Hickman's  
EXTRUDED  
ECONOSNAP**

The Roof Edge System provides a permanent, waterproof, "no-slip" grip on the roofing membrane. And only Hickman offers an extruded, heavier-gauge aluminum fascia. 2-piece system in 10' lengths (metric sizes, too). See us in Sweet's (7.3 Hi).



Available in Canada US Patent 4,071,987

**HICKMAN®**  
construction products

W. P. Hickman Company □ 175 Sweeten Creek Road  
P.O. Box 15005 □ Asheville, N.C. 28813 □ (704) 274-4000

Circle 100 on inquiry card

# Advertising index

**Bold face**—page number  
*Italics*—Reader Service number

- A**  
 AllianceWall Corp., 6; 4 [G]  
 (404) 447-5043  
 Alumax Building Specialties, 92; 61 [G]  
 (214) 285-8811  
 American Consulting Engineers Council, 166; 76  
 (202) 347-7474  
 American Marazzi Tile, Inc., 34; 29 [G-L-D]  
 (214) 226-0110  
 Amoco Fabrics & Fibers Co., 186-187; 88 [E]  
 Andersen Corp., 170-171; 82 [G-L]  
 Architect's Book Club, 177 to 179  
 Armstrong World Industries, Inc., **Cov. II-1**; 1 [G-E-D]  
 (800) 233-3823  
 Autodesk, Inc., 148; 65
- B**  
 BASF Corporation Fibers Div., Geomatrix Systems, 64; 50 [G-E-L-D]  
 (704) 667-7713  
 Besteel Industries, 32Sb; 27  
 (213) 283-8251  
 Bigelow (Designtec), 30-31; 19  
 Bilco Co., 54; 44 [G-E-I-L]  
 (203) 934-6363  
 Bond Cote Systems Co. Div., WestPoint  
 Pepperell, **Cov. III**; 103 [G]  
 1 (800) 368-2160  
 Buckingham-Virginia Slate Corp., 32Eb; 22 [G]  
 (804) 355-4351
- C**  
 Carlisle Syntec Systems, Div. of Carlisle Corp., 33; 28 [G-E-I]  
 (800) 233-0551  
 Chadsworth, Inc., 191; 91  
 (404) 876-5410  
 Chemstar, Inc., 32Wc; 25  
 Commonwealth Aluminum, 48; 38  
 Compaq Computer Corp., 184-185  
 (800) 231-0900  
 Computer Associates, Inc., 49; 40  
 (800) 533-2070  
 Contech Construction Products, Inc., 192; 93  
 Cooley Roofing Systems, 145; 63 [G-I]  
 (401) 724-0490  
 Corbin Div., Emhart Hardware Group, 84-85; 57 [G]  
 (203) 225-7411  
 C/S Group, 66; 51 [G-E-L]  
 (201) 272-5200
- D**  
 Dataprint Corp., 193; 96  
 (800) 227-6191  
 Deleo Clay Tile, 32Wa; 24  
 1 (800) 654-1119
- E**  
 Edison Electric Institute, 88-89; 59  
 EICH Corp., 50; 41  
 (213) 381-7424  
 Elliptipar, Inc., 195; 99  
 (203) 932-2266  
 Ellison Bronze Co., Inc., 36; 30 [G]  
 (716) 665-6522
- F**  
 Florida Power & Light, 32Sa; 26  
 (305) 227-4324  
 Follansbee Steel Corp., 154; 67 [G]  
 (800) 624-6906  
 Formica Corp., 5; 3 [G]  
 (800) 543-3000
- G**  
 Georgia Marble Co., 190; 89 [G-I-L-D]  
 (404) 735-2591  
 Georgia-Pacific Corp., 44; 35,36 [G-I-L-D]  
 (800) 225-6119  
 Glen Raven Mills, Inc., 14-15; 9 [G]  
 (919) 227-6211
- H**  
 Herman Miller, Inc., 22-23; 14  
 (800) 851-1196  
 Hickman Co., W.P., 195; 100 [G-I]  
 (704) 274-4000
- I**  
 Innovative Marble and Tile, Inc., 43; 34 [G-D]  
 (516) 752-0138  
 Interna Designs, Ltd., 32; 20  
 1 (800) INTERNA  
 ISICAD, Inc., 146; 64  
 (714) 821-2600
- J**  
 John Wiley & Sons, Inc., 173,175  
 1 (800) 526-5368
- K**  
 Karastan, 18-19; 12  
 (212) 980-3434  
 Kawneer Co., Inc., 39,41; 31,32 [G]
- L**  
 Lapeyre Stair, Inc., 193; 87 [G-I]  
 1 (800) 535-7631  
 Lees Commercial Carpet Co., 58-59; 47  
 (800) 523-5647
- M**  
 Manville Corp. -Roofing Systems Div., 24-25; 15 [G-E-I]  
 (303) 978-4900  
 Marble Institute of America, 167; 77  
 (313) 476-5558  
 Marble Modes, Inc., 32Ea; 21  
 (718) 539-1334  
 Marvin Windows, 10-11; 7 [G]  
 (800) 346-5128  
 Mayline Co., 160; 70  
 (414) 457-5537  
 MBCI, 42; 33 [G]  
 Mirafi, Inc., 85; 58 [G-E]  
 (800) 438-1855
- N**  
 NCARB, 183  
 Nevamar Corporation, 28-29; 18  
 1 (800) 233-9485  
 Norco Windows, Inc., 90-91; 60 [G]  
 (715) 585-6311  
 Northwest, 150  
 (800) 447-4747  
 Nucor Corp., 26-27; 16,17 [G]
- O**  
 Overly Mfg. Co., 144; 62 [G-E]
- P**  
 Pantone, Inc., 158; 69  
 (800) 222-1149  
 Pella Rolscreen Co., 52-53; 43 [G-L-D]  
 (512) 628-1000  
 Philips CPMS, 48B-48C; 39  
 Pittsburgh Corning Corp., 174; 85 [G-E-I]  
 (412) 327-6100  
 Polyurethane Foam Contractors Div. -SPI, 176; 86  
 (800) 253-6154
- R**  
 Raceway Components, Inc., 172-173; 83  
 (201) 661-1116  
 Red Cedar Shingle & Handsplit Shake  
 Bureau, 168; 79  
 Rohm & Haas, 180; 87
- S**  
 Sargent & Co., 68; 52 [G]  
 (203) 562-2151  
 Sentry Electric Corp., 160; 72 [G]  
 (516) 379-4660  
 Shakertown Corp., 160,192; 71,95 [G-L]  
 (800) 426-8970  
 Sitecraft, 46; 37 [G-I]  
 Sloan Valve Co. -Plumbing Div., 16; 10 [G-E-I]  
 Spacesaver Corp., 78; 56 [G-I]  
 (414) 563-6362  
 Spectrum Glass Products, 191,193,195,197; 92,98,101,102 [G]  
 (919) 592-7101  
 Spring City Electrical Mfg. Co., 169; 81 [G-E]  
 (215) 948-4000  
 Steel Joist Institute, 55; 45  
 Steelcase, Inc., 2-3; 2  
 (800) 447-4700  
 Stevens Elastomerics Div. of J.P. Stevens & Co., 62-63; 49 [G-I]  
 (413) 586-8750  
 Sto-Industries, Inc., 51; 42 [G]  
 (802) 775-4117  
 Stow & Davis, 12-13; 8  
 (800) 447-4700
- T**  
 Tectum, Inc., 191; 90 [G]  
 (614) 345-9691  
 Thermo Materials, Inc., 168; 78  
 Thoro Systems Products, Inc., 60-61; 48 [G-E]  
 (305) 592-2081
- U**  
 USG Interiors, Inc., Commercial Ceilings, **Cov. IV**; 104  
 US Intec, 72; 54 [G-I]
- V**  
 Velux-America, Inc., 17; 11 [G-L]  
 Vermont Structural Slate Co., 198  
 (800) 343-1900  
 VersaCAD Corporation, 8; 5  
 (714) 960-7720  
 Versatec, a Xerox Company, 74-75; 55  
 (800) 538-6477  
 V.T. Industries, 161; 73 [G]
- W**  
 Walker Systems, 168; 80  
 Wayne-Dalton Corp., 162-163; 74 [G-I]  
 (216) 674-7015  
 WilsonArt, 70; 53  
 (800) 433-3222  
 Wolverine Technologies, Inc., 32Ec; 23 [G-L]  
 (313) 386-0800

# Sales offices

## Main Office

McGraw-Hill, Inc.  
1221 Avenue of the Americas  
New York, New York 10020

Director of Business and  
Production  
*Joseph R. Wunk (212) 512-2793*

Publisher  
*Ted Meredith (212) 512-4685*

Director of Marketing  
*Camille Padula (212) 512-2858*

Classified Advertising  
*(212) 512-2556*

## District Offices

**Atlanta**  
4170 Ashford-Dunwoody Road  
Atlanta, Georgia 30319  
*Gregory Bowerman (404) 252-0626*

**Los Angeles**  
Media Sales Associates  
23232 Peralta Drive  
Laguna Hills, Calif. 92653  
*William W. Hague (714) 859-4448*  
*Sherylen Young*

**Boston**  
607 Boylston St.  
Boston, Massachusetts 02116  
*Louis F. Kutscher (203) 968-7113*

**New York**  
1221 Avenue of the Americas  
New York, New York 10020  
*Theodore C. Rzempoluch*  
*(212) 512-3603*

**Chicago**  
645 N. Michigan Ave.  
Chicago, Illinois 60611  
*Anthony Arnone, (312) 751-3765*  
*Cheryl L. Shores, (312) 751-3705*

**Philadelphia**  
1234 Market St.  
Philadelphia, Pennsylvania 19107  
*Blair McClenachan (215) 496-4966*

**Cleveland**  
55 Public Square  
Cleveland, Ohio 44113  
*George Gortz (216) 781-7000*

**Pittsburgh**  
6 Gateway Center, Suite 215  
Pittsburgh, Pennsylvania 15222  
*George Gortz (412) 227-3640*

**Denver**  
7400 S. Alton Ct. Suite 111  
Englewood, Colorado 80112  
*John J. Hernan (303) 740-4630*

**San Francisco**  
Media Sales Associates  
*William W. Hague (415) 345-0522*  
*Sherylen Young*

**Detroit**  
4000 Town Center, Suite 770  
Southfield, Michigan 48075  
*Thomas J. Shaw*  
*(313) 352-9760*

**Stamford**  
777 Long Ridge Road  
Stamford, Connecticut 06902  
*Louis F. Kutscher*  
*(203) 968-7113*

**Houston**  
7600 W. Tidwell, Suite 500  
Houston, Texas 77040  
*Lockwood Seegar (713) 462-0757*

Vice President Market  
Development  
Federal Government  
Paul R. D'Armiento  
1750 K Street NW  
Suite 1170  
Washington, D.C. 20006  
*(202) 463-1725*

Cost Information Systems  
McGraw-Hill Information  
Systems Co.  
Percival E. Pereira  
P.O. Box 28  
Princeton, N.J. 08540  
Toll Free 800/527-5295  
N.J. (609) 426-7300

## Overseas Offices

**Frankfurt/Main**  
Elsa-Brandstroem Str. 2  
Frankfurt/Main, Germany

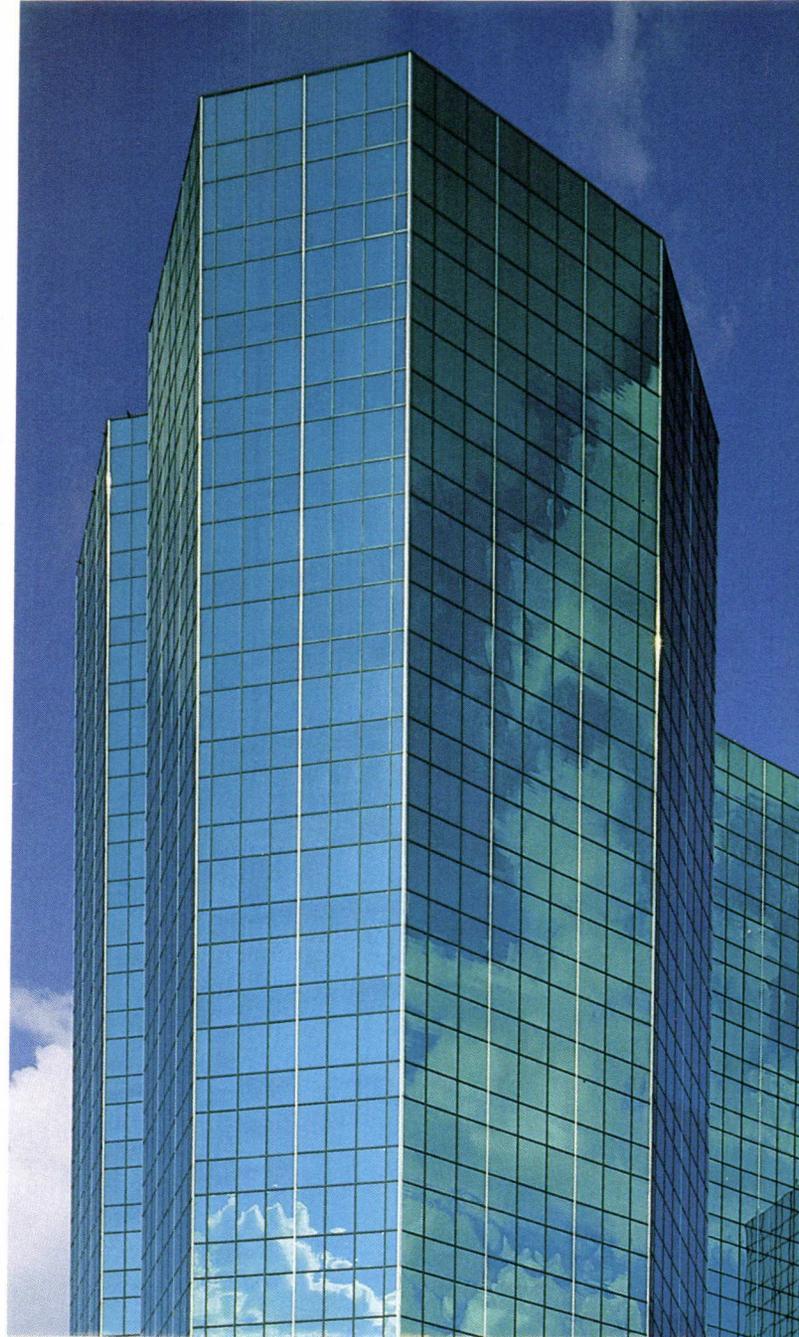
**Tokyo**  
2-5, 3-chrome  
Kasumigaseki, Chiyoda-ku  
Tokyo, Japan

**Sheffield**  
146 West St.  
Sheffield S14ES, England

**Milan**  
Via Baracchini No. 1  
Milan, Italy

**South America**  
Empresa Internacional de  
Comunicacoes Ltda.  
Rua da Consolacao, 222  
Conjunto 103  
01302 Sao Paulo, S.P. Brasil

**Paris**  
128, Faubourg St-Honoré  
75008 Paris, France



# The Total Spectrum

Wide product offering, narrow focus. That sums up Spectrum, specialists in fabricating high performance glass for construction.

You can benefit. From proven products, which live up to the high standards set for them, every time. From reliable technical assistance and competitive pricing.

And not least, from on-time delivery. Because our reservation system can protect your construction schedule by committing production time as soon as glass has been awarded to Spectrum. Well in advance of the final order. Other scheduling techniques assure quick turn on wrap-up orders needed to close up the building and complete the job.

For more information, call or write Spectrum Glass Products, P.O. Box 408, Clinton, NC 28328. (919) 592-7101. Telex: 910 380 9098.

**SPECTRUM**  
GLASS PRODUCTS

Circle 102 on inquiry card

# Hats On to the Winners...



I'm Bill Markcrow and I want to thank the more than 140 people from all over the world who designed some of the most interesting and

unique gazebos I've ever seen for my first-ever "Design a Gazebo Contest." In my opinion, they're all winners.

## ...of the First International Design a Gazebo Contest.

I'd also like to thank the distinguished panel of judges who worked a long and exhausting day, painstakingly selecting our twelve prize winners. These hard-working decision-makers from both educational and architectural backgrounds include: Robert Campbell, Architect, Cambridge Massachusetts, contributing editor to *Architecture* and critic for "The Boston Globe" . . . Patrick L. Pinnell, Principal Architect, Cass & Pinnell Architects, Washington, D.C., and instructor, Yale University . . . Stephen Potters, Stephen Potters Architects, New York City . . . Suzanne Stephens, journalist, critic, editor and teacher, Barnard College, New York City, and contributor to *House and Garden*, *Manhattan, Inc.* and *Art in America* . . . and Craig Whitaker, Craig Whitaker Architects, New York City.

## And the winners are:

- Robert Botwin and Rick Metcalf, New York City, NY
- C.L. Fornari, Chatham, NY
- Lee Hill, Guilford, CT
- John Keshar Wenderoth, Gradyville, PA
- Marc L'Italien, New York City, NY
- Robert L. Miller, Washington, D.C.
- Jesus Porras, Houston, TX
- Paul William Smith, Ann Arbor, MI
- Patrick Roberson, Dallas, TX
- Karen Schindler, Chicago, IL
- Daniel Winterbottom, Boston, MA
- The Skyline High School Architecture Cluster, Dallas, TX



It was quite a contest . . . with submissions ranging from beautifully designed models to nine sets of colored drawings, and entrants ranging from high school students to the world's top architects.

Some of the unusual designs ranged from the Niagara Falls Gazebo and the Garbage Gazebo (covered entirely with garbage, believe it or not) . . . to the Fairy Tale Gazebo.

Thank you gazebo designers everywhere, for making my "First International Design a Gazebo Contest" such a success. My special thanks to thirteen-year-old John Keshar Wenderoth for his clever and imaginative "Gazebo for Duck Hunters."

Watch for the innovative gazebo design entries to be exhibited in March and April at the National Institute for Architectural Education, 30 West 22 Street, New York, NY, from March 9 through April 15.

**VERMONT STRUCTURAL SLATE COMPANY**  
Fair Haven, VT 05743

# Use your STAC number!

XXXXXXXXXXXX5-DIGIT 69699  
6400 009876543-2 FEB90 S07  
TERRY DOE, TD & ASSOCIATES  
128 MAIN STREET  
ANYTOWN IL 69699

**N**eed product information fast? Your Architectural Record Subscriber Telephone Access Card number can help speed information to you about any product or service (advertised or new products/manufacturers literature items) described in this issue.

Architectural Record's exclusive STAC number system enables you to call and key your "more information" requests directly into our computer via touch-tone telephone. Your personal STAC number is conveniently listed above your name on the mailing address label for each issue. **IMPORTANT:** Your STAC number starts after the first four numbers and is separated from them by a space. If your STAC number starts with one or more zeros, ignore them, as well as the hyphen. (For example, the STAC number on the above label is 98765432.)

Soon after your call, advertisers can access your requests by phone from our computer, and start speeding information to you. So when you need information fast, free help is as close as your STAC number. And STAC service is available to you 24 hours a day, seven days a week.

### BEFORE YOU DIAL:

1. Write your STAC number in the boxes in Step 4 below. Do not add leading zeros.
2. Write the Reader Service numbers for those items about which you want more information in the boxes in Step 6. Do not add leading zeros.

### CALL STAC:

3. Using a standard touch-tone telephone, call 413/ 442-2668, and follow the computer-generated instructions.

### ENTER YOUR STAC NUMBER AND ISSUE NUMBER:

4. When the recording says, "Enter your subscriber number..." enter your STAC number by pushing the numbers and symbols (# or \*) on your telephone keypad. Ignore blank boxes. Enter:

# #

5. When the recording says, "Enter magazine code and issue code..." enter these numbers and symbols:

2  5  #  2  8  #  #

### ENTER YOUR INQUIRIES:

6. When the recording says, "Enter (next) inquiry number..." enter the first Inquiry Selection

Number, including symbols, from your list below. Ignore blank boxes. Wait for the prompt before entering each subsequent number (maximum 17 numbers).

1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
11.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
12.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
13.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
14.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
15.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
16.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#
17.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	#	#

### END STAC SESSION:

7. When you have entered all your Inquiry Selection Numbers and the recording prompts, "Enter next inquiry number," End the call by entering:

\* \* 9 1 # #

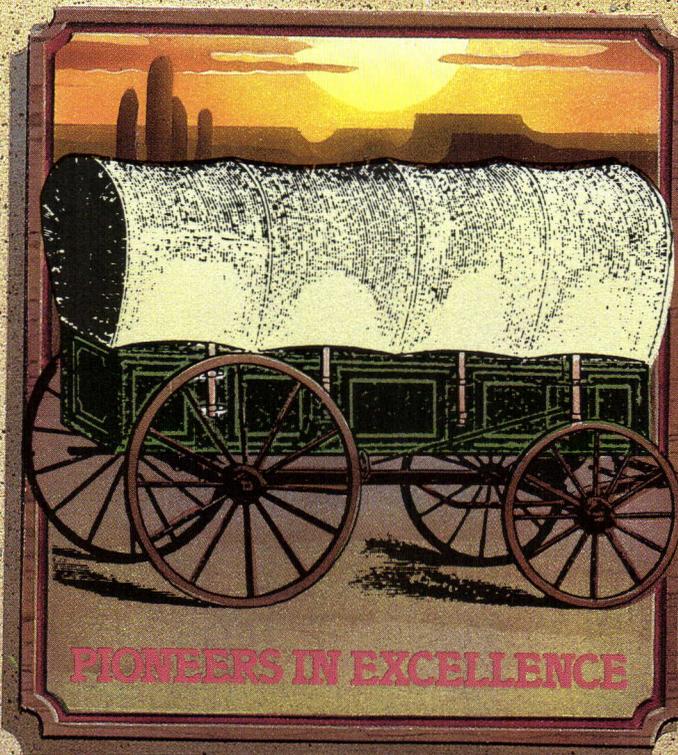
If you are a subscriber and need assistance, call 212/512-3442. If you are not a subscriber, fill out the subscription card in this issue, or call Architectural Record Subscription Services at 914/628-0821.

# BOND COTE'S ROLLIN' IN WITH SOME MIGHTY GOOD NEWS.

Don't miss  
the Bond Cote  
wagon at the  
NRCA Convention.

For over a century, the pioneers at WestPoint Pepperell—the ones who make Bond Cote single-ply roofing—have dedicated themselves to quality, innovation and performance.

From the beginning days of crafting weather-resistant canvas for Conestoga wagons and tall clipper ship sails, to creating today's toughest



PIONEERS IN EXCELLENCE

single-ply roofing membrane, WestPoint Pepperell has been in a class by itself.

That proud spirit of achievement lives on today in **Booth 757**. Stop by. Visit a while. And find out how the best Bond Cote roof got better. It's some mighty good news.

**BOND COTE**<sup>®</sup>  
ROOFING SYSTEMS



WestPoint Pepperell

P.O. Box 71  
West Point, GA 31833-0071  
1-800-368-2160



Presenting™  
*Prisms*  
Acoustone® Ceiling Panels

**Deep-cut facets cast fascinating shadows.**

Any way you look at it, a Prisms ceiling is unique. Each panel has gentle-sloping prism designs that play with lights and shadows. Particularly effective in accent-lighted stores and restaurants, its exclusive design adds to the ambiance without overpowering the decor. Prisms comes in 2x2-foot mineral fiber panels. Fire-resistant. Acoustically rated. Installs in standard or narrow grids. For the newest in affordable designer ceilings, see our representative or write to **USG Interiors, Inc.**, 101 S. Wacker Dr., Chicago, IL 60606-4385. Dept. AR288.

© 1987 USG Interiors, Inc. A Subsidiary of USG Corporation. See 91/USg in Sweet's catalog.

**USG**

Interior  
Systems

Circle 104 on inquiry card