

ATRIUM, HYATT REGENCY HOTEL, HOUSTON

HAMILTON PLACE THEATER: SOLVING THE MULTI-PURPOSE PROBLEMS

FIVE CURRENT PROJECTS FROM THE OFFICE OF HUGH JACOBSEN

BUILDING TYPES STUDY: CONVENTION HOTELS

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

MAY 1974

5

A MCGRAW-HILL PUBLICATION THREE DOLLARS PER COPY

Letter to a reader

For people in publishing there is a special poignancy in the death of a respected magazine. I suppose it is because such a magazine has achieved personality. I expect that my own feeling about it is akin to a maritime man's when a fine ship, for all the loving care lavished upon it, and for all the dependable services it has performed in fair weather and foul, disappears beneath the waves or is sold and ignominiously broken up for scrap.

Thus, the fall of the magazine named *Architectural Forum* has saddened me no less than four times in the last ten years: first in 1964 when folded by Time, Inc., then in 1969 when abandoned by Urban America, again in 1972 when sold by Whitney Publications and now in 1974 with suspension of publication in March.

It is not the loss of a name that saddens me. What is a name but a label that can be soaked off and reapplied anywhere if in someone's opinion the goodwill warrants? What disturbs me is the breakup of the entire publishing team behind the name—the dashing of its ideas, intentions and hopes and the loss of another valuable viewpoint and professional service.

As a matter of fact, though the *Forum* insisted on its lineage in its promotion, there was not the slightest kinship between the old Time, Inc. *Forum* and the Billboard one—not a publisher, not an editor, not a salesman in common! And not even an editorial, circulation or marketing policy!

To illustrate: the original *Forum* stated that its editorial mission was "to bring together around the central art and science of architecture all the major influences which will build America in the years ahead." Reflecting this "building team" concept, subscriptions were solicited from such disparate groups as builders and contractors, financiers, realtors, school board members, hospital administrators, management personnel of all types of owning organizations, etc.

As the publisher, Joseph C. Hazen, Jr. wrote in his last issue, "magazine readership increased 10-fold to 64,000—a gain that unfortunately did not provide economic success." As circulation soared and editors sought to serve the limited common denominator interests of all kinds of building professionals as well as building amateurs, the support of architects and engineers waned—and so did the investments of advertisers.

Ten years later in 1974 *Architectural Forum* had a totally different editorial mission which it stated as follows: "to serve principally U.S. registered architects and in so doing to be both selective and critical, presenting buildings in the context of their environment and relate their materials, their structural concepts, their equipment, their designs to the architect's professional responsibility."

This is not the time or place for post mortems, but in my opinion the lack of economic success in this instance (only seven ad pages in March and six scheduled for April!) cannot be blamed on that editorial mission or the editorial product.

The *Forum* was a handsome magazine, professionally edited, highly respected and well read—with great integrity (it never postured, strutted or sought to gimmick its way to success). Two recent Jesse H. Neal Editorial Achievement Awards to its editor Bill Marlin and Two Certificates of Merit attest to the editorial quality of the *Forum* that is no more.

Our sympathy goes out to all the *Forum* team and especially to Bill Marlin and his fine staff and to Charles Whitney whose long illness tragically weakened his hold on the helm.

Best,
Blake Hughes, publisher

Calendar

MAY

9-10 Seminar on How the Architect and Engineer Can Profit as Builder-Developer, Atlanta. Sponsored by *Architectural Record*. Contact MCI, 505 Park Avenue, New York, New York 10022. Phone (212) 759-5830.

9-11 Energy standards and environmental controls on housing and land development seminar, Americana Hotel, New York City. Contact: BNA-HDR Seminar Secretary, 1231 25th Street, N.W., Washington, D.C. 20037.

10-11 Seminar on documenting architectural and environmental heritage, Americana Hotel, Bal Harbour, Florida. Contact Architecture Department, University of Miami, Coral Gables, Florida 33124.

13-14 Seminar on How the Architect and Engineer Can Profit as Builder-Developer, Los Angeles. Sponsored by *Architectural Record*. Contact MCI, 505 Park Avenue, New York, New York 10022. Phone (212) 759-5830.

17-23 Annual convention, National Architectural Secretaries Association, Washington, D.C. Contact Mrs. Terry L. Peck, AIA/ASA, 1735 New York Avenue, N.W., Washington, D.C. 20006.

19-23 AIA national convention, Sheraton Park Hotel, Washington, D.C. Contact The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006.

26-June 1 FIP/PCI Congress, New York Hilton and Waldorf-Astoria, New York City. Contact the Prestressed Concrete Institute, 20 North Wacker Drive, Chicago, Illinois 60606.

29-31 Workshop-seminar on industrialized building, University of Illinois at Urbana-Champaign. Contact Professor Samuel T. Lanford, 106 Architecture Building, Urbana, Illinois.

JUNE

5-7 Pacific Coast Builders Conference, Fairmont Hotel, San Francisco. Contact PCBC, Suite 1247, Russ Building, 235 Montgomery Street, San Francisco, California 94104.

6-7 Seminar on How to Market Professional Design Services, Chicago. Sponsored by *Architectural Record*. Contact Building Industry Development Services, Suite 104, 1301 20th Street, N. W., Washington, D.C. 20036.

14-15 Seminar on How the Architect and Engineer Can Profit as Builder-Developer, Houston. Sponsored by *Architectural Record*. Contact MCI, 505 Park Avenue, New York, New York 10022. Phone (212) 759-5830.

17-28 Study program in Management in the Construction Industry, Massachusetts Institute of Technology, Contact the Department of Civil Engineering, Room 1-382, MIT, Cambridge, Massachusetts 02139.

17-20 Conference of the American Society for Engineering Education, Rensselaer Polytechnic Institute, Troy, New York. Contact C. A. Eckert at the Society, Suite 400, One Dupont Circle, Washington, D.C. 20036.

17-21 Course in Energy: Resources, Conversion and Utilization, University of California at Berkeley. Contact Continuing Education in Engineering, University of California Extension, Berkeley California 94720.

19-21 NEOCON, contract furnishings market, The Merchandise Mart, Chicago, Illinois 60654.

24-25 International symposium on metrication, Shoreham and Sheraton Park Hotels, Washington, D.C. Contact ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103.

27-29 International Bicycle/Pedestrian Planning and Design Seminar, Hotel Metropole, London, England. Contact MAUDEP, Box 722, Church Street Station, New York, New York 10008.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER)

May 1974, Vol. 155 No. 5, Title® reg. in U.S. Patent Office copyright® 1974 by McGraw-Hill, Inc. All rights reserved. Copyright not claimed on front cover and editorial four-color separations. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science and Technology Index, Engineering Index, and The Architectural Index. Published monthly except May, August, and October when semi-monthly, by McGraw-Hill, Inc.

Quotations on reprints of articles available. Every possible effort will be made to return material submitted by 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, N.Y. 10020. Other Editorial Offices: 425 Battery Street, San Francisco, Cal. 94111; 1249 National Press Building, Washington, D.C. 20004.

PUBLICATION OFFICE: 1221 Avenue of the Americas, New York, New York 10020. Second class postage paid at New York, New York 10001 and at additional mailing offices.

OFFICERS OF MCGRAW-HILL PUBLICATIONS COMPANY: John R. Emery, president; J. Elton Tuohig, executive vice president-administration; David J. McGrath, group publisher-vice president; senior vice presidents: Ralph Blackburn, circulation; John B. Høglund, controller; David G. Jensen, manufacturing; Gordon L. Jones, marketing; Jerome D. Luntz, planning & development; Walter A. Stanbury, editorial.

CORPORATION OFFICERS: Shelton Fisher, president and chief executive officer; Wallace F. Traendly, group president—McGraw-Hill Publications Company and McGraw-Hill Information Systems Company; Robert N. Landes, senior vice president and secretary; Ralph S. Webb, treasurer.

SUBSCRIPTIONS: Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders. CHANGE OF ADDRESS or subscription service letters should be forwarded to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520. Provide old and new addresses, zip code or postal zone number. If possible, attach issue address label. Annual subscription prices: U.S., U.S. possessions and Canada: \$10.00 for architects, engineers and other individuals in the fields served, all others \$22.00. Other countries: \$25.00 to architects, engineers; others \$35.00. Single copies \$3.00. GUARANTEE: Publisher agrees to refund that part of subscription price applying to unfilled part of subscription if service is unsatisfactory.

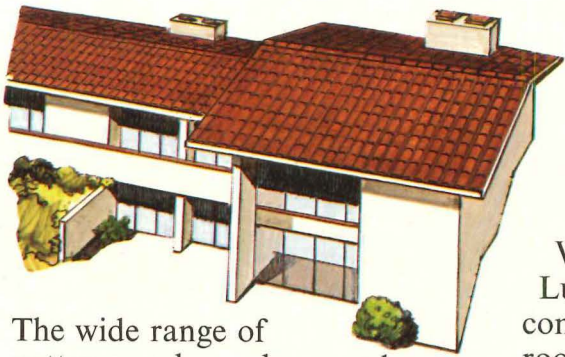
ASSOCIATED SERVICES / McGraw-Hill Information Systems Co.: Sweet's Catalog Files (Architectural, Light Construction, Interior Design, Industrial Construction, Plant Engineering, Canadian Construction), Dodge Building Cost Services, Dodge Reports and Bulletins, Dodge/SCAN Microfilm Systems, Dodge Management Control Service, Dodge Construction Statistics, Dodge regional construction newspapers (Chicago, Denver, Los Angeles, San Francisco).

THIS ISSUE is published in national and separate editions. Additional pages of separate edition numbered or allowed for as follows: Western Section 32-1 through 32-4. POSTMASTER: Please send form 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520.



Create bold, beautiful roofs to crown your finest buildings.

Ludowici roofing tile provides lasting splendor for any structure.



The wide range of patterns, colors, glazes and textures can accommodate any design or mood. From bold barrel patterns to subtle flat shingles, from weathered surfaces to smooth multi-shaded glazes, Ludowici tile fuels the imagination of the most creative designer . . . satisfies the most demanding owner.

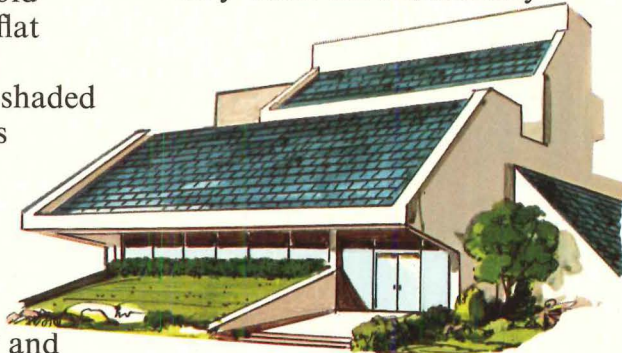
Ludowici tile resists the elements. Rain, snow and sun will not affect it. Time merely seasons the appearance,



allowing the hue and gently softening the texture.

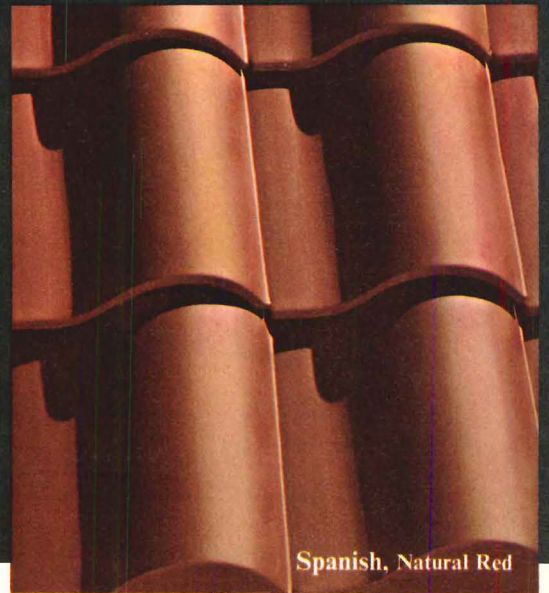
The fireproof characteristics of Ludowici tile are important in this age of increasing concern over life-safety. Little or no maintenance is required. Tile will not decay or disintegrate.

With all these advantages, Ludowici tile remains cost competitive to other quality roofing materials. Even the least expensive material is more costly when tile's durability

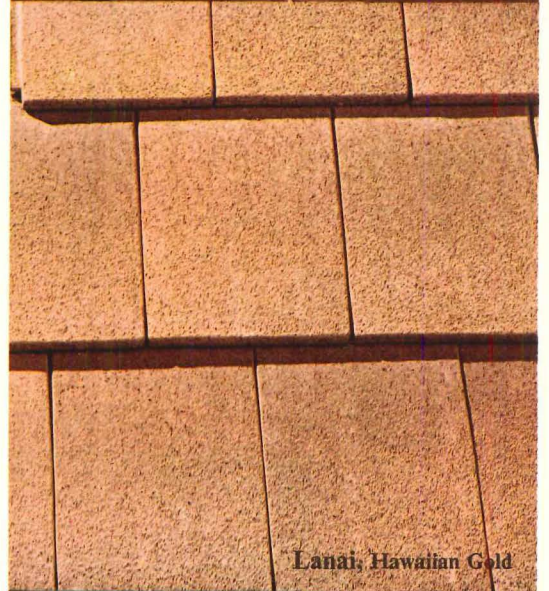


and economy are projected over the life of the structure.

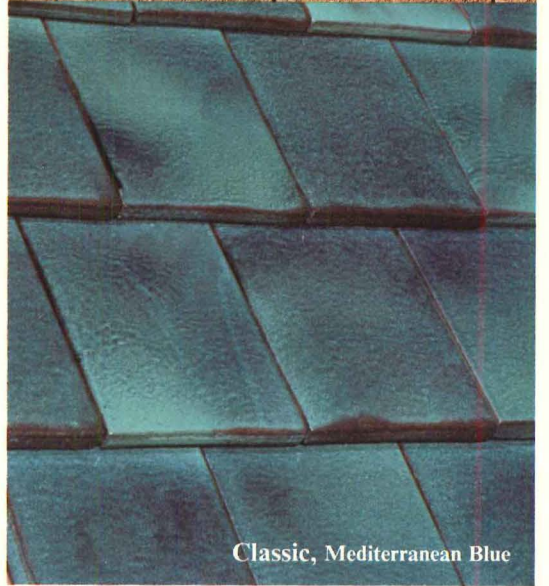
The timeless elegance of Ludowici roofing tile adds a lasting value to any residential, industrial, commercial or institutional building. For more information on this thoroughly practical material, locate your local distributor in the Yellow Pages, or use the coupon.



Spanish, Natural Red



Lanai, Hawaiian Gold



Classic, Mediterranean Blue



LUDOWICI-CELADON COMPANY

111 EAST WACKER DRIVE, CHICAGO, ILL. 60601 • Phone: (312) 329-0630

For more data, circle 6 on inquiry card

Ludowici-Celadon Co.
111 East Wacker Drive, Chicago, Ill. 60601
Gentlemen,
Please send me your full color literature.

Name _____

Firm _____

Address _____

City _____ County _____

State _____ Zip _____

SHADOWFORM[®] By KAWNEER

The award winning Sir Sanford Fleming College of Applied Arts and Technology has a striking exterior appearance that varies with viewing angle, season, and time of day. Kawneer's hardcolor finished facing, SHADOWFORM, helped create the desired effect. Located in Peterborough, Ontario, Canada, the school has won high honors for its architects and planners. R. J. Thom, Architects of Toronto.

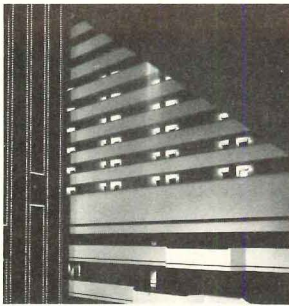
First Place Award: New Construction Category, Aluminum Building Products Design, sponsored by the Architectural Aluminum Manufacturers Association.

KAWNEER ARCHITECTURAL PRODUCTS
1105 N. Front Street, Dept. C, Niles, Mich. 49120

For more data, circle 9 on inquiry card







Cover. Atrium, Hyatt Regency Hotel
Houston, Texas
Architects: JVIII
Photographer: Julius Shulman

EDITOR

WALTER F. WAGNER, JR., AIA

MANAGING EDITOR

HERBERT L. SMITH, JR., AIA

SENIOR EDITORS

ROBERT E. FISCHER
WILLIAM B. FOXHALL
MILDRED F. SCHMERTZ, AIA
ELISABETH KENDALL THOMPSON, FAIA

WASHINGTON EDITOR

ERNEST MICKEL, Hon. AIA

ASSOCIATE EDITORS

GERALD ALLEN
BARCLAY F. GORDON
CHARLES E. HAMLIN

ASSISTANT EDITORS

CHARLES K. HOYT, AIA
ANNETTE K. NETBURN

EDITORIAL ASSISTANT

JANET NAIRN

DESIGN

ALEX H. STILLANO, Director
ALBERTO BUCCHIANERI, Associate
ANNA-MARIA EGGER, Assistant
MURIEL CUTTRELL, Illustration
J. DYCK FLEDDERUS, Illustration
JAN WHITE, Consultant

EDITORIAL CONSULTANTS

EDWARD LARRABEE BARNES, FAIA
JONATHAN BARNETT, AIA, Urban design
GEORGE A. CHRISTIE, JR., Economics
PAUL RUDOLPH, FAIA

Foreign architecture:
L'Architecture d'Aujourd'hui, Paris

McGRAW-HILL WORLD NEWS

RALPH R. SCHULZ, Director
10 domestic and 8
international news bureaus:
Bonn, Brussels, Buenos Aires,
London, Milan, Moscow, Paris,
Tokyo.

SALES MANAGER

LOUIS F. KUTSCHER

CIRCULATION MANAGER

HUGH S. DONLAN

PUBLISHER

BLAKE HUGHES

THE RECORD REPORTS

13 Editorial

Energy conservation standards:
too much, too fast?

4 Letters/Calendar

33 News in brief

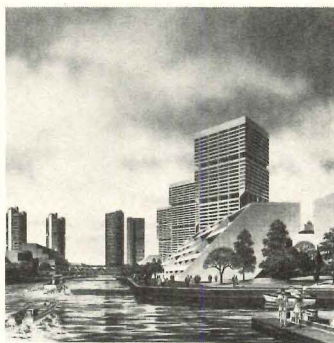
Short items of major
national interest.

34 News reports

Grand Ole Opry has a new home.
Los Angeles City Hall saved
from wrecker. Contractors seek
an end to retainage. Frank Lloyd
Wright Week announced in Los Angeles.
GSA energy guidelines are
available. AIA elects 73 Fellows
of the Institute. Florence, Italy
rejects international airport.

39 Buildings in the news

AIA Honor Awards. Children's
mental health center, Washington, D.C.
Burlington Square, Burlington,
Vermont. Recreation center, Baltimore,
Maryland. Augustus Long library/health
sciences center, New York City.
Hospitality center, Tolland,
Connecticut. Talega Development,
Puerto Rico (below).



43 Human Settlements: World News

44 Required reading

ARCHITECTURAL BUSINESS

**65 Job satisfaction: key to reduced
A/E employee turnover**

Getting down to fundamentals in both
organizational method and psychological
background, this rather scholarly review
by H. Maynard Blumer, coordinator of
quality control for Guirey, Srnka, Arnold
& Sprinkle, summarizes pertinent matter
from scientific and practice literature to
come up with his own practical
suggestions for increasing job satisfaction
and reducing turnover in architectural and
engineering firms of all sizes.

69 Construction management

Project purchasing strategy is seen by
Charles B. Thomsen, president of CM
Associates, not only as a tool for building
cost control but also as an on-course
guidance system for keeping the
design-bid-construct process as a whole
strictly on targets of quality, cost and time.

71 Building costs

This spring a supplement to the Dodge
Digest of Building Costs and
Specifications adds case histories of costs
on 17 selected building projects
previously reported during construction.

73 Building activity

Signs of the times imply that construction
labor in 1974 may be reaching the end of
a relatively peaceful era, according to
economist Jim Carlson.



FEATURES

111 Hamilton Place: a multi-purpose theater that succeeds

Hamilton, Ontario's new performing arts center, by Trevor P. Garwood-Jones, provides facilities for three performances, numerous meetings and one full-scale rehearsal to occur at the same time—all centering on a big multi-purpose theater that achieves surprisingly good acoustics by surprisingly simple means.

117 Five current projects from the office of Hugh Jacobsen

Housing for the Pennsylvania Avenue Development Corporation in Washington; resort development for Half Moon Bay, Antigua, West Indies; three collegiate buildings, two in Greece and one in Egypt.

123 Back to the box

Houses conceived as works of sculpture cost more as a rule than do those contained within a rectangle and often require specially designed cabinet work in order to function efficiently. Boxes can cost a lot less to construct and furnish, but they require meticulous design of the kind which architect Robert L. Rotner has lavished upon four low-cost houses in the Hamptons.

133 Suburban office buildings

Two striking and imaginative designs that, while projecting strong images, remain considerate of their locales: North Carolina Blue Cross and Blue Shield Headquarters in Durham, by Odell Associates, Inc.; and Heublin Corporate Headquarters, Farmington, Connecticut, by Russell Gibson von Dohlen Inc.

141 Pedagogical analogy:

Learning the principles of architectural design through product design.

BUILDING TYPES STUDY 460

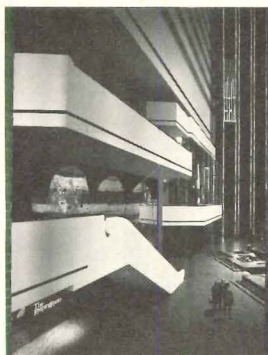
145 The convention hotel: an American hybrid in hotel design

Currently ranging from 200 to 2000 rooms, the American convention hotel is seen by many expert in its design as the most prevalent type of hostelry in the coming years. Usually the nucleus for downtown renewal, the convention hotel has to be all things to all people, all the time. How it can be designed to meet this goal functionally and esthetically is the subject of this article.

146 The economics that affect hotel design and operation
by William B. Tabler

148 The planning process
by Alan H. Lapidus
It is the same for most hotels, regardless of size.

152 Hyatt Regency, Houston
The nucleus of a booming convention business. Joint venture architects: Koetter Tharp & Cowell; Caudill Rowlett Scott; and Neuhaus + Taylor.



Julius Shulman

ARCHITECTURAL ENGINEERING

161 Steel space trusses are prefabbed to cut construction costs

Engineers Hirsch & Gray designed three-dimensional trusses for shop fabrication and field assembly with only bolted connections—which cut costs and construction time, and minimized construction errors. A variety of configurations are shown from case examples in this two-part article.

169 Product Reports

171 Office Literature

242 A/E Update

251 Advertising Index

252 Classified Advertising

253 Reader Service Inquiry Card

NEXT MONTH IN RECORD

Building Types Study: public administration buildings

A collection of public buildings that are not only distinguished in themselves but also illustrate a variety of processes for achieving good design in the public sector.

New life for old barns

One of the best ways to live in the country, on weekends and vacations or all-year round, is to inhabit a remodeled barn. Architect Stanley Tigerman has a way with old barns. For the Vollen and Frog Hollow barns, Tigerman started with the foundations and the timber frame of each and added complex interior levels, stairs and new exterior skins. Each of the barns has become a unique family house, difficult to equal without a fine old barn as skeleton.

Nord stock wood columns.

Classic design, custom quality, commodity prices.

Nord combines fine wood, classic design, old-world craftsmanship, and modern production techniques. The result: Quality wood columns that are reasonably priced, rapidly shipped.

8 to 20 feet. Plain or fluted.

Nord uses only select Western hemlock and Douglas fir, specially seasoned in Nord's own kilns. Columns are individually turned on specially built lathes, then sanded smooth, carefully inspected, and wrapped in polyethylene to protect against moisture and dirt. They come in eight stock heights, 8 to 20 feet. Eight stock diameters, 6 to 20 inches. Plain or optionally fluted.

Classic proportions.

Nord's design is classic. Lines are clean and simple. And Nord builds entasis into every column shaft. Entasis, the mark of a fine column, is the slight curving of the column shaft. It keeps the lines graceful and in proportion.

Lower prices, faster shipment.

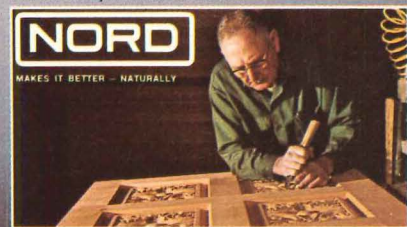
Nord uses the same traditional processes associated with fine custom work. But because Nord produces only standard styles and sizes, prices are much lower than you'd normally pay for custom columns.

And because Nord columns are manufactured to inventory, you can count on rapid shipment to all parts of the country.

Nord.

Nord is the largest manufacturer of stile and rail doors in the world. It's a family-owned company with a solid reputation for quality architectural products, in quantity, on time.

For more information on Nord stock wood columns, and the name of the distributor nearest you, write "columns" on your letterhead and mail it to E. A. Nord Company, Everett, WA 98206.



For more data, circle 10 on inquiry card



Energy conservation standards: too much, too fast?

Let me say one thing right away, before I make a whole collection of people mad:

There ain't no one around here but us old believers in conserving energy. Back in October 1971—two and a half years ago, long before energy conservation had become a household word, long before anyone dreamed we'd have lines at gas stations much less today's shortage-induced and mind-boggling fuel prices—RECORD held a Round Table on "Energy Conservation through Higher Quality Building." Way back then, long before anyone was considering the problem very seriously, we wrote (in the summary to the Round Table report, RECORD, January 1972):

"It is clear that there is much that architects and engineers can do to conserve energy in buildings. The need is not for new technology. . . . We know how to cut heat loss and solar load; and manufacturers—with a little turn-around time—could at modest extra cost produce equipment that uses appreciably less power.

"But as clear as it is that much can be done by architects and engineers—and by manufacturers—to conserve great amounts of energy, it is also apparent that they cannot accomplish much until their clients acknowledge the seriousness of the problem and become willing to explore the over-all economics of building—operating costs as well as first costs—more comprehensively than they are accustomed to. For the present economic, financing and taxation framework that we now work within clearly favors lower first cost in building: and that exacts a high price in operating costs over the life of the building. Much of that high price is in unnecessary power use; indeed unconscionable power waste.

"To be realistic in a realistic world: Nothing is going to happen without incentives. . . ."

Well, that was two and a half years ago.

Today, the incentives to conserve energy are upon us—and they're starting to hurt

The simplest and purest form of that incentive has been visited upon the automakers—people stopped buying behemoths overnight, and we now see on television the spectacle of earnest announcers describing as "our gas-saving economy model, two inches shorter than The Big," the same car that last year was hailed as "the longest and lowest and most powerful in the mid-price range."

Well, the building industry is a little more sophisticated, a little less emotional, and generally more sensible than that, but as standards for energy conservation in buildings emerge they're beginning to alarm architects and engineers, and building-materials manufacturers alike. Which means that—over a cause in which *everyone* believes, energy conservation—we're building up adversary positions. And that's bad news. That delays what everyone knows has to happen—a commitment to stop *wasting* energy. And the adversaries—the Federal government on one side, and the professions and the big manufacturers on the other side—are the wrong adversaries. For they both believe in energy conservation.

The standards are coming from the Federal government, and sound like they'll be tough

. . . and the concern of most architects, engineers, and manufacturers who have been involved with the standards development under work is that—under pressure to "do something"—the standards are being developed too quickly, with inadequate industry consultation, and are gaining somehow "force of law" even though they are preliminary.

For example, as most everyone knows by now, the National Bureau of Standards prepared a draft proposal for specific technical guidelines on energy conservation measures at the request of the National Council of States on Building Codes and Standards.

Though this was merely a draft proposal, when it was sent to several hundred interested parties (including AIA, engineering groups, and involved corporations) for comment, the proposals stirred up a hornet's nest of criticism and concern—mostly on the ground that the guidelines were in the nature of "prescriptive regulations" and that the necessary testing to meet the regulations would be most difficult if not impossible. The criticism was perhaps unfair—the material submitted for comment was clearly labeled "draft proposal"—but the reaction focused attention on three things: the industry's concern that the proposals were not realistic; that prescriptive rather than performance codes become the law; and that state governments—like the Feds under great pressure to do something—would adopt the proposal before all the criticism is in and argued over.

More recently, the General Services Administration has sent up, in trial balloon form,

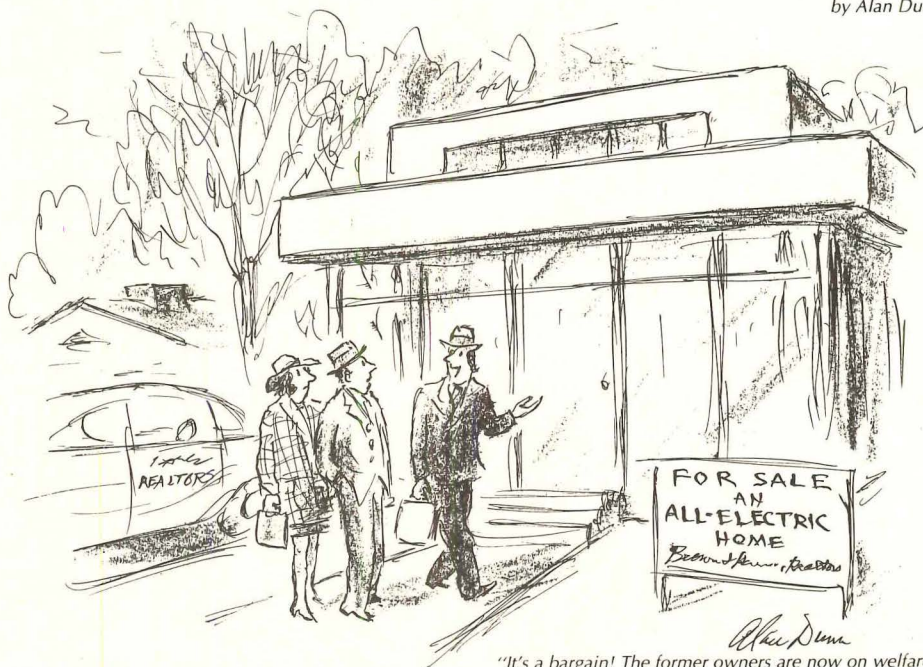
"Energy Conservation Design Guidelines." These guidelines, developed jointly by GSA with Dubin-Mindell-Bloome Associates (the engineers are developing the prototypical energy-saving building in Manchester, New Hampshire), the AIA Research Corporation headed by John Eberhard, and architects Heery and Heery. These guidelines point clearly to a performance-type standard—and hooray for that! For surely, in this difficult business of making substantial cuts in energy use in building, architects and engineers must be given options and trade-offs in the way they accomplish the goal. Again—and this is important—the GSA Guidelines are in preliminary form. But again, a controversy has built up over the standard suggested. The GSA document now in circulation gives detailed suggestions and checklists of, to quote, "various methods that can be utilized by architects, engineers, and GSA to reduce energy consumption for new buildings by an order of 20 to 40 per cent over current practice." It points out, as mentioned above, that the methods "are purposely constructed in a combination of guidelines and performance terms in order to permit architects and engineers the greatest latitude of design, and to encourage innovation in design responsive to energy conserving principles." So far fine—no one can or is arguing. But the storm brews over the GSA conclusion that "it is important that conservation goals be firmly established even though subject to change as new information is developed (and) therefore these guidelines are based on methods which, if utilized, will make it possible to meet an energy goal of 55,000 Btu/gross square foot/year of energy input at the building boundary regardless of location within the country."

55,000 and fight? The question is can we substantiate that figure, meet it, measure it?

The 55,000 number was established, GSA reports, by AIA Research Corporation and Dubin-Mindell-Bloome Associates based primarily on extensive studies preceding the design of the Manchester project. And this criteria was set for Federal office buildings only. But . . .

A lot of responsible architects, engineers, and manufacturers—recognizing that this criteria is still in proposal, but afraid it will be cast in bronze prematurely—are asking:

- Is 55,000 Btu/gsf/year really reasonable? If the goal is a 20 to 40 per cent reduction, the 55,000 figure appears to assume that current "wasteful" practice achieves an energy consumption level of 70,000 to 90,000—and this seems to many responsible people an awfully low estimate of current practice.
- What happens for other building types? Might a GSA standard for office buildings become somehow a broad industry standard—something like the reverse of the way Federal Minimum Property Standards became maximums for a great deal of housing construction?
- How do you measure a building's performance—how do you meter it? And what do you do if a building, despite the best efforts of all concerned, fails to measure up?
- And even if the standard is fair and reasonable, is it fair and reasonable to enforce it under



"It's a bargain! The former owners are now on welfare."

what is acknowledged by all to be a "hurry up procedure"?

The glass manufacturers, for example, are deeply concerned by what they feel, with justification, is an "unquestionably negative" view on glass. The guidelines, without suggesting a specific reduction, do pretty clearly point to reduction of window area as the most desirable of window treatments to reduce energy consumption, and without much emphasis on the fact that glass is far from a single product. The glass industry argues accurately that glass can be a commodity product with a commodity performance at a commodity price—or it can be a high-quality, high-performance product at a higher price; a product that can meet stringent standards under the "life-cycle" rules that the GSA has so wisely adopted (and which private developers need to adopt as soon as possible). Criticism directed at the glass industry for the "wastefulness" of glass boxes is surely unfair to the industry—for what it was asked to do by architects and clients (including the Federal government) for a long time was to manufacture a product to "skin" a building as inexpensively as possible; and they did it with great success. If what architects and clients (including the Federal government) now wants is an energy-conserving product, that same glass industry, under the new rules, can supply that product, though of course not at the same price. There are also considerations, for those who see an easy way out by "cutting down on all that glass," of how people feel.

Windows are not just for looking out of—they represent an important human relationship to the outdoors—even if the outdoors is just the building across the street. People just don't like not being able "to see out." And that feeling, carried to an extreme in the name of energy conservation, could well result in strong employee dissatisfaction and slower rentals of income-producing buildings.

Finally, on glass, there are considerations of natural light vs. artificial (energy-consuming) light which are surely important, if not yet well codified.

In short, it seems important not to condemn or damage an industry for doing what everybody has been asking it to do, especially when it can, and happily will, switch to the new ballgame given a fair chance.

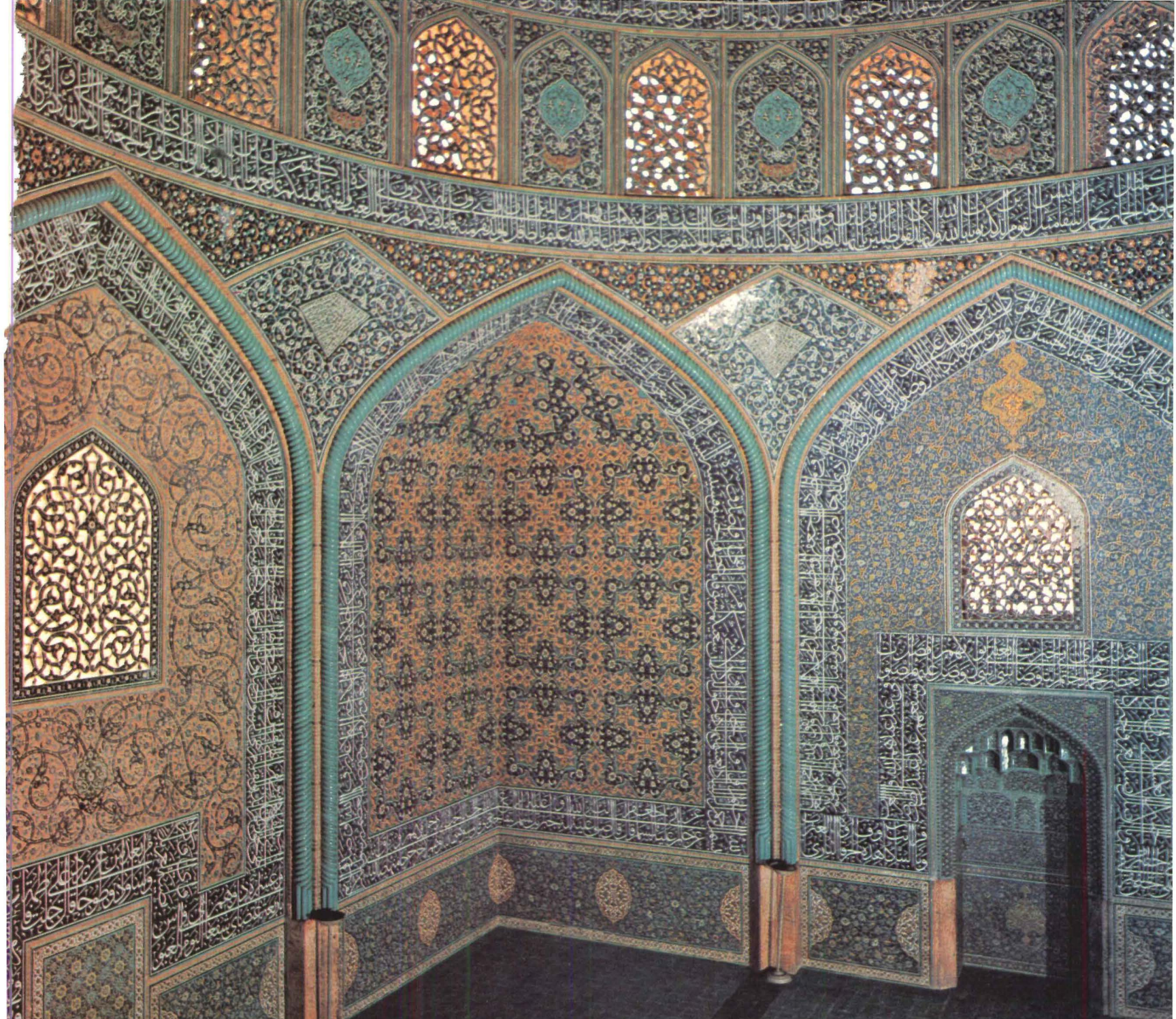
It's just as Stanley Gilman (then ASHRAE president) said at that Round Table two and a half years ago: "The trend has been to emphasize low initial cost . . . and ignore operating costs. The manufacturer has had no choice but to follow this trend if he expected to stay in business . . . Manufacturers have millions of dollars of tooling and production equipment invested (in producing for lowest first cost) that cannot be done away with overnight. Industry momentum has been in the direction of lowest initial cost and not toward energy conservation. It will take a considerable educational effort, and considerable time, to turn this around."

And it seems to me that architects, engineers, manufacturers and clients—long under real pressure to do one thing—now need time to do something else, even when that something else is energy conservation. I think no one can argue that we must stop the waste, but I think that we must take the time—though with all deliberate haste—to do the job right.

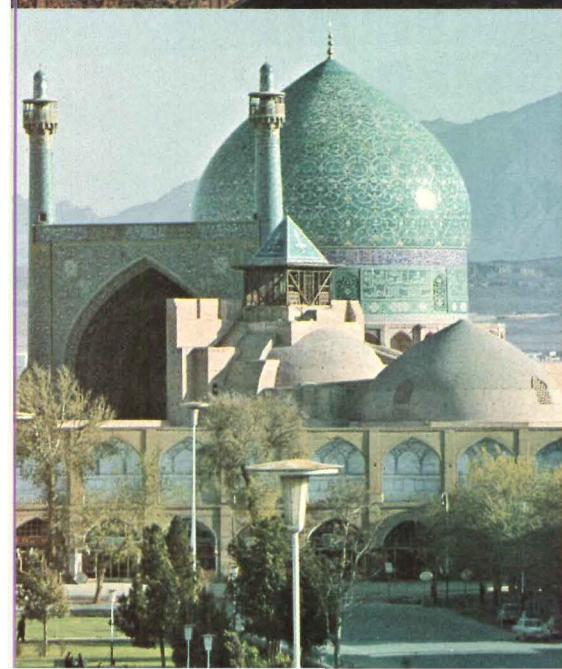
—Walter F. Wagner Jr.

NEOCON 6 opens June 19 at Chicago's Merchandise Mart

The sixth annual conference on contract interiors will be held at Chicago's Merchandise Mart June 19-21, 1974. As in past years, interior designers, architects, and other design professionals will get together to exchange information and views on challenging subjects of important mutual concern. The three-day program includes 20 sessions, some of them concurrent, and numerous prominent speakers. Stuart Udall, former Secretary of the Interior, will speak at the final session on "Energy Gluttons: Glass & Steel Dinosaurs." For information, call 800-621-3902.



Ceramic tile, the decoration you build with.



The Mosque of Sheik Luftullah, Isfahan, Iran. 1601-1618. By Muhammad Rida ibn Ustad for Shah 'Abbas I.

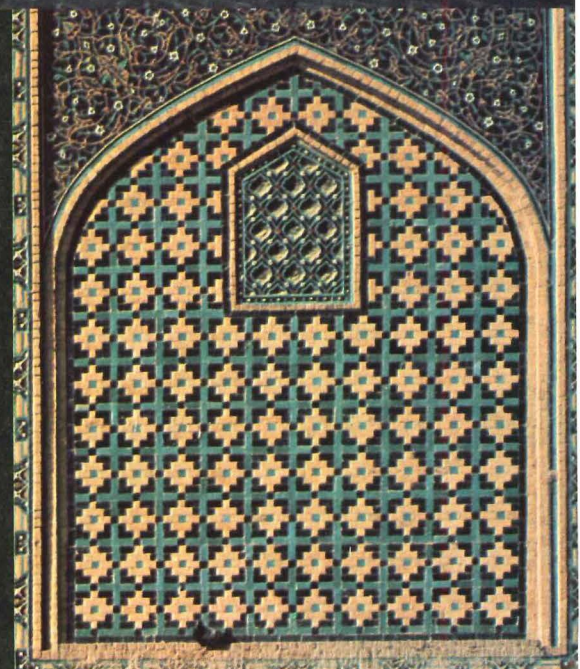
Inspired architects have been using ceramic tile to unify the decorative and structural aspects of their concepts for more than 5,000 years.

And today's technologies make lavish use of ceramic more feasible, in terms of cost, than ever before.

For a free copy of the Tile Council Handbook, spec sheets, and a full-color brochure of innovative residential tile installations, write to P.O. Box 2222, Room 471, Princeton, New Jersey 08540.

Tile Council of America, Inc.

Photographs courtesy of H.C. Seherr-Thoss, *Design and Color in Islamic Architecture*. For more data, circle 11 on inquiry card



Fresh designs, aesthetic styling and enormous selection make the Krueger line an acclaimed seller. It offers creativity to the interior designer, new features for the specifier.

What you see is merely illustrative of the total Krueger offering in chairs, modular seating, stools and tables. Contact us for literature.

What you see . . .

1,2. AFKA Office Seating: Pedestal, jury or tubular bases; vinyl or fabric cushioned upholstery. CIRCLE 15

3. AFKA Modular Seating: 2 to 5-places or larger. Removable vinyl or fabric cushions; table units. CIRCLE 16

4,5. Modular Seating: 2 to 5-places or larger; fiberglass or poly shells; some upholstered. 4 base styles. CIRCLE 17

6. Poly Stack Chairs: Sled base model stacks 40 high to clear 80" doorway. Stacking side, arm and tablet arm models. CIRCLE 18

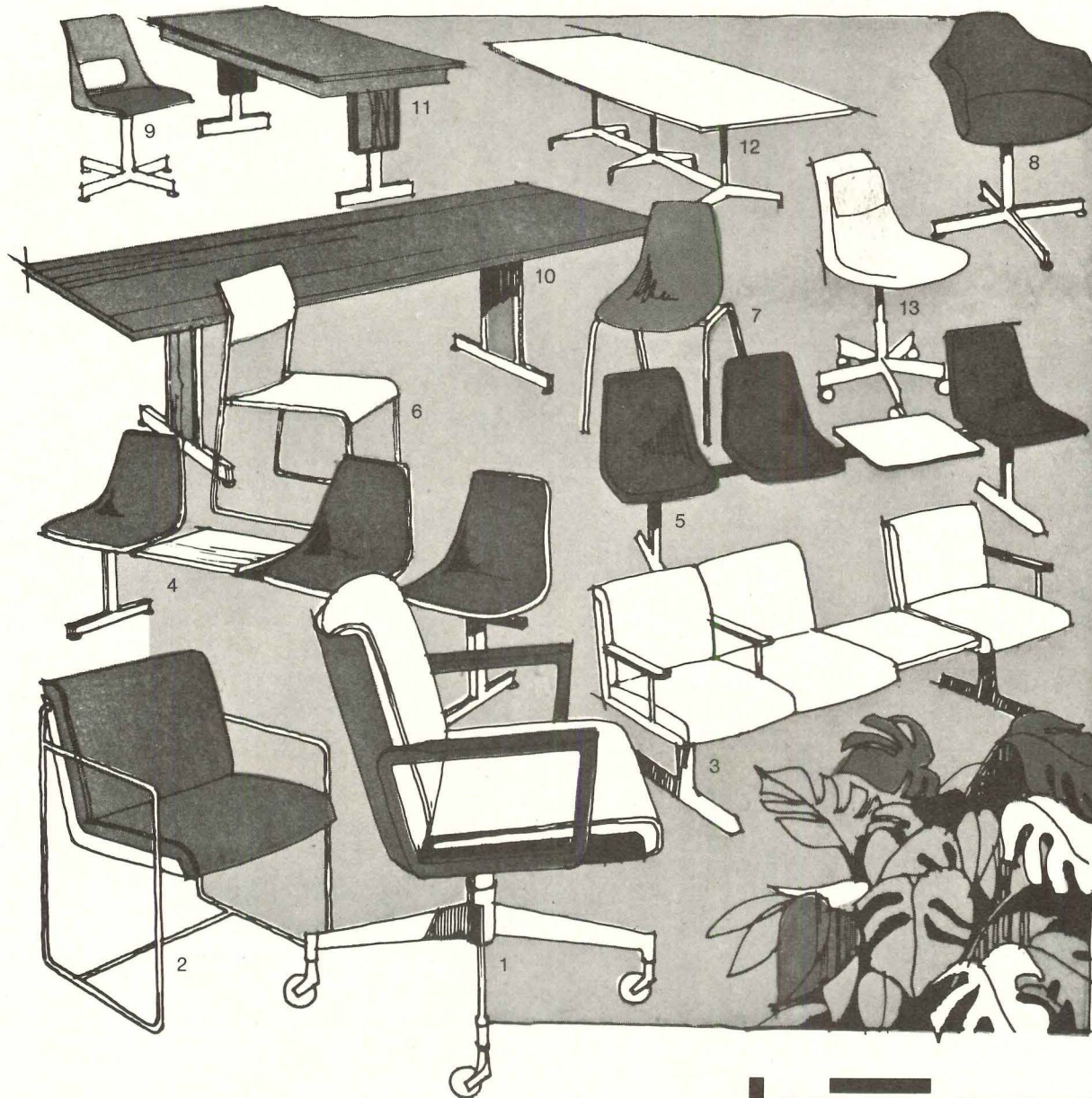
7,8,9. Fiberglass Seating: Arm, side, pedestal base chairs; tablet arm models. CIRCLE 19

10,11. Conference, Auxiliary Tables: Folding, adjustable height, pedestal base models; variety of sizes, shapes, surfaces. CIRCLE 20

12. Centro Tables: Unique pedestal base system for auxiliary and conference tables, desks and credenzas. Standard models and custom components. CIRCLE 21

13. ARIES Stool: Pneumatically adjustable; glides or casters. Variety of shell designs including upholstered. CIRCLE 22

A FULL LINE OF CONTRACT FURNITURE



Showrooms: New York 212-697-9565 • Boston 617-893-2752
Philadelphia 215-666-9696 • Indianapolis 317-545-5246 • Chicago 312-467-6850
Dallas 214-823-4183 • Houston 713-222-1408 • Denver 303-534-6060
Los Angeles 213-272-0301 • London, Ont. 519-433-4041

krueger
GREEN BAY, WIS 54306
414/437-3245

For more data, circle 15-22 on Inquiry Card



The last word in environmental ceilings

Striking good looks, excellent performance, superb engineering, and quality craftsmanship are all brought together in the new "Project EC" environmental ceiling system — a simple, easily-installed four-component system that advances the concept to its ultimate refinement.

The 5-by-5 modules with perforated metal coffers are available with a wide range of options to allow unprecedented design flexibility.

The whole story is told in GUTH LIGHTING's "Project EC" Catalog. Write or call for a copy — it's good reading.

GUTH LIGHTING

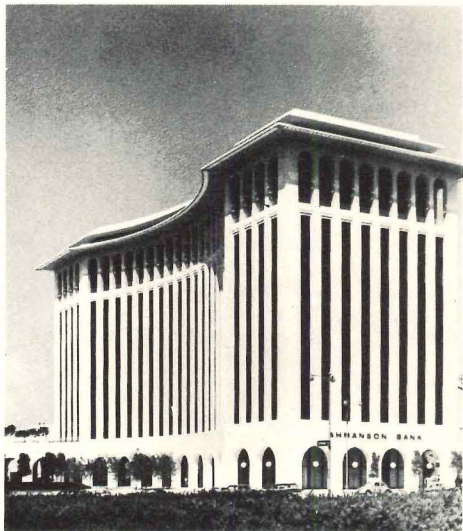


P. O. BOX 7078 • ST. LOUIS, MO. 63177 • (314) 533-3200

SOLA BASIC DIVISIONS: ANCHOR ELECTRIC • BISHOP ELECTRIC • DIELECTRIC COMMUNICATIONS • DOWZER ELECTRIC • GUTH LIGHTING
HEVI-DUTY ELECTRIC • LINDBERG • NELSON ELECTRIC • SIERRA ELECTRIC • SOLA ELECTRIC • TEMPRESS • WARREN G-V COMMUNICATIONS

For more data, circle 12 on inquiry card

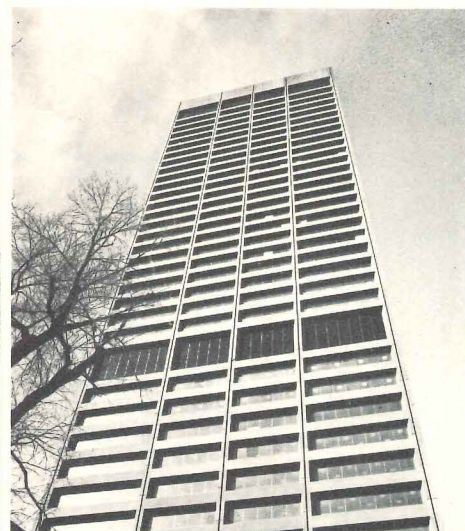
Three blind concepts. See how they work.



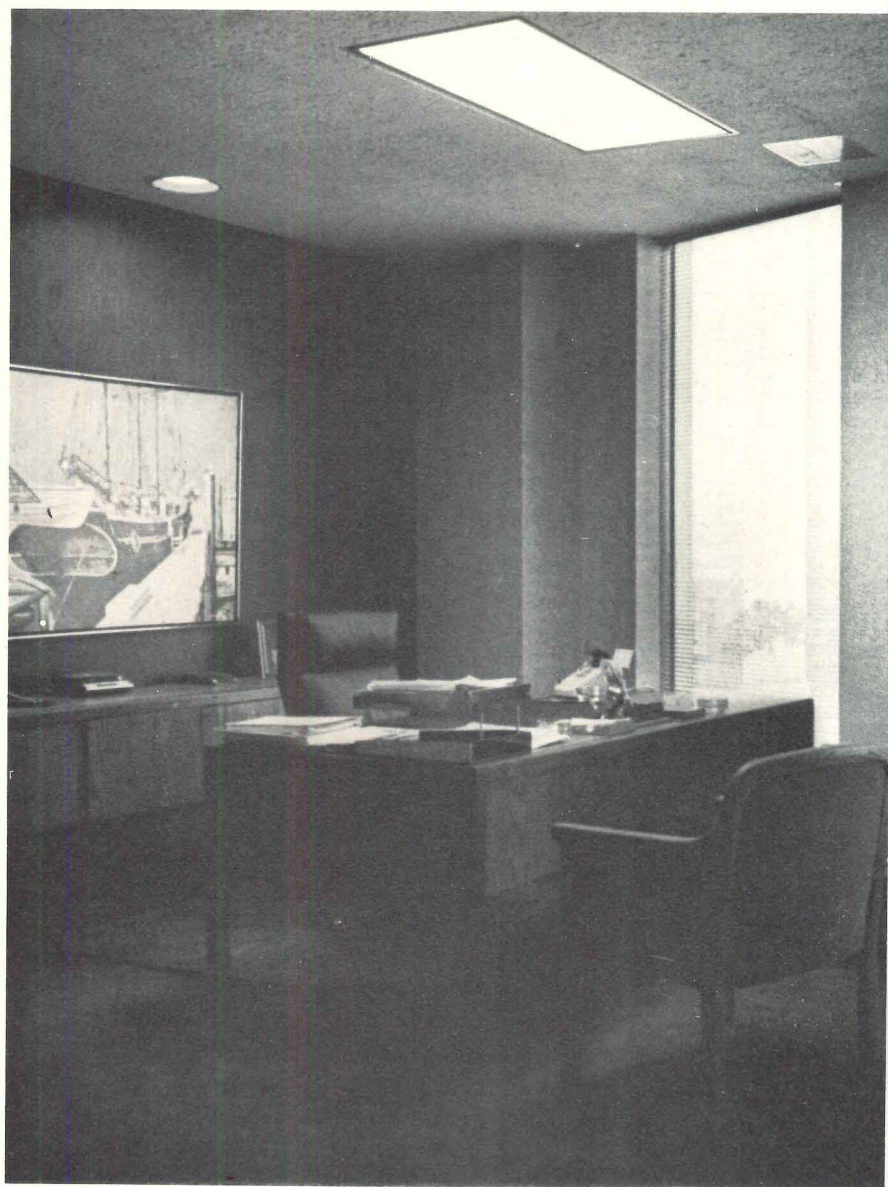
AHMANSON CENTER, LOS ANGELES.
ARCHITECT: EDWARD DURRELL STONE.



111 EAST WACKER DRIVE, CHICAGO.
ARCHITECT: MIES VAN DER ROHE.



ONE BEACON STREET, BOSTON.
ARCHITECT: SKIDMORE OWINGS & MERRILL.



Boston. Chicago. Los Angeles. All across the country architects are discovering the hardest-working window covering (and the most beautiful): blinds. Levolor Riviera blinds.

Rivieras are the narrow-slatted, tapeless blinds that come in 90 great colors. Including the popular metallics, among other colors, that take a big load off an air-conditioning system, even when tinted glass is used.

Levolor Riviera blinds control light better than any other window covering (only a blind is continuously variable from complete privacy to an open view).

And Rivieras have a feature called, "Top-Lok," that preserves the integrity of your facade by fixing blinds at a specific level.

When you add all these features to the fact that Levolor operating hardware is guaranteed for life, you see that these three blind concepts work very well, indeed.

Levolor Riviera Blinds

Unsuccessfully imitated the world over.™

OAKLAND, CALIFORNIA 94607 • 1216 24th Street

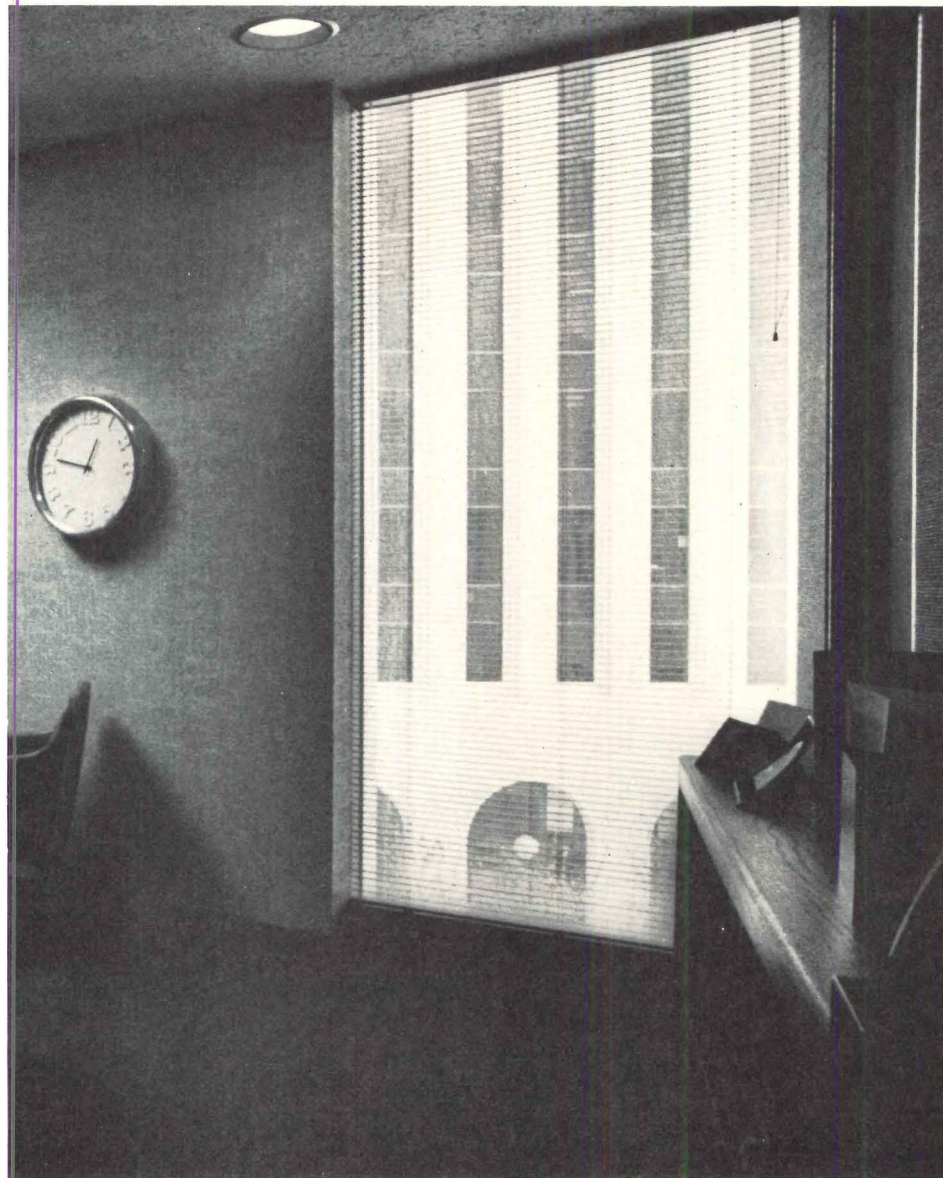
GARDEN GROVE, CALIFORNIA 92645 • 12052 Industry Street

LOS ANGELES, CALIFORNIA 90048 • 323 So. Robertson Blvd.

DALLAS, TEXAS 75235 • 5610 Maple Ave.

Levolor Lorentzen, Inc., 720 Monroe Street, Hoboken, New Jersey 07030

For more data, circle 13 on inquiry card

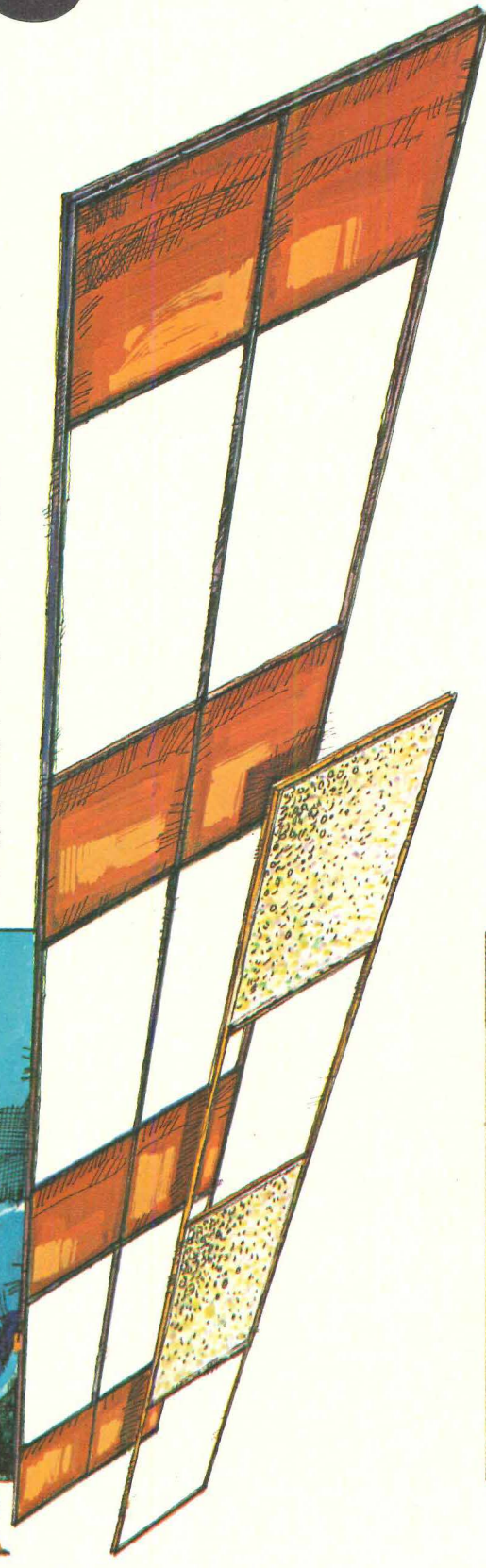
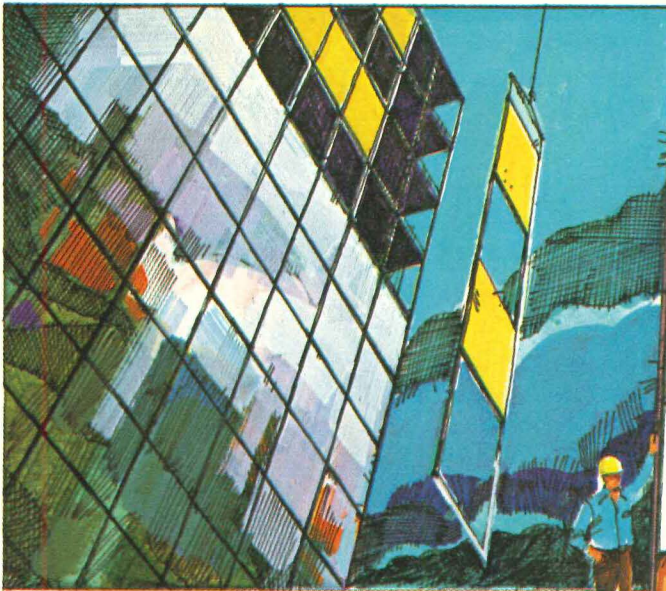


We've got ideas.

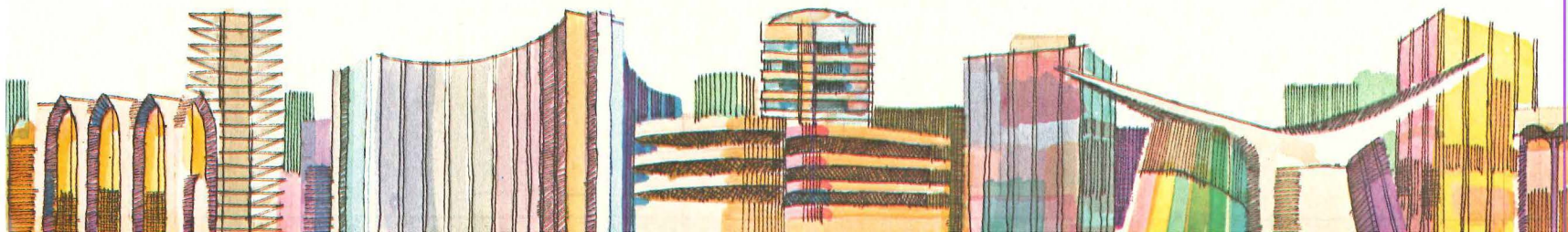
Curtain walls that cut costs.

Inryco®/Fenmark® steel grid walls, in modules up to 8' x 40'. Choice of infill panel materials and colors. Factory assembly cuts on-site time. The strength of steel carries large areas of heaviest glass, resists wind loads, and still makes possible narrow sight lines. Weathertight in all climates.

For more data, circle 14 on inquiry card



Ideas from Inryco help you design

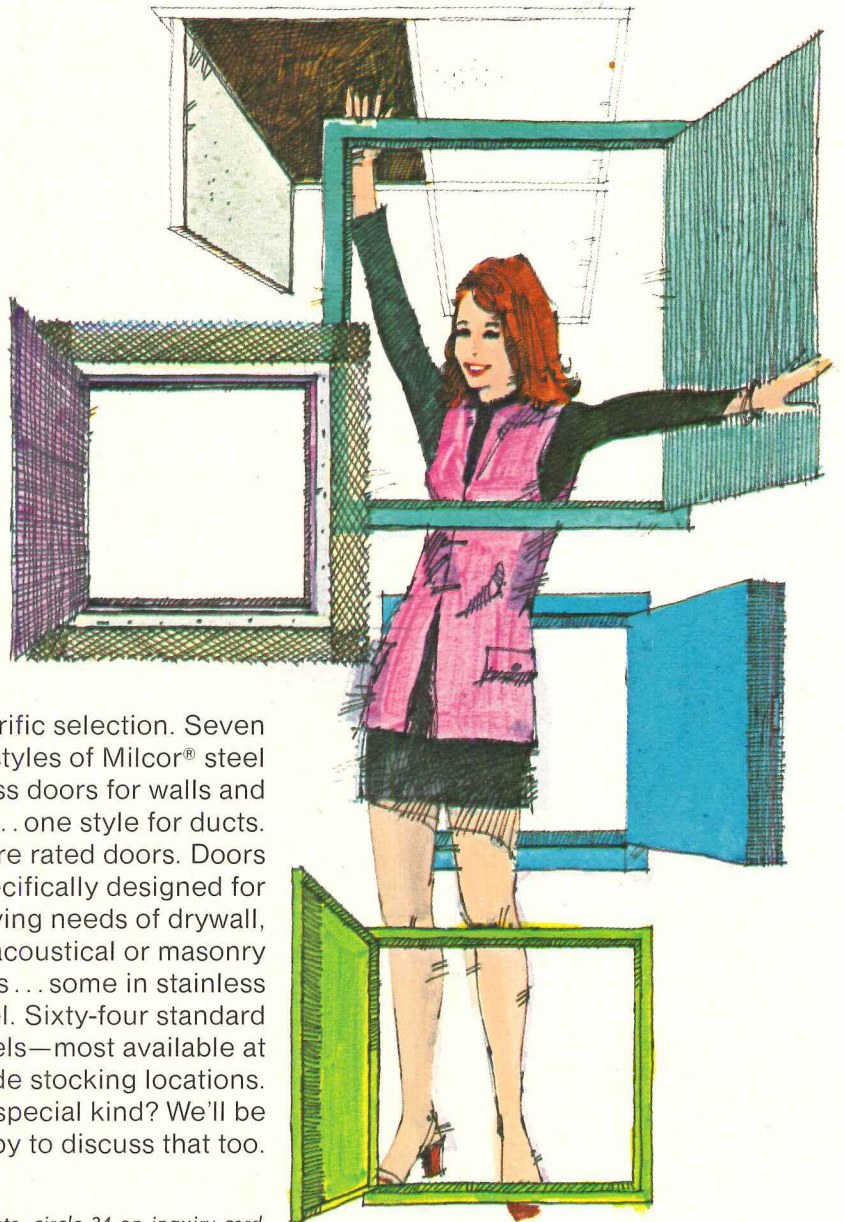


Framing that follows your fancy.

Design freedom is the watchword when you frame walls with Milcor® steel studs. They adapt to any contour ... simplify execution of intricate shapes ... meet load bearing or non-bearing conditions, exterior or interior ... accept almost any desired facing material. Can be shop assembled to reduce on-site labor. Light weight cuts footings, foundation and structural requirements.

For more data, circle 23 on inquiry card

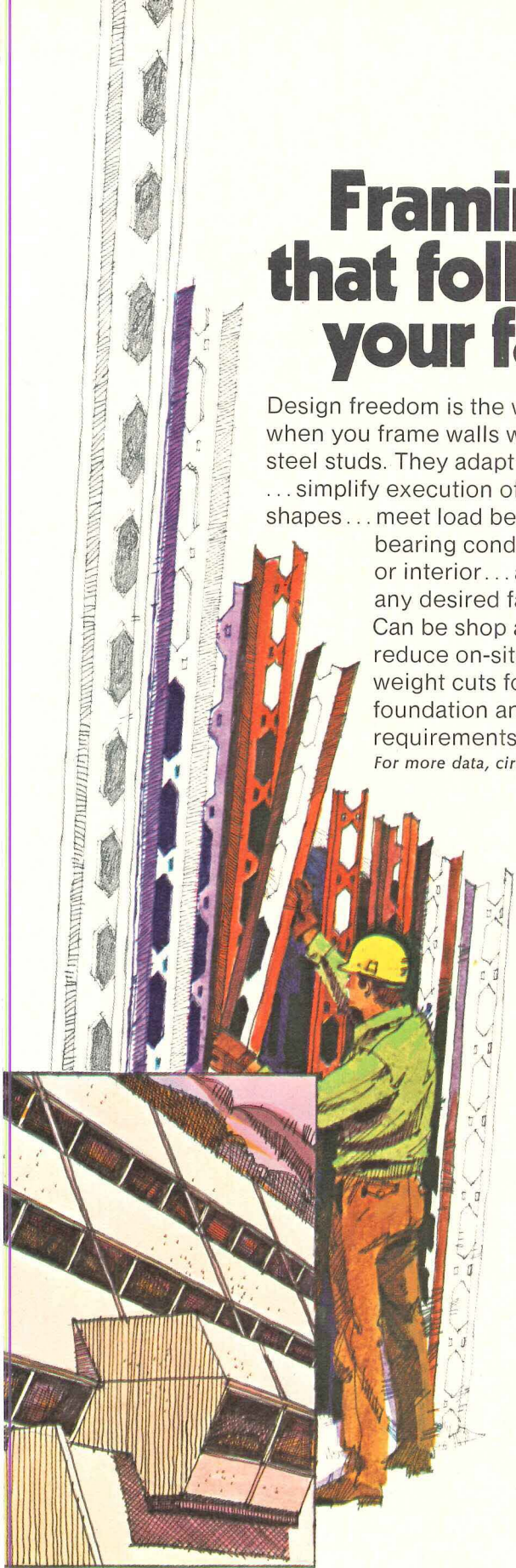
Doors for everything but doorways.



A terrific selection. Seven basic styles of Milcor® steel access doors for walls and ceilings ... one style for ducts.


Fire rated doors. Doors specifically designed for the varying needs of drywall, plaster, acoustical or masonry surfaces ... some in stainless steel. Sixty-four standard models—most available at nationwide stocking locations. Need a special kind? We'll be happy to discuss that too.


For more data, circle 24 on inquiry card



better buildings

See our catalogs in Sweet's 

INLAND 
RYERSON

A member of the  Steel Family
Inland-Ryerson Construction Products Co.
Dept. E, 4033 West Burnham Street
Milwaukee, Wisconsin 53201

Yes, send me more Inryco ideas, as checked:

- On Inryco®/Fenmark® grid walls. On lightgage steel framing. On Milcor access doors.

Name _____

Title _____

Company _____

Address _____

City _____ State _____ Zip _____





Sizzle Fizzled

The sun shines bright, big and bright . . . deep in the heart of Texas. A real sizzler. A real potential problem for glass enclosed buildings. To keep people under glass cool and comfortable, you need help . . . material help. Like C-E Polarpane "20" Reflective Insulating Units.

C-E Polarpane's remarkable ability to reject such a large percentage of total solar energy puts the fizzle on sizzle. And the Lister Office Building in Houston, Texas is a beautiful example in C-E Polarpane #2016 Gold.

Only 16% of the sun's heat that would get through plain $\frac{1}{8}$ inch glass will be allowed inside by the C-E Glass Insulating Units. Total indoor heat gain is only 37 BTU/hr per square foot. A very comfortable level.

Cooler people are more efficient people. And efficiency gets another boost with the visual comfort provided by the low 20% visible light transmission. Very easy on the eyes.

In heating season, a low .31 "U" value means that this Polarpane will retain more than $\frac{2}{3}$ of room heat. Very effective against winter cold.

Performance like this cuts initial investment in air conditioning, heating and ventilating equipment. It means additional savings every year by reducing the requirement for electricity and fuels which are bound to become more expensive or harder to obtain in a situation of energy crisis.

To learn more about C-E Polarpane "20," see the C-E catalog in Sweets: 8.26/CE. For additional information, contact our local representative or write C-E Glass, 825 Hylton Road, Pennsauken, N.J. 08110, (609) 662-0400.



Architect: Hoff, Blackstone & Strode, Houston, Texas
Glazing Contractor: Binswanger Glass Co., Houston, Texas

CE GLASS
COMBUSTION ENGINEERING, INC.

For more data, circle 25 on inquiry card



**Du Pont invents a
bottomless carpet cushion
less than 1/2" thick.**

Du Pont has invented a suspension system for people to walk on.

Polyester pneumacel* carpet cushion. It's neither an elastomeric foam nor a felt. Rather, it is billions of inflated cells in fiber form—masses of tiny pneumatic springs. Actually, pneumacel is a new form of matter.

Nothing cushions like pneumacel. It sinks in easily at first, then pushes back as pressure increases. Never fully compresses. Keeps its resilience.

Any carpet over pneumacel feels luxuriously thick underfoot. Pneumacel spreads the load to help prevent crushing of carpet face pile and stretching of its backing. Prolongs useful life of carpet.

Composition: Cellular polyethylene terephthalate (polyester) inflated with a fluorinated hydrocarbon and air. Fiber strands are bonded together with a thermoplastic binder.

Advantages: Outstanding cushioning together with protective firmness. High ratings as thermal insulator, and as impact-noise reducer. Highly resistant to moisture, mildew, carpet-cleaning chemicals. Unique combination of low flame spread and smoke generation characteristics. Excellent durability.

Specifications: Available through selected local dealers in two styles: "Belmeade" (0.30" thick) and "Lansdowne" (0.48" thick). Comes in rolls 72" wide.

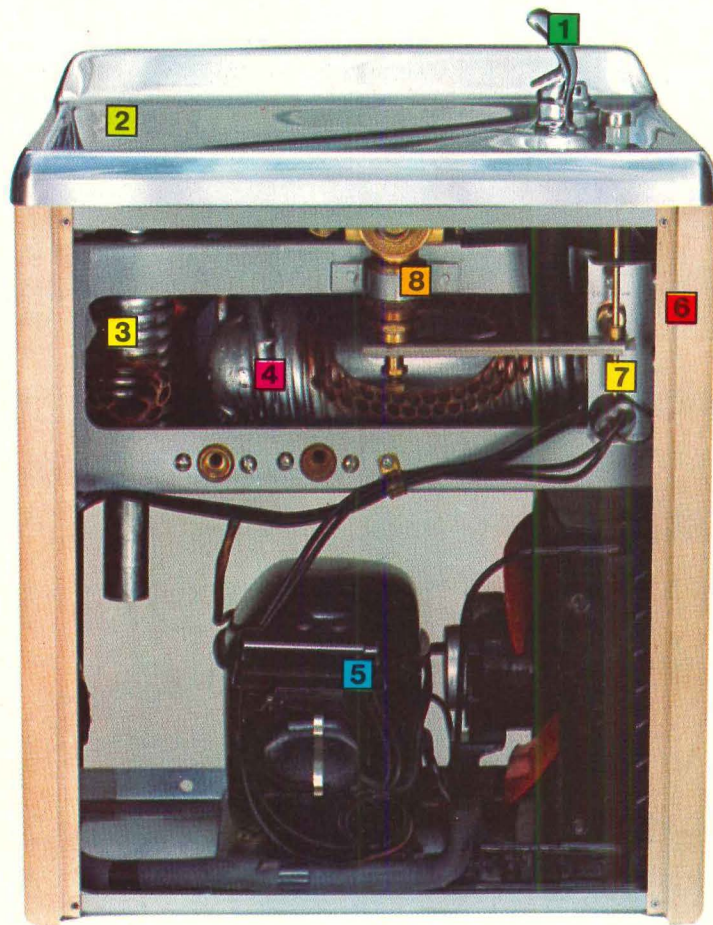
Additional information is detailed in *Sweet's Architectural Catalog File*, reference 9.29/Du. For samples, see *Sweet's Interior Design File*. Or write Du Pont, Pneumacel Marketing, Christina Site, Wilmington, Del. 19898.

*Pneumacel is the generic term for pneumatic cellular polymeric cushioning material.



Specify Du Pont Pneumacel Carpet Cushion

For more data, circle 26 on inquiry card



Most water coolers look pretty much the same on the outside.

Only one looks like this on the inside.

Halsey Taylor.

Not that you'd recognize it. Very few people ever have to look at the inside of our water coolers. Including repairmen.

That's because we concentrate on what really counts—function. Besides, where could anyone get the idea that an architect specifies functional products on appearance alone?

The ultimate pay-off is a cold, satisfying drink of water. But the pay-off that counts is years of service, extremely low maintenance, quality construction—and knowing that the product you specify is as good as your own reputation.

We put a lot more into it so your customers will get a lot more out of it. Cold water included. Here's how:

- 1 Exclusive 2-stream bubbler.** Builds a large, drinkable mound of water. Anti-squirt and vandal resistant. One piece chrome-plated brass forging prevents contamination.
- 2 Cooler top.** Satin finish stainless steel, polished and buffed for beauty and ease of cleaning. Separate drain strainer removable for easy cleaning without removing cooler top.
- 3 Pre-cooler.** Incoming water line coiled around and tin-bonded to cold water drain. Boosts cooling capacity by 60%.
- 4 Cooling storage tank.** All copper, hot-dipped pure tin lining. Incoming water coil is tin-bonded to refrigerant coil to cool water before it enters tank.
- 5 Condensing unit assembly.** Hermetically sealed, lubricated for life. Automatic re-set overload protector prevents overheating. Capacitor insures compressor startup. All components designed and coordinated for top efficiency and long life.
- 6 Cabinet.** One-piece unitized body of heavy gauge bonderized steel. Baked-on enamel resists wear, moisture, heat, sunlight. Cabinets also available in stainless and vinyl-clad steel.
- 7 Dual temperature controls.** Two thermostats, primary and secondary, provide double protection against freeze-up.
- 8 Automatic regulating/operating valve.** Maintains constant stream height under line pressures varying from 20 p.s.i. to 90 p.s.i. Easy to service. Tamper-proof. Large orifices resist deposits and clogging. All parts are corrosion-resistant.

Halsey Taylor Division,
1554 Thomas Road,
Warren, Ohio 44481.



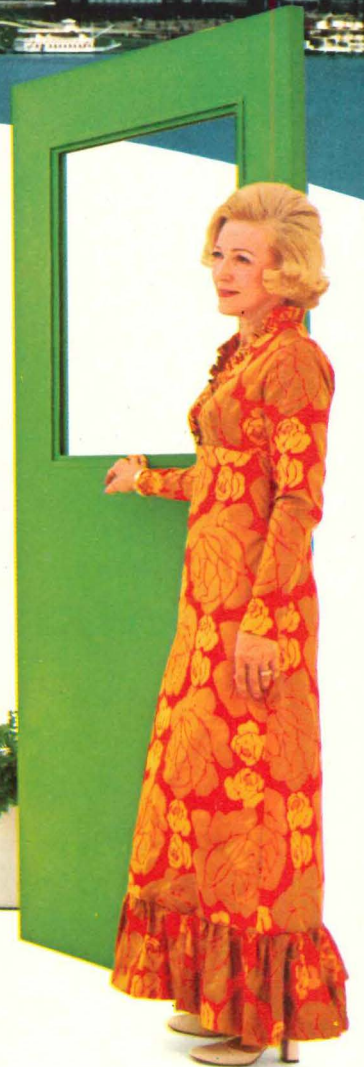
Halsey Taylor[®]
KING-SEELEY **IST** THERMOS CO.

For more data, circle 27 on inquiry card



Colorful steel doors accent the new excitement in old St. Louis

Style and beauty plus ruggedness make Ceco steel doors attractive to architects in St. Louis and throughout the country. Ceco doors meet every functional need. Use them as a "package" to accent your design. Ceco doors and frames are prepared for simple erection in minutes. And both are prepared for quick and solid attachment of hardware. Ceco doors and frames are tough and stable — won't warp, swell, shrink or rot. You gain the advantages of durability and trouble-free performance. Our Colorstyle doors have factory-baked quality finishes, kept fresh in poly bags. See Sweet's, or consult your local Ceco office.



CECO steel doors

The Ceco Corporation • 5601 West 26th Street • Chicago, Ill. 60650

"The door people"

For more data, circle 28 on inquiry card

Uninterrupted The Quiet Wall — and Rodgers Associates



with sound-absorbing, structurally resilient

“Designing for Aural Privacy is one of the most important aspects



Sydney G. Rodgers, one of the foremost conceptual designers in the field of landscape planning and design.

Rodgers Associates combined acoustical control with wall beauty, achieving this *sweeping, uninterrupted expanse of decorated wall.*

This new way to control sound — beautifully — combines the sound absorbency of a glass fiber core with the decorative finish of any of the 85 original Victrex Vinyl Wallcovering patterns.

Exclusive Monolithic construction provides a flawless, decorative, unbroken sound-absorbent wall surface so vital to effective landscape design, with no visual breaks, no mold-

ing, no hardware. Monolithic means no design limitations!

And: Vicracoustic® VM Monolithic wall has built-in body. This new approach to product design combines structural resilience with the necessary rigidity for a wall system of this type.

Ask for the new full-color Vicracoustic® VM Monolithic brochure. It gives full details of composition, noise reduction and absorption tables, monolithic installation procedure. Write today for your copy — or call your Victrex man.

planned it as an integral part of their open landscape concept
for Montgomery Ward's new executive offices

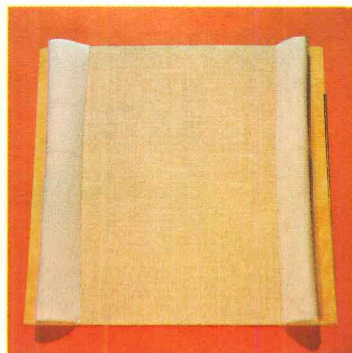


Vicracoustic VM Monolithic Wall Systems

of our work." — Sydney G. Rodgers, RODGERS ASSOCIATES



Choose from the spectrum of 85
Vicrtex® Vinyl Wallcovering patterns
and textures—thousands of colors!



Vicracoustic® VM Monolithic panel
—exclusive Vicrtex® side flaps
permit the monolithic wall effect.

L.E. CARPENTER

AND COMPANY

964 Third Avenue, New York, N.Y. 10022
(212) 355-3080 • Mill: Wharton, N.J.



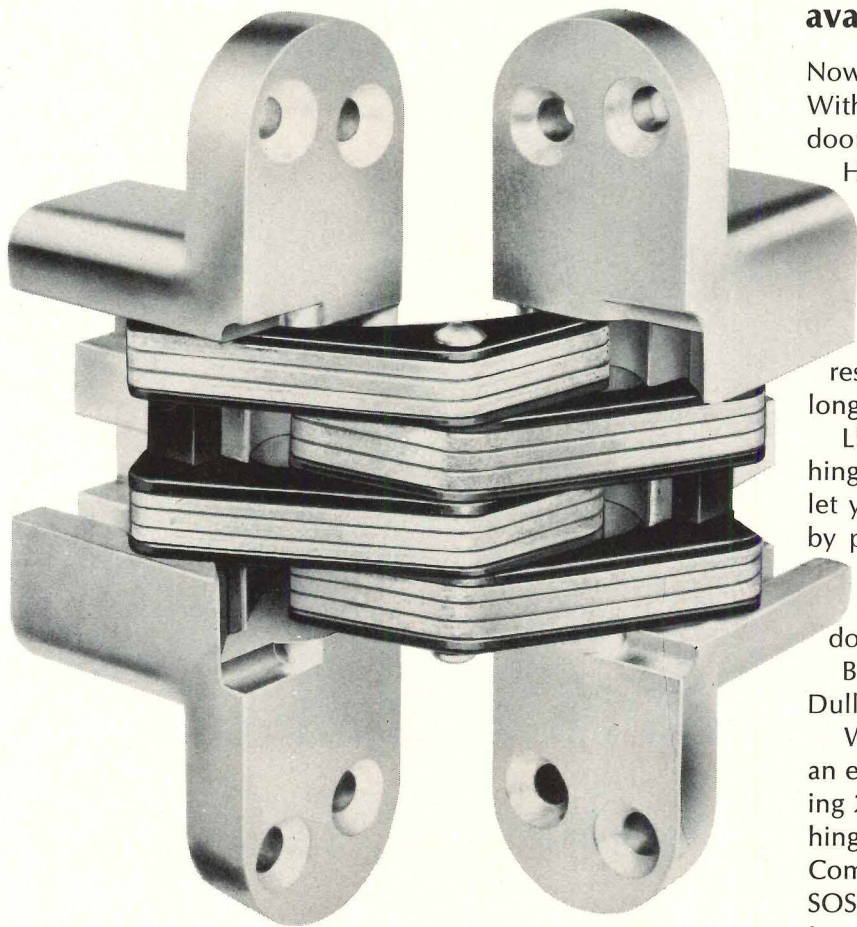
A DAYCO
COMPANY

**VICRACOUSTIC® VM MONOLITHIC WALL SYSTEMS
DISTRIBUTED BY: VICRTEX SALES DIVISION,**

*New York, Atlanta, Chicago,
Dallas, Los Angeles, San Francisco, Boston,
Minneapolis | HOWELLS, INC. Salt Lake
City | PAUL RASMUSSEN, INC. Honolulu.*

For more data, circle 29 on inquiry card

NEW! Hinges that hide... a lot longer



Extended-life invisible hinges now available for high frequency doors

Now you can expand your hinge hiding horizons. With two new, extended-life, large commercial door hinges from the invisible hinge company.

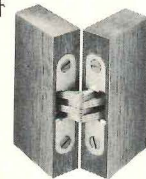
Hinge Models 218 and 220 now have nylon links and bushings at all wear points (Patent Pending). The molybdenum disulfide-reinforced nylon is visible in the black areas in the open hinge shown at left.

But when the hinge is closed, the nylon results in just one more invisible feature: longer life.

Like every Soss Invisible, these rugged new hinges are completely hidden when closed. They let you create clean architectural lines unbroken by protruding hinges. And their longer life lets you add this invisible beauty on high frequency doors and on doors with automatic closing mechanisms.

Both hinges are available in Dull Brass US 4, Dull Bronze US 10, and Dull Chrome US 26D.

Write for all the details. We'll also include an extra copy of our catalog in Sweet's, featuring 20 styles and models of the tamper-proof hinges that hide. All from Soss Manufacturing Company, Division of SOS, Consolidated Inc., P.O. Box 8200, Detroit, Michigan 48031.



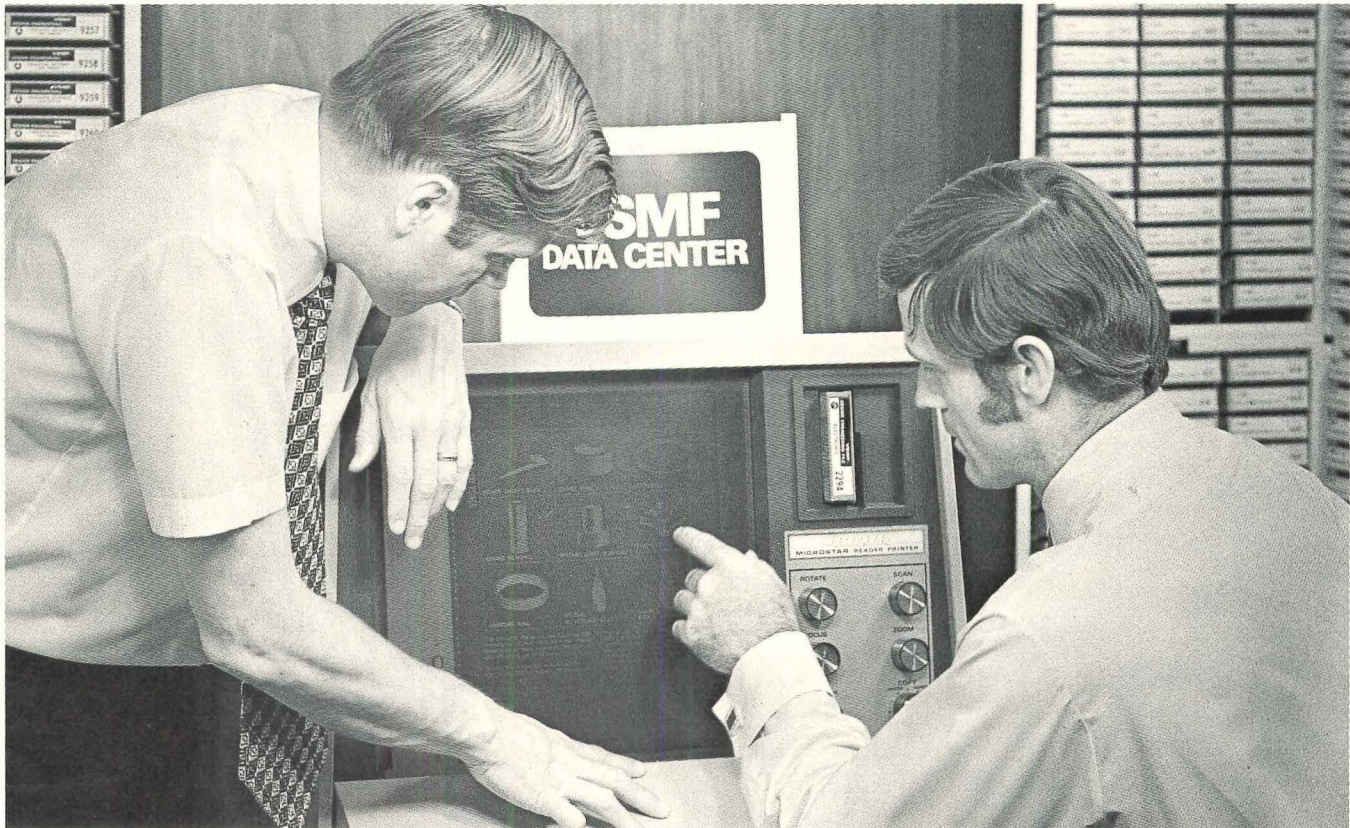
Now you see it.



Now you don't!

the SOSS Invisibles

For more data, circle 128 on inquiry card



today these men can't afford to operate by the book.

These engineering managers don't have time for the paper chase—thumbing through stacks of catalogs, spec sheets, and cumbersome reference books to find the right products or suppliers. Not when they've got to increase productivity without increasing the size of their engineering staff. That's why they've turned to Visual Search Micro Film (VSMF®). It's a complete, up-to-the-minute data bank of products and suppliers, all carefully organized and indexed for instant retrieval.

So if you're fighting the shortage of engineers... the shortage of critical components ... the shortage of everything but demands for higher output, try VSMF. We can't get you more

people, but we certainly can help you produce more with those you've got. That's because VSMF:

- Provides fast access to current Spec's and Standards;
- Gives you thorough product and supplier selection;
- Lets engineering compare similar products quickly;
- Keeps engineering up to date;
- Cuts catalog search time, often by 90%;
- Puts only the data you need... where you need it;
- Provides prints at the push of a button.

And that's just a start. Let us show you *all* that VSMF can do to solve your specific problems. Just send in the coupon. Or call us today at (303) 771-2600.

Information Handling Services, Dept.
Denver Technological Center
P.O. Box 1154
Englewood, Colorado 80110

Please Call To Arrange An Appointment.

Please send more information about:

Manufacturers Catalog Services:

Building Products;
 Plant Equipment;
 Industrial Products/Components.

Standards & Specifications Services:

MIL, FED, Spec's and Standards;
 Gov't Construction Specifications;
 Industry Standards (ANSI, ASTM's, ASME, etc.).

Product/Component Locator Service:

Design Engineering including Marine.

Special Services:

Customized Data Systems.

Name _____
Title _____
Company _____
Address _____
City _____ State _____ Zip _____
Area Code _____ Telephone _____

AR 5-74



Information Handling Services

An Indian Head Company

For more data, circle 30 on inquiry card

"When I specified Fluropon,[®] I wanted beauty...durability...and lasting values for the Zenith Center."

Nelson Sanesi, President
Zenith National Insurance Company
6300 Wilshire Boulevard
Los Angeles, California

"To the 325,000 Californians we insure, the Zenith Center Building is Zenith National Insurance Company.

"Every product selected for the construction was chosen for these qualities—beauty, durability and lasting values. Fluropon met these requirements, and is, we believe, an important addition to the building's unique sculptured metal design."

Design Flexibility. Fluropon is the leading full-strength fluorocarbon that offers outstanding adhesion. It really takes the tough forming processes, contours and configurations of today's modern designs.

*Fluropon meets Pennwalt license requiring 70% Kynar 500[®] resin.

Color Consistency. Batch-to-batch, year-to-year, you know you can count on Fluropon colors to be consistent. Damaged panels can be replaced without showing; future additions will match existing buildings even if added years from now.

Color Retention/Gloss Retention. Fluropon is the full-strength fluorocarbon that holds its original color, its original sheen! Its non-static surface resists adherence by potentially damaging pollutants. Rain washes it clean.

And, Fluropon is the full-strength one that resists the unsightly effects of sunlight, humidity and common solvents years longer than conventional finishes.

Long-Term Economy. Fluropon's long-term properties can mean long-lasting beauty plus big savings in repainting and maintenance expense for years.

Wide Color Range. Fluropon offers more than the usual amber-bronze tones. You can select from true bright whites, blues, golds, greens, garnets, almost any color.

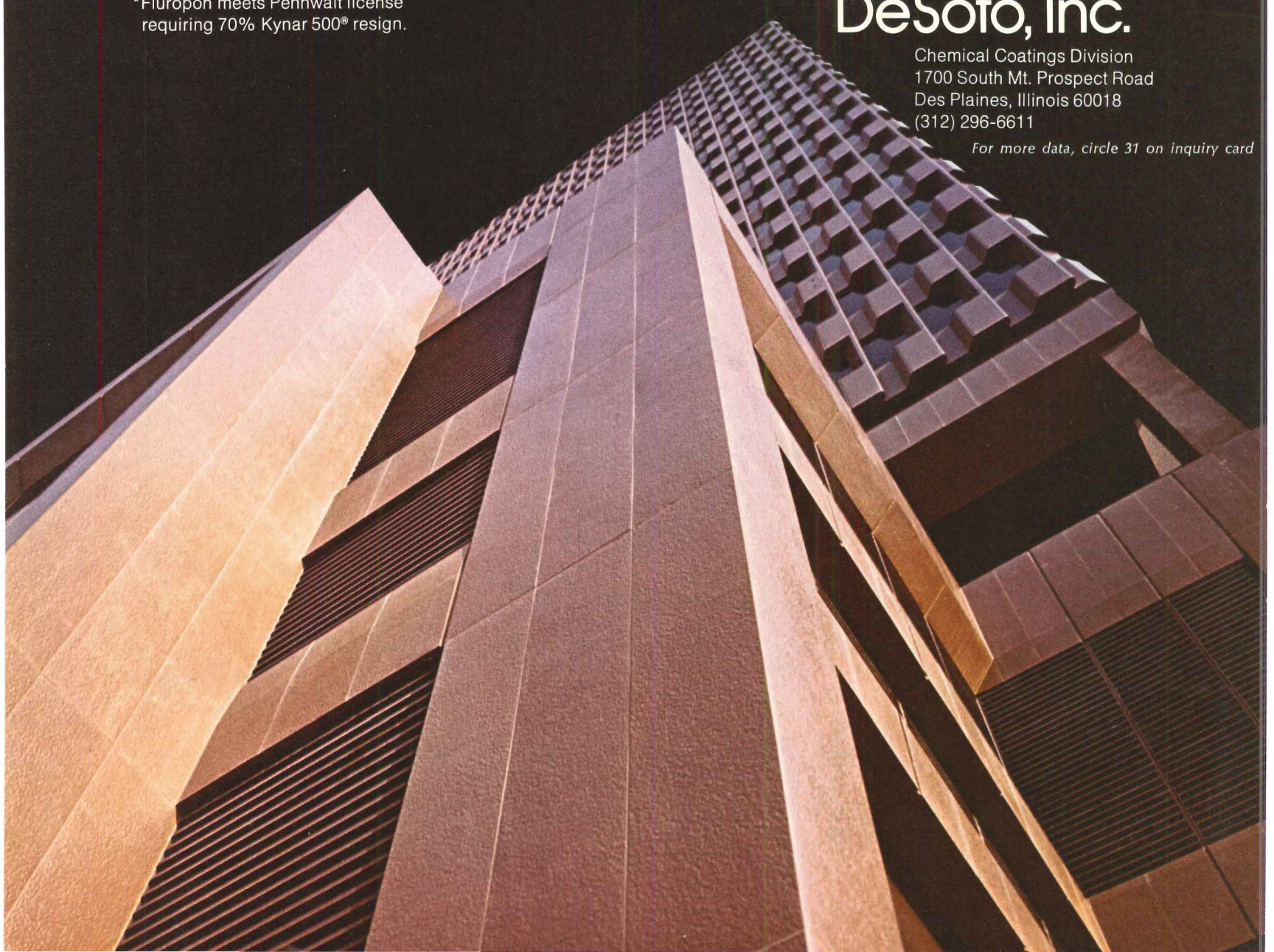
When you need the best, specify the only finish that gives you all the qualities you need. Write or call for more information on the "one and only Fluropon." Fluropon! By DeSoto.



DeSoto, inc.

Chemical Coatings Division
1700 South Mt. Prospect Road
Des Plaines, Illinois 60018
(312) 296-6611

For more data, circle 31 on inquiry card



Construction contracts rebounded sharply in February, resulting in a 21 per cent advance in the Dodge Index, according to McGraw-Hill Information Systems Company. After a two-month plunge, the latest month's activity lifted the index of contract value to 187, from January's 155. The index uses 1967 as its 100 base. The dollar value of construction work initiated in February totaled \$6,610,062,000, three per cent below the amount contracted in the same month of 1973.

HUD Secretary Lynn says he would recommend a veto if the House adopts the Senate-passed housing bill. In an interview, James Lynn expressed confidence that the House would develop a substantially different approach to the Senate-approved Omnibus housing bill that would provide \$10.4 billion for housing and community development. Secretary Lynn's major objections to the bill are: a mandated spending of funds allotted for subsidized housing construction; a distribution of community development funds that he said is slanted toward those already participating in existing programs; and the continuation of a categorical grant concept as distinguished from block grants to the states. The Senate passed the housing bill on March 11.

The American Subcontractors Association has called for continuation of wage controls in construction. Urging a temporary continuation of controls, the ASA pointed out that wages have been stabilized in the construction industry over the last three years by controls, and that lifting of wage controls in the construction industry at this time could return the industry to an unstable, inflationary wage spiral.

Seattle contractors and architects see a need for continued wage controls. With trade union agreements expiring there in mid-year, unions are already reported to have strike sanctions to strengthen demands for a 15 per cent wage increase. In California all basic craft contracts are open for renewal this spring and demands will possibly be for 10 to 20 per cent pay increases. However, rising construction prices do not seem to be dampening the enthusiasm for building in San Francisco, according to John R. Levikow, president, Northern California Chapter, AIA.

An AIA group, including RECORD editor Walter Wagner, has just returned from a three-week China tour. The delegation visited as guests of the Architectural Society of the People's Republic of China, and AIA expects a return visit by Chinese architects to the United States. Headed by former AIA president Max O. Urbahn, the delegation included Harry Weese, James J. Foley, Samuel T. Hurst, William Marshall Jr., Walter A. Meisen, Robert P. Madison, I. M. Pei, Archibald C. Rogers, Daniel Schwartzman, William L. Slayton, John Carl Warnecke, George M. White and Sidney Nyhus.

The Joint Economic Committee of Congress has called for immediate action to provide low-income housing, holding that the problem cannot await Congressional consideration of the Administration's shelter proposals. The committee recommends using existing authority under the Section 235 program to find housing for 300,000 families.

NAHB president Lewis Cenko predicts a slow upward movement of housing production, based on the housing starts annual rate rise of 22.5 per cent in February over January. He was cautiously optimistic, however.

Soul City in North Carolina will begin construction immediately, according to Floyd B. McKissick, president of the Soul City Company. The rural planned community (RECORD, December 1973) has received final approval of the Federal government's guarantee of bonds valued at \$14 million, while another \$11.7 million from Federal, state, local and private sources will be released for use as a result of the guarantee. The first money will be used for construction of a regional water system and to build an industrial plant and health maintenance organization.

Although the metrification bill has been approved for debate in Congress, no action is being taken. The House Rules Committee has allowed the bill to come to the floor for debate, but major objections of labor groups have caused the House to defer action.

A House subcommittee has begun hearings on the Unified Transportation Assistance Program, an Administration proposal that would combine highway and transit programs in urbanized areas, bringing relief to many large city transit systems, according to supporters.

The AIA board of directors has approved a statement calling for limits on private political contributions. In its spring session, the board committed the Institute to a policy closely aligned to the mixed system of public financing developed by Common Cause, combining public funds with small private contributions.

Major contract furnishings and flooring markets are scheduled for Chicago, June 19-21. NEOCON, the National Exposition of Contract Interior Furnishings will feature two million square feet of non-residential furnishings, and seminars which are said to focus on vital issues in the contract industry. (See item Editorial, page 14.) Further information can be obtained from The Merchandise Mart, Suite 830, Chicago, Ill. 60654.

Research delves into pollution effects on stone

In the geology lab at the University of Louisville, the weather conditions are appalling. Temperatures soar and plummet. Noxious gases hiss and bubble. Where it is not arid, it is humid. Pollution is everywhere. Conditions could hardly be worse, which is just where Lal Gauri wants them.

What Dr. Gauri is finding out should have considerable influence on how we proceed to preserve and restore the buildings and monuments, public and private, that have so far survived pollution, age, indifference and exploitation, according to Universal Restoration Incorporated, a Washington, D. C. firm specializing in architectural restoration.

The laboratory in Louisville is, then, a scientific battleground where a struggle against erosion of the architectural past is conducted by a small group of scientists.

"Basically, we are doing two things," said Dr. Gauri. "We are testing different kinds of stone, and we are experimenting with materials, mainly

resins and petrochemicals, to protect the stone from weathering elements.

"The main thing is to keep water from contact with the stone in depth or on the surface. Water is the culprit because gases can't work to erode the stone if there is no water."

Matching core samples are taken from the stone and these samples, some impregnated with preservative chemicals, some not, are subjected to a furious battering. The impregnation is called diffusion, a process by which the surface is soaked with a polymer, or plastic, compound until the compound has reached a depth of about an inch below the surface.

As these systematic tests are being carried out on a variety of stone samples, experiments are also being conducted on the plastic compounds themselves, and on other substances such as fiberglass. These include not only strength and durability but color and cost, fire resistance and smoke production.

Airport in Florence, Italy causes concern

The fragile artistic environment of Florence, Italy may be sacrificed to improved air service for the Tuscany region, according to local opponents of a proposed international airport.

Two years ago, funds were appropriated for construction of an airport, which could only be located in a spot eight miles from the center of the historic city. According to a study by the University of Florence, the noise from jet aircraft would make normal living impossible for 150,000 persons residing in apartments and villas on the left bank of the Arno River.

It is further claimed that fumes from airplane fuel mix

readily with water in the air (see item on decomposition research on this page) to form sulphur dioxide, held responsible for extensive damage to the bronze horses on St. Mark's Basilica in Venice.

Airport opponents are currently being supported by actions of the regional council which voted to put off plans for construction until better economic times. The council voted that \$13 million destined for the new airport be used for improvements at the Pisa airport—which presently serves Florence—and for the building of a rapid train that would connect the two in 40 minutes.

Los Angeles sponsors Frank Lloyd Wright week

Los Angeles Mayor Tom Bradley is declaring June 1 to 8 as "Frank Lloyd Wright Week in Los Angeles," as part of events to mark the 105th anniversary of Mr. Wright's birth on June 8th.

The observance begins with a Frank Lloyd Wright retrospective (May 28 thru June 7) at ARCO Plaza Level C in downtown Los Angeles. The exhibit will include photos by Julius Shulman, Frank Lloyd Wright fabric design cuts done for Schumacher, and special slides and films. Some FLLW furniture will also be shown.

A reception is planned for the evening of May 29th to include Mayor Bradley, Mr.

Wright's son and grandson, and his granddaughter, actress Anne Baxter.

A Frank Lloyd Wright House/ Grounds/ Gallery tour on June 8 and 9 includes: Hollyhock House, Freeman House, Storer House, Millard House, Ennis House, Sturges House and Comsky Gallery.

This joint-venture fundraising program is sponsored by two Los Angeles groups: the Cultural Heritage Foundation and the Southern California Chapter, Architectural Secretaries Association. Funds raised will aid architectural students at Cal Poly in San Luis Obispo, and other student activities.



Gordon H. Schenck

Grand Ole Opry moves into new home by Welton Becket and Associates

The Grand Ole Opry has a new house to call home. Designed by Welton Becket and Associates, the \$15 million Opry House represents the world's largest radio and television broadcasting studio. It is the focal point of the \$40-million Opryland, U.S.A., a 369-acre complex devoted to entertain-

ment, recreation, broadcasting,

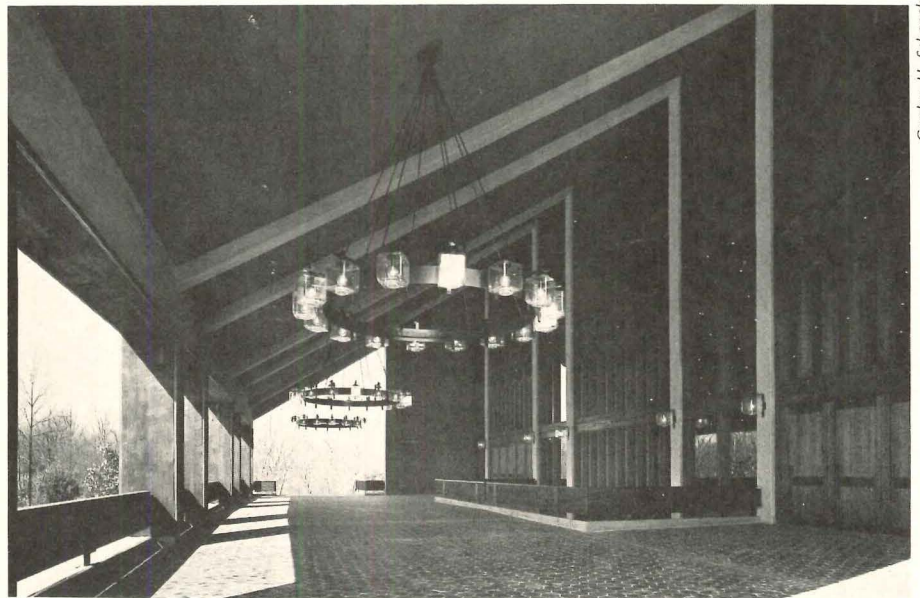
and convention activities. Opryland, which opened last year is 10 miles northeast of downtown Nashville.

To create a warm, rustic appearance for the Opry House, the Becket firm selected brick for the walls; placed rusticated wood panels, handrails, and trim at the entrance and feature

points; designated board form-

finished concrete for the roof beams and columns; and designed a sloping, concrete-shingled tile roof.

Inside the 45,000-square-foot auditorium, the balcony seats approximately 2400 persons and the orchestra 2000 on contoured, wooden "pews" upholstered in persimmon "carpeting" to facilitate acoustics.



Gordon H. Schenck

Seventy-three Fellows will be honored at AIA convention in Washington

The American Institute of Architects has announced that 73 members have been elected to the College of Fellows, a lifetime honor bestowed for outstanding contribution to the profession.

Advancement of the new Fellows brings the total membership of the College of Fellows to over 1,000. Formal investiture will be held in ceremonies on May 20, during the AIA Convention in Washington, D. C.

Selection of the 73 new Fellows was made by a jury composed of the following Fellows of the Institute: George E. Kassabaum, chairman; Edward A. Killingsworth; Mark A. Pfaller; Macon S. Smith; William B. Wiener; Hugh A. Stubbins Jr.; and Robert B. Price, attending alternate.

The new Fellows are: Armand Bartos, MacDonald G. Becket, Herbert Beckhard, George Bissell, Howard T. Blanchard, Elmer E. Botsai, John Bozalis, William R. Brockway, Fred W. Butner, Jr., Mario E. Campioli, Arthur R. Cogswell, Jr., Andrew S. Cohen, John P. Conron, Araldo Alfred Cossutta, Walter H. Costa, Warren W. Cunningham, Natalie G. deBlois, Eugene A. Delmar, David R. Dibner, Rockwell King DuMoulin, Herbert E. Duncan, Jr., Robert E. Entzeroth, Herbert Epstein, Geoffrey W. Fairfax, Howard T. Fisher, Richard J. Fleischman, William L. Fletcher, Richard C. Frank, Rodney F. Friedman, Frank O. Gehry, Harry Abbott Golemon, Ezra Gordon, David Haid, James Wright Hammond, John A. Holabird, Jr., Granville

Warner Hurley, William R. Jenkins, Matt Lawrence Jorgensen, James T. Lendrum, H. Mather Lippincott, Jr., Robert Price Madison, Clinton Marr, Jr., David A. McKinley, Jr., Louis A. McMillen, William H. Metcalf, Jr., Gary L. Michael, Harvin C. Moore, Julian Neski, P. Murff O'Neal, Jr., William T. Priestley, William Ryder Reed, Walter John Richardson, James S. Rossant, Herman O. Ruhna, Lloyd Anthony Ruocco, Stanley Salzman, Nathaniel W. Sample, Charles M. Sappenfield, James A. Scheeler, Robert J. Schultz, David M. Scott, Frank Slavsky, Hamilton P. Smith, Charles B. Soule, Rolland D. Thompson, Roy N. Thorshov, Danforth W. Toan, Richard L. Tully, Morris D. Verger, Ben Weese, Helge Westermann, Kenneth D. Wheeler, John M. Woodbridge.

Women architecture students meet in St. Louis

March 29-31 more than 300 women architectural students from all over the country gathered at Washington University, St. Louis, in what is believed to have been the first national symposium on the "Role of Women In Architecture." Several points emerged that received approval from observers and participants.

First, women students feel a definite need to talk to women architects, and share in their family and professional experiences.

Second, important lines of communication can be opened up by such meetings between male and female students with faculty and architects.

David M. Bowen, a registered architect from Indianapolis, and a member of the AIA's Personnel Practices Committee, who attended, said: "Most of the sessions were very good. I was very impressed. Let's face it, there is discrimination against women in our profession as in other professions. I'm sure what took place in St. Louis and at a similar meeting later in Oregon will receive consideration at the national AIA meeting in Washington in May."

Hannah Roth, W.U. graduate student, who served as chairlady of the symposium, said, "Our goal was to create meaningful dialogue; meet role models; deepen self awareness and examine our profession and stimulate ongoing organizations. We met those goals."

Dr. Constantine Michaelides, dean of W.U.'s School of Architecture, who strongly supported the symposium, was warm in his praise. "The fact that the students put this all together, including the financing (estimated cost \$4500) and attracted nearly 300 from all over the country, attested to the quality of the program. We are proud of them."

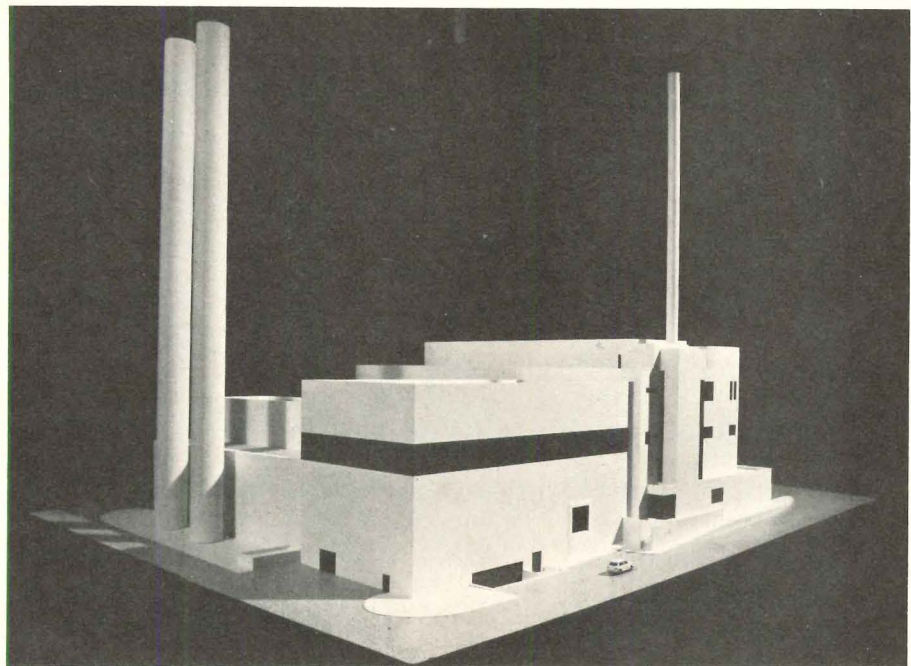
Prominent women speakers disagreed strongly on the subject of discrimination.

Gertrude Kerbis (below top) Chicago architect for 29 years, and the 10th woman accepted as a Fellow in the AIA, said, "If 'profession' means placing your standards above personal self-interest, women today are the only true professionals in architecture . . . for they are the least paid and the least rewarded."

At some workshops, the talk concentrated on personal problems of wife-husband relationships, such as how do you share home responsibilities and still have a career?

Hannah Roth and her committee, flatly rejected that the symposium was put together to support any kind of women's lib movement.

Among other participants at the symposium were: Bradley Soule (top right); Mary Lou Drosden (lower left), St. Louis architect; and Lois Langhorst (lower right), professor of architecture at the University of North Carolina.



Roger Park

Total energy plant will be constructed in Leeds, England

The United Leeds Hospitals in England will build a generation station complex to supply electrical power, steam, hot water and air conditioning requirements for the New General Infirmary and Medical/Dental Schools.

Designers of the whole complex, including the generation station, are Building Design Partnership, Preston Group.

The station is based on the total energy principle using either natural gas or fuel oil to provide all energy needs at a very high efficiency. This is the first time that this principle has been

applied to a hospital in Great Britain.

Building Design Partnership undertook an economic feasibility study which showed that on-site generation of electricity with full heat recovery, refrigeration plant and supplementary boiler plant was economically viable.

Ultimately the station will have six dual-fuel engine/generators, with waste heat boilers plus jacket and lubricating oil heat recovery systems, six steam boilers with dual-fuel burners, 17.58 MW (5,000 tons R) of refrigeration plant and six air

compressors and driers. The complex also contains a maintenance store, works department, and a large laundry.

For United States applications, HUD has released a report called "Economic Evaluation of Total Energy," which is meant to be a screening tool to indicate the relative economic feasibility of total energy systems for residential developments throughout the contiguous United States. Copies are available. Ask for Report No. HUD-DSC-2, Department of Housing and Urban Development, Washington, D.C.



Tenant satisfaction in mixed income housing depends, in part, on design

Good design and construction approaches, as well as effective management, are seen in a "Social Audit" commissioned by the Massachusetts Housing Finance Agency (MHFA) as vital to tenant satisfaction in mixed-income housing developments.

A report on the study is described as the first comprehensive, scientific review of mixed-income housing.

It states in part: "income mix 'works' or does not 'work' according to whether the mix occurs in well-designed, well-constructed, well-managed developments. These latter factors are the crucial determinants of

(tenant) satisfaction. Income mix and racial mix are in themselves of no particular relevance . . ."

Discussing tenant "satisfaction" factors, the report states: by ranking the 16 early MHFA developments according to the tenants' level of overall satisfaction, the study shows that several developments with less satisfied tenants could be classified as "traditional subsidized" housing. These developments, are located in poorer communities and exhibit less successful design, construction and management.

The key factor is the atti-

tude of the developer that he is building a "traditional 236," all-subsidized development, uncompetitive in the market.

By contrast, says the report, the superior developments achieve a startlingly high level of tenant satisfaction as a direct function of the developer's intention to create housing that will compete successfully in the open market.

However, it is emphasized that while these "superior" developments produce more satisfaction for tenants, they are not meeting the same magnitude of social needs as the "traditional subsidized" developments.

Covent Garden market building sought by British Architectural group

The British Architectural Association has put forward a plan to make use of the central Covent Garden market building after the market moves to its new site later this year.

The Association would like to move its school, now situated in Bedford Square, London, to

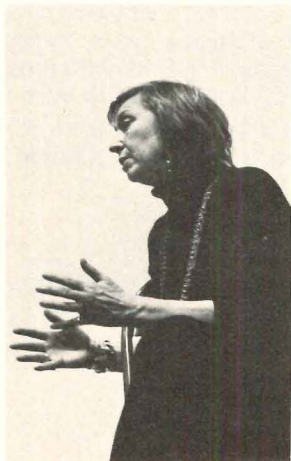
the old market building, since the Association has to find a new home by 1976.

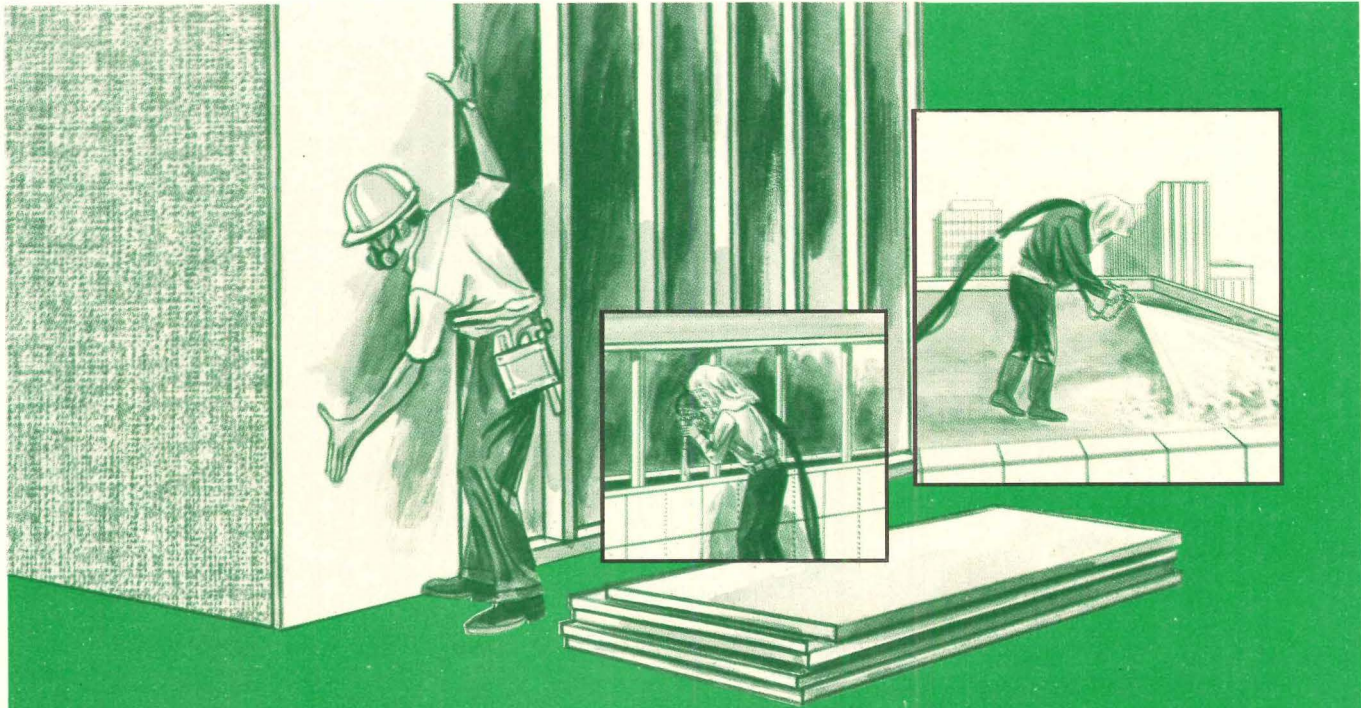
The only snag in the proposal is that the Greater London Council, expected to purchase the four-story brick landmark built in 1828, said they do not want any single user to predom-

inate in the market building after it is renovated.

At any rate, the Architectural Association is not the only prospective tenant seeking approval. At least a dozen others have expressed an interest in occupying a portion of the property.

Barbara Clark McClintic





Presenting a Trio of Trymers

TRYMER 9545

TRYMER 421

TRYMER 442

Maintains the insulation advantages and improves the properties of urethane.

Upjohn

chemicals plastics research
CPR

Unequaled Insulation for Roofs and Other Construction

These three isocyanurate insulating materials offer improvements on urethane—the best insulation now on the market. Their thermal insulating efficiency is almost twice that of any other non-urethane commercial insulation. Their high strength/weight ratio, combined with the need to use less than half the thickness for equal insulating values, means savings in weight, space, and costs.

TRYMER™ 9545 is available in buns or pre-cut board stock. It is the ideal insulation for roofs, buildings, pipes, commercial refrigeration, aerospace, railroad/truck/marine transportation, and as a core material for sandwich panels.

TRYMER™ 421 is the improved cellular plastic foam insu-

lation material that can be sprayed-in-place right on the job. It bonds immediately to itself or adheres to almost any material. It makes insulation... even difficult configurations... an integral part of the structure. Spray it directly on walls, roofs, pipes, and tanks, followed by appropriate coverings.

TRYMER™ 442 is a pour-in-place system designed especially for use as a core material in insulated sandwich panels. Foam produced from TRYMER 442 has been tested and approved by Factory Mutual Engineering Corporation as a Class I material in building panels.

Write for more information or ask a CPR Technical Sales Representative to call. (Please specify your application)

CPR DIVISION, THE UPJOHN COMPANY

555 Alaska Ave., Torrance, California 90503 • (213) 320-3550

CAUTION: Polyisocyanurates and polyurethanes may present a fire hazard in certain applications if exposed to fire and/or excessive heat, e.g. welding and cutting torches, in the presence of oxygen or air.

For more data, circle 34 on inquiry card

Contractors seek end to retainage system

Construction bids nationally would be reduced by as much as 15 per cent, with a potential savings of \$3.7 billion, if contracts followed the format now being used by the U.S. General Services Administration in a dozen projects bid in a no-retainage test program.

This is the finding of a national survey conducted by the American Subcontractors Association (ASA), whose results have been announced at the organization's third national convention in New Orleans.

Tabulated response from 1200 subcontractors across the country showed that: 86 per cent said that the current retention system is not an effective means of getting subcontractors to return to a job to complete punch list items; 100 per cent of subcontractors would complete punch list items if final payment was guaranteed on a stipulated basis, contingent upon completion of the project; 76 per cent of the subs would submit lower bids if retainage clauses were eliminated; 95 per cent said that on projects on which they would refrain from bidding because of retention, they would alter their decision and bid if the retention provision were withdrawn.

An ASA official said, "this archaic system which compels building subcontractors to wait so long to be paid for completed work, necessarily elevates cost and reduces competition. Other industries work on a net, two per cent, 10 day basis.

"The construction industry also is the only one that provides 100 per cent payment and performance bonds in order to ensure proper job completion. This unique double insurance program costs billions."

GSA energy guides may be a first

GSA is calling its recently-released "Energy Conservation Design Guidelines for Office Buildings" the first comprehensive criteria ever printed for the construction industry.

The text was prepared for the independent Federal agency by Dubin-Mindell-Bloome Associates, in cooperation with the American Institute of Architects Research Corporation and Heery & Heery, architects. It is explained that the guides will not supplant any operating standards previously issued, but will make it possible for energy conservation programs to be implemented during emergency periods.



Photo Lang

Architecture of Los Angeles on tour in Europe

The achievements of the city of Los Angeles, as reflected in its buildings and architecture have been gathered together by art collector Mrs. Beata Inaya in an architectural exhibit, "The Three Worlds of Los Angeles" that will be displayed in major European cities in 1974. The exhibit opened in March at the American Cultural Center, Paris. Of special interest are photographs of what has been happening in the Watts area since 1965.

The "Three Worlds" consists of private residences de-

signed by John Lautner; new commercial high-rise office buildings (shown) and apartments, industrial facilities and public buildings designed by Daniel, Mann, Johnson, & Mendenhall (DMJM).

The third world is the world of Watts and features the achievements of black architects John D. Williams, Carey K. Jenkins, Robert Kennard and Arthur H. Silvers. These gentlemen have contributed to the re-building of Watts as well as to the progress of south Los Angeles County.



Brunner Prize awarded Hardy, Holzman & Pfeiffer

Hugh Hardy (center) with Malcolm Holzman (left) and Norman Pfeiffer (right) are winners of the Brunner Prize of The National Institute of Arts and Letters, given annually to an architect who has made a contribution to architecture as an art.

The prize, established by the widow of Arnold W. Brunner, architect and former treasurer of the Institute, was first given in 1955. Among its distinguished recipients have been Louis I. Kahn, I.M. Pei and Gor-

don Bunshaft. This is the first time that a team of three architects has won this award.

Hardy, Holzman and Pfeiffer, noted for their innovative projects in education, and in the visual and performing arts, have also been honored with three awards for their project MUSE, a remodeled one-time pool hall which they transformed into the first neighborhood store front museum and community center in New York City.

Barbara Lamb



Los Angeles city hall saved by new product

One of Los Angeles' best-known architectural landmarks—City Hall—has been saved from the scrap heap by what is said to be the largest masonry structural repair job ever attempted, to correct 11 miles of exterior wall cracks resulting from the 1971 San Fernando earthquake. The solution was to inject the walls with a material developed especially for the project—a structural ceramic foam.

VTN Corporation, an Irvine, California architect-engineer firm called on the job after the quake, found wall cracks from the fifth to the twenty-sixth floors, some large enough to see through. VTN project manager Ronald Galetti asked Delta Plastics Company, Santa Fe Springs, California, to develop something that could be pumped into the walls in a one-step operation. The product developed was *Epiceram FR 450*, a fast-setting, flame resistant and odorless compound.

Private money could be tapped for housing

A novel proposal for tapping private investment money for housing, commercial and industrial development in inner city areas was put out for discussion last month by the Federal National Mortgage Association.

Under terms of the skeletal bill draft, local governments could issue revenue bonds which could be exchanged for mortgages held by savings and loan associations, commercial banks and other financial institutions. The institutions, in turn,

A specially-designed pump, placed inside City Hall near the exterior-face work platform, held foam ingredients in heated individual feed pots. The materials were pumped simultaneously through separate lines, also heated, to the mixing head of the injection gun. The composite fluid was blended in the mixing head and pumped into the wall through grommet-fitted drilled holes; the holes were patched over with a sand and cement mixture and the patch was painted to match the existing terra cotta color.

City Hall, 28 stories and 545 feet high, was designed by John C. Austin, Albert C. Martin, Sr., and John Parkinson. Completed in 1928 at a cost of \$9.7 million, it was Los Angeles' tallest building for decades.

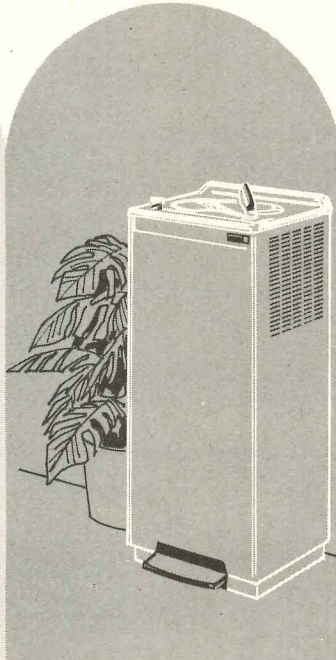
The San Fernando earthquake, although centered some nine miles north of City Hall, caused nearly \$5 million worth of damage to it, including 65,000 sq ft of cracked exterior.

could sell the bonds to the public and the proceeds would be used for inner city development.

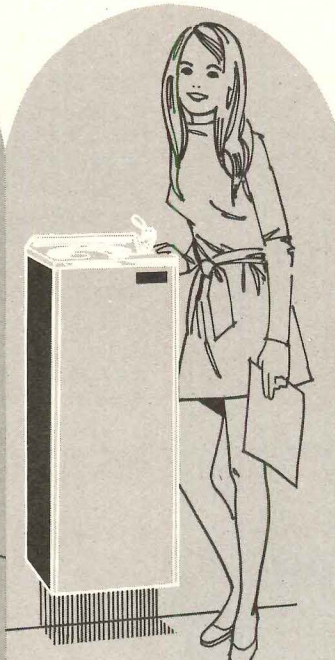
FNMA admitted that the new proposal would be highly controversial but stressed that the central city housing problems had been discussed for decades but remained almost as severe as ever and needed active solutions directed at home seekers who cannot qualify for subsidies, or afford suitable shelter.



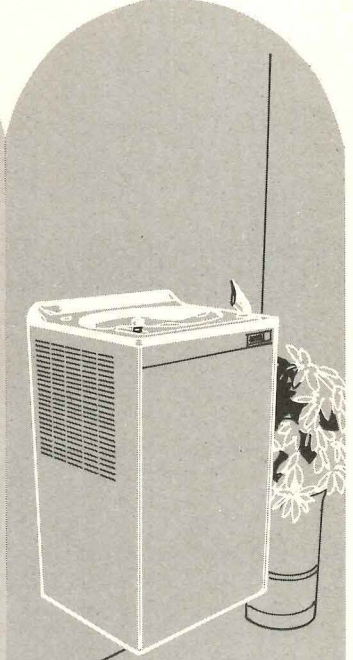
Three models of fully recessed water coolers in 8 to 12 gallon per hour capacities. In satin finish stainless steel or in bronzetone finish. Model shown EFR-8A.



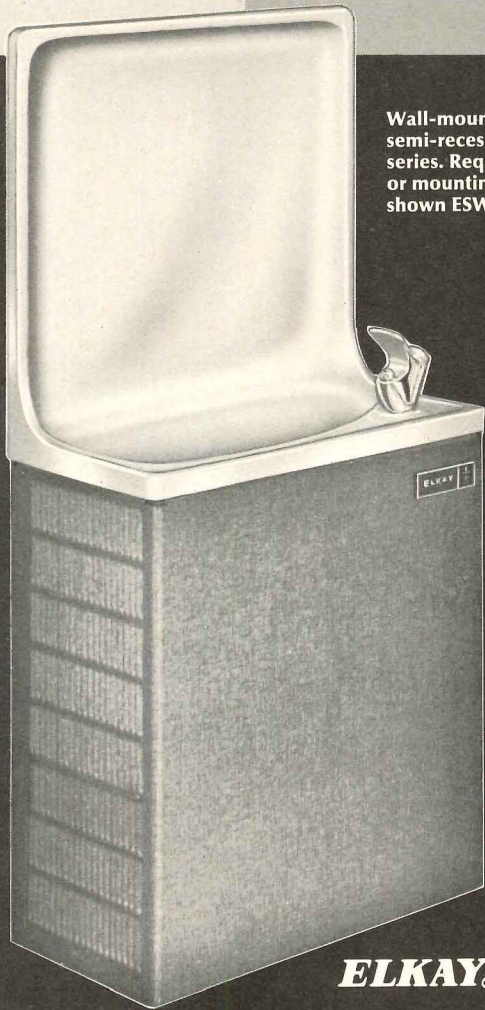
Self contained floor models in 4 to 20 gallon per hour capacities. Panels available in stainless steel, 9 vinyl decorator colors and two in baked enamel. Model shown EF-8.



Space-ette series. The ideal water cooler where space is limited. Capacities are 3, 5 or 8 gallons per hour. Also in floor models. Model shown W-701-5.



Wall mounted models in regular and compact sizes with Elkay's exclusive Cascade Basin. Full range of colored panels. Regular size 4 to 20 gallons. Compact in 4 to 14. Model shown EW-8.



Wall-mounted, simulated semi-recessed coolers, ESW series. Require no wall cut-out or mounting box. Model shown ESW-13.

Elkay reinvented the water cooler and here's why

Water coolers needed to be redesigned to permit simple, fast and economic installation. Elkay did that with sectional construction to keep mechanical systems away from the plumbing connection area. Water coolers needed a basin that is vandal-proof, minimizes splashing, looks better. And Elkay has created water coolers to fit every need: corner models, free standing, multiple basin models, two-level models. All of them with contemporary styling and finishes and colors to complement any decor.

Write for Catalog DFC-4 for more information.

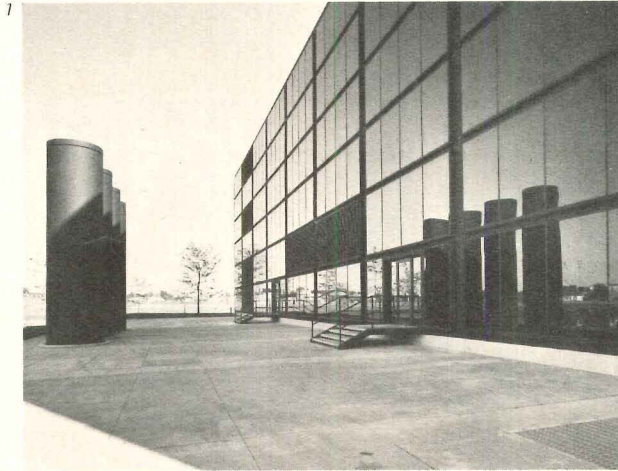
ELKAY® Manufacturing Company, 2700 S. 17th Avenue, Broadview, Illinois 60153

For more data, circle 35 on inquiry card

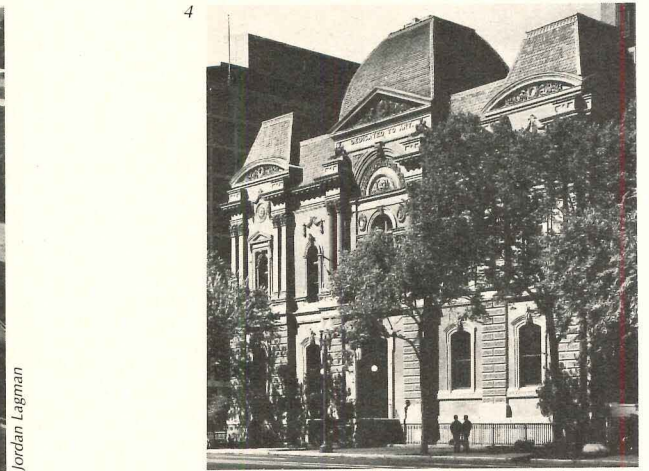
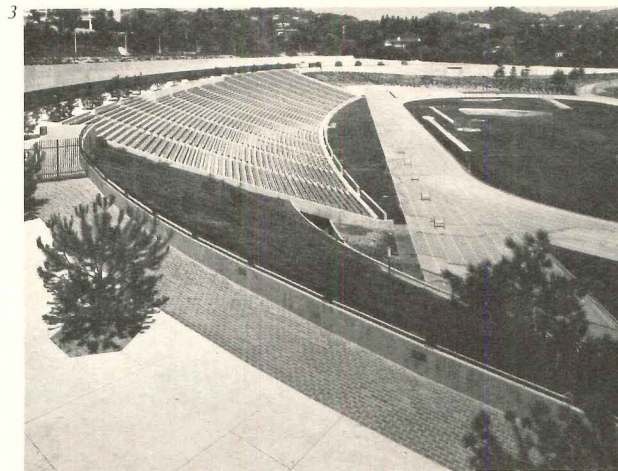
AIA announces eight 1974 Honor Awards

At ceremonies during the 1974 AIA convention this month, eight buildings will be honored with the nation's highest awards for architectural excellence. Representing eight different building types, the projects were praised by the jury for their "highly motivated and committed design intent" as "structures in support of architecture—structures of process rather than styles." The 1974 winners are: 1) Illinois Bell Telephone Equipment Building, Northbrook, Ill., by Holabird & Root; 2) Twin Parks Northeast Housing (RECORD, July 1973), Bronx, N.Y., by Richard Meier & Associates; 3) Multi-purpose Track and Field Stadium, University of California, Los Angeles, by Daniel L. Dworsky & Associates; 4) Renwick Gallery, Smithsonian Institution, (RECORD, July 1972), Washington, D.C., by Hugh Newell Jacobsen (interiors) and John Carl Warnecke & Associates (exterior); 5) North Carolina National Bank (RECORD, June 1973), Charlotte, N.C., by Wolf Associates; 6) MDRT Foundation Hall (RECORD, October 1972), American College of Life Underwriters, Bryn Mawr, Pa., by Mitchell/Giurgola Associates; 7) Paul Mellon Center for the Arts, (RECORD, January 1973) The Choate School, Wallingford, Conn., by I. M. Pei & Partners; and 8) Morgan Residence (RECORD HOUSES, Mid-May 1974), Atlantic Beach, Fla., by William Morgan Architects.

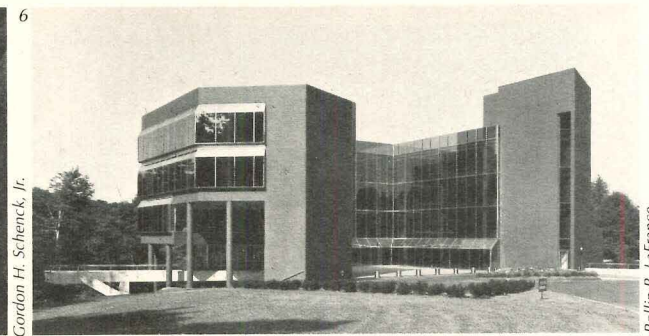
Janis O. Lazda



Ezra Stoller © ESTO

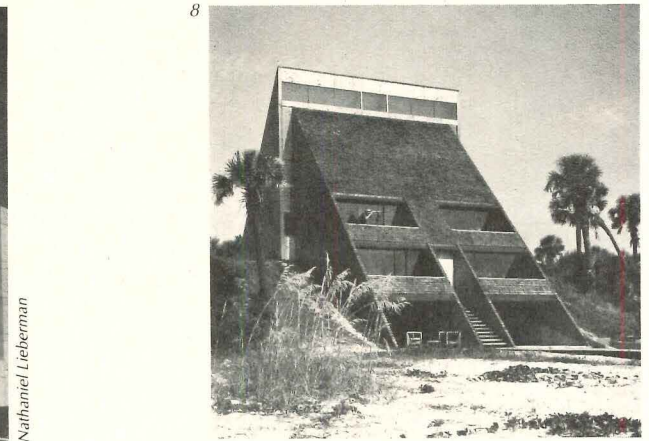
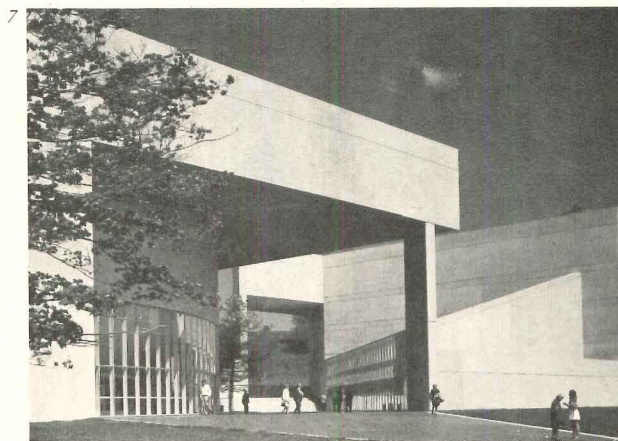


Jordan Lagman

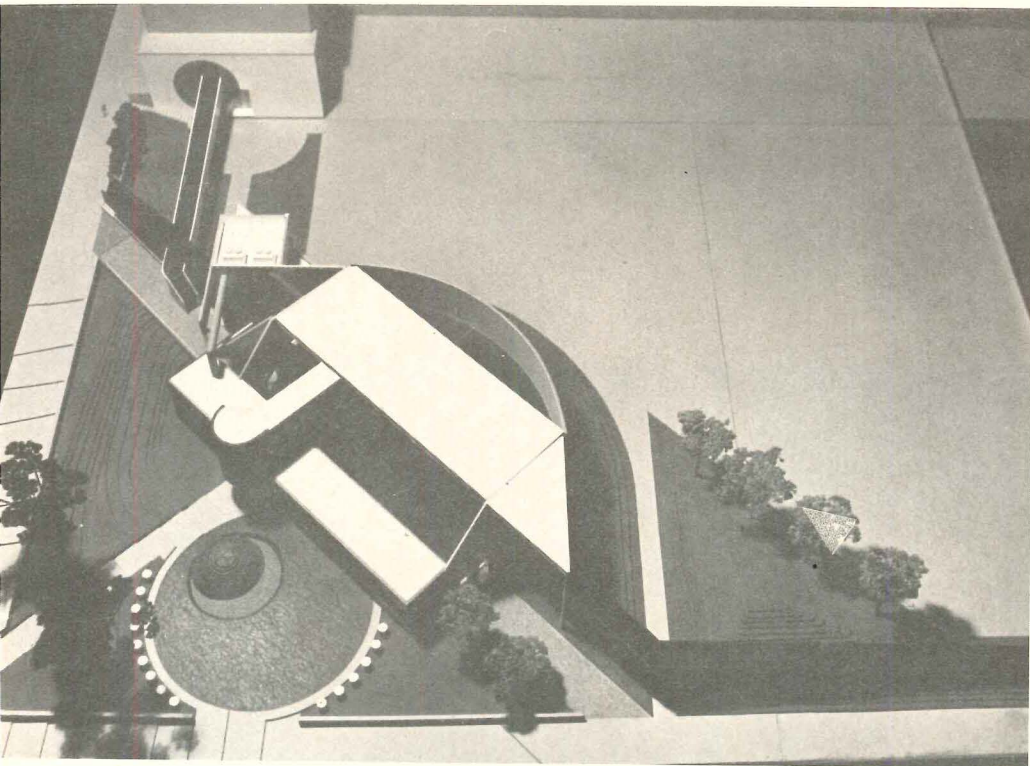


Gordon H. Schemck, Jr.

Rollin K. LaFrance

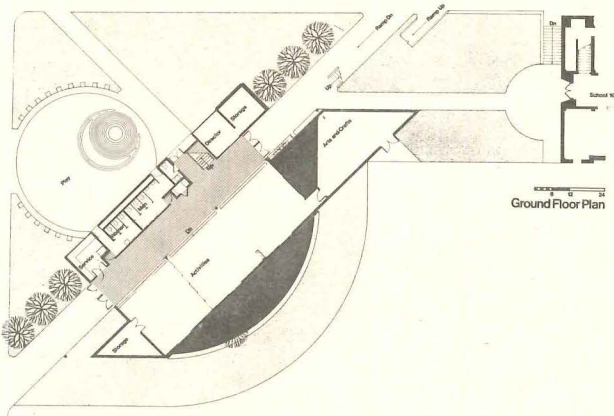


Nathaniel Lieberman



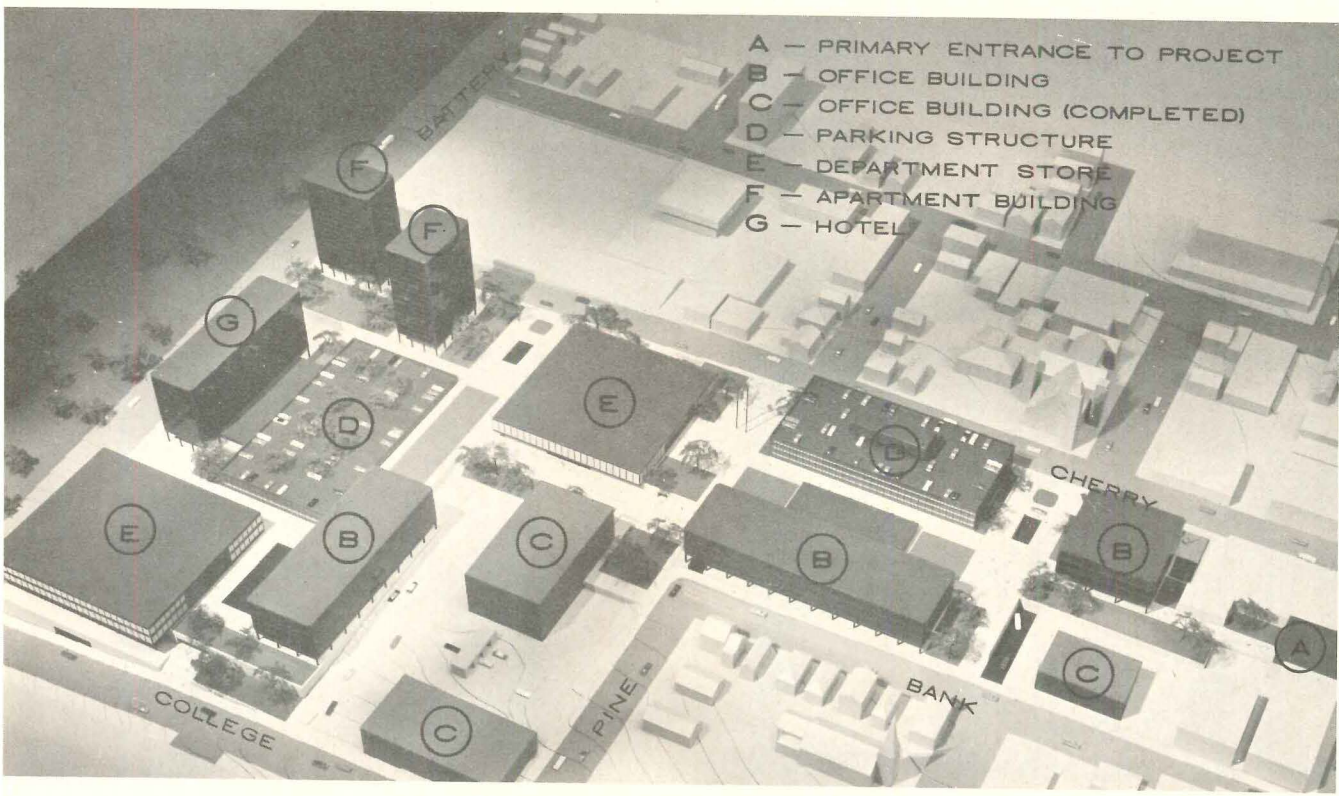
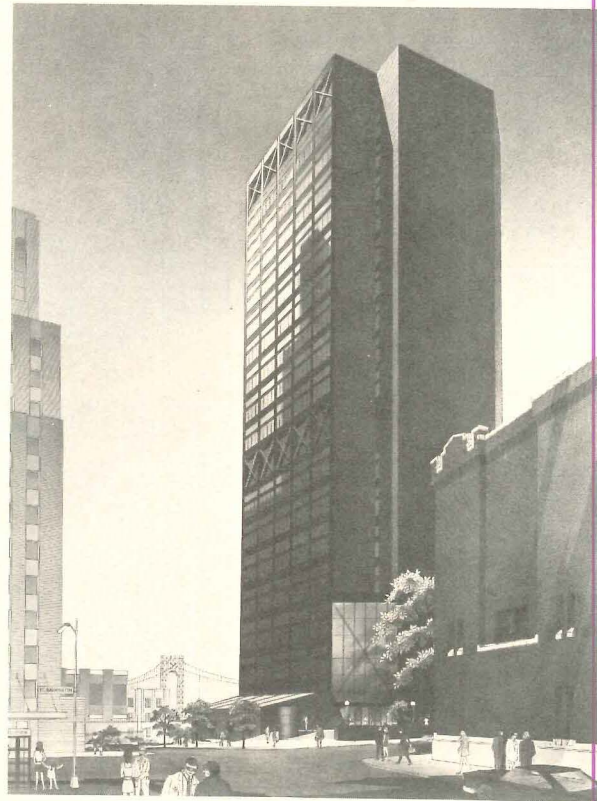
A new recreation spot for inner Baltimore

Under the auspices of the Department of Recreation and Parks, a new recreation center and athletic field facility will be one of the initial efforts in revitalizing a dense city neighborhood. The complex is the work of Designbank and includes a 7000-sq-ft multi-use building designed with exposed structure and systems so that the building itself is play equipment and a learning experience in construction.



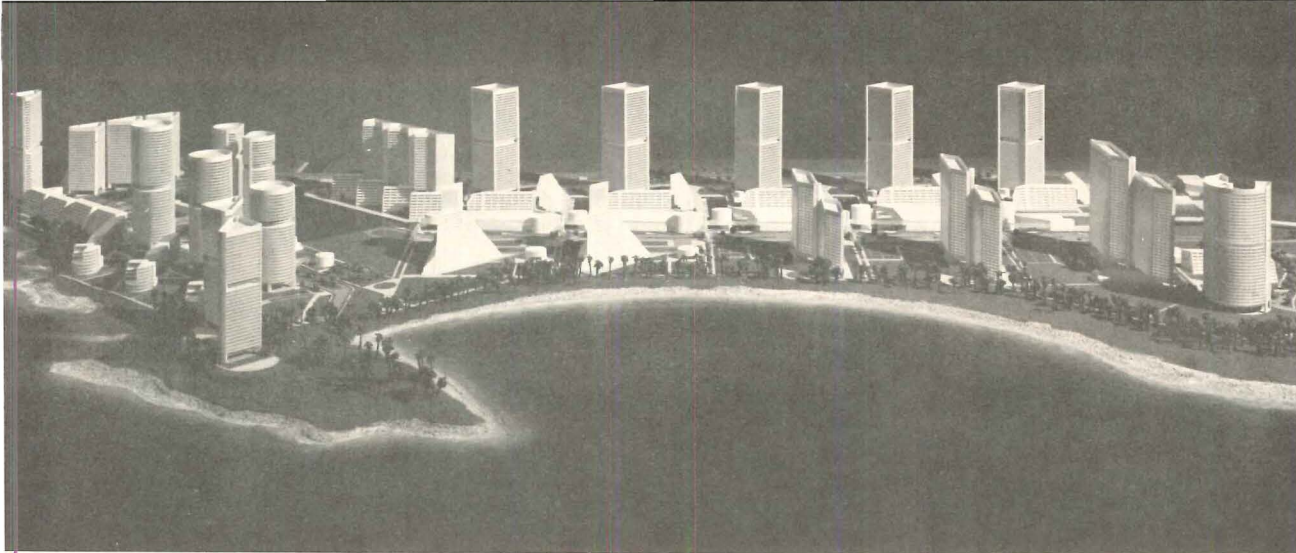
Health sciences center, library in New York

The Augustus Long Library and Health Sciences Center for Columbia University is under construction, using the fast track method. Warner Burns Toan Lunde are the architects for the 18-story tower which will have a weathered steel exterior, with brick and reflective glass. The multi-use facility will provide instructional and research space, plus library space for over 400,000 volumes for the College of Physicians and Surgeons.



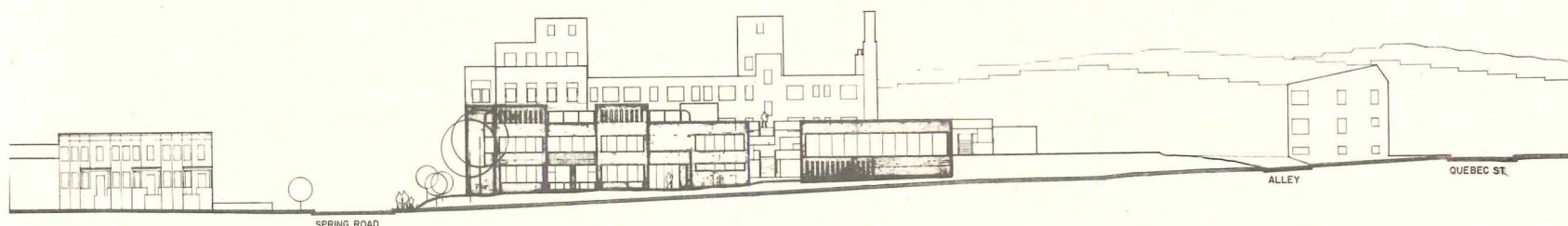
Burlington, Vermont downtown scheme

Faced with the problems of a declining downtown, Burlington, Vermont called upon the Office of Mies van der Rohe, and Freeman, French, Freeman to revitalize the area with a mix of new offices, apartments, shopping and hotel space with parking facilities in common. The site is a 17-acre central space to be called Burlington Square which will extend to a planned lakefront (Lake Champlain) park. An all-weather below-plaza pedestrian mall will include shopping and entertainment and be lighted by light courts and clerestory structures. A stepped plaza or series of terraces will conform to the 80-foot slope of the site. Construction on the project is expected to start in June.



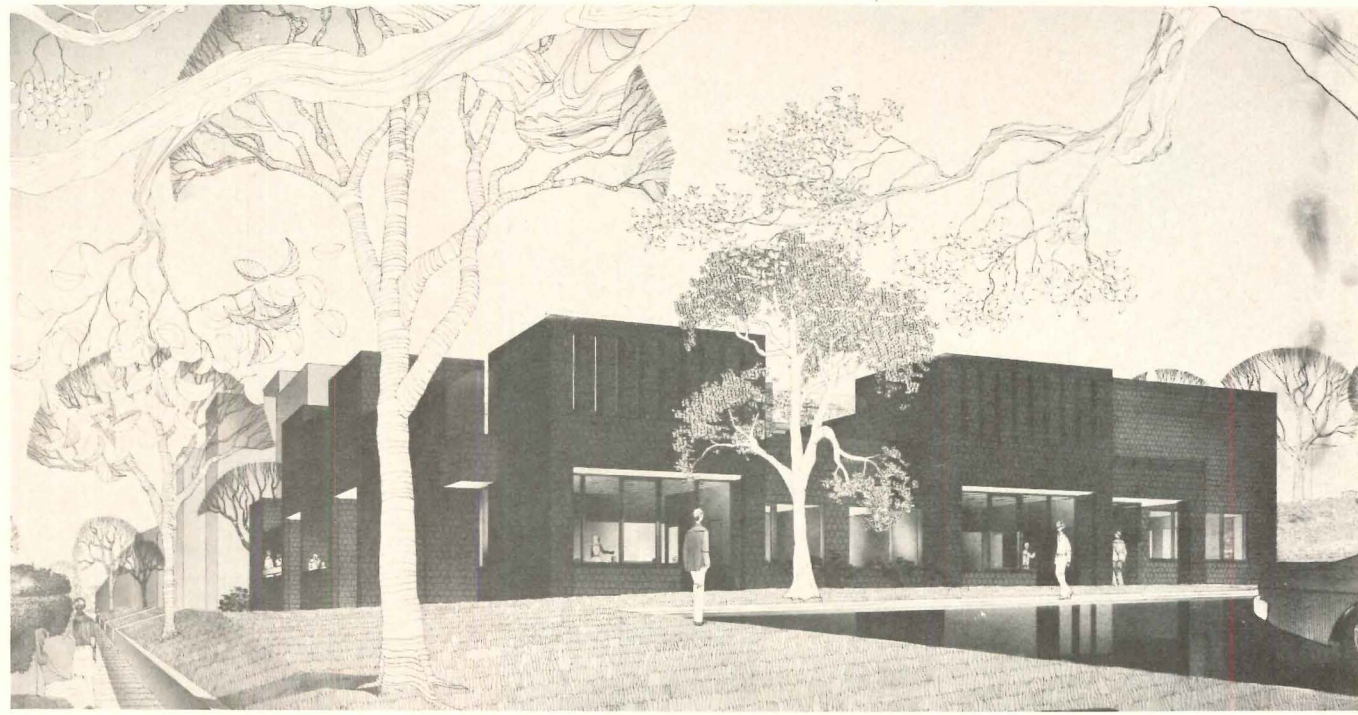
New community planned for Puerto Rico

William L. Pereira Associates has just completed a master plan and urban design concept for a new community to be located on 1300 acres, eight miles from the center of San Juan. The site is one of the last large, privately-owned parcels suitable for development in the metropolitan area. Vacía Talega, as the community will be known, will be the first and largest planned community on the island, and the first to implement new planning guides there.



Children's unit for mental health center in Washington, D.C.

Facilities for short-term residential and day care treatment of emotionally disturbed children will be provided in this building designed by Mariana & Associates. The new building will share the site of an existing adult treatment center housed in a converted home for the elderly. Mitigating the negative community image of the present structure is one of the design objectives the architects hope to achieve with the children's unit. Scale, massing and materials will reflect the neighborhood row house context. Classrooms in the plan are defined as "houses" whose walls continue above the roof to create shaded seating areas. The "windows" of these rest areas are slots in the masonry, echoing a common railing detail of the local row house vernacular. The first building stage will be completed in 1975.



Hospitality center for Connecticut campers

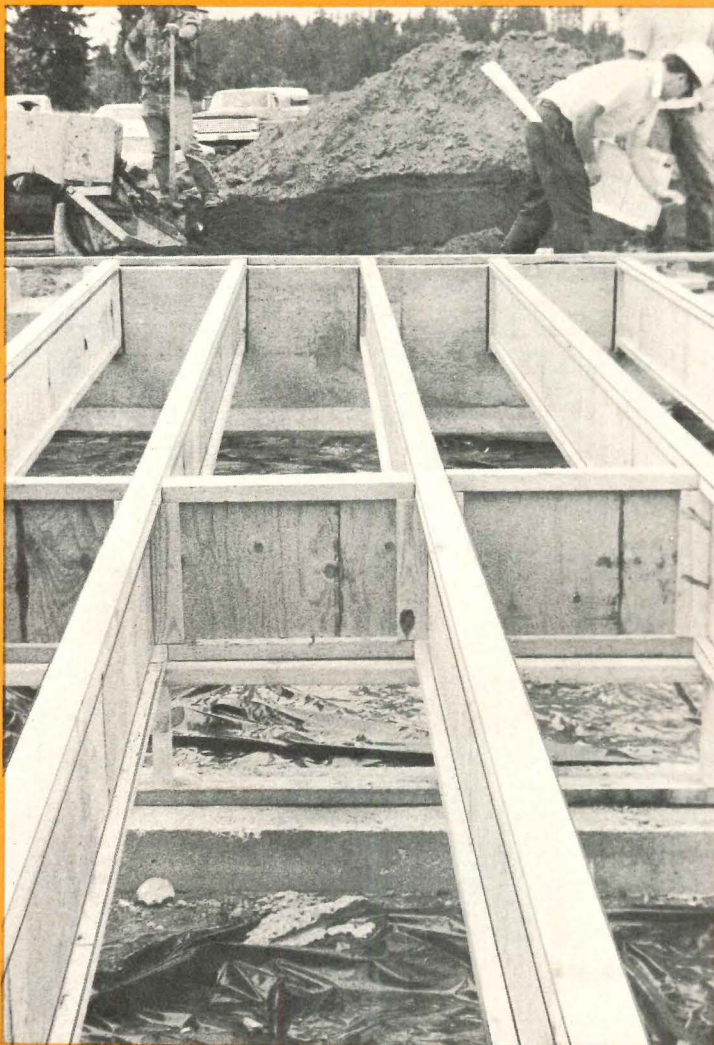
J. Glenn Hughes Associates are the architects for this hospitality center to be located at a campground in Tolland, Connecticut. It is expected to be completed this month. The building has been designed with a wood deck with a sunken fireplace, registration facilities, adults' and children's recreation, grocery store, toilets, laundry, first aid room and outdoor swimming pool.



**ON THE JOB
... ON TIME
EVERY TIME.**



Count on it.



TRUS JOIST roof and floor structural components are on the job on time, whether it's the I-series floor joist which has become a runaway best seller for apartment, condominium or town house construction; or, the custom designed L, M or H-series open web roof and floor joists.

You know the kind of top quality you get with TRUS JOIST, the wide nailable chords, long spans, light weight and fast erection that save you time and money. Couple that with on-time delivery and personal service by highly qualified technical representatives and you'll understand why TRUS JOIST has become the leader in the light weight structural field.

Need more information? A complete design manual or a free and accurate cost estimate? Just drop us a card or call today and your TJ man will be on the way.

Trus Joist

Creative engineering in structural wood.

9777 W. Chinden Blvd. Boise, Idaho 83702 208/375-4450

For more data, circle 36 on inquiry card

Architects chided on responsibilities

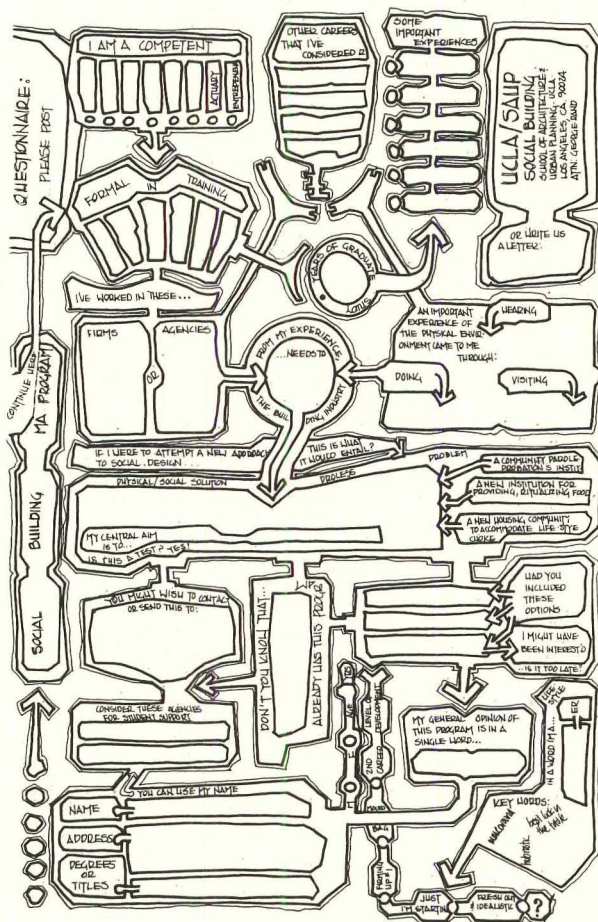
This month, architects attending the AIA national convention in Washington, D.C. will take up the subject of "humane architecture" and how it may be best achieved. One viewpoint was recently expressed by William Houseman in *The Environment Monthly*, which he edits. We are reprinting part of his editorial with his permission, not because we entirely agree but because it expresses an opinion felt by some who would like to see the profession spend less time creating "performance specifications" for ordering national growth, and get back to the task of designing buildings.—Ed.

What's with architecture? Is the "Mother Art" leading the way, dragging her heels, or just getting along by going along?

To be sure, all sensitive souls crave the millenium. But for architects to make it a performance specification to reshuffle poor blacks and Puerto Ricans outward from the inner city and affluent whites inward from the suburbs—that is not just a case of professional over-reaching; it is sheer political fantasy.

Would it not be more helpful if architects decided collectively to stop doing some of the measurable things that are hurting the environment instead of tilting with windmills? Should they not turn down the client who wants to put a senseless industrial park in a corn field? Should they not stop lauding the engineering mentality which orders the erection of buildings taller than the tallest, for the lowliest of motives?

The point would seem to be, not that lofty social and moral aspirations are to be despised by any profession, but that no profession can hope to adopt as its performance specifications a set of objectives which society at large is manifestly unwilling to see adopted. That, it seems to us, is the ultimate denial of what professionalism is all about. There is a key word in the architect's own



lexicon that counsels against the unattainable; it's "feasibility."

Wouldn't it be great to say that architecture as it is practiced today is the Mother Art? And that its practitioners are the generalists who are designing the "humane environment" to which the 1974 AIA Convention will address itself? Heck, wouldn't it be great just to know that qualified architects—i.e., licensed architects—design all of the buildings that go up in this country.

It is inconceivable that an unlicensed physician should remove your appendix, or an unlicensed dentist your wisdom tooth, or an unlicensed lawyer your tort. Those professions wouldn't stand for it. Yet our physical environment, the biggest single business in the world, is largely prescribed by planning and zoning boards comprised for the most part of the garden-variety laymen who

read blueprints upside down that are produced by civil engineers and draftsmen who consider a humane environment one that does not fall on you when you open the door.

And the architectural profession watches all of this happen.

A humane environment starts with shelter. But by and large architects do not design shelter. We were reading a book the other day titled the *Athens Charter* describing the covenants arrived at in the early 1940's by a group of the world's distinguished architects. Le Corbusier was the spiritual heavyweight of the group, and it was his predominant imperative, over 30 years ago, that no challenge is more vital to the architect than providing the world's people with humane habitation. Most of the world's people are still waiting.

It appears that the brightest and the best of the young stu-

dents, interns and practitioners hate the "star" system. And while their ardor for the self-enobling mission of "advocacy" work in the nation's ghettos has cooled, their conception of the profession as an instrument for abetting social change has not. The byzantine configuration though it was drawn by students of UCLA's School of Architecture and Planning. It raises questions that could only come from one profession. Indeed, the words and phrases would constitute a shocking professional breach anywhere else. Words and phrases such as "Social design," "I am a competent," "fresh out and idealistic," etc. Actually, the chart is a UCLA questionnaire sent out in connection with an innovative "social building" program. What it hopes to lure is "a small number of energetic, intelligent, entrepreneurially inclined, work-weathered students to help develop a new experimental program in Social Building. The students, the covering release emphasizes, will shape the program.

We don't know whether this is any way to run a railroad or a profession, but it could yield a reassuring clue to the question we posed at the beginning. Is the Mother Art leading the way, dragging its heels, or just getting along by going along?

Recent UIA activities include India trip

From the International Union of Architects (UIA) in Paris, these items:

■ Twenty members of the UIA Council, presided over by Georgui Orlov, were received in February in New Delhi by, among others, the president of the Indian Institute of Architects. During five work sessions, the group examined a number of topics including UIA contributions to the 1976 Vancouver conference-exposition on human settlements, sponsored by the United Nations Environment Program. During their stay, the

Council also met with V. V. Giri, president of the Indian Republic and several ministers who confirmed the importance of the architect in their country. During their stay, Council members visited the architectural schools of New Delhi and Chandigarh.

■ The European regional bureau of WHO, the World Health Organization, in cooperation with the Federal Republic of Germany, convoked a seminar in Stuttgart, last December, on the sanitary aspects of urban development. The conclusion reached was that problems in the European region at present can only be met by a total interdisciplinary approach to planning. The seminar dealt with the relationships between different systems of sanitary administration and of urban planning in towns of average population (up to one million people) in the European region of WHO.

Architects propose San Juan rezoning

A proposal for rezoning the Condado, San Juan's tourist hotel strip which also contains some of the city's highest cost condominiums and private homes, has been prepared by two architects at their own expense.

Federico Montilla and Russell Latimer will present the plan, which has received the personal endorsement of Condado Association president Queenie Valdes de Adsuar, to Governor Rafael Hernandez Colon. The Condado Association, founded in 1972, seeks to prevent deterioration in the Condado, where trashy advertising signs and the like have made the area look cheap.

The architects recommend that an elevated highway and a boardwalk bordering Condado Lagoon be built, that space be left for businesses on the ground floor of all new construction and that the Condado be rezoned by the Government as was done when the restoration of old San Juan was carried out by the Institute of Puerto Rican Culture.

Waving the vinyl flag

PLASTICS AND ARCHITECTURE, by Arthur Quarmby: Praeger Publishers, New York, 1974, 208 pages, illus. \$20.00.

Writing a book about plastics is a difficult task for two reasons. First, developments happen so quickly that the book is likely to be out-of-date before it is in print. Second, the materials can take on so many forms and characteristics. It is able to span vast distances with a single sheet while, at the same time, it is capable of holding your dentures on. It can be lightweight like wood, strong like steel, and moldable like concrete, while looking like any one of these.

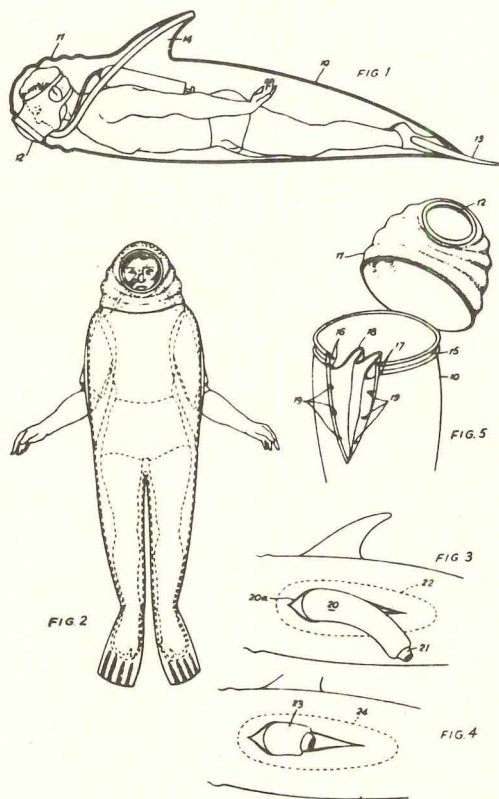
The obvious way to limit the scope is to describe the history of plastics and then to speculate about the future. *Plastics and Architecture*, by Arthur Quarmby, is excellent on the first count because of the considerable experience of the author in working with various forms of the material. In speculating about the future, however, he has (like so many others in the last decade) relied on the images of Archigram and their contemporaries, rather than developing independent, fresher, and perhaps more realistic alternatives. It is difficult, for instance, to distinguish portions of this book from *The Anthropods*, *Urban Structures for the Future*, *Archigram*, *Experiments in Architecture* and many articles by Rayner Banham and others.

Because there are so few books specifically on plastics, it is difficult not to make comparisons, particularly since the jacket of this one claims it is the first such book for architects. It is not. But where this book lacks in depth of analysis or case studies it makes up for in quantity of illustrations. Inflatables, shells, components and sculptural applications are sections well supported by good quality photographs and captions.

It is important to note that the title of Quarmby's book is *Plastics and Architecture* (as opposed to plastics *in* architecture). This choice gives Quarmby license to talk about either subject, even when the connection is tenuous. He often does digress, and these digressions are either interesting little anecdotes (like the man that made himself a plastic suit in the form of a porpoise, so he could swim like that mammal) or rebukes against architects and educators for our lack of adventure and exploration in the use of plastics. This waving of the vinyl flag appears whenever the text seems to get technical or whenever the author is at a loss to explain why some magnificent use of plastics was not universally accepted. "We design out of habit, we do not think, we do not question." One would assume, then, that the

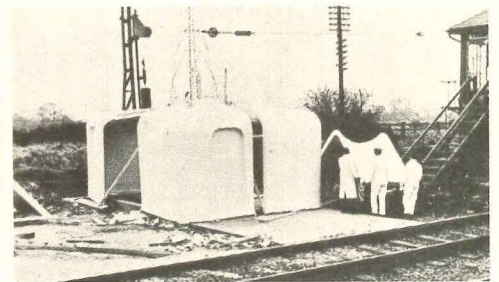
absence of the total plastic building is due to the lack of imagination and education of the architect. I think not.

First of all, as Quarmby admits, plastics are not cheap, and, as he says, most plastic techniques "will remain beyond our reach until we succeed in organizing the gigantic market for building into viable units." The problem is therefore at least partially political and social. Secondly, those of us who have



tried diligently to use plastics as a structural and space enclosing material and have still met with little success even on a small scale are convinced that the problems remain somewhat technical. Fire is the single most critical issue when working with plastics as a total building material, but astonishingly, it is scarcely mentioned in this book. Although this is partially a chemist's problem (additives) or a manufacturer's problem (coatings) there are still many architectural and planning concepts which can alleviate the difficulties, and these should have been suggested in this book. These possibilities include holding rooms on each floor of high-rise buildings, and outside elevators for emergency access, or zoning structures with fire breaks for lower density situations.

Quarmby discusses how he sees the restructuring of a profession as a result of the eventual adoption of plastics. Some architects will design components, and others will inter-

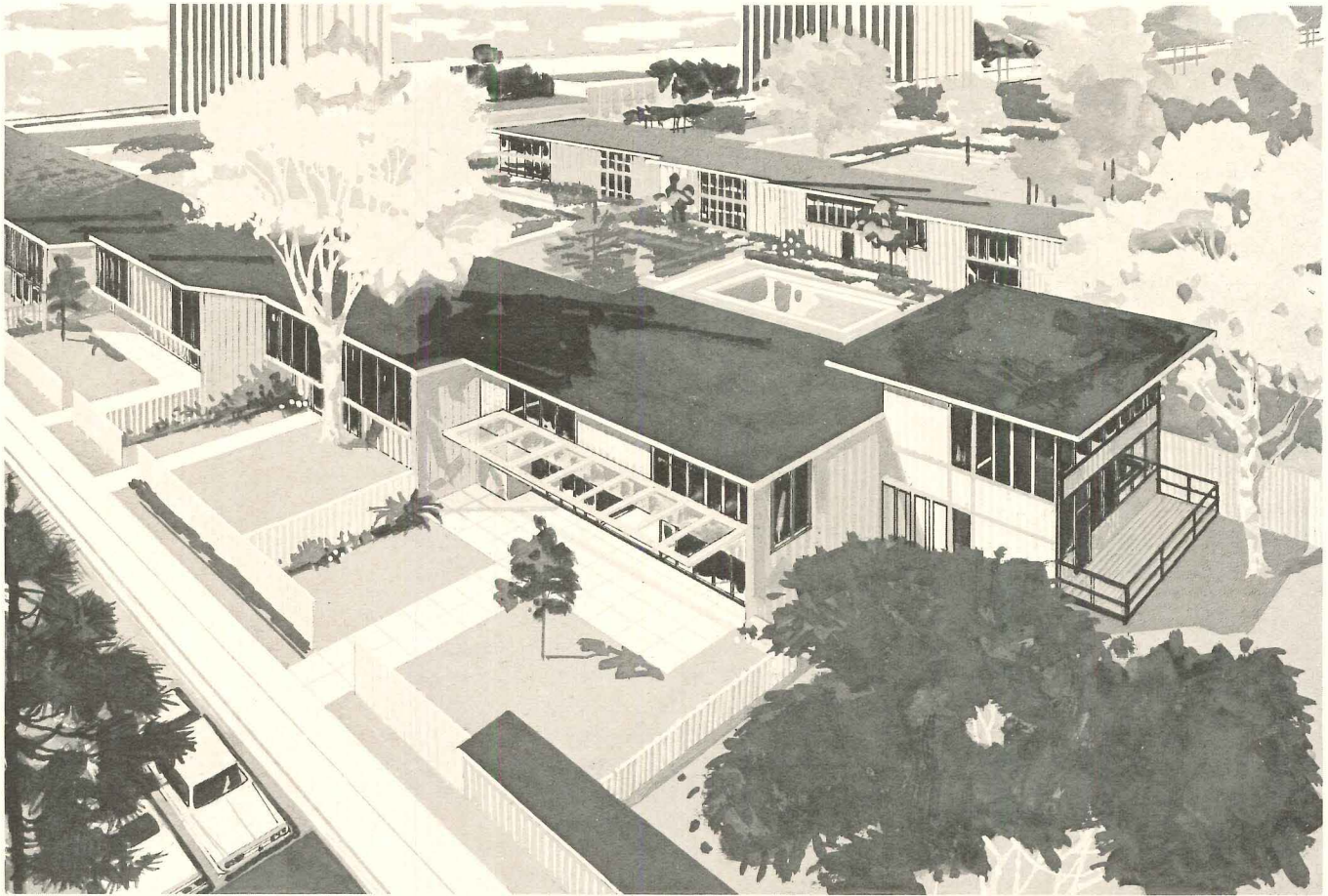


pret these parts into buildings. However, when using plastic components for structure and enclosure, the molding process and the desirability (without huge production runs) of limiting the number of molds leads to houses of fixed geometry and limited architectural expression. The architect of the system becomes the architect of the individual building. These fixed geometries are generally round or saucer-shaped, using only one pie-shaped mold. They have informal plans, they are easy to erect with only one standard joining condition, and they are most appropriate for emergency shelter and vacation homes where fire codes and user needs are not as restrictive as in the general market.

It is Quarmby himself who found a way to overcome some of the problems of limited size and geometry of these buildings and his switch houses for the British railway. For some reason (perhaps modesty) he does not go into great depth on the actual design process or evolution of the form of this system. In the switch houses Quarmby uses three concepts not yet in general use. First, through the molding process he eliminates the critical connections (both from weatherproofing and structural standpoint) of the ceiling to wall. He also uses a double curved surface on the component to increase its strength, and finally he allows for variation in building size by additions of identical components. The House of the Future at Disneyland used single pieces to eliminate the critical connections, but these had a variable section calling for two molds in order to make the great cantilever. The Disneyland house could not be expanded and was not completely enclosed by the use of its plastic component panels. The railway switch houses, with single mold elements and integral windows in these panels, enclosed the entire space. Why Quarmby decided not to go all the way and use a "c" shaped component which included the floor as well, what kinds of transit problems were incurred, what kinds of mold designs are all unexplained questions.

Quarmby sees a great potential in these buildings by combining the interior equipment

continued on page 46



Saving energy all year long with insulating glass

Insulating glass units made with LP® polysulfide polymer base sealants are conserving energy and cutting HVAC operational expenses in buildings everywhere. Double-hung units—with one of the two panes made of metalized coated glass—reduce the 1.09 heat transfer coefficient (U value) of single-pane glass dramatically by 56 percent down to 0.50. This is not too far from the 0.27 U value of the most efficient (but dehumanizing) solid masonry wall.

In the past 15 years, over 80% of all organically sealed insulating glass window units used LP polysulfide base sealants, delivering strong, flexible, long-lasting airtight bonds between glass and frame. Although LP sealed units may cost less than other organically sealed units, they will perform trouble-free for years and years.

Because replacement of only one or two insulating glass units can be very costly, you should seriously consider the outstanding, long term, proven performance of polysulfide base sealants. The present integrity, beauty and economical practicality of curtain wall construction can thus be extended through the innovative use of properly sealed insulating glass units.

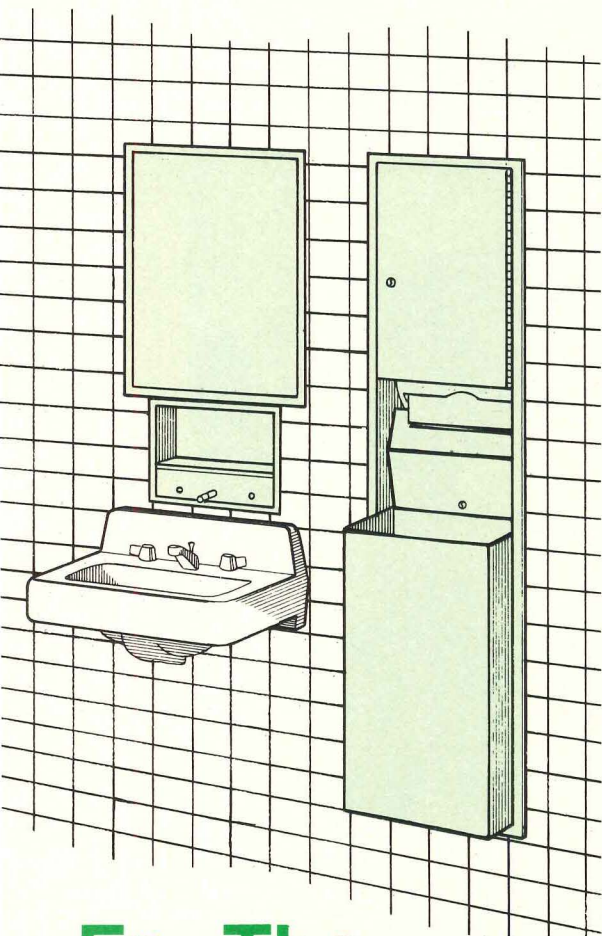
Specify—and demand—insulating glass with an LP polysulfide polymer base sealant to see your way clearly through the energy crisis of today—and through whatever tomorrow may bring. For more information and help in solving your insulating glass problems, contact Thiokol/Chemical Division, P.O. Box 1296, Trenton, N.J. 08607, or phone 609-396-4001.

Thiokol

*Specialty Polymers • Off-The-Road Vehicles • Synthetic Fibers & Fabrics • Sprayers • Propulsion • Educational Services
Friction Materials • Ski Lifts • Pyrotechnics • Closures • Rubber and Rubber Chemicals • Medical Electronics Equipment*

For more data, circle 37 on inquiry card

THE PARKER FAMILY...



For The Modern Washroom.

In today's washroom, where space is often a factor, the Parker Family of Washroom Equipment can provide every necessary convenience in a small area. In the washroom shown above, one Parker unit provides a soap dispenser and shelf and one provides facilities for dispensing and disposal of paper towels. These two units, as well as the mirror frame, are constructed of the finest quality stainless steel, making them attractive as well as easy-to-clean.

SEE OUR FAMILY ALBUM IN SWEET'S ARCHITECTURAL FILE 10.16/Pa.

charles  parker

290 PRATT ST., MERIDEN, CONN.

06450

TEL. 203-235-6365

REQUIRED READING *continued from page 44*

with the enclosure skin. "... If we could have built-in permanent finishes for the interior—there are so many more interesting ways of developing personality than by changing the wallpaper or buying a new carpet." I agree that all our present enclosures, plastic or otherwise, are virtually the same, and that traditional furniture has given only choice of style not options in environmental design. Yet there are a number of developments (most of which are in plastics) contributing to the increase of alternatives, and all of these are overlooked by Quarmby. The most obvious are the Italian domestic landscapes in general, and the work of the late Joe Colombo in particular. Although these solutions are meant to be independent of the shell, they are nevertheless multifunctional equipment capable of having immense spatial implications within the enclosure. Similarly the work of Severino (whose *Equipotential Space* parallels many of Quarmby's attitudes) shows a highly developed approach of coordinating a spatial enclosure and three dimensional interior (functional objects). Another possibility, also not discussed, is the potential for three-dimensional elements to clip on to existing enclosures. In this way specialized equipment or simple space additions could be easily applied to the dwelling. Because of its molding and three dimensional potential, plastic is the perfect material for this use.

On the other hand, the extent of Quarmby's historical analysis and research is truly impressive. The development of the plastics industry occurred at what seems to have been the perfect time. The post-war European countries needed to rebuild, thereby establishing a huge market. They needed to rebuild quickly and looked to industrialized methods. They had vast shortages of building materials and looked to synthetics and plastics. And many needed a new soft edge esthetic to counteract what was regarded as the sterility of the modern movement. Unfortunately the opposite situation from today existed then. The desire was there but the technology was not up to it. Now it appears that the technology is that in spite of any real experiments in its use, the industry continues to grow enormously. The all-plastic house is a reality. Look at a mobile home. Most of the interior and exterior finishes are plastic as well as the baths and much of the hardware, even though it may look Georgian.

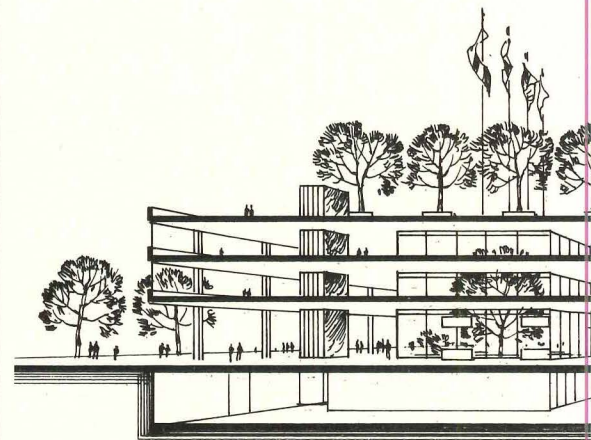
Many of the real problems that are retarding any experimentation are glossed over by Quarmby and some realistic not-so-distant solutions should be suggested. Esthetic acceptability, fire, maintenance, availability of a petroleum-based material are only a few that get minor attention.

Quarmby is thoroughly knowledgeable in this field, speaks with authority, and his motivation is simple and clear. "Many of us are still driven on by the complete certainty that the logical applications of plastics materials and technology can, and one day will, produce an industry of building capable of curing the housing ills of the world." I hope he's right.

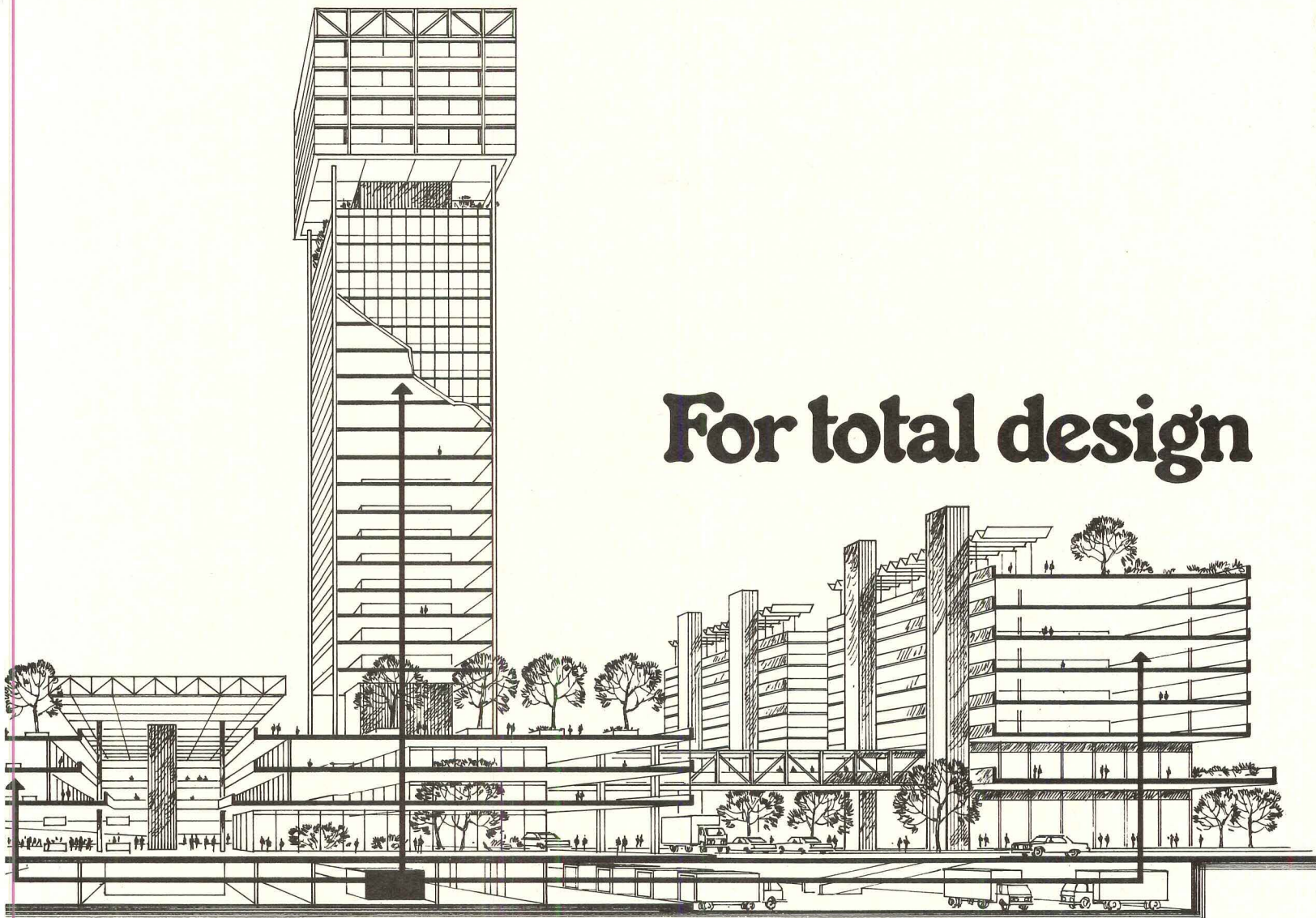
—Sam Davis

Mr. Davis is an architect who teaches at the University of California at Berkeley.

◆ For more data, circle 38 on inquiry card



call the



For total design

Bell System when preplanning.

Efficient buildings provide facilities to install today's sophisticated communications systems. Since these facilities should be integrated with your design, we want you to know about our Building Industry Consulting Service.

A Bell System consultant can advise you on local building codes which affect communications, and suggest a system that offers maximum efficiency and makes optimum use of space. And there's no extra charge for this service.

Calling us early can eliminate the need for expensive alteration, or exposed cables and wires.

Our insert in Sweet's Catalogue has basic information. For questions on current or future projects call a Building Industry Consultant at your Bell Company or send in our coupon. At AT&T and your Bell Company, we want to help you produce an efficient end product.

We hear you.



For more data, circle 39 on inquiry card

Building Industry Consulting Service K
American Telephone and Telegraph Company
 Room 2238D, 195 Broadway
 New York, New York 10007

I am interested in the Building Industry Consulting Service.

- Please send me additional information.
- Please have a representative contact me.

Name _____

Title _____ Tel. _____

Company _____

Street _____

City _____ State _____ Zip _____



Granco decking is used in the two 110-story towers of the World Trade Center in the Port of New York. That's proven performance.

Since 1950 Granco has provided a complete line of steel decking for floors and roofs. We've been known for quality and performance. You probably recognize some of our trade names as standards of the industry.

And now to perform more efficiently for you, we've made some new moves.

Like building a new East Coast plant to increase production capacity and cut shipping costs to our Eastern customers.


And moving our corporate headquarters to Houston. Where we've already more than tripled our research and development staff, increased our engineering capability

and added more computer design capability.

Granco is moving. To provide you with construction products that perform. And service to get your order there on time. Write Granco, P. O. Box 40526, Houston, Texas 77040.

For more data, circle 40 on inquiry card

Granco[®]
Building products that perform

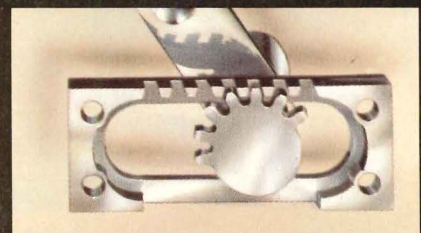
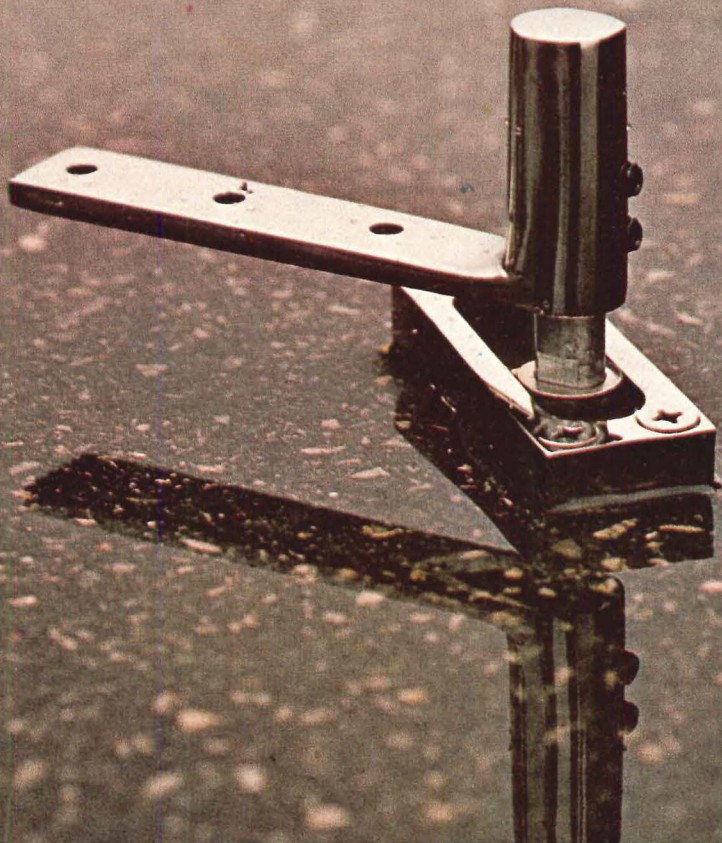
 **Granco Steel Products Co.**
Subsidiary of
National Steel Corporation

**If you're looking for
Proven Performance,
Granco's your kind of place.**

**TUF COR
CORRIFORM
CEL-WAY
COFAR**

The real beauty of Hager's Raconteur® hinge is hidden.

The beauty of Hager's Raconteur® pivot is that you can't see it. It's perfect for concealed applications in executive offices, libraries, private clubs, luxury condominiums, apartments and homes. Raconteur® rack and pinion pivots will support any 1-3/4" wood or metal interior door weighing up to 150 lbs. Paneled walls of doors with uninterrupted lines are possible because Raconteur® completely concealed pivots require no frames. And Raconteur® pivots allow doors to open 105°. All pivot components are made from fine quality brass, stainless steel, rolled steel and cast iron eliminating sagging common with other concealed hinges. Plastic plugs allow for simple concrete floor installation. Patent #3,394,428.



Alignment is easily adjustable. Available in satin brass and satin chromium decorator finishes. Ask your architectural hardware consultant about Hager's complete selection of fine quality door hardware. Or, write Hager Hinge Company, 139 Victor Street, St. Louis, Mo. 63104.

Hager

EVERYTHING HINGES ON *Hager!*

For more data, circle 41 on inquiry card

It's funny. Just because we invented the traditional precast Washfountain, many may think that's all we make.

But Bradley has 1500 other bright ideas.

A full line of two-handle and single control faucets with the longest guarantee in the business.

Wall showers and group showers in columns, multi-stalls, panels and modules.

Soap valves and soap spray systems.

Hundreds of mirrors, dispensers, receptacles and other related accessories.

Drinking fountains and safety showers, eyewashes.

Washfountains in new shapes and materials.

Plus Duo Washfountains and Bradpack® preassembled wash centers.

So come see the people with the products that serve many, save money and give you more room when you need it.

Bradley.

From the Washfountain to a lot of other bright ideas.

Write: Bradley Corporation, 9107 Fountain Blvd., Menomonee Falls, WI 53051.

Bradley 





**Bradley can give
people showers,
wash and dry
their hands,
give them a drink,
look good on a sink
and collect the trash
when they're done.**

For more data, circle 43 on inquiry card



This is how one pressure group operates to keep Harlem clean.

The pressure we're talking about is the negative pressure exerted by the vacuum principle of ECI's Air-Flyte pneumatic waste disposal conveying system.

It was the kind of pressure the East Harlem Tennant Council and their architects, Silverman & Cika needed to protect the environment of their highrise project.

They wanted to make sure that the garbage cans, the odors and most importantly the vermin and the rodents that can ruin a project of this size, were completely eliminated.

Four towers housing 656 families, a day care center, a job training facility, children's playhouses, an amphitheater and stores can produce a lot of trash.

The initial estimate was 7,500 pounds a day. The planners turned to an ECI Air-Flyte pneumatic conveying system using a negative pressure vacuum system to remove it, cleanly and effectively.

The system consists of conventional gravity trash chutes, specially designed sizing and receiving hoppers, an ECI Air-Flyte pneumatic conveying system and a waste holding area, containing two large compactors with 35 yard roll-off containers.

Waste is placed in the gravity trash chutes, or directly into receiving hoppers in the commercial and service areas.

The system automatically sizes and transports the waste to the central collection system via the Air-Flyte conveying system. The Air-Flyte system uses a negative pressure vacuum principle to

carry the waste at a mile-a-minute, in any direction, up, down, diagonally, around corners—over any required distance.

Once the waste is placed in a trash chute or hopper it's never touched again. Because the system is completely enclosed, odors, vermin and rodents are eliminated.

The Air-Flyte system works efficiently to keep the environment clean, in Harlem or anywhere else. Ask your ECI representative for the whole story on Air-Flyte trash collection systems.



ECI Air-Flyte Corp.

Subsidiary of Eastern Cyclone Industries, Inc.
15 Daniel Road • Fairfield, N. J. 07006

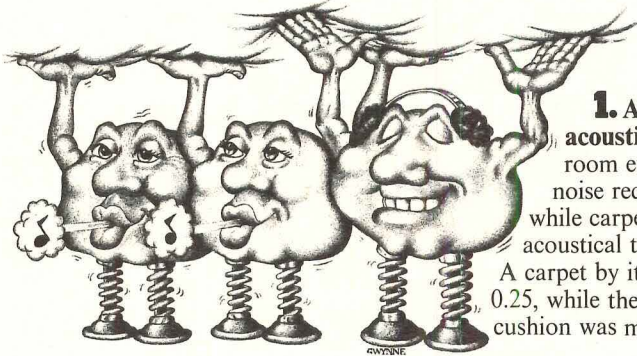
Regional Sales Offices:
BOSTON • CHICAGO • LOS ANGELES
ATLANTA • DALLAS

Affiliations in Europe, Africa, Australia and Asia

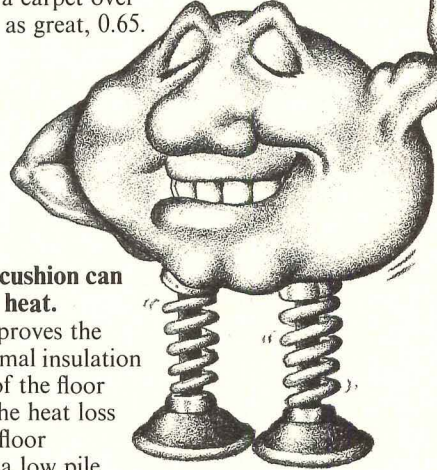
For more data, circle 44 on inquiry card

Before you pull the padding out from under another rug, read this.

Whenever your carpeting budget is up against the wall, the first thing you're tempted to do is pull out the cushion. Before you do, consider the underlying contributions carpet cushion can make to your next installation.

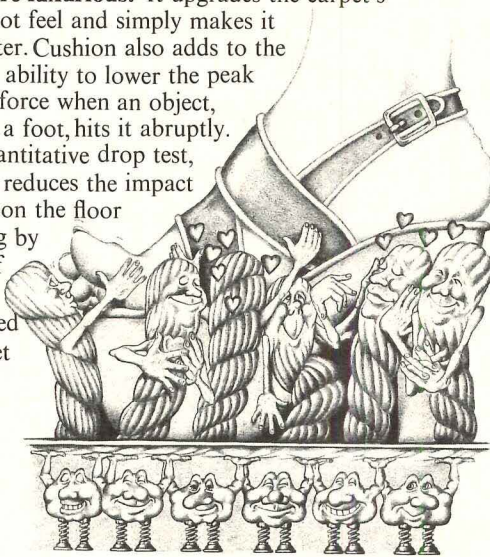


1. A carpet cushion more than doubles a carpet's acoustical properties. A carpet with cushion makes a room even more quiet. In tests to measure impact noise reduction, carpet only received a +14 rating, while carpet over cushion had a +25 rating. In a similar acoustical test measurements were taken for noise reduction. A carpet by itself measured a noise reduction coefficient of only 0.25, while the coefficient for a carpet over cushion was more than twice as great, 0.65.



3. Carpet cushion can help retain heat. Cushion improves the overall thermal insulation properties of the floor covering. The heat loss factor of a floor covered by a low pile carpet and a cushion is about one-third of what it would be with the same carpet alone.

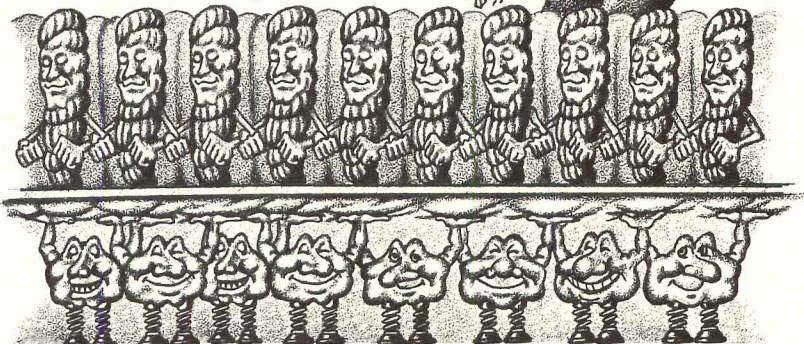
2. Separate cushion makes a carpet seem thicker and more luxurious. It upgrades the carpet's underfoot feel and simply makes it feel better. Cushion also adds to the carpet's ability to lower the peak impact force when an object, such as a foot, hits it abruptly. In a quantitative drop test, cushion reduces the impact exerted on the floor covering by one-half when compared to carpet alone.



5. Separate cushion makes a carpet easier to maintain. It lowers the maximum forces acting on the fibers, thereby reducing the pile crushing and the grinding action of imbedded dirt that can cut and fray fibers. That means a cushioned carpet—given a fixed maintenance cost—will look better for a longer period of time than a non-cushioned carpet.



4. The initial cost of a cushioned carpet need not be more expensive. Instead of putting money into a sub-floor, you can put it into a cushion. A cushion plus carpet can mask surface irregularities so that a lower-grade, less costly finish on sub-floors can be specified. In addition, a lighter weight, less expensive carpet can be used since the more expensive face yarns aren't needed to provide cushioning. And there are no expensive labor costs involved in the removal of an old carpet, as there can be with glue-down installations.

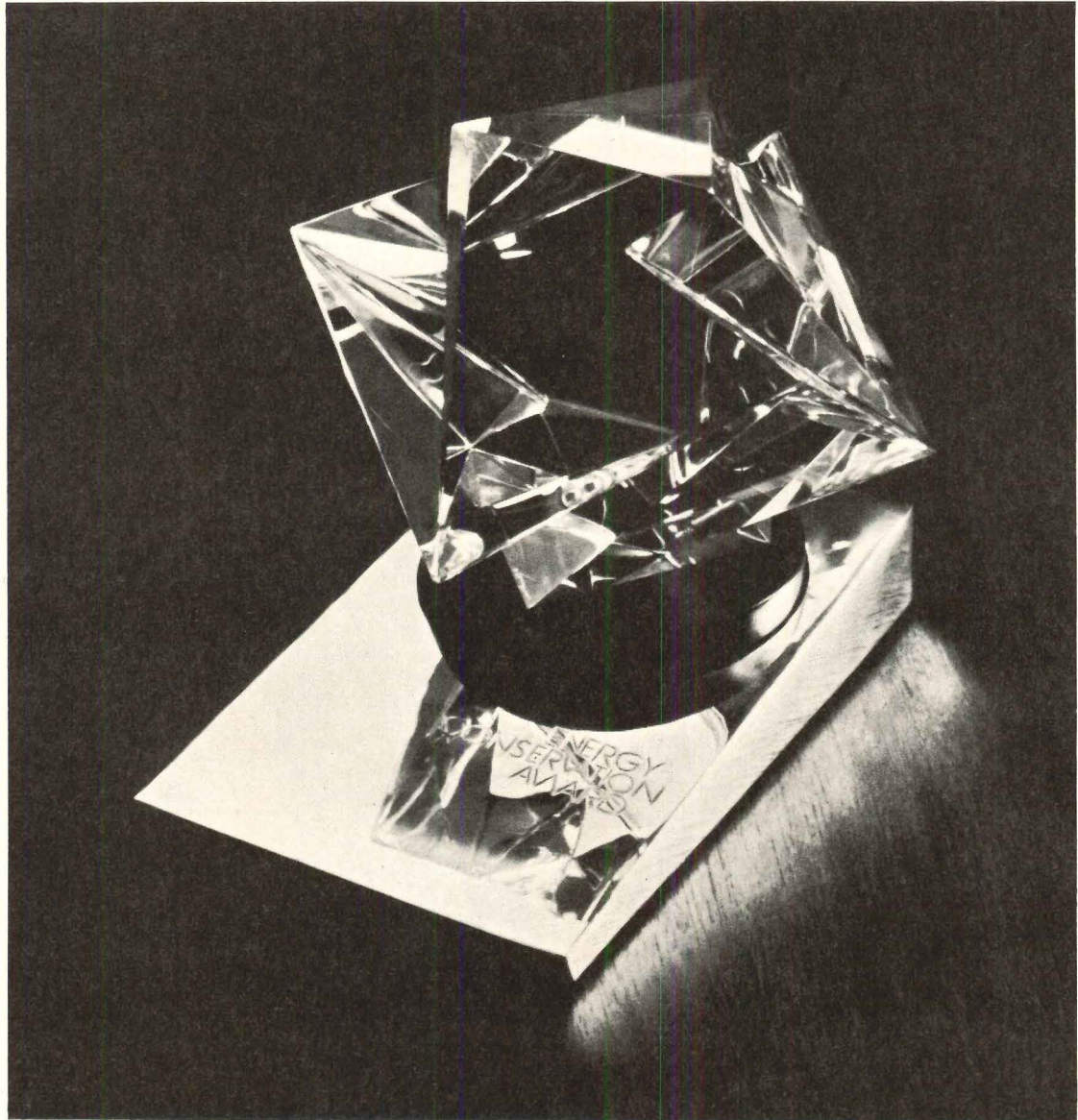


6, 7, 8. and more reasons why carpet cushion will add life, and cost less to install, can be found in our new brochure. For your free copy of "The Supporting Facts about Carpet Cushion," write: Carpet Cushion Council, P.O. Box 2048, Dalton, Georgia 30720 (404) 278-3176.

 carpet cushion council

For more data, circle 45 on inquiry card

**Owens-Corning announces
its third annual
Energy Conservation Awards Program
for architects and engineers**



The Owens-Corning 1974 Energy Conservation Award.
"Triangles," a Steuben Crystal sculpture that captures and refracts light from multiple triangular planes.

This year, the whole world is watching.

Show our Awards Jury a building design that doesn't waste energy—and you could win one of the Energy Conservation Awards Owens-Corning will present for 1974.

The Awards Jury will be looking for three things: Creativity. Originality. And most important of all—designs that save energy.

Too many buildings waste fuel and contribute to environmental pollution.

By continuing the Energy Conservation Awards Program we initiated in 1972, Owens-Corning hopes to stimulate even more new ways to conserve energy. And it will let us honor the architects and engineers who do the best job of designing buildings and mechanical systems that conserve fuel.

Who can enter

Any registered architect or professional engineer practicing in the U.S. is eligible. As an individual. Or in a team. But to qualify, your entry must be a commissioned building project—in the design process, under construction, or a completed structure.

Although Fiberglas* products are an excellent way to conserve energy, their use is not a requirement.

Four entry categories

A winner will be selected in each of these categories:

Institutional—schools and hospitals, for example.

Commercial—office buildings, shopping centers, retail stores, and similar structures.

Industrial — including manufacturing plants, research centers, warehouses.

Governmental—post offices, administrative buildings, and military structures to name a few.

The Awards

Winning architects and/or engineers will receive the Steuben Crystal sculpture "Triangles." Owners or clients associated with winning entries will receive other Steuben Crystal awards.

The Awards Jury for 1974

Eight outstanding professionals in architecture and engineering will serve as the Awards Jury to select the winners.

H. Fred Campbell, H. F. Campbell Company, Detroit, Mich.; Walter H. Costa, Skidmore Owings & Merrill, San Francisco, Calif.; Sital Daryanani, Syska & Hennessy Inc., Engineers, N.Y., N.Y.; Dr. Donald P. Greenberg, Prof., Cornell Univ., Ithaca, N.Y.; George T. Heery, Heery & Heery, Atlanta, Ga.; Philip J. Meathe, Smith Hinchman & Grylls, Detroit, Mich.; Richard L. Mullin, Symes Maini & McKee, Cambridge, Mass.; Thomas A. Stokes, Cary B. Gamble & Associates, Inc., New Orleans, La.

Send for entry details now

Completed entries must be submitted by August 31, 1974. Winners will be selected and notified in early September.

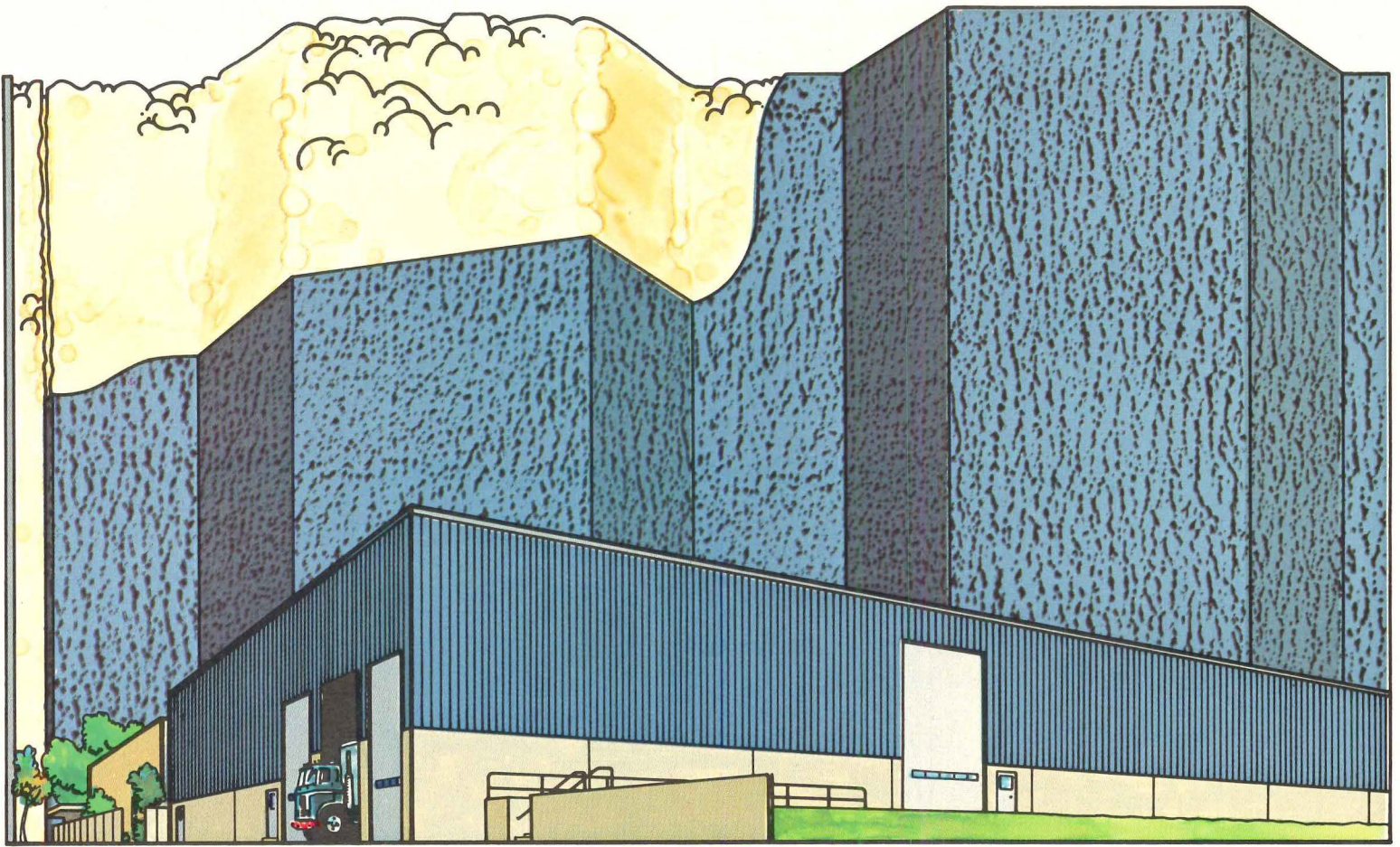
For a brochure giving complete details, contact your local Owens-Corning representative. Or write N. E. Meeks, Owens-Corning Fiberglas Corporation, Architectural Products Division, Fiberglas Tower, Toledo, Ohio 43659.

*T.M. Reg. O.-C.F.

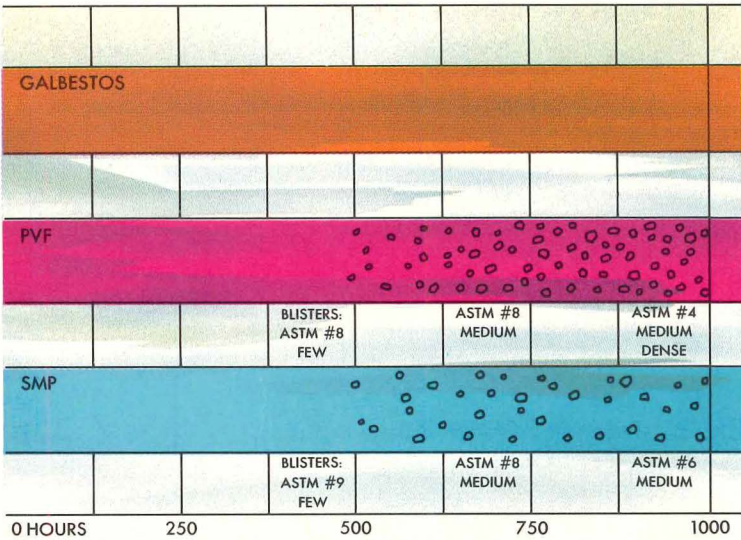
Owens-Corning is Fiberglas

OWENS/CORNING
FIBERGLAS
TRADEMARK ®

For more data, circle 46 on inquiry card

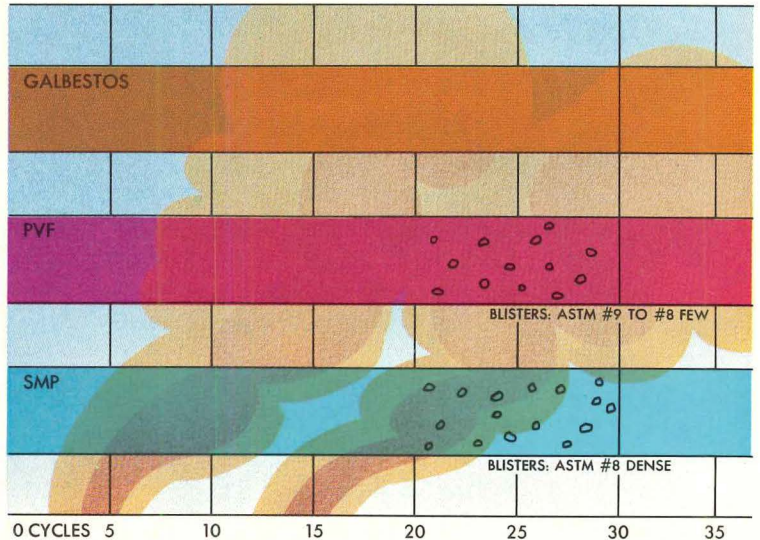


COATING SYSTEM INTEGRITY TEST RESULTS



ASTM B-117-64 SALT FOG TEST PROCEDURE: Samples continuously exposed to 5% salt fog at 95° for 1000 hours. Results: PVF2 showed few # 8 blisters at 500 hours, medium dense # 4 blisters at 1000 hours; SMP showed ASTM # 9 few blisters at 500 hours, # 8 medium blisters at 750 hours, medium # 6 blisters at 1000 hours; no blisters on Galbestos. Significance: Galbestos resists corrosion and other forms of environmental attack. Galbestos coating system has superior film continuity and integrity.

POLLUTION RESISTANCE TEST RESULTS



KESTERNICH TEST PROCEDURE: Expose panels to a specified number of cycles, each consisting of 8 hours in enclosed cabinet holding 2 liters distilled water and 2 liters each of dry sulphur dioxide (SO2) and dry carbon dioxide (CO2) at 104°F (40°C), followed by 16 hours of drying at ambient temperature. Results: After 20 cycle PVF2 showed blistering ASTM # 8 to # 9 few, SMP showed blistering ASTM # 8 dense. No blisters on Galbestos. Significance: Galbestos has superior resistance to the airborne pollutants, sulphur dioxide and carbon dioxide.

New Ribbed-Line TWO is low cost insulated wall

It is a one-piece construction with the insulation foamed in place in the factory. This yields several economies over conventional profiled panels, which are field assemblies of three or more components. This is why new Ribbed-Line TWO can price out as low as \$2.75 per square foot . . . installed.* And much of the economy occurs during the more efficient installation. Its effective insulation helps the Ribbed-Line TWO achieve a U-factor of 0.13. All of this is combined with the colorful but tough Galbestos® finish. Those are some of the reasons that architect Davie G. Crawley of Henderson, Kentucky was able to specify this high performance wall system for the new Eaton Manufacturing plant, Humboldt, Tennessee, within a tight budget. This efficiency of insulation was important in the project planning, because conservation of energy is a high priority of the owner.

The colorful finish of the Galbestos exterior is critical for two reasons. First, the owner is determined to have a pleasant appearance for the facility so that it will be an asset to the community. Secondly, a highly durable finish that has proved itself over 60 years of performance will keep long-term maintenance costs to a minimum.

with the tested high performance Galbestos finish.

New Ribbed-Line TWO is given exterior protection against corrosive atmosphere and future maintenance costs with the tested wall finish system, Galbestos. This proven performer is not only time tested on thousands of buildings around the world, but also thoroughly laboratory tested. (Note. Page opposite, two of the battery of tests by independent laboratories are illustrated.) This is why Robertson can offer an unusual performance promise.

“Robertson will, when specifically required by specifications, pay for coating system integrity and pollution resistance tests. The tests to be conducted under the supervision of an independent laboratory on Galbestos samples jointly selected at random from material on hand at the job site. The failure of the material to meet the minimum requirements of these tests shall be cause for rejection of the entire lot of material intended for the project and replacement at Robertson’s expense.”

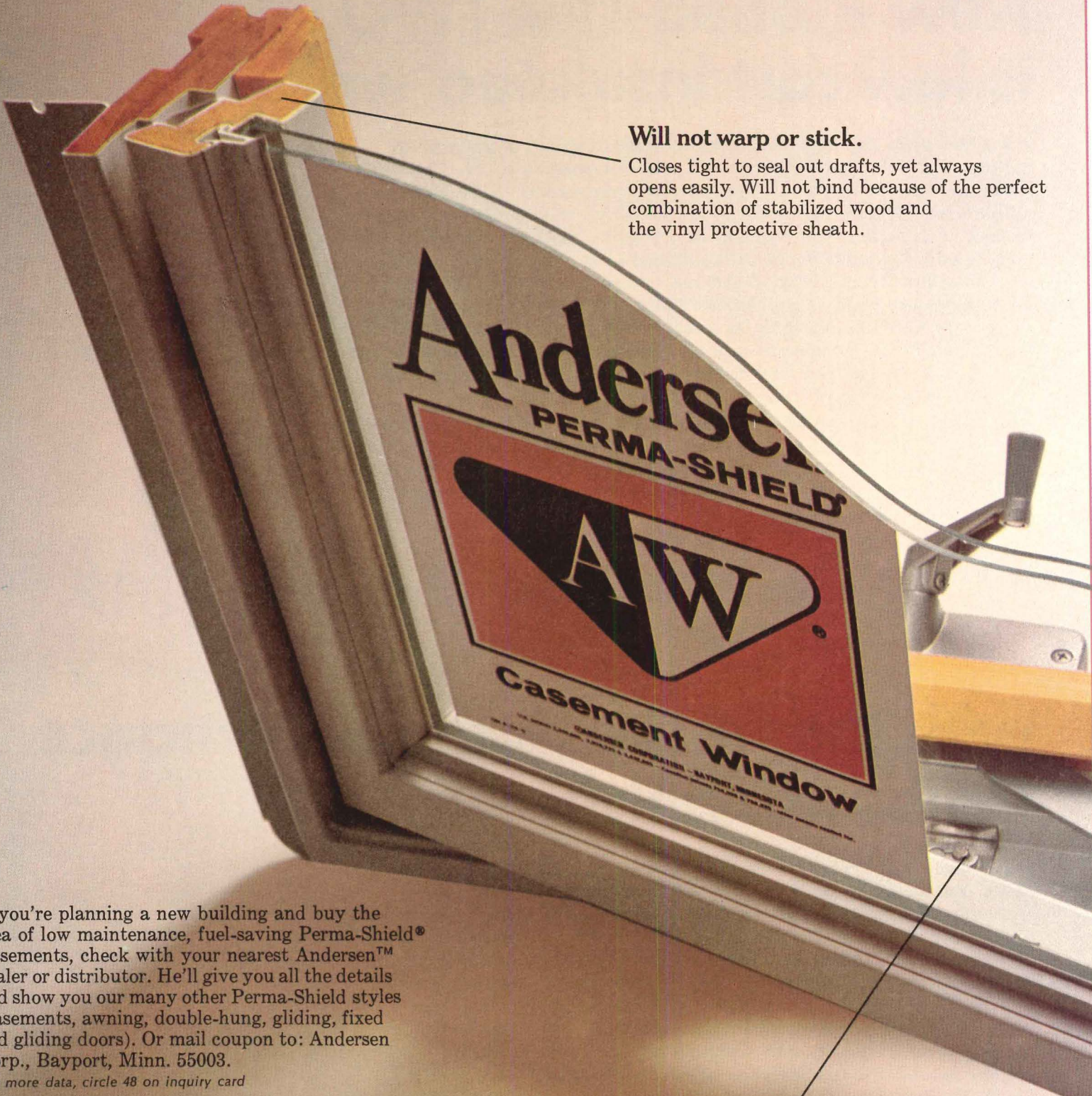
New Ribbed-Line TWO, the low cost insulated Q-Panel® with premium performance Galbestos, is worth a detailed study by the architect searching for value.

*This is an average cost applied to typical wall areas of large expanse. Other wall elevations and local conditions may vary this budget cost. For the cost of your project’s wall, consult your Robertson salesman.

For full product specification information, and test reports of independent laboratories, call your local Robertson salesman. Or, write H. H. Robertson Company, Dept. 711, Two Gateway Center, Pittsburgh, Pa. 15222.


Robertson

For more data, circle 47 on inquiry card



Will not warp or stick.

Closes tight to seal out drafts, yet always opens easily. Will not bind because of the perfect combination of stabilized wood and the vinyl protective sheath.

If you're planning a new building and buy the idea of low maintenance, fuel-saving Perma-Shield® Casements, check with your nearest Andersen™ dealer or distributor. He'll give you all the details and show you our many other Perma-Shield styles (casements, awning, double-hung, gliding, fixed and gliding doors). Or mail coupon to: Andersen Corp., Bayport, Minn. 55003.

For more data, circle 48 on inquiry card

AR-54

Send me literature on all your Perma-Shield Windows.

I'd like your representative to call on me.

Name _____

Firm _____

Address _____

City _____

State _____

Zip _____

Andersen Windowalls®
ANDERSEN CORPORATION BAYPORT, MINNESOTA 55003



Sliding stainless steel hinge means easy cleaning.

Andersen Perma-Shield Casement Windows pivot on sliding hinge so that both surfaces of window may be reached from inside for easy cleaning. And with double-pane insulating glass, there are only two surfaces to clean, not four.

Perma-Shield.[®] The window that takes care of itself.

No need for storm windows.

Double-pane insulating glass provides comfort and saves fuel. Eliminates storm window bother. Cuts cleaning chores in half. Andersen Perma-Clean[®] screens optional.

Wood's a natural insulator.

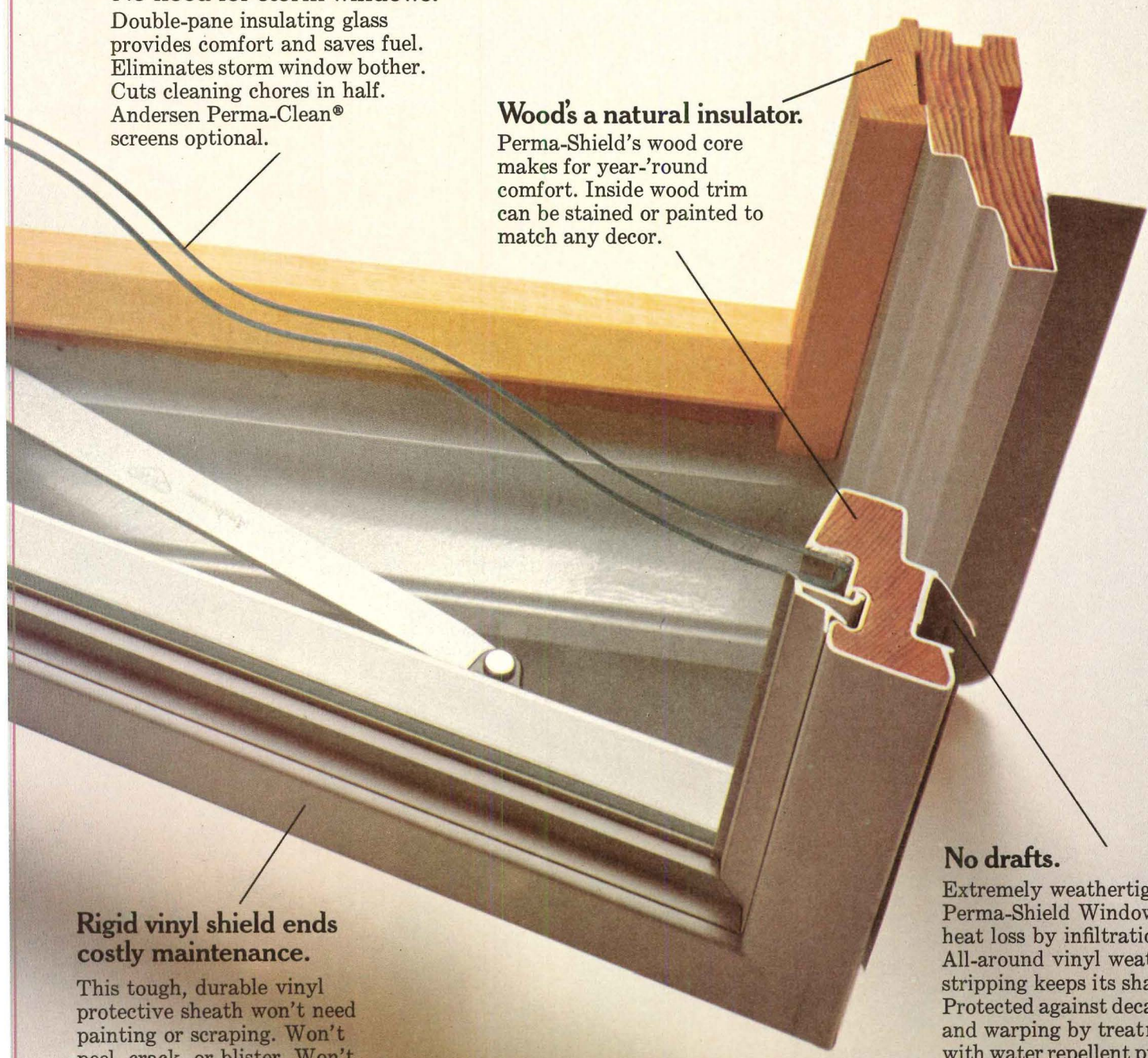
Perma-Shield's wood core makes for year-round comfort. Inside wood trim can be stained or painted to match any decor.

Rigid vinyl shield ends costly maintenance.

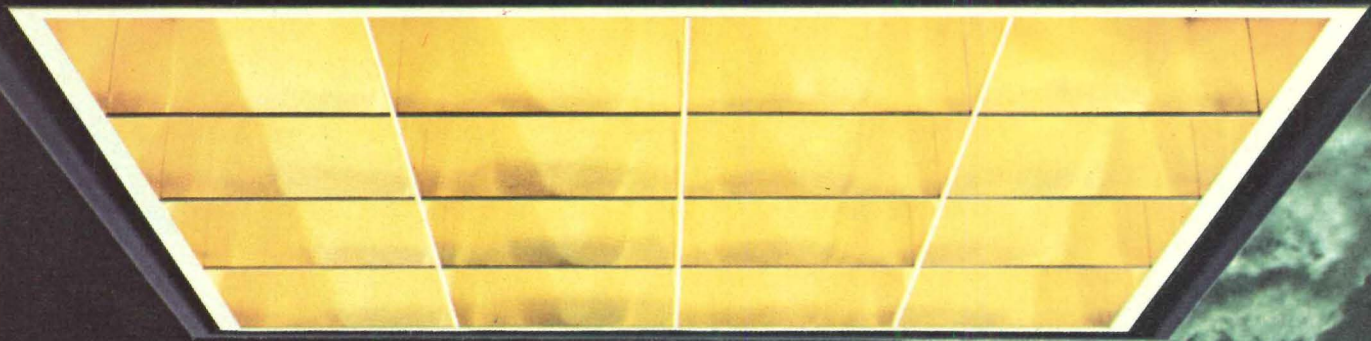
This tough, durable vinyl protective sheath won't need painting or scraping. Won't peel, crack, or blister. Won't rust, pit, or corrode.

No drafts.

Extremely weathertight, Perma-Shield Windows reduce heat loss by infiltration. All-around vinyl weatherstripping keeps its shape. Protected against decay, termites and warping by treatment with water repellent preservative.



FUNCTIONAL



Parabolume! Next to sunlight for efficiency, low maintenance and environmental control.

You'll find this beautiful family of low brightness, fluorescent luminaires in a hospital in Georgia, a bank in New York, a newspaper in the West Indies, a med school in Massachusetts. Some buildings with 17 thousand units . . . some with a hundred . . . because only Parabolume offers an average 90% VCP value while conserving energy, increasing visual comfort and providing the best lighting levels. Comes with parabolic specular aluminum baffles in all standard modular sizes, surface or recessed, and includes full air-handling capability. You'll have to write for data now or go on thinking forever that this is all too good to be true. Specify Parabolume in your next building by contacting your local Columbia agent or writing for more information. We have answers to lighting questions you've yet to ask.



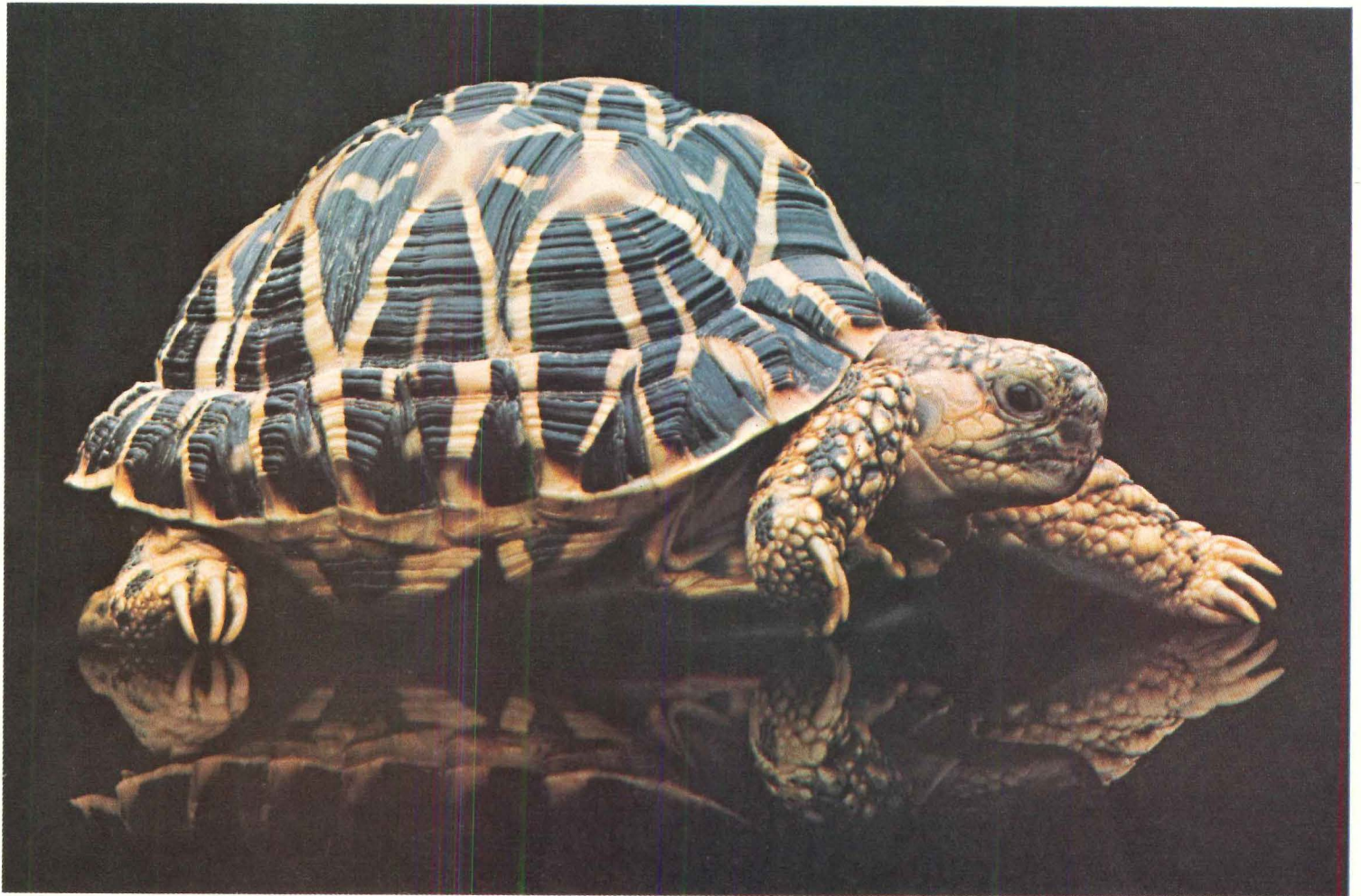
COLUMBIA
lighting, inc.

For more data, circle 5 on inquiry card

North 3808 Sullivan Rd. Terminal Annex Box 2787 Spokane, Washington 99220 Phone (509) 924-7000

A Subsidiary of **GTE SYLVANIA**

The only organic roof that might outlast the Owens-Corning all-Fiberglas roofing system.



Conventional asphalt roofing systems have organic felts. So moisture and heat can cause them to curl, wrinkle, fishmouth, char and rot. And that can lead to an early failure.

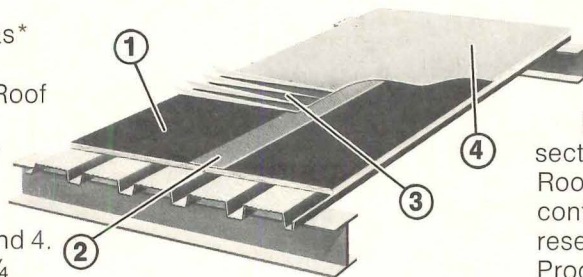
Not so with our all-Fiberglas* roofing system. Here's why.

1. It begins with Fiberglas Roof Insulation. This has a bottom surface that conforms to minor roof irregularities. And a top surface that stays flat. (FM Class 1 construction. UL 1, 2, and 4. Thickness from 15/16ths to 2 1/4 inches. C-value certification.)

2. Fiberglas Roof Tape then provides reinforcement at the roof

insulation joints and helps reduce failures caused by normal deck movement.

3. Fiberglas roofing felts come next. Unlike conventional felts, ours



won't absorb or hold moisture. So they won't char or rot. They resist curling, wrinkles and fishmouths.

And they're less subject to contraction and expansion due to changes in moisture.

4. Fiberglas PermaCap (where available) tops everything off. It's surfaced with inert, non-combustible ceramic granules that help beautify the roof.

More information? Refer to our section in Sweets Catalog, Built-Up Roofing Systems 7.1/Ow, or contact your Owens-Corning representative. Or write: Architectural Products Division, Attn.: Mr. D. N. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

*Reg. T.M. O.-C. F.

Owens-Corning is Fiberglas

OWENS/CORNING
FIBERGLAS
TRADEMARK ®

For more data, circle 49 on inquiry card

Graceful greeting.



Add the warmth of wood with Sexton Uniloc® locksets and Rosewood mortise locksets by Russwin. A hearty grasp of the grain, contoured to comfort the hand... styled to enrich any decor. Enduring design in the Russwin tradition. Russwin, Division of Emhart, Berlin, CT 06037. In Canada—Russwin, Division of International Hardware.

For more data, circle 50 on inquiry card

R
RUSSWIN

Job satisfaction: key to reduced A/E employee turnover

Turnover of architectural professional employees is a major management problem which consumes significant time for orientation and training of replacement employees. This time could better serve the practice and the employee if diverted to job enrichment and improved product. An examination of the three basic architectural staff organization systems in terms of professional employee desires will reveal how to increase job satisfaction at all levels in order to reduce employee turnover.

To discover job enrichments desired and job dissatisfactions that should be eliminated, the very nature of the architectural professional must be explored. Very few studies dealing specifically with architectural employees have been made. In order to use published studies which are available, it is assumed that the architectural professional's attitude toward his work and his needs is similar in most basic ways to those of engineers and scientists or other professional employees. Notable among periodicals that have published papers in this area are the *Administrative Science Quarterly* and *The California Management Review*. Key articles found in these periodicals, and a few other publications which contributed to ideas set forth here, are appended as a list for recommended reading about the creative and research professional as an employee and related special management problems.

From a survey of the published studies, the following facts and developed assumptions, believed applicable to architectural employee work satisfactions, attitudes, needs, and dissatisfactions, are enumerated for consideration in evaluation of work assignments:

1. "The creative atmosphere should be free from external pressure. A person is not likely to be creative if too much hangs on a successful outcome of his search activities, for he will have a strong tendency to accept the first satisfactory solution whether or not it seems novel or best possible. Thus he needs indulgence in time and resources and particularly in organizational evaluations of his activities." (Thompson, reference 1)

2. "In the innovative organization, professional orientations and loyalties will be stronger relative to organizational or bureaucratic ones. Esteem striving will tend to replace status striving. There will be less control by superiors and more by self and peers. Power and influence will be much more broadly dispersed." (1)

3. "The dispersal of power is important because concentrated power often prevents

imaginative solutions of problems. When power meets power, problem solving is necessarily called into play. . . . Dispersed power, paradoxically, can make resources more readily available to support innovative projects because it makes possible a large number and variety of supporters and sponsors." (1)

4. "Heterogeneous team membership was associated more frequently with superior success in all aspects of group performance." (Smith, reference 2)

5. "In practically every group surveyed, there was strong evidence of frustration and generalized dissatisfaction." (Johnson and Hill, reference 3)

6. "It was found that the average professional employee works 35 per cent of the time on tasks which he feels are beneath his capabilities." (3)

7. "In a recent survey of 622 engineers and scientists, the following feelings were expressed:

72 per cent thought management misused their talents.

80 per cent felt they were underpaid compared with other groups.

Most felt management got an unfair share of recognition.

76 per cent thought management tried to manipulate people for their own purpose." (3)

8. "Need for Esteem. The prime determinants of professional behavior are to be found in his need for love, esteem, and self-actualization." (3)

9. "The need for self-esteem assumes the form of a desire for independence, freedom of action, self-control, and confidence in one's ability to perform successfully. The need for group esteem manifests itself in recognition by others that the professional has achieved these desires." (3)

10. "The professional worker's need for self-actualization is a desire to utilize his capabilities to the fullest extent. He wants a challenging, creative job, one that requires the abilities he possesses and provides an opportunity for self-development." (3)

11. "Salary affects the engineer's motivation considerably. While not always the overriding factor in his motivational make-up, it plays a major role in his job satisfaction and should not be underrated. In addition to its practical aspects, salary is for him a highly important symbol of status and recognition." (Reeser, reference 4)

These findings show that many causes of

job dissatisfaction center around inappropriate work assignments and suggest that to give an employee a project to do on his own would yield maximum satisfaction. This would be the simplest form of vertical staff organization, which will be discussed later. Even if this form is possible, it should be noted that there would surely be a significant proportion of tasks required that would be well beneath his capabilities, and therefore a source of dissatisfaction.

William Wayne Caudill, well-known Houston architect and professor of architecture at Rice University, wrote, "How to get highly creative people to work together in efficient team play is the most pressing problem of architectural management." (5)

Three management organizations reflecting work flow and task assignments are suggested in *The American Institute of Architects' Architect's Handbook of Professional Practice: horizontal, vertical, and combination.* (6) It is suggested that staff capabilities will be a determining factor in the selection of an appropriate system for a particular office. Caudill outlines a philosophy dubbed "Troika," a system to structure architectural teams, to control team efforts, and to promote product quality through the identification of three "think/action" disciplines or tasks—design, management, and technology. An examination of these three organizations, and the application of Caudill's philosophy to them for evaluation in terms of job satisfactions and dissatisfactions, should reveal which organizations and task assignment system will be most effective in combating employee turnover.

Vertical staff organization. Under this organization, each project is assigned to a project team under a project architect. The project architect would remain assigned to the project through all its phases from programming through construction documents, bidding administration, and construction contract administration of the job.

The satisfaction of the project architect is virtually assured in this staff organization, provided it is a meaningful project, an adequate team is provided to eliminate his working beneath his capabilities, and management is tolerant of his decisions and not over-restrictive of his expenditure of time and resources; and, most important, provided he is a well-rounded generalist.

Management, on the other hand, feels reservations toward the vertical organization. The project architect will tend to possess "his project." It will become his design, and potentially

MO-SAI UNIFIES GOVERNMENT COMPLEX DESIGN



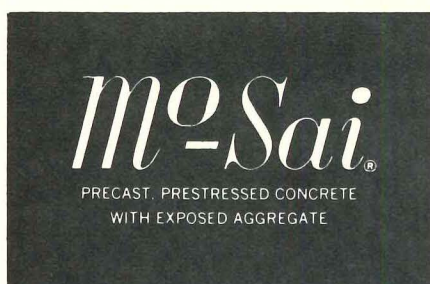
Carroll Gartin Justice Building / Architects: John L. Turner and Associates / General Contractor: M. T. Reed Construction Company
Walter Sillers State Office Building / Architects: Barlow & Plunkett with Associated Architectural Firms, Bigg, Weir, Neal & Chastain, R. W. Naef & Associates, and Charles G. Mitchell & Associates
General Contractor: Southeastern Construction Company

The design plasticity of Mo-Sai precast architectural concrete, along with the material's deserved reputation for enduring beauty with minimum maintenance, made it a natural choice for Jackson, Mississippi's, new state government complex. An exposed Mo-Sai surface of crushed ivory aggregates was

used in a variety of ways while maintaining the unity of the complex.

On the Carroll Gartin Justice Building (foreground), Mo-Sai column covers curve gracefully to the Mo-Sai coping, while the Walter Sillers State Office Building used structural Mo-Sai window walls to support the

building perimeter. A garden plaza with Mo-Sai walls, stairs, benches, and planters conceals the parking and service facilities for both buildings. The dense, hard surface achieved through the factory controlled Mo-Sai process will retain its maintenance-free beauty for years to come.



For more information, write or call any of the Institute members listed below:

MO-SAI INSTITUTE, INC.

Information Office
110 Social Hall Ave.
Salt Lake City, Utah 84111
Members, Producers' Council

BEER PRECAST CONCRETE LIMITED
110 Manville Road
Scarborough, Ontario, Canada

CAMBRIDGE CEMENT STONE CO.
P.O. Box 41
156 Lincoln Street
Allston, Massachusetts 02134

ECONOMY CAST STONE CO.
P.O. Box 3-P
100 E. Franklin Street
Richmond, Virginia 23207

GOODSTONE MANUFACTURING CO., INC.
470 Hollenbeck Street
Rochester, New York 14621

HARTER CONCRETE PRODUCTS, INC.
1628 West Main Street
Oklahoma City, Oklahoma 73106

JACKSON STONE CO., INC.
P.O. Box 4355
Fondren Station
Jackson, Mississippi 39216

OLYMPIAN STONE CO., INC.
P.O. Box 685
192nd N.E. and Union Hill Road
Redmond, Washington 98052

SOUTHERN CAST STONE CO., INC.
P.O. Box 1669
Sutherland Ave. and Concord Street
Knoxville, Tennessee 37901

SEKIGAHARA STONE CO., LTD.
2-11-1 Takara-Cho, Chuo-Ku
Tokyo, Japan

WILSON CONCRETE CO.
P.O. Box 56
Red Oak, Iowa 51566

P.O. Box 7208
South Omaha Station
Highway 75 Avery Road
Omaha, Nebraska 68107

For more data, circle 51 on inquiry card

his client. Management carries the responsibilities and liabilities of the firm. They want controlling influences, and they want to assure the quality of the product and the continuity of the firm.

Job satisfaction for other team members is not as easily achieved, particularly in light of the esteem vested in the project architect. Caudill's philosophies suggest the recognition of special talents and the creation of team positions, all of which require special types of "creative thinkers."

Caudill's "Troika" suggests the project architect's task be split vertically into three "think/action" disciplines, with each discipline assigned to a project-architect/caliber person whose long suit tends to lie in one of the three discipline areas; design, management, and technology. This heterogeneous team membership should yield what Clagett G. Smith observed as being "associated more frequently with superior success in all aspects of group performance." Victor A. Thompson's supposition on the merits of dispersal of power (see assumption 3 above) supports Caudill's "Troika" as conducive to imaginative solutions and supportive to innovation. Keith Davis's organization pluralism (7) is a less sophisticated form of multiple vertical organization, which lends validity to the "Troika" concept.

Caudill next doubles the opportunities for individuals to identify their talents within his "Troika" by introducing "two kinds of thinkers—the idea people and the developers. Idea people come up with the ideas. Developers see those ideas reach fruition. Idea people are not usually organizers (but there are exceptions). They often lack the necessary follow-through, and would rather explore other newer ideas than develop the old ones. The developer has a single-mindedness and determination to carry out the ideas. He likes to 'wrap up packages.' Developers are rather more rigid and often are quite dogmatic. They give stability to the team."

By multiplying the three think/action disciplines by the two kinds of thinkers, there are six classes of task/talent team members who are needed, and with which the employee can personally identify. This multiplication of specific talents needed on the team can again be extended when the five to seven phases of the project are considered. Breakdown and identification of tasks in this manner will show the minor or short-term members of the team the significance of the need for their particular talent at a given moment in the life of a project, and the importance of their unique contribution to the quality and success of the project.

Horizontal staff organization. Under this organization each project passes from one department or specialist to another at each phase of the project. Each specialist or department contributes its effort at the proper time and place under the direction of the project architect or project manager.

Most of the job enrichments described under vertical staff organization are possible under the horizontal organization. However, in this structure the specialists or departments

relate to the phase and tend to dominate the task assignment, whereas in the vertical organization the tasks relate more strongly to the project, with more opportunity for a team member to work on the same project in multiple phases. The horizontal organization is desirable if the firm is specialist-oriented and so staffed. Generalists have limited opportunities for satisfaction in this organization whether they are in the early stages of their careers or they are senior architects.

Management tends to favor the horizontal staff organization because it appears to require less training and seems to offer greater control. Conversely employees tend to receive a lower level of job satisfaction, with the staff-acknowledged and self-satisfied specialist being an exception to the rule.

Combination staff organization. Under this structure, two interpretations are found. In one, both horizontal and vertical organizations are employed on different projects within a firm at the same time in order to fully utilize staff talents. In the second, the combination staff is a vertical organization which utilizes selected specialists or departments; for example, a design department with a head designer who does all preliminary designs in the office or a specifications department with a chief specifications writer who writes all specifications for every project. This second interpretation is very common because management feels that with this system it has maximum control and protection where they are most concerned. However, this system probably produces more job dissatisfaction than any other.

Certainly the potential dissatisfactions are easily identified. For example, most young professionals want an opportunity to do preliminary design. This is the most glamorous task in the business, the task of highest esteem. If they observe that it is performed by a specialist and their turn is not likely to come, dissatisfaction is certain. They complain they are being exploited by management and are required to work beneath their capability. The senior generalists are complaining they do not have full control of their projects when a senior design architect controls their design and a senior specifying architect controls material selection and construction techniques.

Caudill introduces another aspect of his "Troika" to inject management quality control influences through a participation management form which parallels the thoughts of Victor A. Thompson, as quoted earlier with respect to "Variety of Supporters and Sponsors." The Caudill concept appoints a sponsor for each of the three think-action disciplines. The sponsor is selected for his special commitment to the particular discipline (design, management, or technology). "A sponsor is charged with: serving as patron of his assigned discipline; causing activities such as open forums and seminars which generate new thought in the assumed discipline; using his influence to promote advancement within his discipline; initiating procedures leading to proficiencies; encouraging research and advising individuals to delve; using his influence as a high-level

member of the firm to improve quality."

The "Troika Sponsor" concept attempts to provide for management those features that it seeks in the combination organization through less autocratic management techniques. It also provides the teachers or critics that give unity and continuity to practice philosophies. As a multiplier for the talents of the sponsors, it provides self-improvement of the employees, adding greatly to their job satisfaction.

It is difficult to state final conclusions and recommendations for the architectural employee turnover problem from this limited study of published resources, and obviously much work and many specific surveys need to be conducted in this area. There are, however, clear indications that turnover rates that may average 30 per year are significant enough to warrant experimentation in job enrichment and aggressive efforts to eliminate job dissatisfaction by whatever means.

The Caudill philosophy appears to offer many opportunities to enrich tasks which the standard organization structures do not enhance, through its identification of multiple disciplines and types of "thinkers" for particular tasks. A key to generating satisfaction in each of these categories is recognition that each is a special type of creative, thinking, design talent. The vertical staff organization appears to offer fewer opportunities to develop dissatisfactions and is most adaptable to the Caudill philosophy. Although the vertical staff organization and the Caudill philosophy will require more training per employee to assure management control of the product, it appears that a resultant increase in job satisfaction at all levels would ultimately reduce training costs through reduced turnover. Improved product, increased effectiveness, and similar resultant effects of more satisfaction should also contribute ultimately to monetary savings, which can be reflected in increased rewards for all members of the team, thereby adding another remedy to combat employee turnover.

H. Maynard Blumer
coordinator of quality control
Guirey, Srnka, Arnold & Sprinkle

Reading sources

1. Victor A. Thompson, "Bureaucracy and Innovation," *Administrative Science Quarterly*, 10 June 65.
2. Clagett G. Smith, "Scientific Performance and the Composition of Research Teams," *Administrative Science Quarterly*, 16 Dec. 71.
3. Richard A. Johnson and Walter A. Hill, "Management's Dilemma—The Professional Employee," *California Management Review*, 5 (Spring 63).
4. Clayton Reeser, "Industrial Scientist and Engineers Motivational Style Differences," *California Management Review*, 14 (Fall 71).
5. William Wayne Caudill, *Architecture by Team* (New York: Reinhold, 1971).
6. *Architect's Handbook of Professional Practice* (Washington, D.C.: American Institute of Architects, 1971).
7. Keith Davis, *Human Behavior at Work* (New York: McGraw-Hill, 1971).

200
SERIES

Seating has never been
more complete, comfortable
or beautiful.

All-Steel—a collection of contemporary office seating designed for style, styled for comfort. With back support where you need it most, in the lumbar area. Make your decision a simple one. Specify one source...The 200 Series meets every job requirement. Write All-Steel Inc., Aurora, Illinois 60507.



Project purchasing strategy: CM tool for cost control

This is the third article in an intermittent series prepared by the staff of the Houston-based firm, CM Associates. (See "Overview" September 1973, and "Budgeting," February 1974.) This month, Charles B. Thomsen looks at buying as an alternative to taking bids.

The bid opening is the "high noon" for architects and their clients. How the prices come in determines very quickly whether a project can progress or if it's "back to the drawing boards" for the building team.

The traditional process is hard to control

In the traditional process, all the plans and specifications are done, the project put out for bids, and the contractors given three to four weeks to figure out their prices. Everybody gets nervous; no subcontractor will expose his price until two or three hours before bid opening for fear other subs will undercut him. The job really winds up being bid in the last few hours before the opening. If the bids are high (as they frequently are in this poker-game atmosphere), then, indeed, it *can* be back to the drawing boards and a costly delay, possibly even termination, of the project.

Nothing about the process is very business-like or predictable, even though millions of dollars are usually on the line. No company spending millions in operating costs each year would think of operating this way. There would be a well-trained staff in a well organized purchasing department to manage the firm's buying on a daily basis to keep it within a pre-determined budget.

That's precisely the manner in which construction management treats the buying-out of a project—businesslike and analytically. Instead of waiting for completed drawings and specifications before starting the purchasing of a project on a sink-or-swim basis, the Construction Manager takes it a little bit at a time. The structure may be bought first, then the foundation, perhaps the carpet—all depending upon the strategy established. And as these items are purchased, he checks them against the budget.

Any control system requires feedback. We couldn't hit the moon, or even drive a car without on-course correction. In cost control, some feedback comes from estimating, but the only hard numbers come from the actual purchase prices. They tell the Construction Manager gradually, not in one killing blow, whether the project is on course financially. And the earlier they come in, the better. If the project is over

the budget, the Construction Manager has time to recommend adjustments and the individual prices tell him where to adjust. He can either negotiate the high prices lower, suggest changes in the scope of work within a certain area, or look ahead to upcoming contracts to reduce the average.

Purchasing strategy is a management control

Construction management gives the owner someone who can manage the numerous, specialized contractors who will do the actual work, not as someone selling the building to the owner (the General Contractor's traditional role) but as the owner's agent buying the building for him.

One of the biggest advantages in buying a project contract by contract is that it facilitates communication between the building team and the contractors. By sitting down with the contractors and detailing the scope and nature of the work, the building team can eliminate contingency pricing. If the contractor know exactly what is expected of him, he won't feel the need to protect himself by padding his bid. He and the building team can work together to determine where economies lie.

The contractor's role changes under construction management. Subcontractors become prime contractors in most cases. Instead of obscuring their bids in a general contractor's lump sum bid, they bid directly to the owner through the Construction Manager. As a result, each contract is open to immediate scrutiny. If it's out of line, there's no question as to where the overage is coming from. Furthermore, because the sub is now a prime contractor bent on getting the job for himself, a building project has its best opportunity for eliciting all of the low bids, not just some of them. Most general contractors enjoy the loyalty of a few subs who will help them bid low by giving them better prices than those given to other generals. But no general has all the subs in his camp. So, each general is getting only some of the best prices—and that means that the owner isn't going to get the lowest set of prices no matter which general he chooses. Under construction management, however, the sub has one card to play with one construction manager, so he's got to throw out his best one.

Budgeting and estimating: prelude to buying

Control of building costs is initially dependent upon skillful budgeting and estimating. Knowing what the job is worth before you sit down at the table with the people you're trying to

buy it from is essential to getting a fair price. But it would be short-sighted, indeed, to assume that the budget/estimate is inviolable. The day-to-day market fluctuations that typify the construction industry (especially in today's erratic economy) make such an eventuality far from automatic. The only guarantee is that guy who will put his name on the line and say, "I'll build it for this price." And that is why management is so important in the purchasing aspect of the building process. Since there are no guarantees and automatics when it comes to someone else's price, there had better be a lot of preparation prior to asking for it.

The successful buying out of a project revolves primarily about the following activities: 1) making a thorough analysis of market conditions, both national and local; 2) establishing a contract strategy; and 3) responding to the feedback generated by the contract-by-contract purchasing sequence. The second point, contract strategy, is a product of the market analysis and determines the scope of work in each contract (and therefore, the number of contracts), the sequence in which they're bid, and the type of contract (competitive bid or negotiation).

Market analysis is critical. On a national level, we are entering an age of random scarcity—not just in energy but in materials as well. No longer can a building team assume that all the construction materials it has specified will be available when needed. The construction manager has to look at the national market and anticipate where the shortages are going to occur and react in time to prevent disaster from befalling the construction timetable. He must be able to respond to less predictable shortages with alternate solutions.

At the local scene he has to determine how things normally are done and who does them best, whether the labor market is lean or fat, how local labor jurisdiction will affect his contracts, what the bonding capacity of the local contractors is, and he must gin up interest in the project. This means going into the area and dealing with contractors face to face and establishing credibility. Once he's familiar with the local market, he can begin to establish a contract strategy.

The scope of work in each of the contracts will be determined by local custom. For example, in some parts of the country sheetrocking, taping and floating, and painting are all part of the same contract. In other parts, the painting is a separate contract. Knowing the scope of work per contract will tell the con-

struction manager how many contracts he's going to have. He can then decide how each one will be bought.

The Construction Manager has several ways to contract for work, but generally speaking, they break down into variations of competitive bidding and negotiation.

Competitive bidding is a valid but over-used method. Essentially, a competitively bid fixed price is asking for risk insurance; a contractor is selling a building he hasn't yet bought. Operating under this contract, he knows that every cent saved is 100 per cent profit for him. So, only when product quality is easily definable, bidders' contingencies are minimal, and real competition exists—only then is competitive bidding a wise choice.

This last point can't be made strongly

enough. If a market is saturated, competition won't exist. And even if it isn't a construction manager is going to have to beat the bushes to stir up as much competition as he can, if he expects to get a fair price. On one of our recently completed jobs, we experienced a striking example of what non-competitiveness vs. competitiveness can do to a bid. The price on the exterior skin came in 50 per cent over our estimate. There had been only one bidder. We discovered that a provision in the specifications inadvertently had prevented all but the one contractor from bidding. So, we rewrote the specs, ginned up competition, and got the skin right on our estimate—and, from the same contractor with the same product who'd been 50 per cent over on the first go-round.

Pre-qualification can be used to advan-

tage in competitive bidding. It doesn't eliminate the inflexibility of a fixed price, but since it selects a few organizations with good records in the kind of product or performance needed, it does limit bidding to reputable contractors.

When it comes to negotiated contracts, there is a considerably wider field of contracting strategies to choose from.

The "time and materials plus fee" contract requires no maximum guaranteed price and permits the architect and client to involve the contractors from the start. But absolute integrity is required on the part of the contractor (whether general or subs). When a contractor is working elsewhere on a competitive contract that is suffering losses, his inclination is to put his most productive people on that job, which shifts the burden to his time-and-material-plus-fee job.

When it's known what is wanted, who should do it, and what it is worth (and this is critically important), then it's sensible to negotiate a "fixed price contract." When a contractor is given business because of a good reputation, he often feels a moral commitment to do his best (both in terms of cost and performance) due to the consideration given his firm. And obviously, he's looking ahead to the possibility of future business.

Since working drawings are the basic contract document, it is impractical to assume an iron clad, lump sum contract prior to their completion. However, it is possible to begin construction before their completion. At the end of design development most project decisions are made and the data are there for contractors to prepare a pretty good estimate of costs. Frequently, at this point the contractor is told he'll receive cost reimbursement plus a stipulated profit in return for a guaranteed ceiling on the ultimate price.

Any saving the contractor generates is divided between the owner and the contractor. This "negotiated guaranteed maximum price with incentives and unit prices" can create risks for the contractor, however, who may attempt to offset them by setting the ceiling higher than it should be. And as the guarantee is given on incomplete documents, it may be difficult to enforce and manage with the changes that always occur after the contract is formed. (See RECORD, April, 1974, page 71.)

Under "two-stage negotiation" the schematic design is developed and several potential contractors are selected to review the work. One is selected based on his estimated price and/or demonstrated ability to collaborate with the architect, but a contract isn't signed, only a letter of intent. The contractor works with the architect in developing final drawings and specs within the lowest possible price. If the contractor's DD price is maintained or reduced, a contract is signed. If not, the owner has the option to negotiate with the other contractors. Two-stage allows costs to be identified early and permits the contractor to add his construction knowledge during design. On the other hand, in order to be selected, he may state an overly optimistic price, thinking he won't be held to it.

continued on page 192

the ENERGY CRISIS is news — KALWALL® isn't!

but KALWALL

is certainly timely!

Kalwall is a complete, translucent, insulating wall — or roof — system!

Kalwall lets you save heating and air conditioning energy — and use the sun's energy to even greater advantage to save on artificial lighting, and even pick up solar heat in the cold months! (We call this our Kalwall Solar Control System.)

You can design your buildings with a choice of key ENERGY SAVING factors:

- It can have a variety of "U" Factors ranging between .06 and .40!
- It can have a light transmission value ranging between 3% and 75%!
- It can have Shading Coefficients from .50 to less than .10!

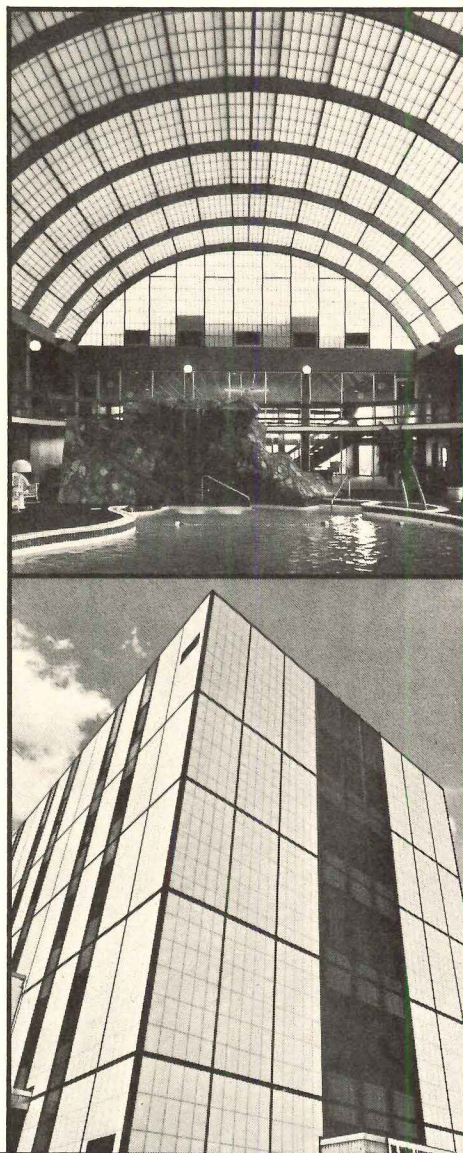
And Kalwall can be engineered for every building situation, every location, and every exposure!

PLUS — Kalwall buildings win design awards every year!

Write or phone Mr. Bruce Keller, Vice President, for complete information.

**KALWALL
CORPORATION**
1111 Candia Road
Manchester, N. H. 03103
Phone 603-627-3861

Patented



For more data, circle 53 on inquiry card

Dodge supplement adds case histories

The April, 1974 supplement of the *F.W. Dodge Digest of Building Costs and Specifications* features building cost case histories of 17 selected building projects in addition to the current cost and specification data usually provided.

The case histories are final costs for building projects previously reported in the *Digest* during their construction. Access to this type of information enables architects, contractors, construction engineers or appraisers to compare the contract award prices of a project with the final costs, and to use the case history as a guideline for projecting trends in costs of similar construction projects.

A typical case history will include a photograph of the project, and a reproduction of the bid prices originally reported in the *Digest*. Other items included are the number of stories above grade, fireproof or non-fireproof construction, basement or no basement, cost analysis of building systems, special project features that affect costs and percentage of union versus non-union labor.

The April edition of the *Digest* will also include 1,148 new project listings, and completely updated city-by-city indexes and codes, which enable the subscriber to calculate listings from the bid time to current time and from one location to another. The user can then adjust the costs to his city, no matter when that project was awarded or where it was constructed.

*John H. Farley, senior editor
Dodge Building Cost Service*

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
		INDEXES: May 1974				
U.S. Average	8.3	457.2	429.3	447.7	437.0	+11.38
Atlanta	7.5	562.9	530.7	550.8	538.8	+ 7.51
Baltimore	8.6	526.1	494.6	513.3	499.7	+16.84
Birmingham	7.1	411.7	382.9	397.2	392.8	+ 9.11
Boston	8.9	462.0	436.5	458.2	445.1	+ 9.92
Buffalo	9.0	506.1	475.2	498.1	483.3	+10.02
Chicago	8.3	522.5	496.7	504.2	497.5	+10.50
Cincinnati	8.6	491.8	462.7	477.6	466.9	+12.56
Cleveland	9.0	498.2	468.7	487.9	475.4	+12.26
Columbus, Ohio	8.1	475.6	446.6	464.9	454.5	+10.39
Dallas	7.7	458.7	444.2	447.3	439.1	+11.38
Denver	7.9	482.3	453.7	473.1	459.9	+10.84
Detroit	9.7	525.2	501.3	533.8	512.3	+12.09
Houston	7.1	416.9	391.4	404.2	398.2	+ 9.17
Indianapolis	7.6	411.0	385.9	401.1	393.0	+ 9.58
Kansas City	8.3	442.2	417.8	432.9	421.4	+12.34
Los Angeles	8.4	526.6	481.4	511.2	500.5	+13.44
Louisville	7.6	457.4	429.4	445.5	436.8	+12.33
Memphis	8.1	463.2	435.5	446.5	439.2	+21.00
Miami	7.8	474.2	451.7	460.6	451.3	+11.59
Milwaukee	8.2	510.3	479.2	500.2	486.0	+11.91
Minneapolis	8.5	475.8	447.7	466.5	456.9	+ 9.07
Newark	8.5	435.1	408.6	426.8	418.6	+ 7.63
New Orleans	7.4	444.1	419.2	437.2	427.9	+14.48
New York	10.0	509.8	474.0	497.4	485.5	+ 9.67
Philadelphia	8.9	502.1	478.4	497.0	483.5	+ 7.92
Phoenix (1947 = 100)	7.9	264.2	248.1	255.1	250.8	+11.38
Pittsburgh	8.7	449.5	422.9	443.8	430.6	+ 9.19
St. Louis	8.4	465.6	439.5	458.4	448.8	+ 7.21
San Antonio (1960 = 100)	7.4	174.3	163.7	169.3	165.4	+15.86
San Diego (1960 = 100)	8.4	192.7	181.0	188.6	184.8	+16.72
San Francisco	9.2	662.5	605.5	656.5	635.5	+ 6.71
Seattle	8.5	450.1	402.8	443.7	427.6	+12.70
Washington, D.C.	7.9	436.7	410.1	425.2	414.9	+12.32

Cost differentials compare current local costs, not indexes.

Tables compiled by Dodge Building Cost Services, McGraw-Hill Information Systems Company

Metropolitan area	HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES										1941 average for each city = 100.00							
	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973 (Quarterly)				1974 (Quarterly)				
										1st	2nd	3rd	4th	1st	2nd	3rd	4th	
Atlanta	313.7	321.5	329.8	335.7	353.1	384.0	422.4	459.2	497.7	516.4	518.0	543.8	544.8	555.2				
Baltimore	280.6	285.7	280.9	295.8	308.7	322.8	348.8	381.7	420.4	441.8	443.6	474.5	475.5	516.3				
Birmingham	260.9	265.9	270.7	274.7	284.3	303.4	309.3	331.6	358.3	371.7	373.2	401.1	402.1	405.5				
Boston	252.1	257.8	262.0	265.7	277.1	295.0	328.6	362.0	394.4	414.0	415.6	436.8	437.8	455.1				
Chicago	306.6	311.7	320.4	328.4	339.5	356.1	386.1	418.8	444.3	465.3	466.9	507.6	508.6	514.2				
Cincinnati	269.5	274.0	278.3	288.2	302.6	325.8	348.5	386.1	410.7	430.4	432.0	461.4	462.4	484.5				
Cleveland	283.0	292.3	300.7	303.7	331.5	358.3	380.1	415.6	429.3	436.7	438.3	461.2	462.2	490.3				
Dallas	256.4	260.8	266.9	270.4	281.7	308.6	327.1	357.9	386.6	407.3	408.9	435.4	436.4	453.7				
Denver	287.3	294.0	297.5	305.1	312.5	339.0	368.1	392.9	415.4	429.5	431.1	460.0	461.0	476.1				
Detroit	277.7	284.7	296.9	301.2	316.4	352.9	377.4	409.7	433.1	463.4	465.0	500.0	501.0	519.5				
Kansas City	250.5	256.4	261.0	264.3	278.0	295.5	315.3	344.7	367.0	387.7	389.3	404.8	405.8	435.6				
Los Angeles	288.2	297.1	302.7	310.1	320.1	344.1	361.9	400.9	424.5	453.3	454.9	503.2	504.2	514.3				
Miami	274.4	277.5	284.0	286.1	305.3	329.3	353.2	384.7	406.4	419.0	420.6	446.2	447.2	467.6				
Minneapolis	282.4	285.0	289.4	300.2	309.4	331.2	361.1	417.1	412.9	430.6	432.2	455.1	456.1	469.7				
New Orleans	240.9	256.3	259.8	267.6	274.2	297.5	318.9	341.8	369.7	382.1	383.7	419.5	420.5	437.5				
New York	289.4	297.1	304.0	313.6	321.4	344.5	366.0	395.6	423.1	453.5	455.1	484.3	485.3	497.4				
Philadelphia	275.2	280.8	286.6	293.7	301.7	321.0	346.5	374.9	419.5	459.3	460.9	484.1	485.1	495.7				
Pittsburgh	263.8	267.0	271.1	275.0	293.8	311.0	327.2	362.1	380.3	406.3	407.9	423.4	424.4	443.7				
St. Louis	272.1	280.9	288.3	293.2	304.4	324.7	344.4	375.5	402.5	427.8	429.4	443.2	444.2	458.7				
San Francisco	365.4	368.6	386.0	390.8	402.9	441.1	465.1	512.3	561.0	606.4	608.0	631.3	632.3	647.1				
Seattle	266.6	268.9	275.0	283.5	292.2	317.8	341.8	358.4	371.5	388.4	390.0	423.4	424.4	437.8				

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

Want to get our goat?

(Angora, that is)



Just ask us on your letterhead.
We'll send you a new swatch card showing
our luscious plushes with 100% mohair pile.
Made from the wool of remarkable Angora goats.
In 27 great colors. All ready to ship.
Plus natural, which we'll dye
to the color you think we forgot.
Come on. See how easy it is
to get our goat.

See us at Neocon, space 1172 at the Merchandise Mart.

DesignTex New York
DesignTex Los Angeles
DesignTex San Francisco
DesignTex Chicago
DesignTex Atlanta
DesignTex Houston
DesignTex Boston
DesignTex Syracuse

275 Seventh Avenue, New York, (212) 924-5880
147 N. Robertson Blvd., Los Angeles, (213) 274-6661

For more data, circle 54 on inquiry card

Construction labor in 1974: the end of peaceful relations?

Three facts are portentous for the year ahead:

- Average hourly earnings of workers in contract construction rose at a *slower* rate last year than the average price of construction materials. This is the first time that has happened in at least 15 years—and probably the first time ever.
- The unemployment rate in contract construction, fairly high in 1971 and 1972, began to drop last year, and has continued to trace a downward pattern so far in 1974.
- The number of workers represented in labor contracts that expire this year will be the highest total ever.

Are these facts telling us that 1974 will be the year when construction labor, a relative "good guy" in the industry these past few years, dons the black hat again? And, if so, what does this mean for the industry as a whole?

Let's look for a minute at what's generally recognized as the most recent "black hat" period for construction labor, the years 1968, 1969, and 1970, in order to gain some sense of the impact labor strife has had on the industry as a whole.

The unemployment rate in contract construction, steady for the most part during the early and middle sixties, dropped sharply in 1967, and continued steadily downward through both 1968 and 1969. This was the period you'll recall, when contracts for nonresidential building, pushed on by an overheated war economy, were growing in excess of 10 per cent a year, on the average. Unemployment for skilled laborers in construction, a statistic that generally averages well above the rate for the economy in general, hit a low of two per cent at one point in 1969, significantly below the comparable rate for the economy as a whole.

The low levels of unemployment in the industry acted as a catalyst, triggering a series of unusually stringent labor demands. 1969, the year when construction unemployment rates hit bottom, was marked by a wave of strikes that saw more than 19 million man-days of worker idleness, while in 1968, the idleness figure was closer to 9 million mandays. By contrast, the years from 1960 to 1967 experienced, on the average, only 4 million man-days lost due to strike activity.

And, the basic issue, was money. Eighty-six per cent of the idle man-days in construction during 1970, for instance, were due to disputes involving general wage changes.

By contrast, only a little more than a third of the man-days idle in all of manufacturing that year were because of disputes over general wage changes. Despite the fact that many contractors fought the unions right down to the strike stage and beyond, the demand for new construction was so acute that others were able to pass the increases on. As a result, wages soared through the roof. Average hourly earnings in the industry jumped more than seven per cent in 1968, nearly nine per cent in 1969, and 9.5 per cent in 1970. Gains in hourly earnings for the 1960-1967 period, on the other hand, averaged 4.5 per cent.

These conditions led to the creation of the Construction Industry Stabilization Committee (CISC) in March, 1971. Since that time, both construction wage gains and man-days lost due to strike activity have declined significantly. Time lost due to strike activity has averaged between seven and eight million man-years since then, well below the 1969 peak of 19 million. Similarly, increases in construction hourly earnings averaged 6.5 per cent in both 1972 and 1973, as against the nine per cent average of the previous three years. Translated into real take home pay (average weekly earnings deflated by the consumer price index.), that represents an average gain of one-and-a-half per cent a year for 1972 and 1973, with the high side of the average coming in 1972.

Although the CISC can claim credit for some portion of these successes, clearly, there were other factors at work as well. It is extremely doubtful that the CISC would have been nearly as successful, for instance, if the construction unemployment rate in the past three years had been closer to the six-to-seven per cent average of the 1968-to-1970 period, than the nine-to-ten per cent figure it actually did record.

This brings us to 1974, where, as we've seen:

- Workers involved in contracts that expire during the year are at an all-time peak.
- Unemployment in construction has edged down slightly below nine per cent in recent months.
- Wage gains are barely keeping up with inflation.

Ironically, the record contract expiration total comes largely as a result of CISC policies. Construction unions, operating under CISC guidelines since early 1971, have opted for contracts with shorter expiration dates to retain the maximum flexibility for renegotiation once

the guidelines were lifted. The absolute number of contract expirations is not necessarily the most important factor, though.

The key variable here, it seems, is the unemployment rate. Low rates of unemployment in the industry—a condition of tight labor supply—have been, historically, closely associated with periods of excessive labor demands and strike activity. This is especially true in recent years (like the 1968-1970 period) when labor contract negotiations have centered more on the basic economic issue of higher wages, than on other matters. In earlier years, issues tended, often as not, to be more ideological. Jurisdictional disputes and agitation for union recognition were more frequent causes of strikes in earlier periods than is currently the case. These were not issues that correlated highly with conditions of labor scarcity—if anything, the opposite was more to the point.

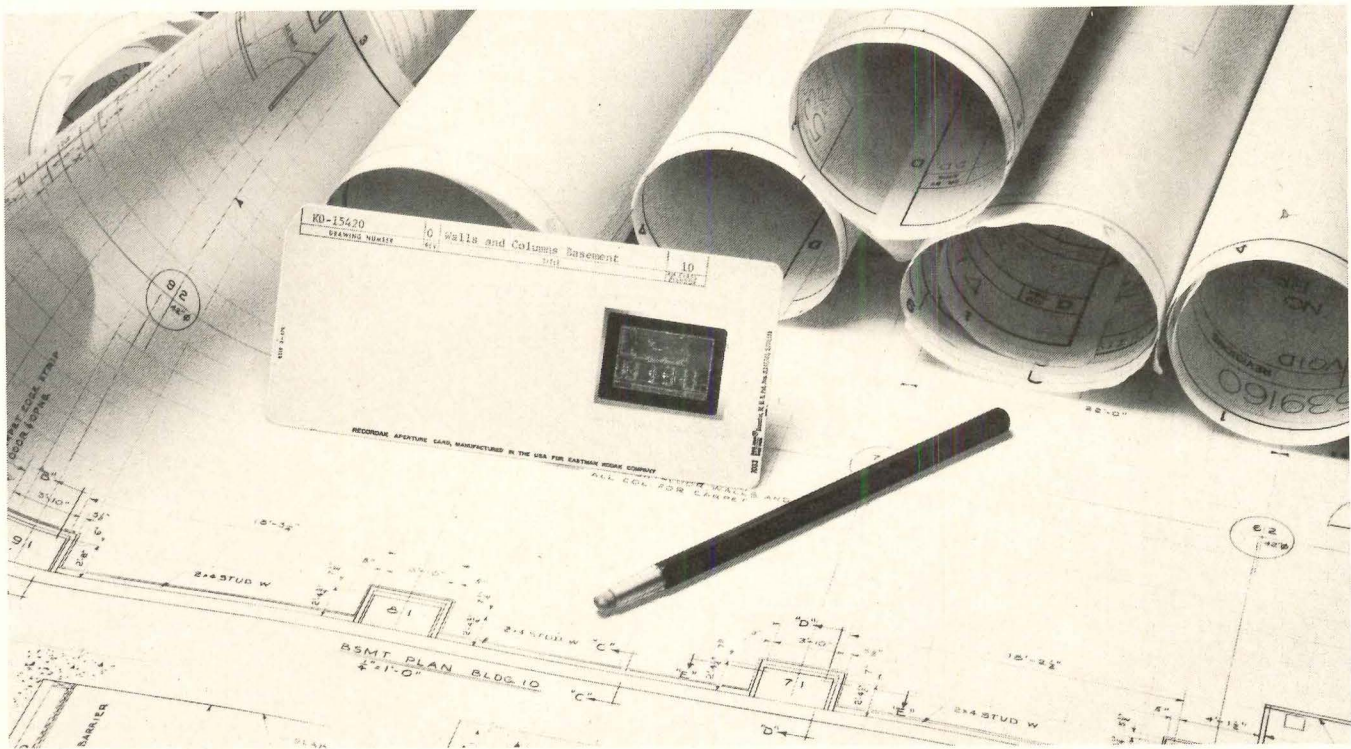
While it's true that the unemployment rate has been trending downward this year, construction labor is nowhere near as scarce as it was in the 1968-1970 period. Nor, considering the trends that we anticipate in construction activity this year (see last month's article), is it going to get that scarce.

Even so, this does not appear to be the time for a programmed phase-out of CISC. While wage gains in the industry still have a slight edge on the consumer price index, it's nowhere near the edge that construction labor has been used to. In this regard, some form of higher wage demands are virtually a certainty this year. The contractor, then, will be faced with cost pressure from *both* the labor and materials sides, something he has rarely had to contend with. In this situation he is apt to be more reluctant to agree to labor demands than otherwise. Strikes in 1974 are likely to be more prevalent than last year.

Are we going to return to the peak rates of strike activity experienced in the late sixties? That's doubtful. The unemployment rate will still be somewhat of a constraint here. Also, excessive gains cannot be justified from the standpoint of productivity. And, the increasing acceptance of nonunion labor into the industry is serving to mitigate demands. While asking for a wage package in excess of productivity gains has never caused construction labor unusual worry, the growing number of nonunion workers willing to do the job for lower wages certainly has.

James E. Carlson, manager, economic research
McGraw-Hill Information Systems Company

Blowbacks. Another good reason for microfilm.



Put the flexibility of Kodak microfilm into your drawing operation.

There are many advantages to microfilming your drawings. It saves space, it provides security, and it's one of the most efficient methods of filing and retrieving engineering data. And now, you can make high-quality enlargements directly from the sharp, crisp microfilm images that Kodak products have produced.

Blowing back onto Kodagraph films or papers from microfilm is a fast, easy way to make second originals. And you not only eliminate the need to use original drawings; you also save material because you can

produce the exact size reproductions you require.

You'll find that you save in other ways, too! Whether the job is revising drawings or restoring them, or even making distribution prints, blowbacks from Kodak microfilm can save you time and money.

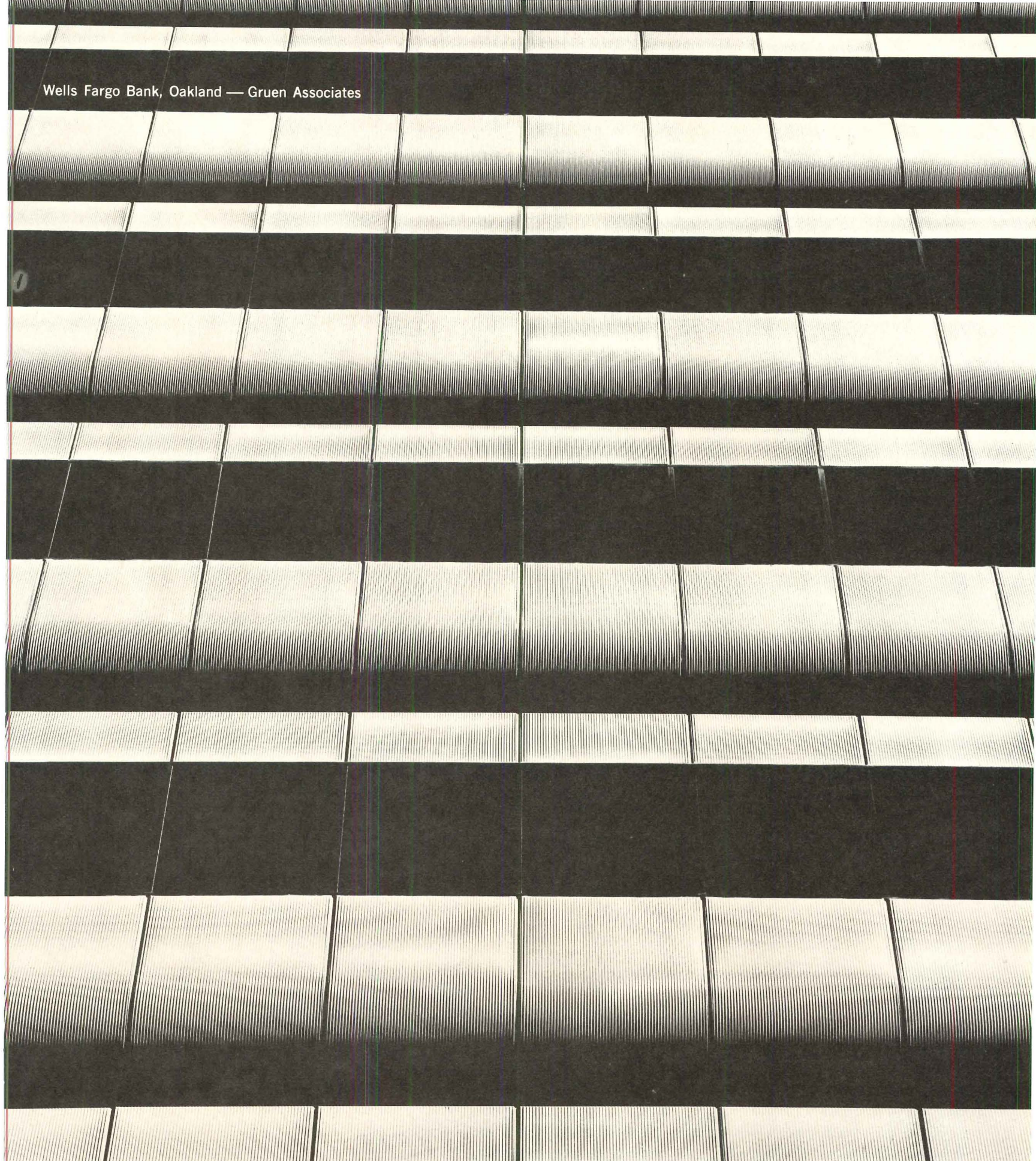
Get the details.

Find out how Kodak microfilm and drawing reproduction products can benefit your organization. Write for our booklet on Engineering Document Control or ask for a sales representative to call. Eastman Kodak Company, Business Systems Markets Division, Dept. DP761, Rochester, N.Y. 14650.

Kodak products for drawing reproduction.



For more data, circle 55 on inquiry card



Wells Fargo Bank, Oakland — Gruen Associates

Warnel Metal panels offer an imaginative new vocabulary of building surfaces.

A wide range of sculptured textures are embossed in the following metals:
bronze, copper, stainless steel, weathering steel and aluminum. Also available
are long-life color and texture finished on galvanized steel or aluminum.

Panel systems are engineered for lightweight, economical construction.

Forms & Surfaces Box 5215 Santa Barbara, Calif. 93108 Tel. (805) 969-4767

FORMS + SURFACES



Outside, one of 11 colors available in our low maintenance, acrylic coated aluminum exterior.

Pella Clad Wood Windows overcome, beautifully, two common objections to weather-shielded wood windows. Lack of color choice. And lack of design freedom. In a Pella Clad window, all exterior wood surfaces are covered with an acrylic coated aluminum skin. A well-known and well-respected outside finish. Available in three standard (a) and eight special colors. On our Contemporary and Traditional Double-Hung, Casement, Awning, Fixed and Trapezoidal Windows. And Pella Sliding Glass Doors.



(a)

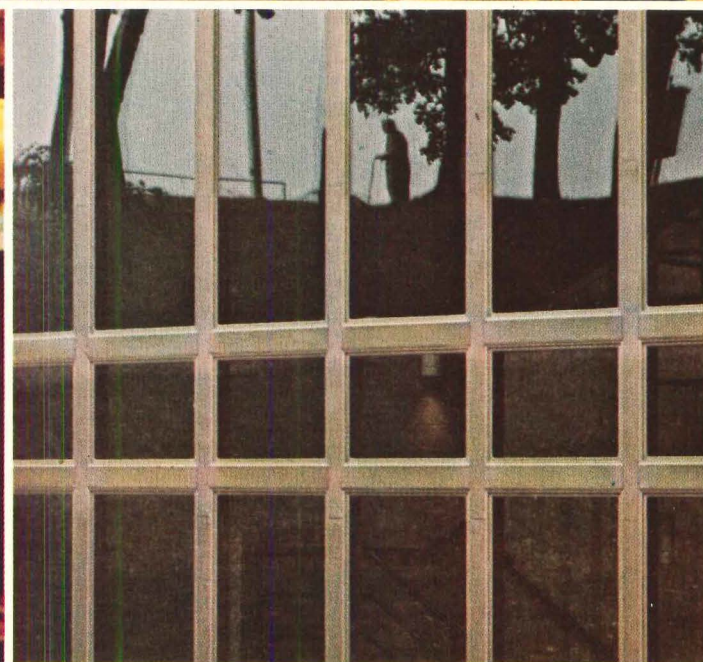
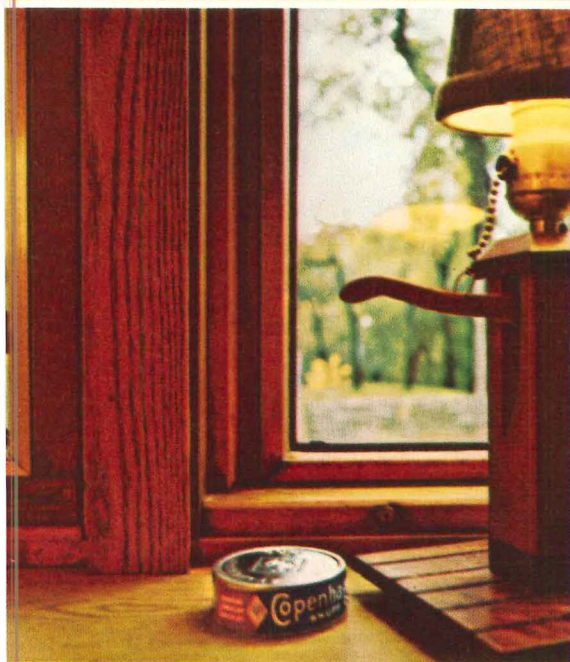
Inside, the unspoiled beauty of a carefully-crafted wood window.

Wood windows are known for their warmth. Visually. And because of their natural insulating value. And in designing the Pella Clad Wood Window, we left both of those properties unchanged. The exterior aluminum skin does not penetrate the frame or sash (b). Nor is it visible anywhere on the inside of the window. We recognized the need for a weather-resistant, low maintenance window. But seeing no reason to compromise the natural warmth of a wood window, we very carefully avoided doing just that.



(b)

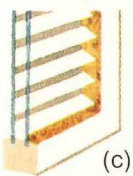
**At the Minnesota Veterans Home,
this Pella Clad window system
adds a warm touch,
inside and out.**



Architect: S. C. Smiley & Associates Builder: Arkay Construction Company Windows: Pella Clad Fixed Units and Contemporary Double-Hung

In between, the built-in flexibility of Pella's exclusive Double Glazing System.

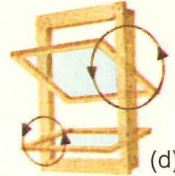
The removable inside storm panel gives you any number of interesting options. Like using our unique Slimshade® (c) to control sunlight, privacy and solar heat gain and loss. Housed between the panes, this fully adjustable blind remains virtually dust-free. The system also accommodates our snap-in wood muntins, and the selective use of privacy panels. But flexibility is not the system's only strong point. The 13/16" air space between the panes does a better job of insulating than welded insulating glass.



(c)

Afterward, the ease of washing a counterbalanced, pivoting sash double-hung window.

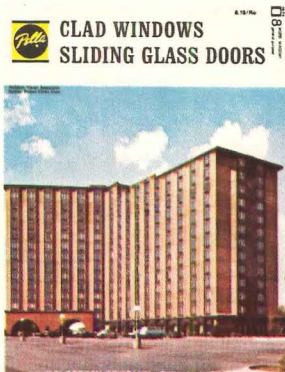
Window cleaning is another maintenance factor that must be considered. And here again, Pella design makes an easy job of it. Our Double-Hung Window has a spring-loaded, vinyl jamb liner which allows the sash to pivot. So the outside surfaces can be washed from inside the building. And because each sash pivots at its center point (d), the weight of the sash is counterbalanced. Which makes the whole job just that much easier. Reglazing can also be accomplished from inside, along with sash removal.



(d)



For more detailed information, send for your free copy of our 24-page, full-color brochure on Pella Clad Windows & Sliding Glass Doors. See us in Sweet's Architectural File. Or look in the Yellow Pages, under "windows", for the phone number of your Pella Distributor.



Please send me your 24-page brochure on Pella Clad Windows & Sliding Glass Doors. I am specifically interested in: Double-Hung Windows, Casement Windows, Awning Windows, Sliding Glass Doors, Wood Folding Doors.

Name _____
 Firm _____
 Address _____
 City _____ State _____ ZIP _____
 Telephone _____

Mail to: Pella Windows & Doors, 100 Main St., Pella, Iowa 50219 Dept. T31E
 Also Available Throughout Canada



If one athletic surface were right for everyone, we wouldn't make three.

We confess. Not all athletic surfaces are created equal. Nor for the same purpose. Not even ours.

But then not all gymnasiums or sports facilities are created alike. Nor for the same purpose. Some are used only for championship basketball. Others must be shared by basketball players, ROTC drill teams and PTA spaghetti suppers.

That's why we make a variety of surfaces.

Take UCLA (which isn't easy to do). The Bruins play on nothing less than Robbins Maple.

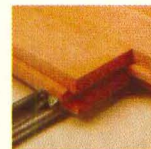
But even in hard maple we give you a choice. Because we make a variety of maple floor systems.

Some for better cushioning. Others for rebound characteristics. And still others for dimensional stability. Most squash and handball experts, for instance, prefer LOCK-TITE for its incredible stability and lightning fast service. And they like Robbins edge-grain hardwood on the walls.

We've even got a fast cure for people who are always running late. Robbins PROTURF.® The original, multi-purpose synthetic that pours over concrete or asphalt. This exceptionally fast track can give sprinters some of the best times of their lives. And it scores well in other sports, too.

Then there's SPORT-TRED,® a rough-tough, competitively-priced vinyl. SPORT-TRED® performs well for all indoor sports, and it withstands the abuse of school carnivals and drill teams.

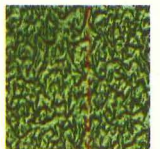
Ask Robbins. The choice athletic surfaces for choosy people.



LOCK-TITE



PROTURF



SPORT-TRED

Robbins  TM
DIVISION OF E. L. BRUCE CO. INC. / A  COMPANY
BOX 16902 / MEMPHIS, TENNESSEE 38116

For more data, circle 58 on inquiry card

One stop and you're set to take on any job in town!

The gas shortage. Suddenly, another good reason to make just one stop for fixtures, fittings and parts.

The place to stop—your American-Standard distributor. You name it. He's got it. Beautifully-styled fittings for the bath, shower, lavatory and kitchen. Hard-working fittings for stores, offices, factories, schools and hospitals.

From prestigious Aquarian single levers to economy-minded Colony fittings, he's got what it takes to make every job an American-Standard quality job all the way.

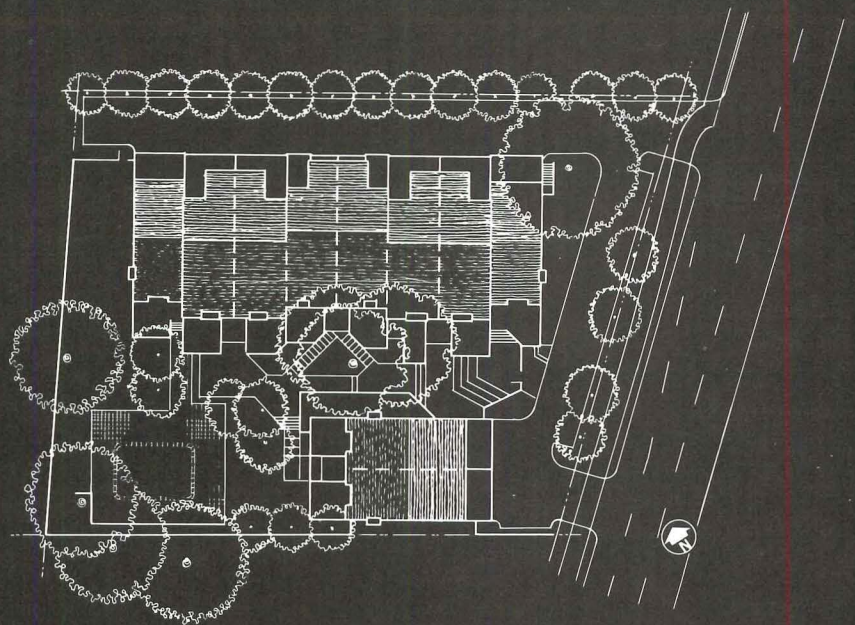
We've got 173 more fittings to show you. Plus parts!



All product names are trademarks of American-Standard.

 **AMERICAN
STANDARD**
PLUMBING / HEATING

For more data, circle 164 on inquiry card



Red cedar addresses vest pocket condominiums.



White Oak Townhouses, Menlo Park, California. Frank L. Hope and Associates, Architects.

These California townhouses are prototypes for a series of multi-unit housing projects on vest-pocket sites. Red cedar helped solve the problem of emphasizing each compact unit's individuality.

Their warmth and texture help each unit become a home while maintaining continuity over the structure's staggered planes.

Next time you need to solve a problem like this, consider the material with texture, warmth, durability and superior insulative properties. Let red cedar address itself to the problem.

For more details, write Red Cedar Shingle & Handsplit Shake Bureau, 5510 White Bldg. Seattle, Washington 98101. (In Canada: 1055 West Hastings St., Vancouver 1, B.C.)



These labels on bundles of red cedar shingles or handsplit shakes are your guarantee of Bureau-graded quality. Insist on them.

Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

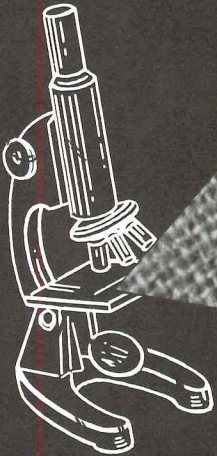
For more data, circle 165 on inquiry card

ARCHITECTURAL RECORD May 1974 80C

Jute carpet backing... a "microscopic thicket"



(Close-up
photo
magnified
20 times)



Entangles adhesive and makes carpet glue-down really work

Only Jute among no-pad carpet backings can make that claim. Because only Jute has the interstices and fibrous pores that accept and retain adhesive, bonding carpets securely to any subfloor or old hard-surface flooring.

Specify Jute backing to realize the many benefits of no-pad carpet glue-down. Among them are seam security under heaviest traffic, easy mobility for casters and wheels, lower cost than same carpet plus padding or cushion-backed carpet with equal pile.

- Jute, over twice as thick as other no-pad backings, prevents cracks in old flooring from being felt or outlined.
- When carpet is rolled out, some floor adhesive penetrates Jute to the primary backing, for additional tuft bind and delamination protection.

- Jute's thickness doubles seam sealing area.
- Jute's dimensional stability is essential for floor cut-outs.
- Jute facilitates clean carpet removal, intact for re-installation.
- Jute works with all standard multi-purpose and release adhesives.
- Jute helps qualified carpets meet fire safety codes.

WRITE FOR ARCHITECTURAL GUIDE SPECIFICATION & CASE HISTORIES

Latter includes 8-year record at Ford Motor Co.

JUTE CARPET BACKING COUNCIL, INC.

American Industries, Inc. • Bemis Co., Inc. • BMT Commodity Corp. • C. G. Trading Corp. • Cosmic International, Inc. • D and C Trading Co., Inc. • Delca International Corp. • Dennard & Pritchard Co., Ltd. • A. de Swaan, Inc. • Gillespie & Co. of N. Y., Inc. • Guthrie Industries, Inc. • Hanson & Orth, Inc. • O. G. Innes Corp. • Jute Industries Div., Sidlaw Industries Ltd. • Multiproducts Trading and Manufacturing, Inc. • R. L. Pritchard & Co. • Stein, Hall & Co., Inc. • White Lamb Finlay Inc. • Willcox Enterprises, Inc. • WLF Inc.

When it's 95° outside,
this brick cavity wall gains heat
at the rate of only .72 Btu/h
a square foot.



10" brick cavity wall. 4" brick units
with 2" polyurethane insulation.

A highly efficient glass wall admits 60 times more heat; a top-quality metal sandwich panel admits nine times more; a concrete sandwich panel admits three times more.

And, from a design point-of-view, it's also a more interesting square foot.

With a U value of only .06, brick cavity walls provide the most efficient barrier against solar heat gain in buildings. A 10,000-square-foot brick cavity wall gains only 7,200 Btu/h under summer design conditions, compared to 440,000 Btu/h for a double-glazed reflective glass wall.

Brick solves energy conservation

problems inexpensively. In most areas, a brick cavity wall can be installed for \$4.50 to \$7.50 a square foot. Price includes finished interior walls.

If the cavity wall doesn't meet your design needs, other brick walls will. All offer similar energy conservation and none will shatter your project's budget.

Brick Institute of America, 1750 Old Meadow Road, McLean, Virginia 22101

For informative booklet comparing energy conservation characteristics of brick with competing systems, please fill out and mail coupon to:

Brick Institute of America, Dept. EC AR
1750 Old Meadow Road, McLean, Virginia 22101

Name _____

Title _____

Firm Name _____

Street _____

City _____

State _____ Zip _____



**BERLIN STEEL
WAS IN BUSINESS
SEVENTY THREE
YEARS BEFORE
THEY SPECIFIED
JOIST GIRDERS
FOR THE FIRST
TIME. ELEVEN DAYS
LATER, THEY DID
IT AGAIN.**

Joist Girders. The advantages they had over I-beams were more than enough for Berlin Steel to specify them for the Sage-Allen Department Store they were building in West Hartford, Connecticut. So much



Joist girders have a simple span design. Which explains why ponding calculations are easier. And why design time is shortened.

more, that eleven days later they specified them again. Only this time for National Plastics and Plating Supply Co. in Plymouth, Connecticut.

Where did Berlin Steel learn about those advantages? From meeting with Vulcraft. The people who knew as



Joist girders need fewer foundations and columns. Which means less work for you and larger bay areas for your clients.

much about joist girders as Berlin did about steel fabricating.

And the first thing the Vulcraft engineers did was show Berlin Steel

why joist girders are easier to specify and erect. By explaining that the simple span design of joist girders make ponding calculations easy. And shorten design time.

By telling them about the larger bay areas possible with joist girders. And by talking about the fewer foundations and columns needed with joist girders than with I-beams.

Then came the subject of the advantages joist girders offer after they're erected.

And to explain that topic Vulcraft talked about the modified Warren truss configuration used in joist girders. And that it gave joist girders a high strength to weight ratio.



Joist girders have a modified Warren truss configuration using hot rolled double angle sections for top and bottom chords and single and double angle sections for web members. What that means is a high strength to weight ratio.

They mentioned further, that bar joist erection was faster. Because top chord panel points show joist location, eliminating a lot of measuring.

Finally, the matter of ducts, pipes and conduits came up. And Vulcraft explained how these things go right through a joist girder. Something no one can say about an I-beam.

What it all added up to for Berlin Steel was a change. A change from I-beams to another roof-framing system. A roof-framing system that was more economical and easier to erect



Joist girders have top chord panel points that show joist location. Which makes a lot of measuring unnecessary.

for anything over 10,000 square feet.

It wasn't surprising to Vulcraft, though. Because architects and engineers all over the country are discovering the advantages joist girders have over I-beams.



Joist girders already have spaces for pipes, conduits, and ducts to run through. So you don't have to cut them yourself.

If you'd like more information about how joist girders can work for you, send for Vulcraft's Joist Girder Specification Guide. Just contact your local Vulcraft sales office. Or write P.O. Box 17656, Charlotte, N.C. 28211. Or call (704) 366-7000. You'll find a few things even Berlin Steel didn't know. Until they asked.

VULCRAFT

Sage-Allen Department Store, West Hartford, Connecticut; Architect: Associated Architects, Farmington, Connecticut / General Contractor: Bartlett-Brainard & Eacott, Inc., Bloomfield, Connecticut / Consulting Engineer: Hallisey Engineering Associates, Inc., Hartford / Steel Fabricator: Berlin Steel Construction Company, Inc., Berlin, Connecticut. National Plastics and Plating Supply Co., Plymouth, Connecticut; Architect: Andrew C. Rossetti, Bristol, Connecticut / General Contractor: S. Carpenter Construction Co., Bristol / Consulting Engineer: Hallisey Engineering Associates, Inc. / Steel Fabricator: Berlin Steel Construction Co., Inc.



Be a stickler when you specify fence.

A bad chain link fence and a good one look a lot alike. For maybe a couple of years.

How can you be sure you're getting a good one? Well, it helps to deal with a good firm to start with. Someone who'll stand by the finished job. But it's very important to know what goes into a good fence...and specifying it.

Take line posts. If they're pipe, they can trap water and corrode at ground level...weakening that part of the fence. But H-posts (see illustration) are solid steel beams. The only posts *designed specifically for fence*. They're stronger than the pipe you usually get, and there's no way they can corrode from within. If you don't put details like this...or lock loops, or box-beam terminal posts...into your specs, you won't get them.

Fortunately, we've made it as easy to specify a good fence as a bad one.

For a complete set of specifications—specs that can be used as is—return the coupon below. They're nonrestrictive. They don't even mention our name. But it's no coincidence that CYCLONE Fence meets them in every way. It lasts longer. Looks better. Takes less maintenance than any other chain link fence.

And CYCLONE Fence is local and convenient, with sales and supply points in 32 areas around the country.

CYCLONE Fence. Engineered and erected by U.S. Steel Supply.



CYCLONE Fence, USS Supply Division
Box 86 (USS C266)
Pittsburgh, Pa. 15230

Teach me how to be a stickler. Send me a set of your specifications for chain link fence.

Name _____

Title _____

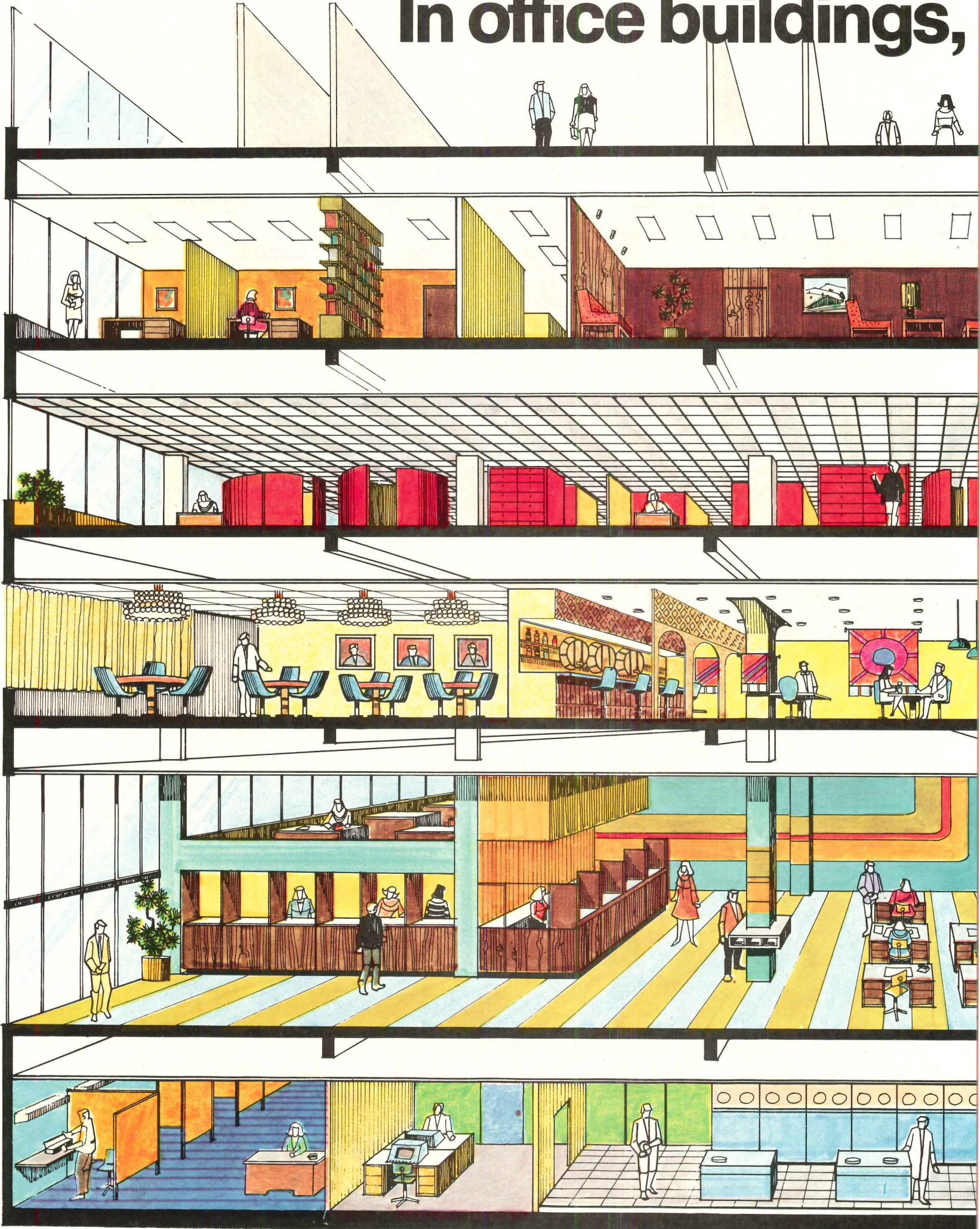
Firm _____

Address _____

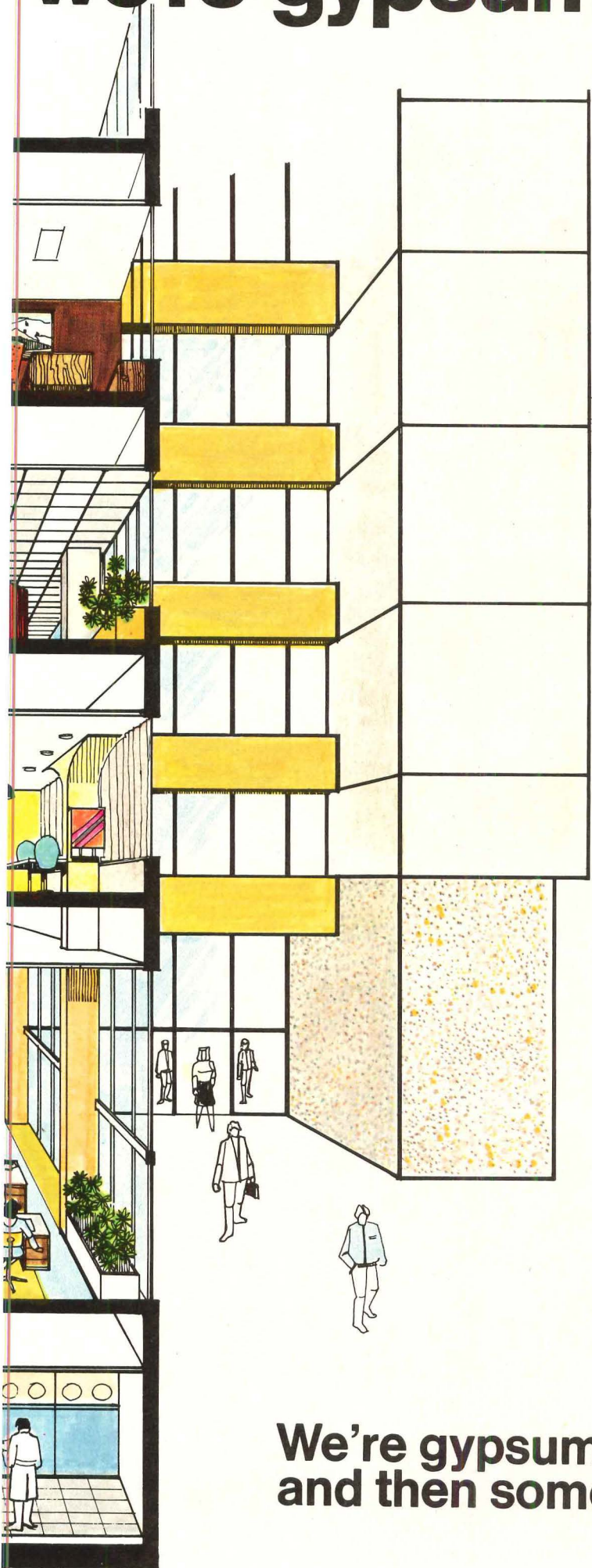
City _____ State _____ Zip _____

USS and CYCLONE are registered trademarks.

In office buildings,



we're gypsum, and then some.



At Gold Bond, we've never been content to produce merely gypsum. While our basic gypsum products include sheathing, wallboard, joint treatment and lath and plaster, our other products are anything but basic. Today we offer a host of products from lime, mineral fibers, metal and other materials, as well as gypsum. All proven in the largest independent sound and fire research facility of its kind. Ours.

At Gold Bond today, we're gypsum and then some. For example:

Gold Bond in the Executive Suite. Good-looking, noncombustible **Solitude**[®] acoustical ceiling panels stifle sound. In ventilating or nonventilating panels, they're made of high-density mineral fiber. For walls, choose from the many patterns of **Durasan**[®] vinyl-surfaced gypsum wallboard such as new cork patterns or woodgrains. Rugged Durasan panels look good in place and stay good looking.

Gold Bond in the Landscaped Office. Landscape with Durasan in **Contempo-Wall**[®] partitions. They can be mounted, demounted and re-mounted overnight, yet they look permanent. Or design with **Tectum**[®] just as you would with wood. Cut, fit, nail, glue or fasten. For ceilings, consider **Tectum Tónico**[®] panels with recessed edges to drop into a fire-rated grid system.

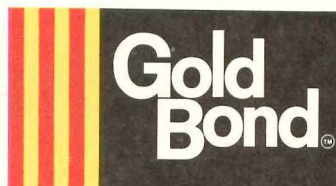
Gold Bond at Lunch. In the executive dining room, for good acoustics plus a new dimension in texture, Tectum ceiling tile is varied by 1-inch, 1½-inch and 2-inch levels. Over cafeteria grills and food preparation areas, specify **Humiguard**[®] ceiling panels. Attractive, yet safe and scrubbable. Walls are economical, easy-to-maintain, vinyl-surfaced Durasan gypsum wallboard.

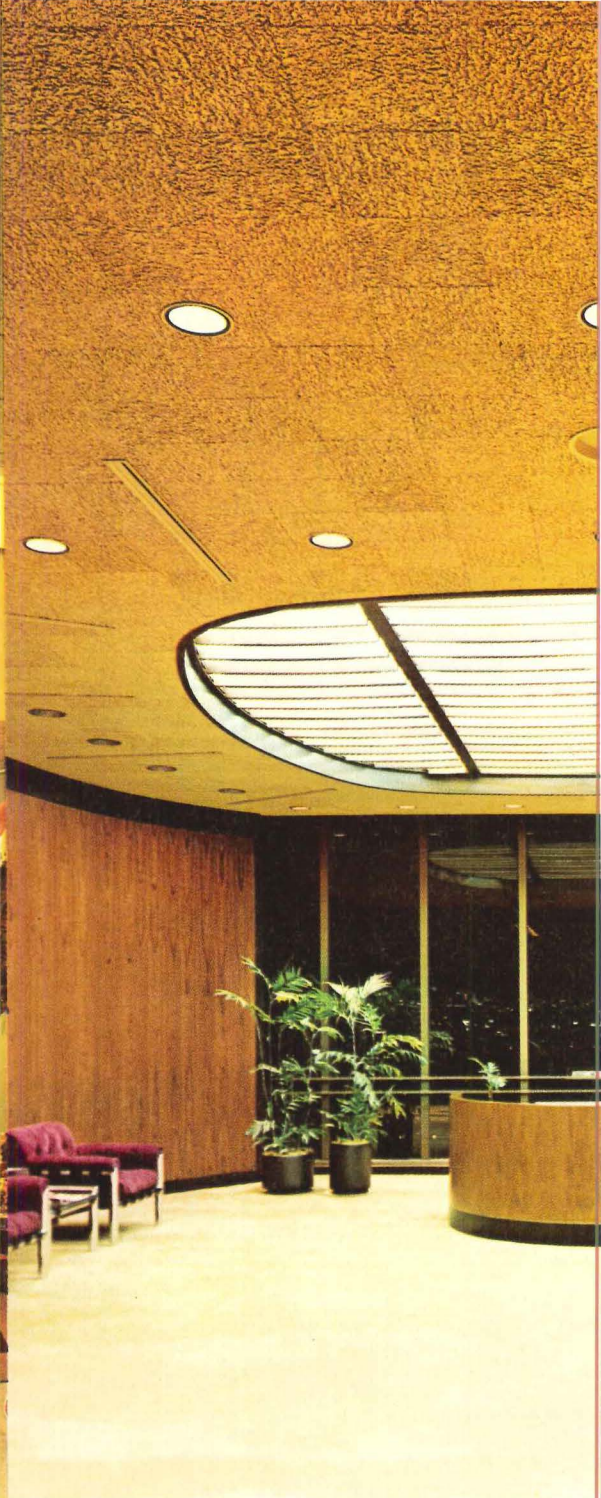
The Gold Bond Entry. For the look of exposed aggregate at panel construction price, consider **Mineral Fiber Flat Sheets** as a substrate. Dimensionally stable, these sheets have a smooth, flat surface, an excellent base for epoxy-set aggregates or textured coatings. The rugged wall is Tectum, which can be painted without losing its good sound-absorbing and insulating qualities. For counter fronts, there's Durasan. Its vinyl surface wipes clean, resists scuffs and stains.

Gold Bond in Special Design. Like our **Metal-edge Corewall**[®], concealed in the elevator enclosure. It cuts installation costs and occupies less than half the space required by typical 8-inch shaft enclosure material. More than meets positive and negative air pressures in high-speed elevator shafts. Suitable for stairwells and other vertical chases. Special wall and ceiling designs use **Gypsum Wallboard** in a variety of systems which are fire-rated, reduce sound and control temperature. For colorful accents, **Plasti-Clad**[®] Panels are available in a range of lastingly beautiful colors.

Gold Bond has a product for nearly every wall and ceiling application in nearly every kind of building. For detailed information, see Sweet's Architectural File, or write Gold Bond Building Products, Division of National Gypsum Company, Dept. AR-54GE, Buffalo, New York 14225.

We're gypsum, and then some.





Celotex ceilings combine

Next time someone says you must sacrifice overhead beauty if you want a functional ceiling—or vice versa—you can answer with one word.

The word is Celotex. And it makes the very notion of an either/or choice between looks and utility seem old-fashioned.

Start with that name, and

you can choose a ceiling system with wide design possibilities. Without giving up beauty. Perhaps a non-directional patterned Celotex ceiling tile for a monolithic effect; or a Celotex reveal-edge lay-in panel for a bold contrast; or a design tile for that special interior.

The same reliable name will help you satisfy noise control requirements, because Celotex ceiling products can deliver Noise Reduction Coefficients to .90.

Time rated ceiling assemblies? You can get U.L. time ratings of one, two or three hours with Celotex.



beauty and performance.

Where the plan calls for complete environmental control, check Celotex Vari-Tec™ systems—sound control, lighting and air handling all provided for in one beautiful, integrated ceiling system.

Which brings you back to where we started: beauty. Your Celotex ceiling can be beautiful as well as functional. Our success

in delivering this valuable combination has made Celotex as popular with architects as with contractors, building owners and managers.

Consult the Celotex Acoustical System catalog. You'll find it in Sweet's Architectural and Industrial Construction Files. Or,

contact your Celotex commercial ceilings representative.

Celotex™

BUILDING PRODUCTS
The Celotex Corporation, Tampa, Florida 33622

a **Jim Walter company**

For more data, circle 63 on inquiry card

How to budget high-rise comfort into low-rise plans.



Plan on Carrier's Modu-Pac air conditioning to put a sophisticated system into your

small building designs. It's simple. Costs less. And fits in without getting in the way of your building's appearance.

Start with the source.

Our rooftop cooling unit. Sits low on the roof. Factory-packaged to save time going in, save energy once it's in.

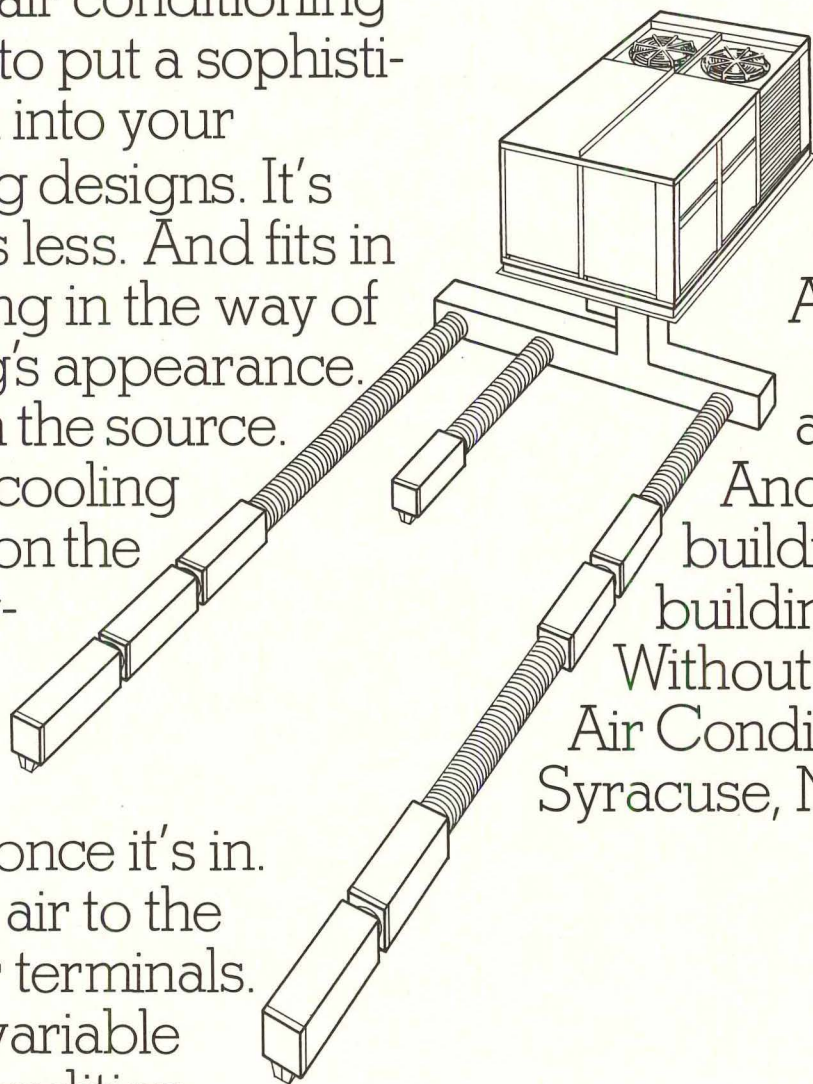
Supplies air to the Moduline® air terminals. Our unique variable volume air conditioning units that hide in the ceiling. Have snap-in controls that make any Moduline a control center. Cools only when it has to — to save energy.

The whole system is pre-packaged and pre-set at the factory to eliminate costly mistakes and client complaints.

Ask your Carrier representative about Modu-Pac.

And give your small building design a big building attraction.

Without the cost. Carrier Air Conditioning Division. Syracuse, N.Y. 13201.

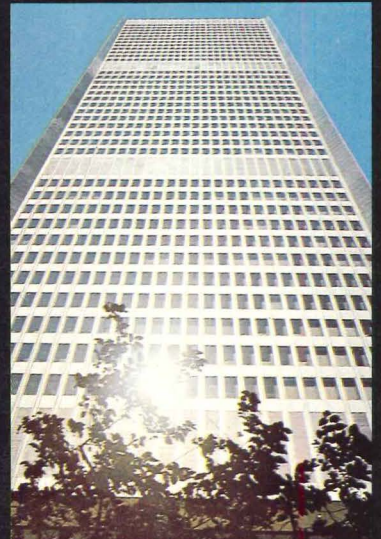
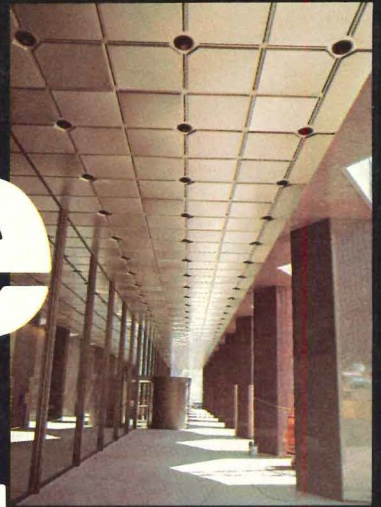


Carrier
Air Conditioning
Division



Carrier

Keep the change.



**Kalcolor[®]
aluminum brings
lasting value to beautifully
changing scenes.**

Each day you can see Kalcolor aluminum reflect the change of the hour. Coolness at dawn. Richness at noon. Warmth at sunset. This is the unique character of Kalcolor aluminum. And you will see it harmonize well with other materials and colors.

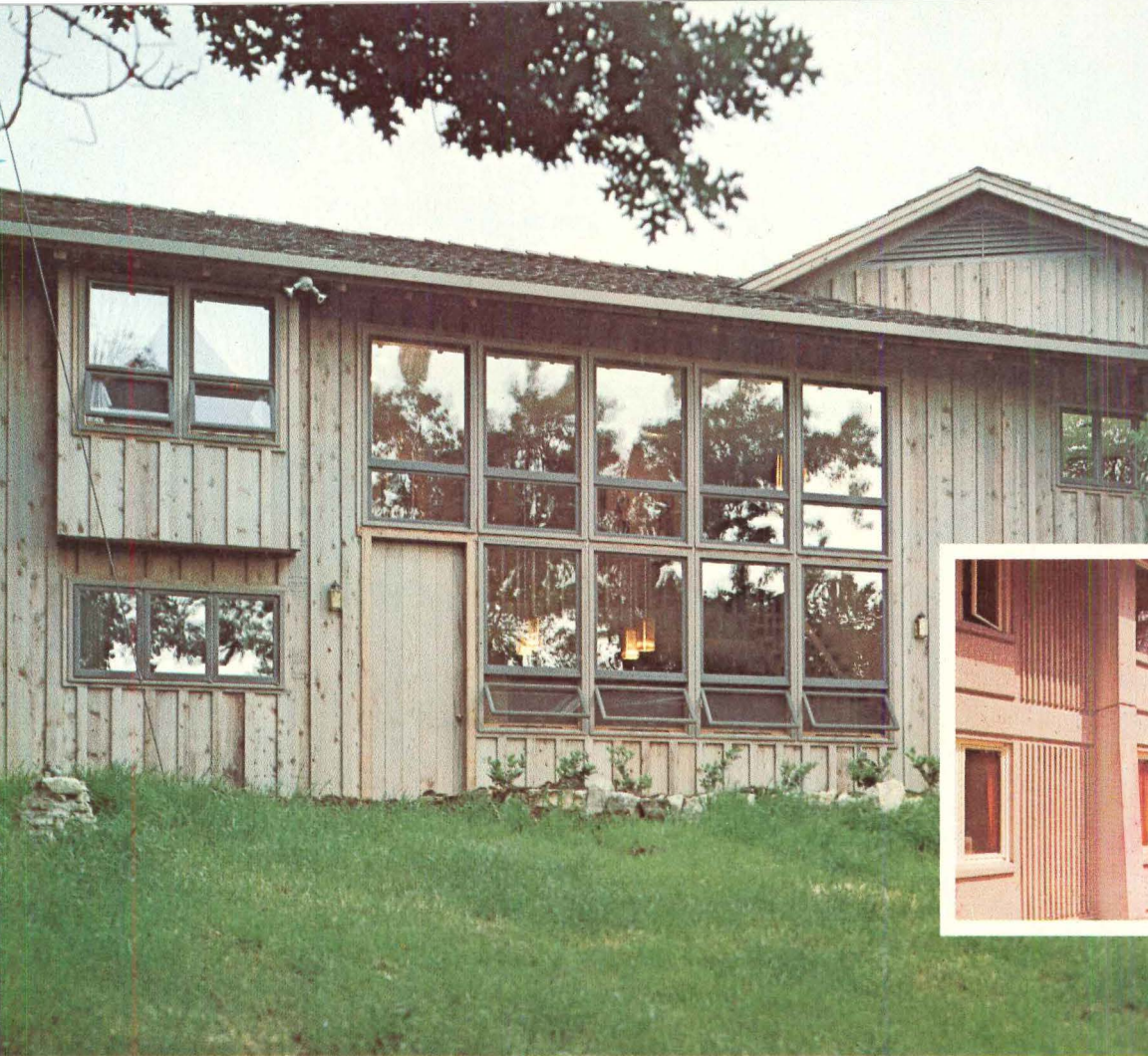
Yet the extremely hard, smooth, dense surface of Kalcolor aluminum will keep its own freshness virtually unchanging. It will bring lasting value to your new horizon. In Gold. Champagne. Ambers.

Bronze. Three shades of gray. Black. Each color is an integral, inorganic part of the anodized coating—color fast, and enduring.

Our new catalog—"Aluminum in Architecture"—will show you the complete selection of colors you can specify in Kalcolor sheet, extrusions and castings for both exterior and interior design.

Write for your copy: Room 2142, Kaiser Center, Oakland, California 94604.

**KAISER
ALUMINUM**



Wood windows: a beautiful way to conserve energy.

The energy crisis has finally hit home. Every home in the country. So the homebuyer of the 70's is giving higher priority than ever to housing that does the best job of conserving energy. And because windows often occupy 30-70% of an outer wall, homebuyers are looking carefully at the insulation they provide.

A window should insulate.

That's the most important thing consumers look for in a window. It was true before anybody was talking about the energy crisis. And it's truer still today. We've spent five years and \$40,000 studying consumers' homebuying plans and preferences. And every time, our research showed that they give the highest priority to a window's insulation capability (and the lowest priority to its initial cost).

Factors Most Important in Window Selection

	1968	1970	1972
Most Important	Insulation	Insulation	Insulation
Next Most Important	Durability	Durability	Durability
Least Important	Initial cost	Initial cost	Initial cost

Wood windows keep the warm in. And that translates into savings.

After a house is fully insulated, you can cut the remaining heat loss by 30%—just by choosing wood windows with insulating glass. That translates into important heating bill savings. And regardless of fuel prices, the savings add up year after year.



In a 16-window Chicago test home, the savings ranged from \$88.40 to \$124.25 last winter, depending on the type of fuel.

Home Heating Cost Comparison

Type of Window	Gas	Oil	Electric
Single glass in aluminum sash*	\$289.50	\$348.68	\$406.91
Single glass in wood sash	260.59	313.85	366.29
Insulating glass in aluminum sash*	225.59	271.70	317.08
Insulating glass in wood sash	201.10	242.21	282.66
Annual savings with insulating glass in wood over single glass in aluminum	88.40	106.47	124.25

*Without a specific thermal barrier
 Figures based on insulation manual developed by National Association of Home Builders Research Foundation. 1,400 sq. ft. home, fully insulated, 6600 degree days.

Wood windows are rated best for insulation quality. Just ask a consumer how he rates wood versus metal windows. We did. And our research showed that 54% rate wood windows as excellent insulators, while only 44% say the same about metal windows.

%Rating Insulation Quality Very Good	1968	1970	1972
Wood Windows	47%	50%	54%
Metal Windows	45	41	44

You can help beat the energy crisis.

Don't wait for your clients to ask for wood windows. Specify them. And then use that savings in energy consumption as an important example of the long-term value of the homes you design.

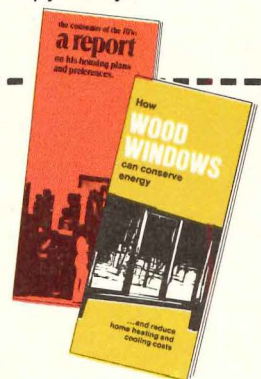
Our new brochure tells how wood windows reduce home heating costs. It includes a step-by-step explanation of how window insulation works, and a detailed report of actual test results from homes all over the country. Write for your own free copy today. We'll also send you a copy of the latest findings from our consumer research.



Mail to:
Ponderosa Pine Woodwork

Dept. A-1
 1500 Yeon Building, Portland, Oregon 97204.
 A member of the American Wood Council.

Send me my copy of your research report.



NAME _____

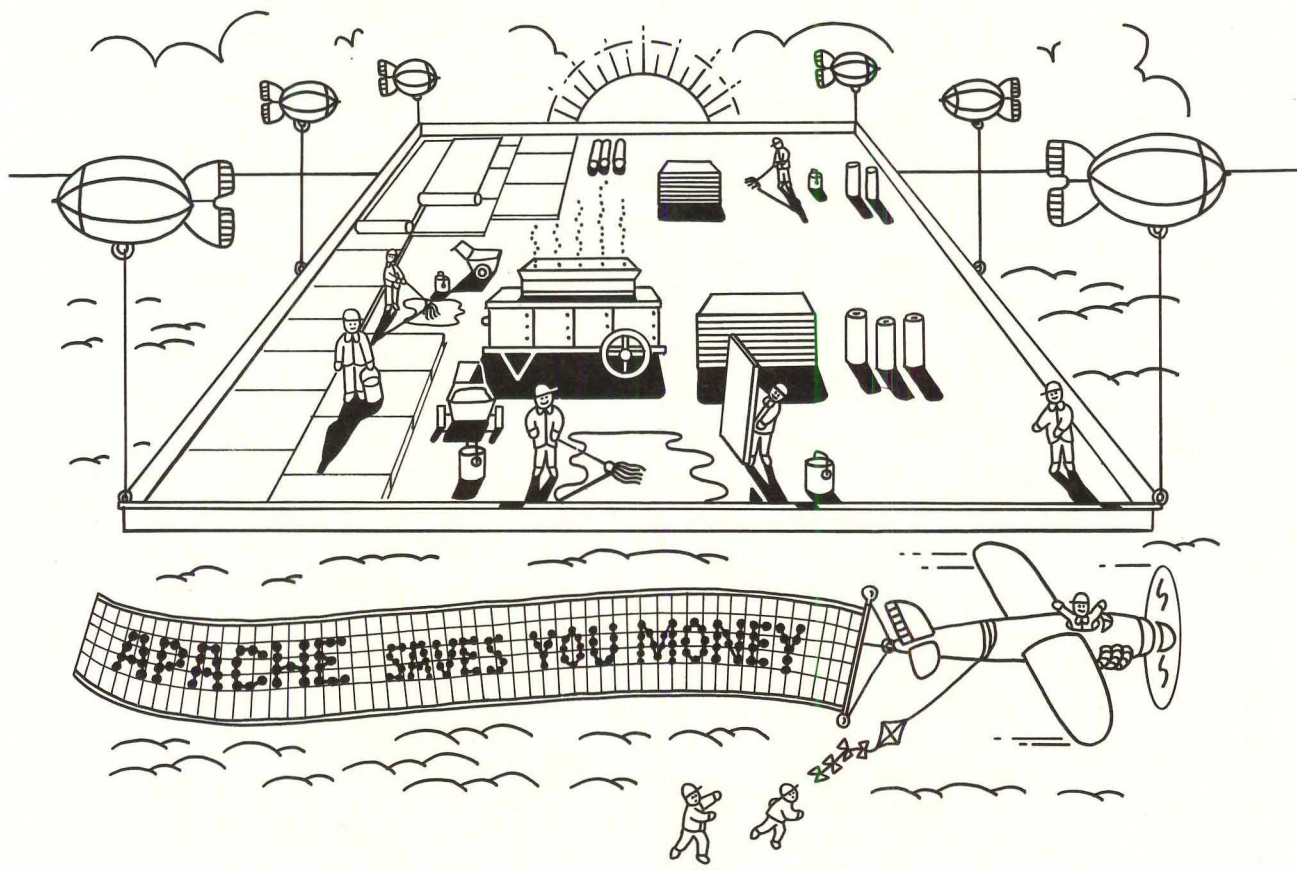
POSITION _____

ORGANIZATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

On some buildings, starting with the roof will save you money.



We make roofing insulation panels with urethane foam—panels which can save you money in two ways.

First, installation costs. Both manufacturing processes and experience help us to produce reliable, dimensionally stable insulating panels that go down fast and easy, and cut handling time 30% to 50%.

Second, life-cycle costs. That's because Apache foam panels have extremely high insulation values that won't deteriorate over the years (no wicking, no creeping, no buckling). And, their integrally bonded skins resist wind uplift beyond 170 mph (better than any fibrous insulation). Consequently, when we analyzed the savings recently on one relatively small building (a 20,000 square foot professional building in Pennsyl-

vania), the architects and engineers came up with more than \$38,000 savings in two areas—lower installation plus predictably lower heating and cooling costs.

Apache offers four main types of foam insulation roofing panels — Lightweight for non-combustible and Class II decks, Millox® for Class I type metal decks, Plaza® and Plaza/Protek® for plaza decks. For information, look us up in Sweet's or write for descriptive literature and our data sheet on savings to Apache Foam Products. In New Jersey, 2025 E. Linden Ave., Linden, 07036. Phone: (201) 486-6728. In Illinois, 1005 McKinley Ave., Belvidere, 61008, Phone: (805) 544-3193.

apache

For more data, circle 66 on inquiry card

Build a 10 story building with loadbearing masonry and get the 11th story free.



When you build with a modern loadbearing masonry system, you can save as much as 10% on construction costs.

Because masonry lets you save on the two biggest expenses of building. Time and materials.

Instead of building separate structural systems and enclosure walls, you can have them both in one step. Masonry walls work together with roof and floor systems to create one solid structural shell. Complete with enclosure walls and inside partitions.

And you can begin finish work on each floor as soon as the masons begin erecting the floor above it. So your building is finished faster. And you can stop paying interim interest and start charging rent.

You save on maintenance costs too. Because masonry doesn't warp, dent, bend, buckle or rot. It gives superior fireproofing and sound control. And with its inherent beauty, it never needs painting.

When you add all these savings up, you can save enough money to add that eleventh story. If that sounds like an interesting prospect to you, mail this coupon. We'll send you the complete story.



International Masonry Institute
Suite 1001 823 15th Street, N. W.
Washington, D. C. 20005 AR

Send me information on the modern loadbearing masonry building system.

Name _____

Title _____

Company _____

Address _____

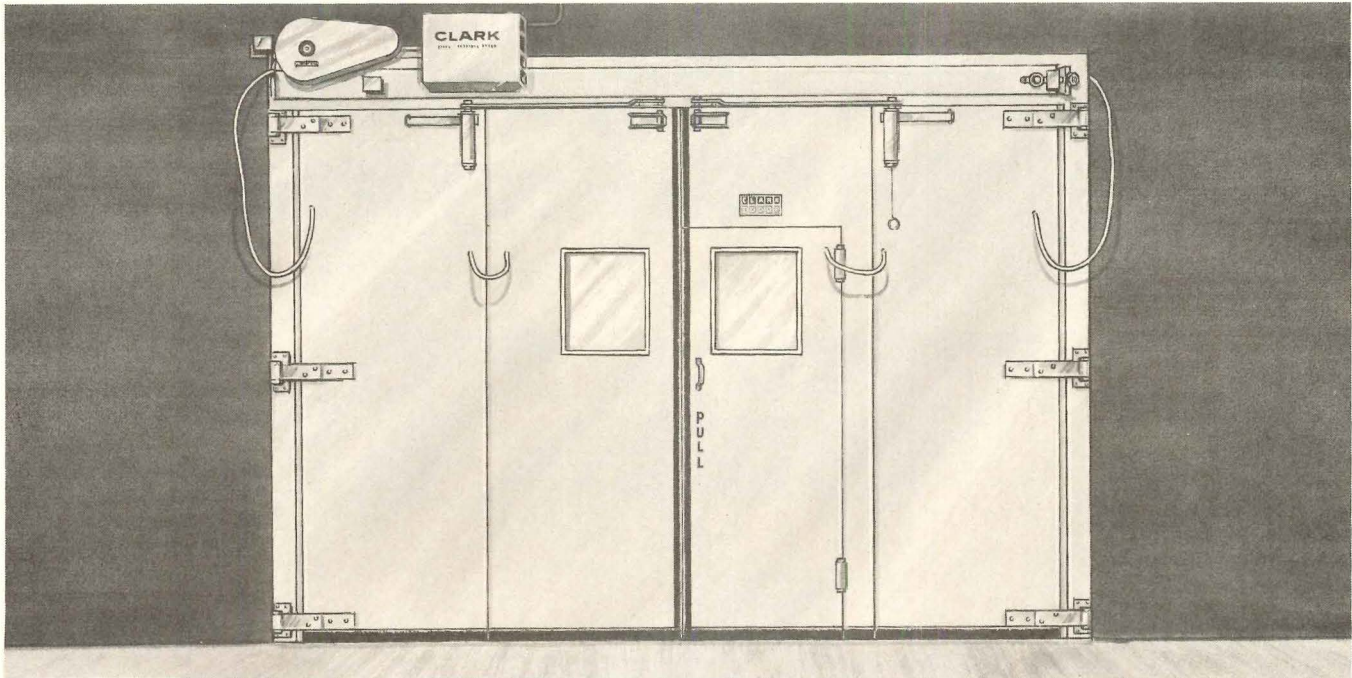
City _____

State _____

Zip _____

Nature of Business _____

For more data, circle 67 on inquiry card



In two seconds this 8' wide Clark Bifold will be completely open.

Clark bifold doors clear doorways at a rate of up to 4' per second; faster than any other type of industrial door. A door that operates this fast hustles out of the way before even the hottest fork truck driver can reach the doorway. And faster opening and closing means a shorter time for heated or refrigerated air to escape.

Clark bifold doors can be installed as close as 9½" from a sidewall or other obstruction.

CLARK
DOOR

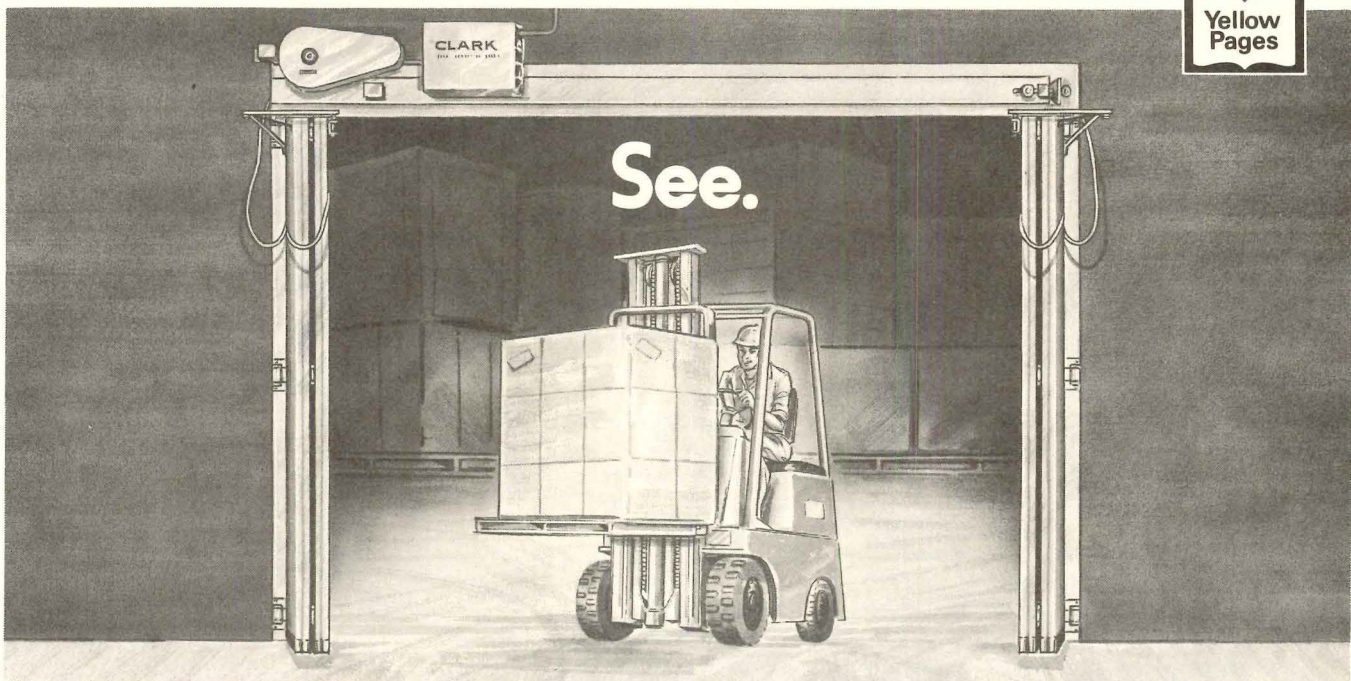
That makes them ideal for vestibules, tunnels, narrow corridors, or between columns or equipment.

You can order Clark bifold doors in full bifold, half bifold or bifold-slide combinations. Like all Clark doors, bifolds are easy to install, easy to maintain and ruggedly constructed for many years of trouble-free service.

Find out more. Call or write for free literature today . . .

Doorway Specialists since 1878.

69 MYRTLE ST., CRANFORD, N.J. 07016 (201) 272-5100 TELEX 13-8268



For more data, circle 68 on inquiry card

Bally Walk-Ins belong wherever the race is on for fast spectator feeding



Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated and Factory Mutual research approved. Choice of stainless steel, aluminum or galvanized. Easy to enlarge . . . easy to relocate. Refrigeration systems from 35°F. cooling to minus

40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane sample. **Bally Case & Cooler, Inc., Bally, Penna. 19503.**

ADDRESS ALL CORRESPONDENCE TO DEPT. AR-5

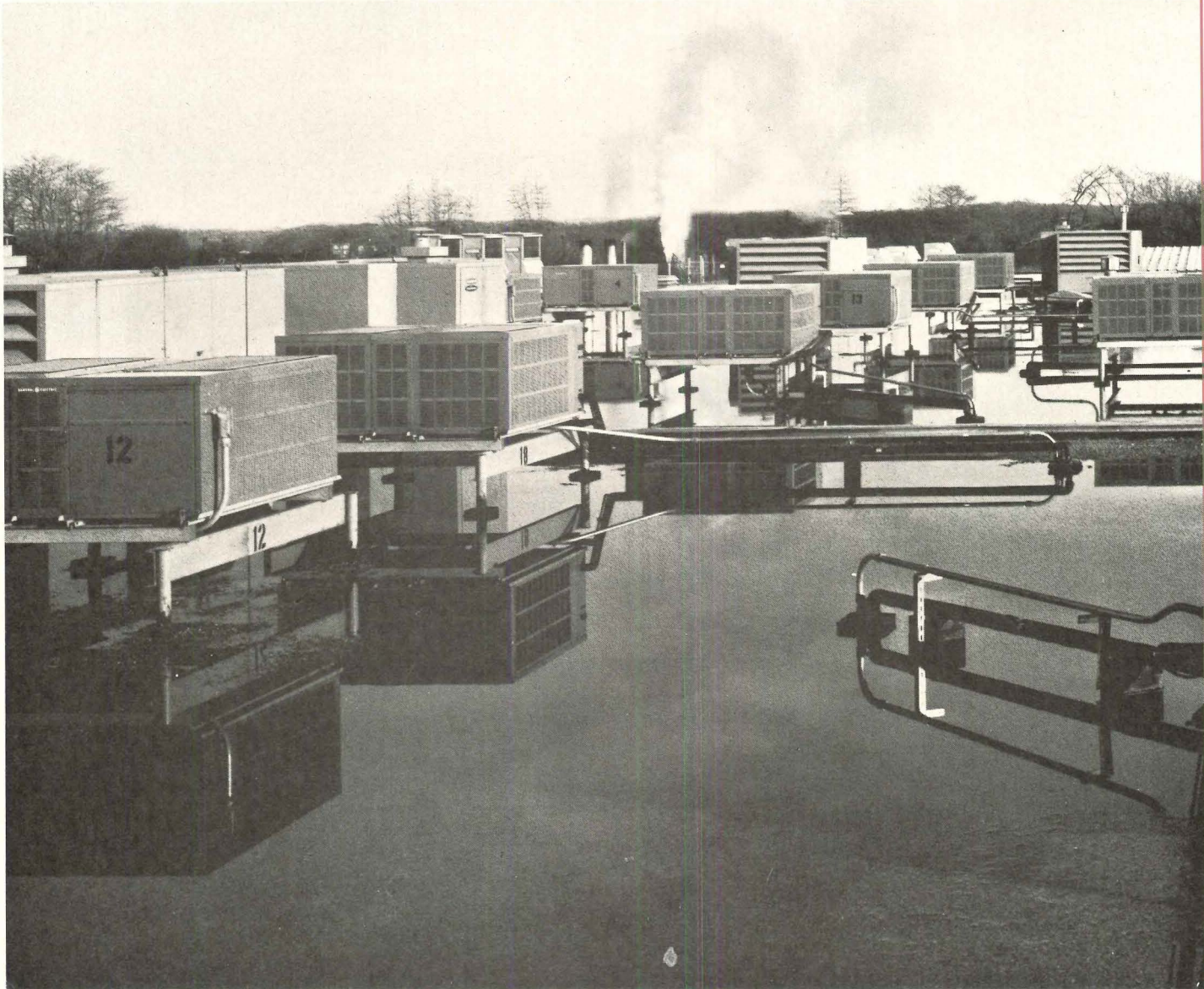


© 1973. ALL RIGHTS RESERVED.

For more data, circle 69 on inquiry card

"Another General Electric installation—705 tons of split system

Joseph H. Gauss, Vice President and General Manager,



When a company bakes goodies by the truckload, even the air in the factory becomes an ingredient — affecting everything from how smoothly the flour mixes to baking time and employee morale.

The management of Stouffers Bakery in Philadelphia wanted to keep things moving smoothly, so they contracted with Arco Mechanical Inc. to install and maintain an air



conditioning system.

Close control of temperature and humidity was required to maintain the quality desired by Stouffers.

In addition, the system had to be installed without interrupting Stouffers' 24 hour-a-day 6 day-a-week production schedule.

Arco had to install ten tons of structural steel and cut holes into a roof

commercial-industrial cooling for Stouffers Bakery.”

Air Conditioning Products Division.



designed to carry four inches of water.

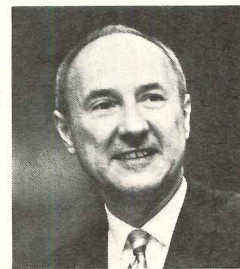
As Clyde Goodwin and Fred Jacobs, owner-partners of Arco told us, one part of the job was easy: GE delivered 33 TA240's and 3 TA180's without a hitch.

When the job was done, Clyde told us every one of Stouffer's requirements was met or surpassed.

We have franchised dealers as talented and resourceful as Fred and Clyde all over

the country. They're a vital part of our commercial/industrial capability.

The General Electric central air conditioning business is growing. If you're not already a GE dealer, this is the time to become one because there's never been a better time. **We mean business. For both of us.**



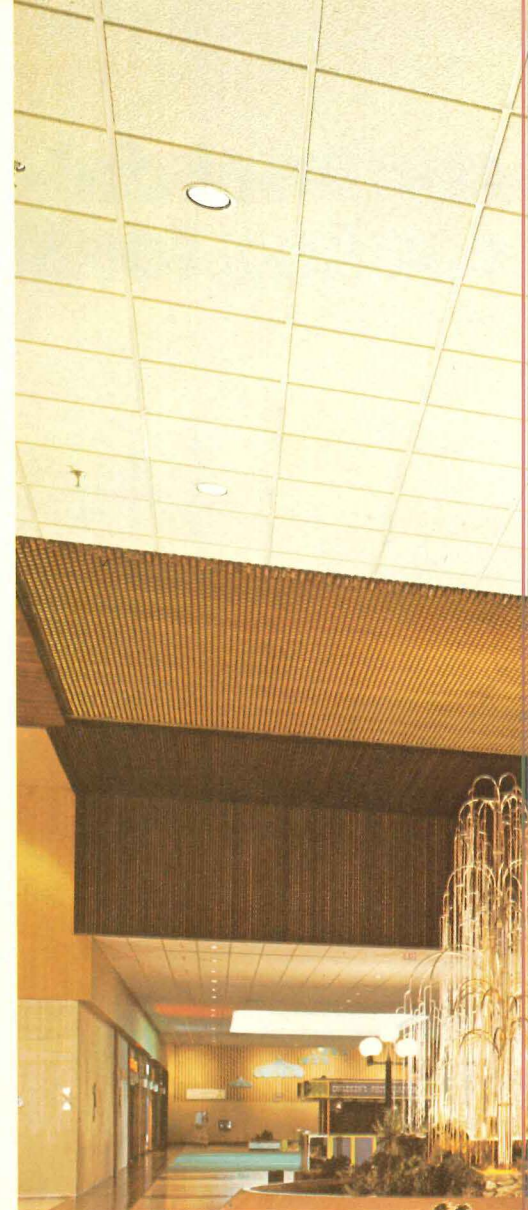
Joseph H. Gauss

GENERAL  **ELECTRIC**

For more data, circle 70 on inquiry card



First Federal Savings & Loan Assn. of Danville, Martinsville, Virginia. Architect: Calvert, Louis & Smith. Acoustical Contractor: J. W. Squire Co. Banking area ceiling: Conwed 12" x 12" Rock Face Ceiling Tile.



Fort Wayne Elementary School, Fort Wayne, Indiana. Architect: Cole Matson & Matott. Acoustical Contractor: C. N. Parker Co. Lobby and Corridor area ceiling: Conwed 24" x 48" Rock Face Ceiling Panels.

Indianapolis 500 Hospitality Suite, Indianapolis, Indiana. Engineers: Fink, Roberts and Petrie, Inc. Acoustical Contractor: Perry Acoustics. Ceiling: Conwed Rock Face 24" x 24" Reveal Ceiling Panels.





ABOVE ALL CONWED® CEILINGS FOR ENDURING BEAUTY



Cloverleaf Mall, Richmond, Virginia. Architect: Carneal and Johnston. Acoustical Contractor: Consolidated Tile Co. Ceiling: Conwed Rock Face 24" x 24" Reveal Panels.

Conwed® Rock Face...the ceiling family with beauty, character, and stamina.

Over a thousand ceilings ranging from locker rooms to executive offices, from corridors to lounges, prove Rock Face ceilings are more than abuse resistant. This one-of-a-kind ultra hard ceiling has a surface texture that's handsome and natural. It stays that way during installation, when removing panels for plenum access and when there are unexpected bumps and jars.

Now a choice of 10 types and sizes including U.L. labeled fire rated formulations make up the Rock Face family for ceiling design variety... Reveal Panels... 24" x 24" and 24" x 48" Lay-in Panels... Concealed Tiles. Each ready to give its own characteristic to the particular design. All maintaining surface texture continuity and abuse resistance.

You can have ceiling beauty and toughness too! Rock Face ceilings have proved it. Write Conwed for Rock Face family data or refer to Sweets Catalog 9.1/Co.



332 Minnesota Street
Saint Paul, Minnesota 55101

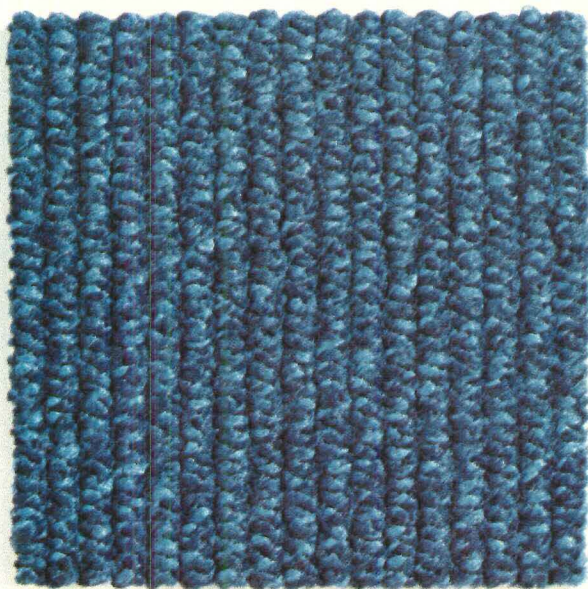
For more data, circle 71 on inquiry card

Expect quality carpets
And expect their

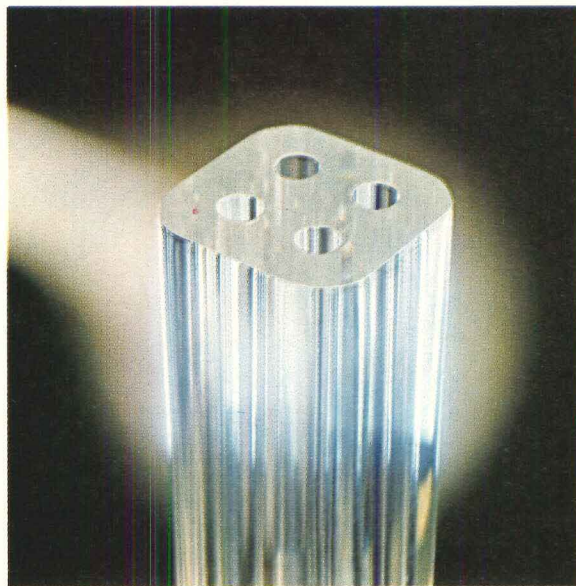


to be Antron® nylon. look to last.

General Telephone & Electronics Corporation wanted commercial carpet that didn't look commercial, a style to complement the distinctive architecture of their new world headquarters in Stamford, Conn. At the same time GTE wanted to take full advantage of the long-term appearance retention inherent in carpet with pile of Antron* nylon. From the wide variety of styles now available in "Antron" they specified this ribbed-texture construction in four custom colors for a total of 35,000 sq. yds.



What you see is what you'll get for a long time. "Antron" is the soil-hiding carpet fiber. Its ability to diffuse light helps blend soil concentrations into the overall look of the carpet (normally they would show up as spots). Also, being nylon, "Antron" gives carpet exceptional durability and resistance to crushing.



How "Antron" keeps carpet looking fresh. Its filament structure is unique, as simulated in this greatly enlarged model. The four microscopic holes scatter light to minimize rather than magnify the dulling effects of soil, while maintaining an attractive, subdued luster. This property of the fiber, together with its remarkable wearability, means the look of the carpet will last.

NEW: "Antron" III nylon for static control is now available in selected styles.



For more data, circle 72 on inquiry card

**See a full selection of commercial styles, in Antron® at
NEOCON, Merchandise Mart, Chicago—Du Pont Space 1097.**

*Du Pont registered trademark. Du Pont makes fibers, not carpets.

look at
If
You're looking
For the most
Modern, mature, and
Sophisticated material
Distribution System in the World...
It's got a lot going for you.

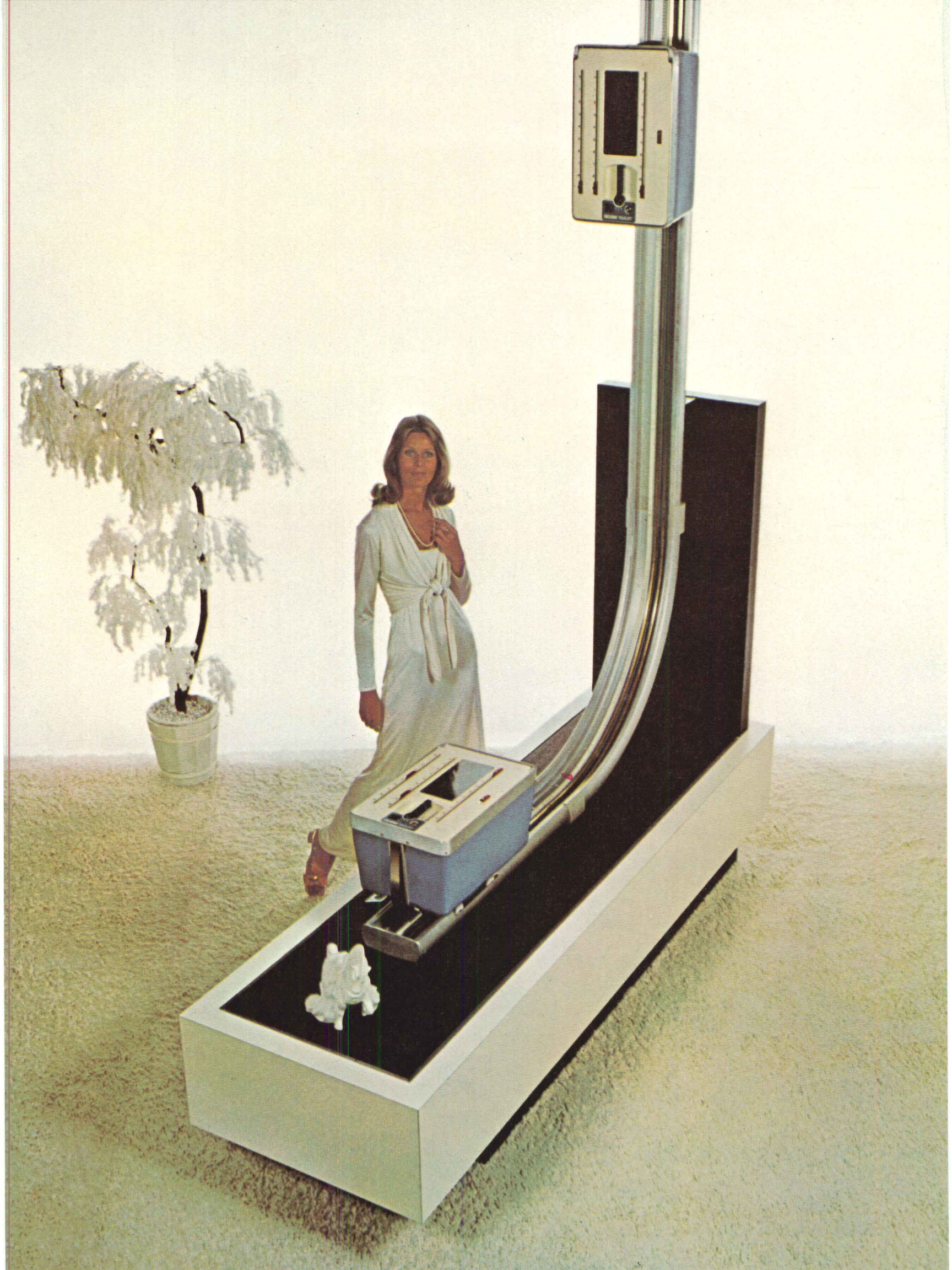
Mosler

An American-Standard Company

for more information contact:

MOSLER/AIRMATIC SYSTEMS DIVISION,

415 PATERSON HAMBURG TURNPIKE, WAYNE, NEW JERSEY 07470 TELEPHONE: (201) 278-6300





Take it up with Armor. No matter how many floors.

We've won our share of battles for the glamorous high-rise elevator jobs. In fact, we win more of them every year. Which is one reason we're growing faster than ever.

But Armor also shines in low and medium rise buildings. With a complete line of tough, dependable geared machines. And solid-state control if you wish, for ultra-fast, smooth, efficient operation. Plus advanced hydraulic elevators—including pre-engineered packages that practically drop into the hoistway. Everything you need for any building, no

matter what its size, or its type—or its height.

We're going up faster than ever in our 40 years in the business. We're eager to battle your problems, and beat them. We'll provide all the skilled engineering help you need, from pit to penthouse. And our contract maintenance programs are tailored to the needs of any building.

Get the full story and go right to the top with Armor. No matter how many floors.

Armor Elevator Company, Inc., Louisville, Ky. 40214.
Armor Elevator Canada Limited, Pickering, Ontario.

Armor

A Subsidiary of **ASmith** Corporation

73-02

For more data, circle 74 on inquiry card

2 new Sansspray sidings.



The best part about this one is what you can't see.

Our Shadowline™ stone-on-plywood Sansspray® siding has a vertical groove pattern so there's no need for battens or mouldings. The shiplapped edges give a smooth fit and appearance which means you could nail up a wall a mile long and virtually never see a joint.

The distinctive look of Shadowline can give a vertical relief to a long horizontal wall. It incorporates a regular stone aggregate with $\frac{3}{8}$ " wide, $\frac{1}{4}$ " deep grooves every 8 inches. And because the look is special, tones are special — 7 of them — ranging from cool white to warm tangerine to a glisteny black. Sizes in 4' x 8', 9' and 10'.

The best part about this one is what you can't miss.

If you're looking for a chunky, rugged look, there's our new Jumbo aggregate Sansspray. We use oversize chips of stone for this texture. It gives you the look of pre-cast concrete without the weight — or the cost. And anything this natural deserves natural colors. Like Gaelic Green, Northern White and Tangerine. Sizes up to 5' x 12' are standard. Special sizes on order.

Besides Shadowline and Jumbo, we also have large- and regular-aggregate Sansspray siding.

Find out more about our extensive line of exterior cladding at your local U.S. Plywood Branch Office.

Especially Sansspray — a face of stone, but a heart of wood.

EXTERIOR
CLADDING BY
U.S. Plywood
777 Third Avenue, New York, N.Y. 10017

 **U.S. Plywood** Division of Champion International

For more data, circle 75 on inquiry card

ARCHITECTURAL RECORD

A MCGRAW-HILL PUBLICATION

ARCHITECTURAL
RECORD
REPEATS
ITS HIGHLY
SUCCESSFUL
CONFERENCE

PRESENTS

**... a special two-day
conference
examining the
exciting profit
opportunities
available in this
new vista**

How the Architect and Engineer can Profit as a Builder/Developer

All over the United States, pioneering architects and engineers are starting to capitalize on their expanding opportunities in development building. In doing so, they are entering new areas of profitability. These opportunities bring with them involvement in a whole range of problems with which the professional practitioner has had little or no previous experience. Now, for the first time, Architectural Record has developed a special conference designed to help cope with these problems and to take full advantage of emerging opportunities.

The faculty for these conferences includes not only successful architect/engineers-developers but attorneys, CPA's, mortgage bankers, contractors, marketing experts and brokers as well.

MAY 9-10 — ATLANTA / MAY 13-14 — LOS ANGELES / JUNE 14-15 — HOUSTON

Conference Highlights

- Feasibility Studies—how to determine the potential marketability and profitability of a project
 - Land acquisition—how to choose the right land—how to secure favorable zoning
 - Project financing—an evaluation of the alternative methods of real estate financing—how to find the money
 - Legal and ethical implications of the architects involvement in development building
 - Professional liability
 - How to organize for success and choose the kinds of partners you need
- Case studies in various building opportunities

MC Management Concepts International, Inc.
505 Park Avenue, New York, N. Y. 10022 • 212 759-5830

Please rush additional registration information on How the Architect and Engineer Can Profit as a Builder/Developer.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone (A/C) _____ Number _____ Ext. _____

the new hotel washroom:



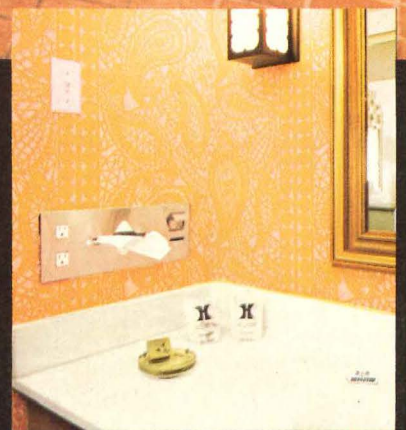
Haver, Nunn & Nelson, Architects, Phoenix, Arizona

How do you provide hospitality in a hotel washroom? The new Scottsdale Hilton does it with colorful decor and Bobrick stainless steel accessories.

In the public washrooms recessed waste receptacles and dispensers for towels, soap and feminine napkins complement the interior design. Grab bars for the handicapped and pull-down shelves are thoughtful conveniences in the toilet

compartments. Guest bathrooms have Bobrick units that combine a facial tissue dispenser, bottle opener and two electrical outlets.

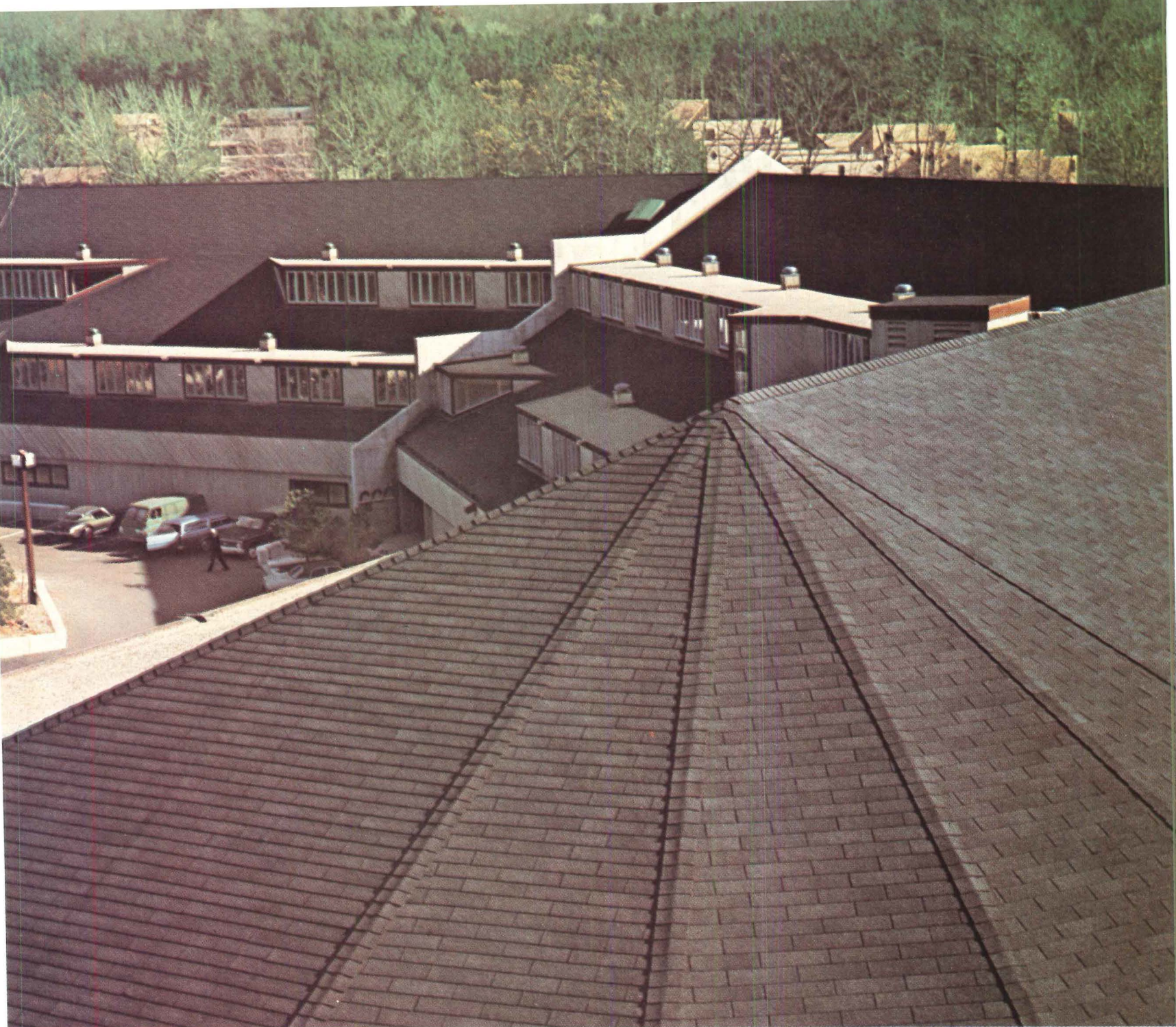
These and many other accessories for today's hotel washrooms are described in our Hotel Planning Guide. Send for a copy. Bobrick, 101 Park Ave., New York 10017. Bobrick products are available internationally.



bobrick

SINCE 1906

For more data, circle 76 on inquiry card



There's been a very unusual development in New England lately. And GAF's right on top of it.

The Exchange, part of Talcott Village in Farmington, Connecticut, is the largest all wood frame building in New England's history. And to top it off, Fire Guard™ Self-Sealing™ Asphalt Shingles were specified.

It's not hard to see why. What was needed was a roof that complemented the natural beauty of wood and yet offered maximum protection. Not surprisingly, GAF gave them both. With attractive black self-sealing shingles, and a 25 year warranty against manufacturing defects.

The Exchange is just one of many major projects throughout the country using GAF building products. Because builders have found that GAF can meet their needs. With not only roofing that comes in a wide assortment of colors and types. But siding too. All as dependable as they are beautiful.

GAF Roofing. There's just no way you can top it. For more information see your GAF Distributor or write: GAF Corporation, Building Products Division, Dept. AR-54, 140 West 51 Street, New York, New York 10020.

gaf® Roofing

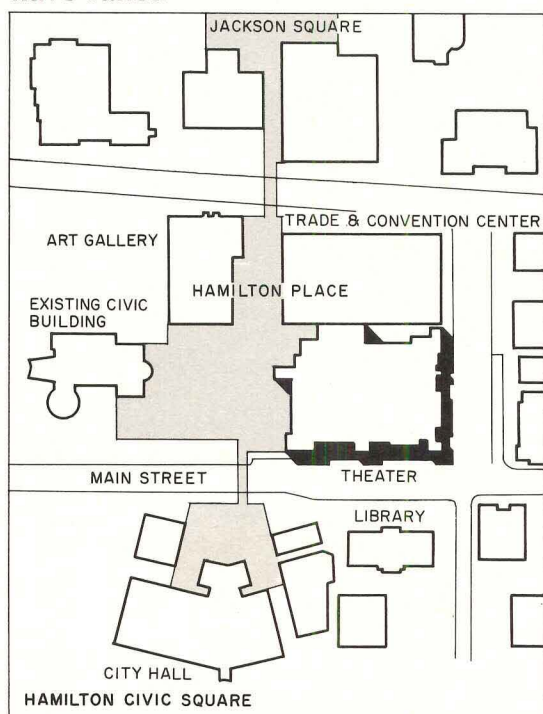
For more data, circle 77 on inquiry card

HAMILTON PLACE



Dolansco

A multi-purpose theater that succeeds where others have failed



The lack of construction funds to adequately house growing cultural activities is a common plight of governments in newer cities. A single multi-purpose theater has usually been the most that could be provided to house the diverse needs of a wide range of performing-arts. Such facilities have not always been artistic successes and—possibly as an outcome—have not received all of the public support that might be required.

A large part of the problem has involved acoustics. The requirements for symphonic music are usually incompatible with intelligible speech. They are achieved by a large room volume and hard sound-reflecting surfaces. The orchestra stage is ideally located within the audience chamber, without the separation provided by the traditional proscenium required by most plays. All the performing arts activities between the two extremes have their own special requirements, and complete acoustic satisfaction in multi-use theaters has been rare.

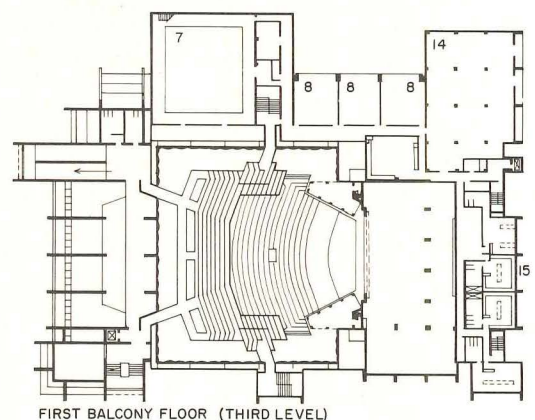
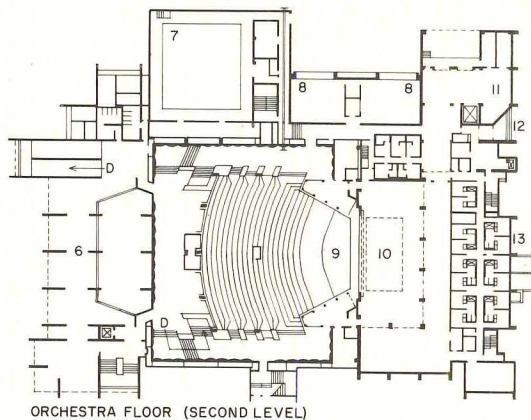
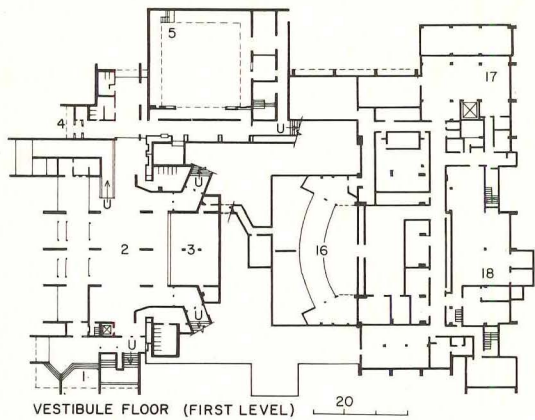
But new problem-solving techniques are appearing. The Edwin Performing Arts Hall at the University of Akron is capable of mechanical adjustment of the auditorium volume and shape (RECORD, March 1974, pages 143-148). By contrast, Hamilton Place's 2,000 to 2,200-seat main hall relies on a few and relatively-simple means to solve acoustic adaptability problems. This Hamilton, Ontario, multi-use facility's success is due to the originality of planning in a fixed-room volume. There have been well-received performances of almost every kind: speeches, opera, musicals, rock shows, a full range of orchestras, plays and pop singers. The enthusiastic support of the city's citizens assures an on-going and lively program of varied presentations. A major part of this happy situation is due to the work of architect Trevor Garwood-Jones.

Hamilton has many heavy industries and—until recently—one of the more-visible diversions for residents has been the success of the local football team, the Tigercats. New dimensions are emerging. The theater building shown here, is part of Hamilton Civic Square, a development meant to give a new co-ordinated focus to the downtown area previously centered immediately to the east. Architect Ron Thom is advisor for the multi-block area, which will be linked by raised walkways and plazas from the existing City Hall (and handsome older library) at the south end to a new "Jackson Square," a multi-use area at the north end (see plan, left). A new art gallery and trade center are being designed—in the theater block—by Garwood-Jones. Planning of the theater has included the considerations of butting directly against the future high-rise trade and convention center to the north (the two buildings will share a service drive between them) and a second-floor-level plaza to the west. Parking for 800 cars will be provided under the plaza and art gallery.

—Charles Hoyt



- | | | |
|-------------------------------|-----------------------------|-------------------------|
| 1 Main entrance | 7 Upper part studio theater | 13 Dressing rooms |
| 2 Lower lobby | 8 Meetings | 14 Mechanical equipment |
| 3 Coats | 9 Orchestra stage | 15 Dressing & chorus |
| 4 Ancillary facility entrance | 10 Drama stage | 16 Lifts |
| 5 Studio theater | 11 Receiving | 17 Workshop |
| 6 Upper lobby | 12 Office & entrance | 18 Mechanical |



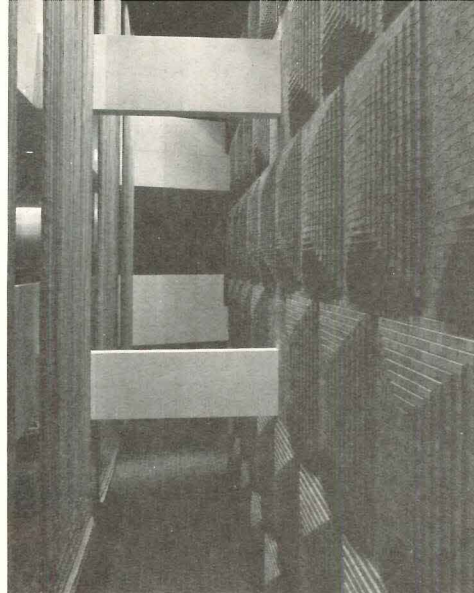
Enthusiastic reactions by Hamilton Place's users and performing arts critics (including *The Times of London*) indicate success of the auditorium. Garwood-Jones had limited theater experience when he began this difficult commission, and he cites an open mind as a benefit. His one pre-conception was "not in any way to compromise acoustics." A two-continent study of theaters ensued. Acoustics consultant Russell Johnson began work early in the design process, and determined options available in shaping the auditorium. The approach has produced technological and visual dividends in a building utilizing concepts never previously tried at this scale.

The designers began by establishing the optimum acoustics for each of the performing arts to be displayed. Spatial characteristics were determined according to desired sound characteristics and the theater design recommendations of theater consultant Vincent Piacentini of Bolt, Beranek and Newman. For concerts, the main hall has a much bigger volume that required merely to enclose the area, because the plan (opposite page) has been enlarged by incorporating parts of the lobby and the usually separate side corridors. The ceiling of the auditorium is the same height as that of the stage, and sound-reflecting brick walls are uninterrupted for their full height, since the balconies are suspended in the room. The optimum conditions for the long reverberation time generally required for symphonic music thus are achieved. To adjust the hall for speech, 18 velour banners can be lowered in front of the brick walls to provide acoustical absorption. (These are also raised in place of the dramatic effect of a stage curtain at the beginning of concerts.) The configuration of these walls is intended to break-up the echo-producing effect of the reflected sound waves of speech and to direct music to the listener. The relation of walls, balconies and banners can be seen in the top photo, right. The hall is square in order to reduce the distance between the farthest audience seats and the stage (less than 90 feet for concerts).

A major concern is the location of the sound source. Most drama continues to demand the comforts of a traditional stage: proscenium, fly loft, the marshalling areas and a curtain. Temporary concert enclosures in such locations either are cumbersome, or, if of flimsy construction, they dissipate sound into the stage area. Hamilton Place has two stages; one is forward and allows concerts to be played within the hall itself. The other allows drama to be performed behind a proscenium. The concert stage is surrounded by permanent (but adjustable) cedar panels reflecting sound to the listeners. This is not a totally new solution, since Hammel, Green and Abrahamson produced a similar concept for a 1,000-seat auditorium in St. Joseph, Michigan (RECORD, December 1964), but the application is new at this scale—and it works.

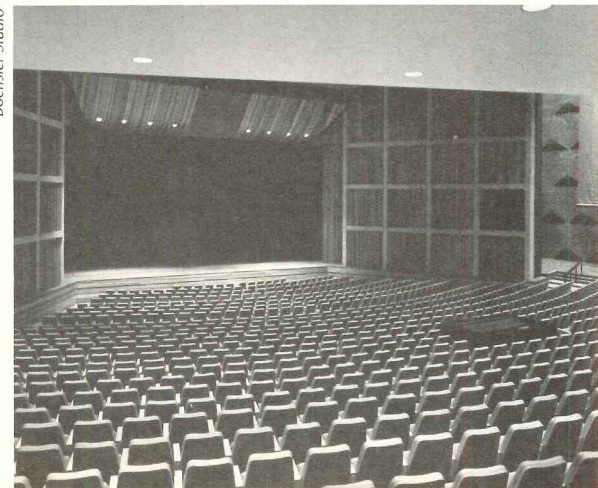
There is some apparent duplication of building volume to enclose the tandem stages, but a total \$9.7 million construction cost here certainly beats that of two theaters of comparable sound qualities. The concert stage is a two lift arrangement on which—for a majority of performances—the hall's capacity can be increased by anywhere from 90 to 224 seats. These seats are not the usual make-shift variety; they are seemingly permanent, and they rise to audience level on motor-powered wagons, which are ordinarily stored under the main floor. When the concerts occur, the proscenium stage is completely sealed from the audience chamber by a fire curtain and an eight-ton cedar wall (seen in the center photo, right) which drops from the fly loft and provides acoustic reflection to the audience. The stage house is available for rehearsals and set construction; and the costs of setting up and striking some sets, and of erecting and dismantling a temporary orchestra enclosure, are minimized. The resulting flexibility was demonstrated in the first month of the new hall's daily use, when there were 13 different productions.

The systems for amplified sound are innovative here—although opera, chamber and symphony orchestras, choral groups and organs do not traditionally use electronic support. The control panel is in the box in the center of the audience (photo, opposite). Every two seats are provided with a floor-mounted speaker and large speakers "bounce" sound from the brick walls surrounding the audience.

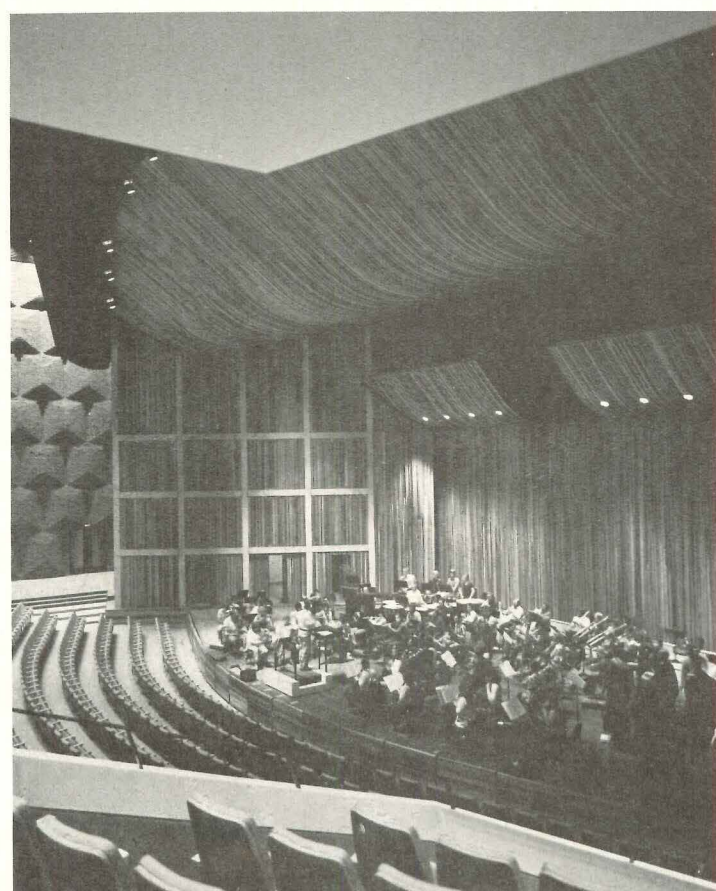


Bochsler Studio

Bochsler Studio

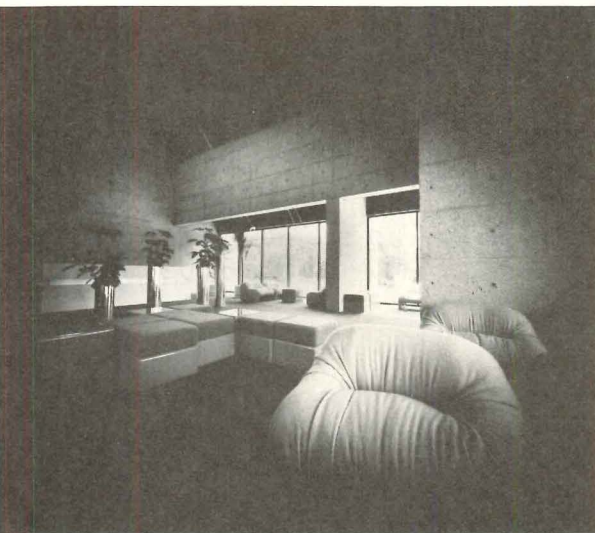
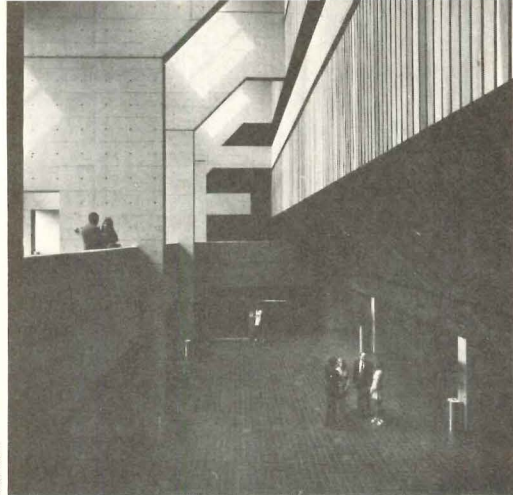


**Can one
single-shape
auditorium satisfy
diverse requirements
as well as two?**



Studio II

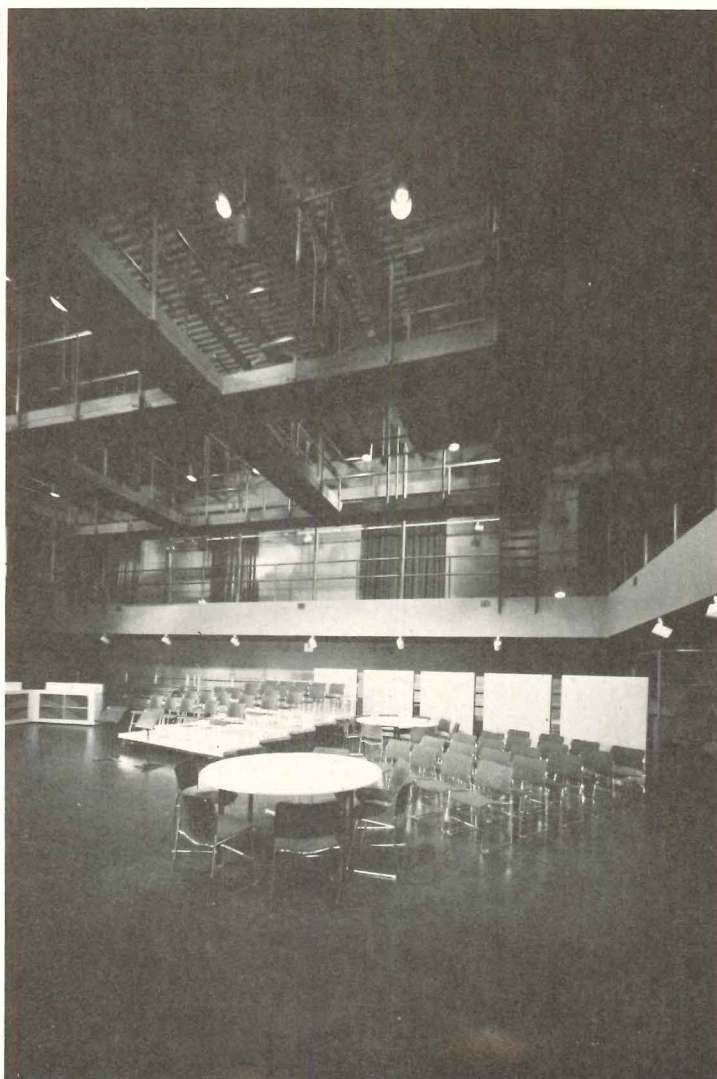
Doláscó



Studio II

**There is more
to this success
than one
good auditorium**

Studio II



The complete facilities at Hamilton Place allow three performances, numerous meetings and one full-scale rehearsal to occur at the same time. A smaller Studio Theater takes the pressure off of the main hall for rehearsals and smaller productions, played to a maximum of 350 viewers, without the costs and complications of running the bigger facility. This room has inherent advantages over the main hall for unconventional presentations including theater-in-the-round. There is a flexible relationship between the movable stage and the audience. TV and cinema are filmed here. Two adjacent meeting rooms are each designed to alternate as a small recital hall or a green room. Public circulation to all of the functions outside of the main lobby is routed through a separate entrance and corridor north of the main lobby. The many simultaneous activities are provided with extensive backup facilities including dressing rooms, work shops mechanical spaces, storage and offices; these are contained in a four-story element of the building located behind the stage.

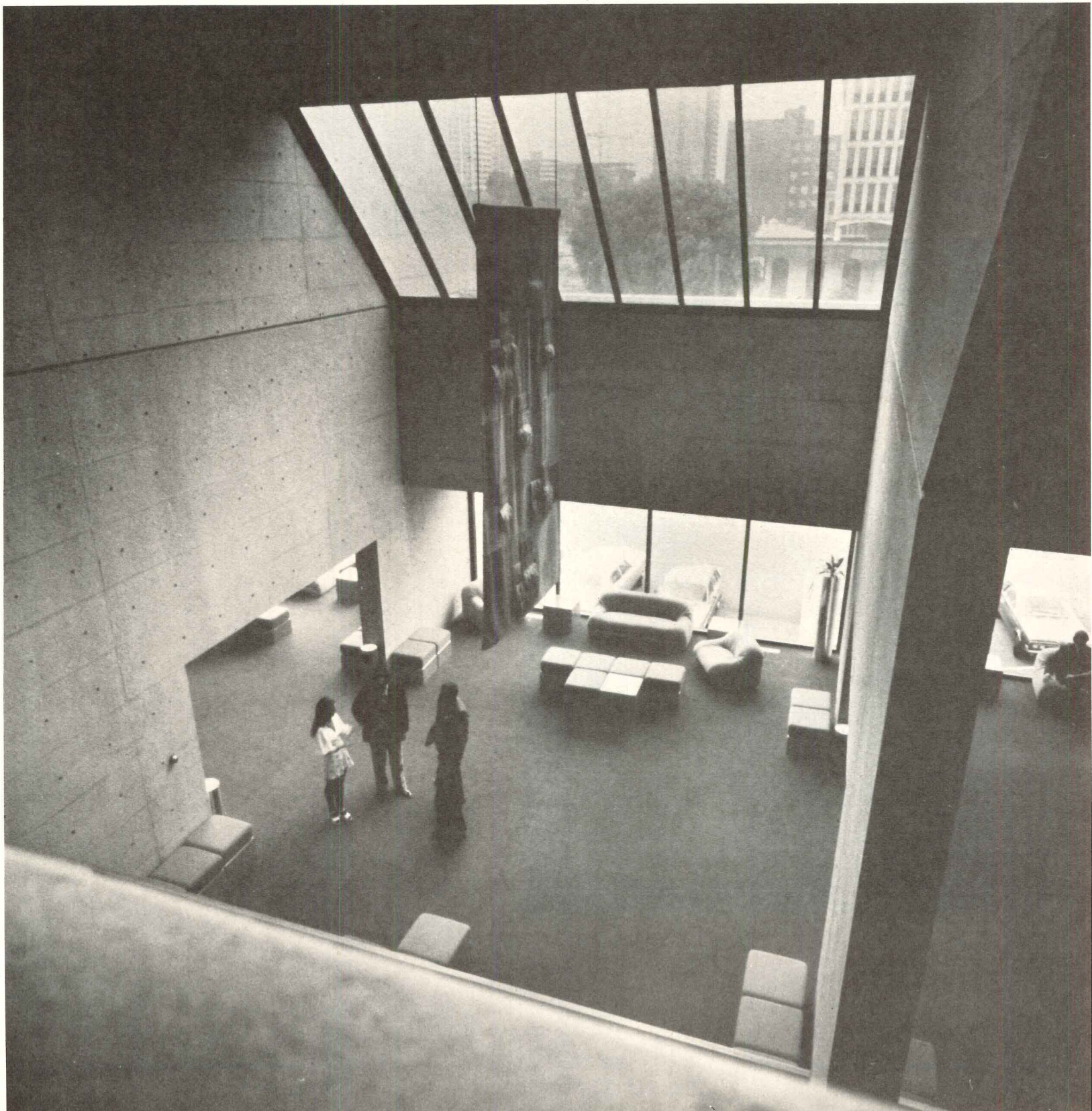
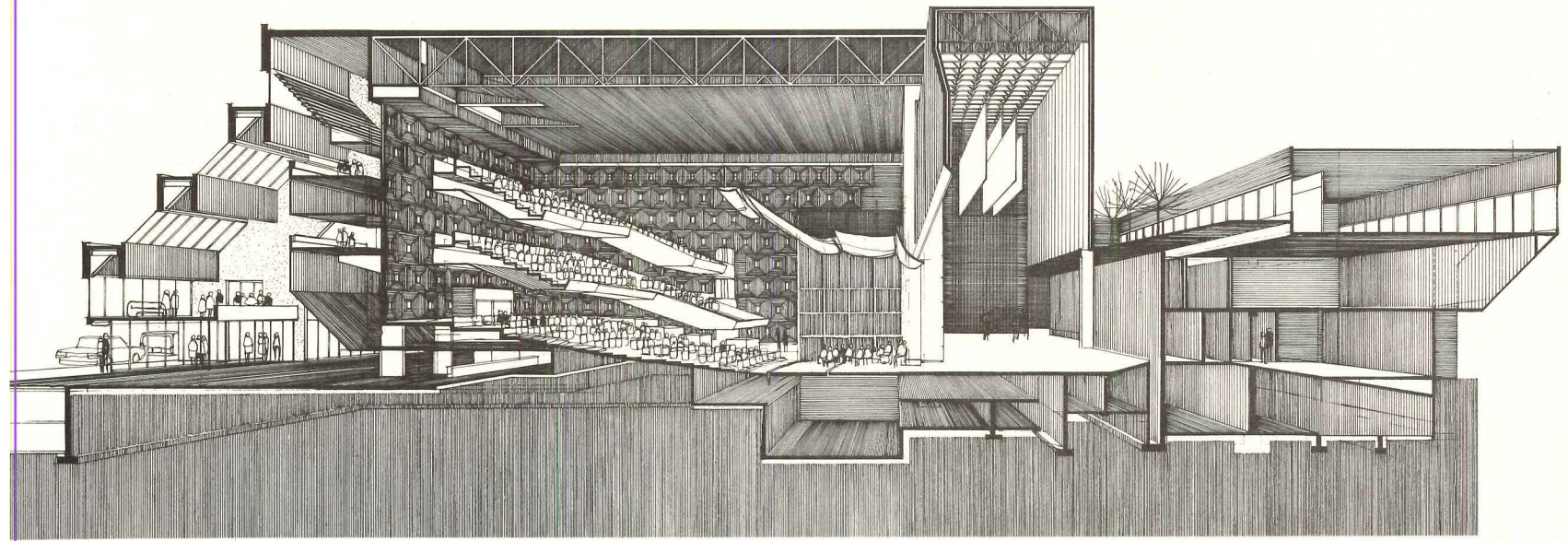
The main lobby is multi-level space rising to the full height of the main hall. The street-level entrance will eventually be supplemented by an orchestra entrance level connection to the planned plaza over the street to the west. The architect purposely avoided the large impersonal void that has come to characterize some lobbies in theaters of this size. Part of the lobby space is contained within the audience chambers. The outer portion is divided by the heavy concrete buttresses that give stability to the structure of the main hall. The resulting spaces have a more intimate character while maintaining functional and visual unification. The orchestra entrance level is conceived as a series of brightly-furnished lounges which overlook the tile-floored lobby below, and are overlooked by the balcony crossovers. A stepped roof admits light by means of sloping clearstory windows, and the lobby's glass walls reveal the internal activity to the busy street outside. Public participation is thus encouraged.

Another part of Hamilton Place's acoustic success is the result of the building's structure. Despite the main hall's proximity to a major truck route on Main Street, there are no audible sounds within the room from passing trucks, other activities within the building or the mechanical systems. There are really five separate structures that comprise the total building. Each has its own foundation and is independently enclosed and buffered by air-space separations. The main hall consists of two chambers—one within the other—separated by a three-and-one-half foot air space between walls and the depth of the trusses between roof and ceiling.

The separation of the five building elements allows the utilization of two types of structures. The original plans called for an all-concrete construction, but it was subsequently determined that the main hall could be built more quickly with steel framing, and that the cost savings would approach a half-million dollars. The remainder of the building was built of poured concrete, which is generally exposed on the interior and exterior. The resulting structural dichotomy has been expressed by brick-wall cladding inside and outside the main hall. Another economy was realized by the hanging of the upper balcony from the main-hall roof trusses. The result has been visually daring, and the cost of extensive separate foundations was saved (the lower balcony is doubly cantilevered over columns on relatively small foundations).

Construction was started with most of the planning in sketch form. The current tendency to emphasize speed of construction is making the "fast tracking" process more common, but—especially in a building of this intricacy—the perils are well known. It is a credit to the owners, architect and contractor that there is a high level of workmanship here, and that the September, 1974 opening was an event without "a hitch." The managers have yet to find what they would call "even a medium scale defect." The largest problem seems to be the parking of all of the patrons' buses; it was never anticipated that so many would arrive by the busload.

This performing arts theater is the first in Canada to realize a profit in its first year, and the reason is due primarily to an attendance average of 85 per cent of capacity at all performances. Concerts are



sold out far in advance—especially those of the Hamilton Philharmonic which is currently conducting three concert series and uses meeting rooms for pre-performance lectures. Assistant manager Larry Russell, says that there was a wide range of performance types, in the first months, to determine those that would be the most popular, but “we don’t know too much more today than when we started.” Every type of performance has been a success. The management knows “a lot” about running a theater. Many shows are bought as a package to be presented by the theater management (other theater owners only rent their auditorium to entrepreneurs). Management offices are located on the top floor of the building element behind the stage house, and they include the board of directors’ meeting room shown below. A specially built table is covered with white plastic laminate. Windows of the offices can be seen on the rear of the building (photo, right).

Income is also realized from rental—to local corporations, theatrical groups and TV stations—of the many meeting rooms and the two smaller theaters, during the times when these facilities would be normally idle. The main lobby is operated as a night club for theatergoers after performances. The policy has produced revenue to the owners, provides a highly visible active night life for the downtown’s main street, and contributes to Hamilton Place’s vitality.

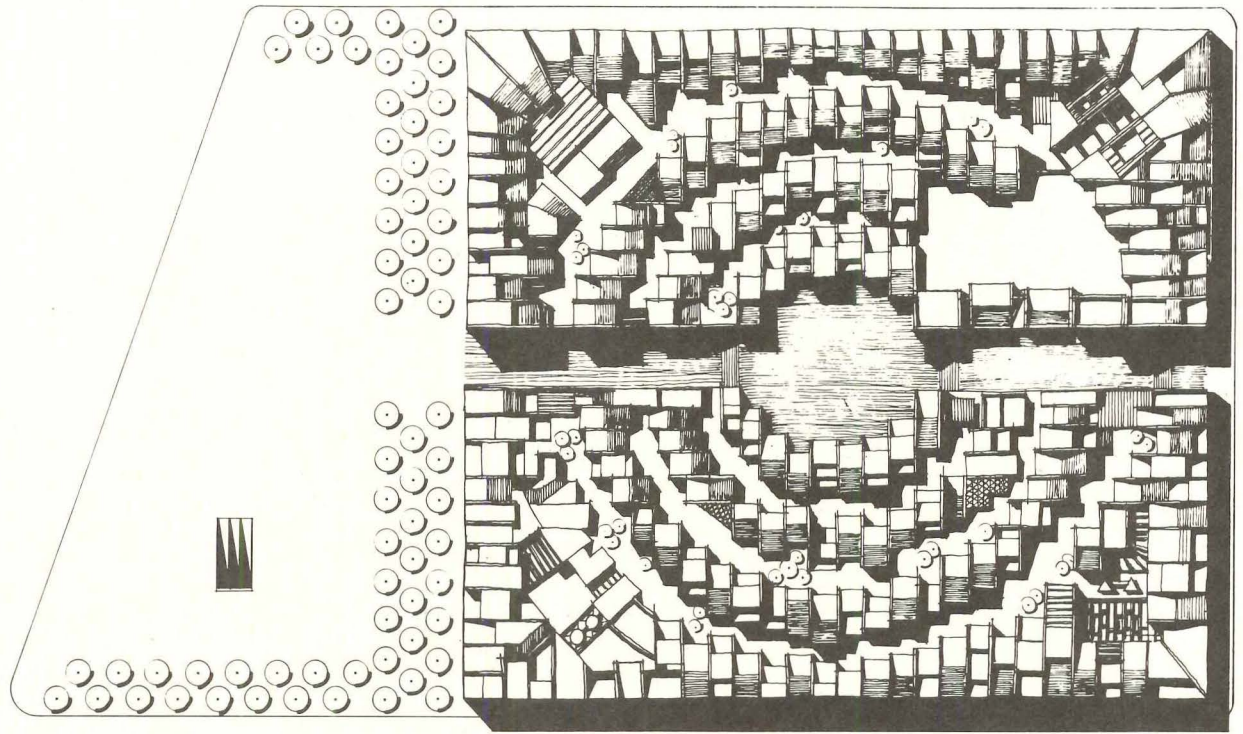
HAMILTON PLACE, Hamilton, Ontario. Owner: *City of Hamilton*. Architects: *Trevor P. Garwood-Jones—associate-in-charge, B. Harry Lennard*. Engineers: *Omen Lee & Associates Ltd., SNC Filer Ltd., Canaly Otter Ltd.* (structural); *Quist & Associates Ltd., Keith Associates, Ltd.*, (mechanical/electrical). Consultants: *Russell Johnson Associates* (acoustics); *Hanscomb Roy Associates* (cost); *Bolt, Beranek & Newman, Inc.*—project manager; *Vincent Piacentini* (theater). General contractor: *Frid Construction Company*.



Bochler Studio

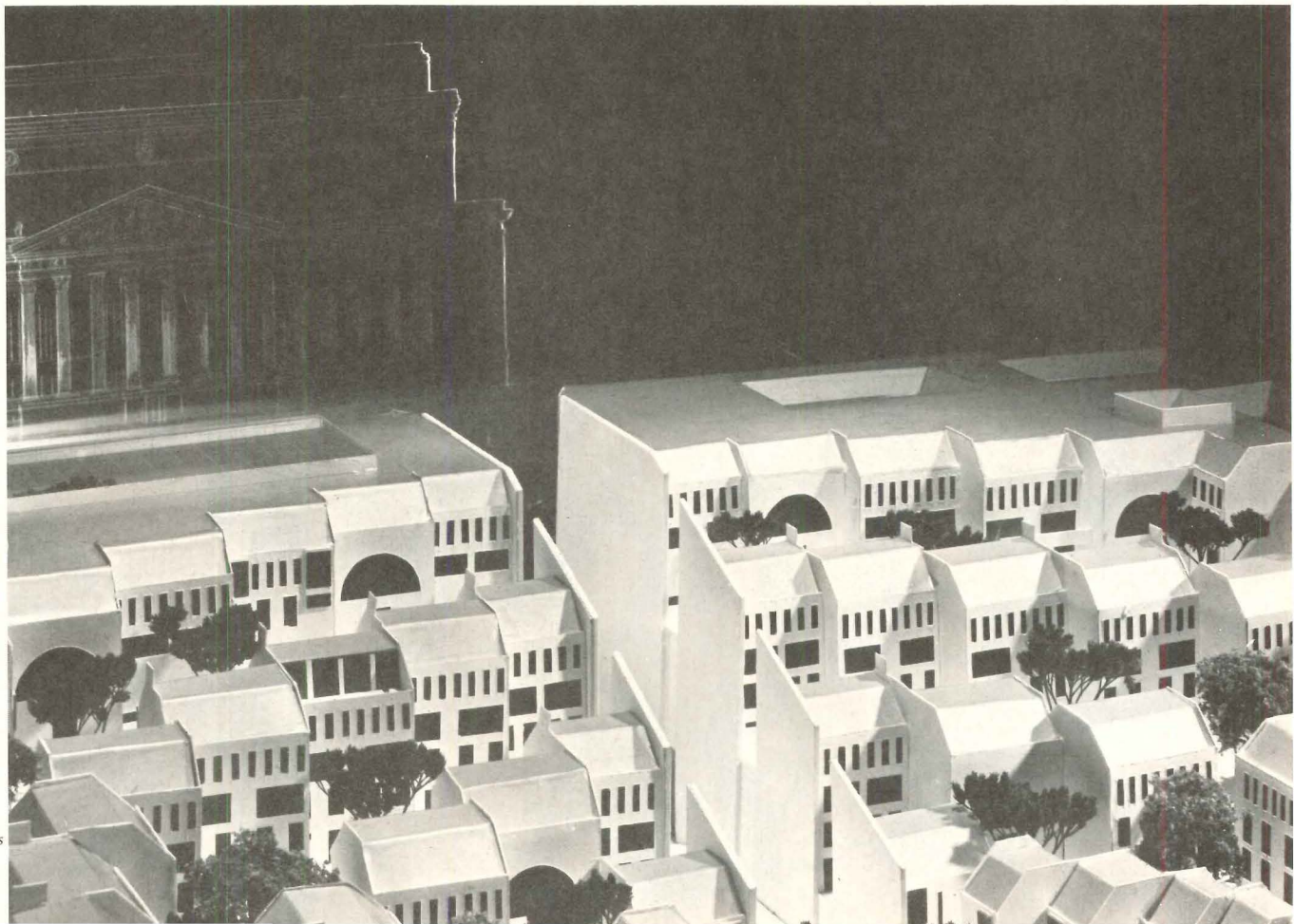


Studio II

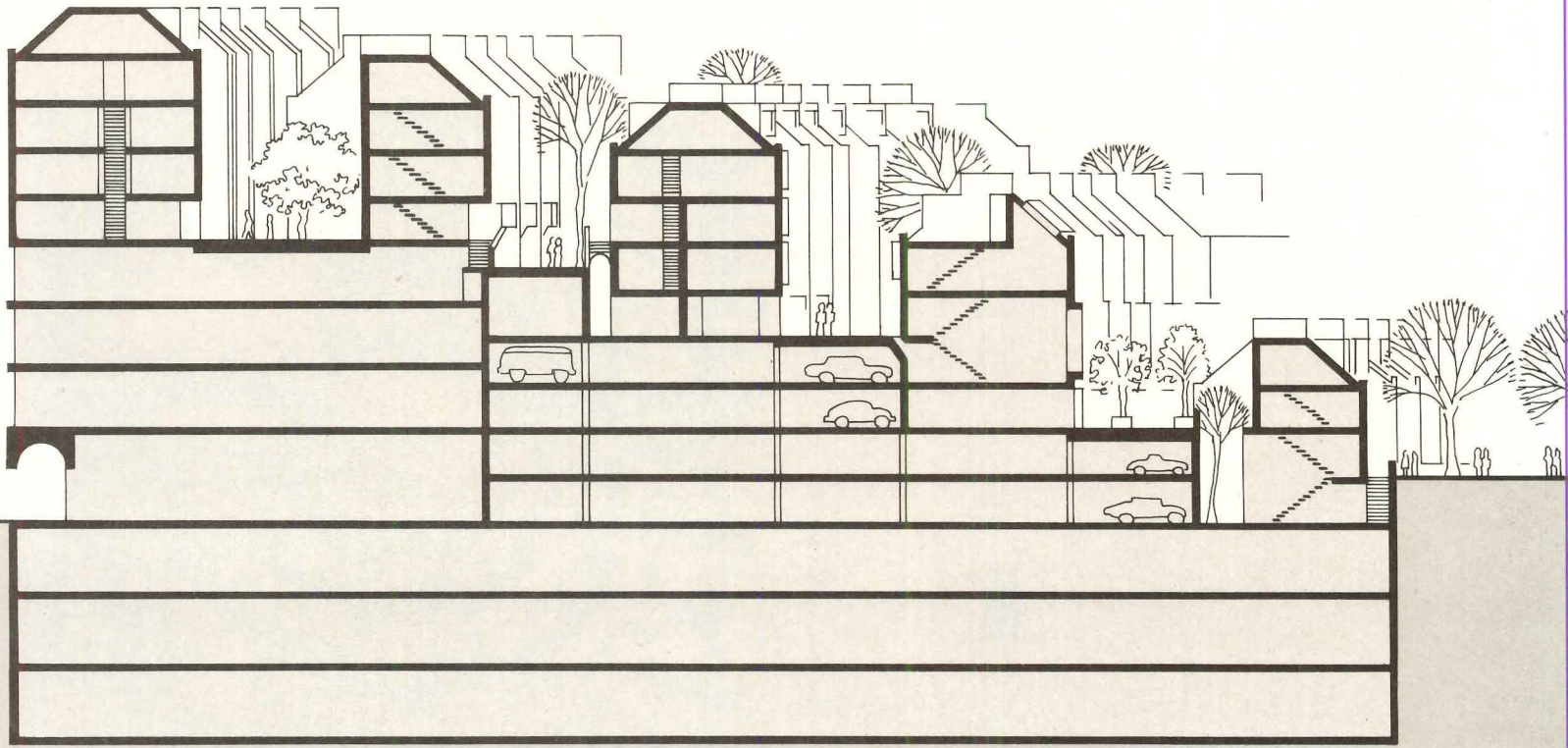


FIVE CURRENT PROJECTS FROM THE OFFICE OF HUGH JACOBSEN

The office of Hugh Jacobsen has over the past years made for itself an enviable reputation for designing houses and for restoring historic buildings with unusual finesse. Many of the results have been seen in the pages of Record (most recently in Mid-May 1973, pages 54-57, and in August 1973, pages 134-135), and so it is a pleasure to present now, by contrast, a portfolio of current work, different in mode and scale from what has been seen before. Jacobsen's housing for the Pennsylvania Avenue Development Corporation (partial site plan above, model photo below) represents a major addition to a major (and still controversial) plan for the national capital, and indeed all of the projects shown on the following pages seem to spring from fundamental concerns of planning—whether at the scale of city, college campus, or resort community.



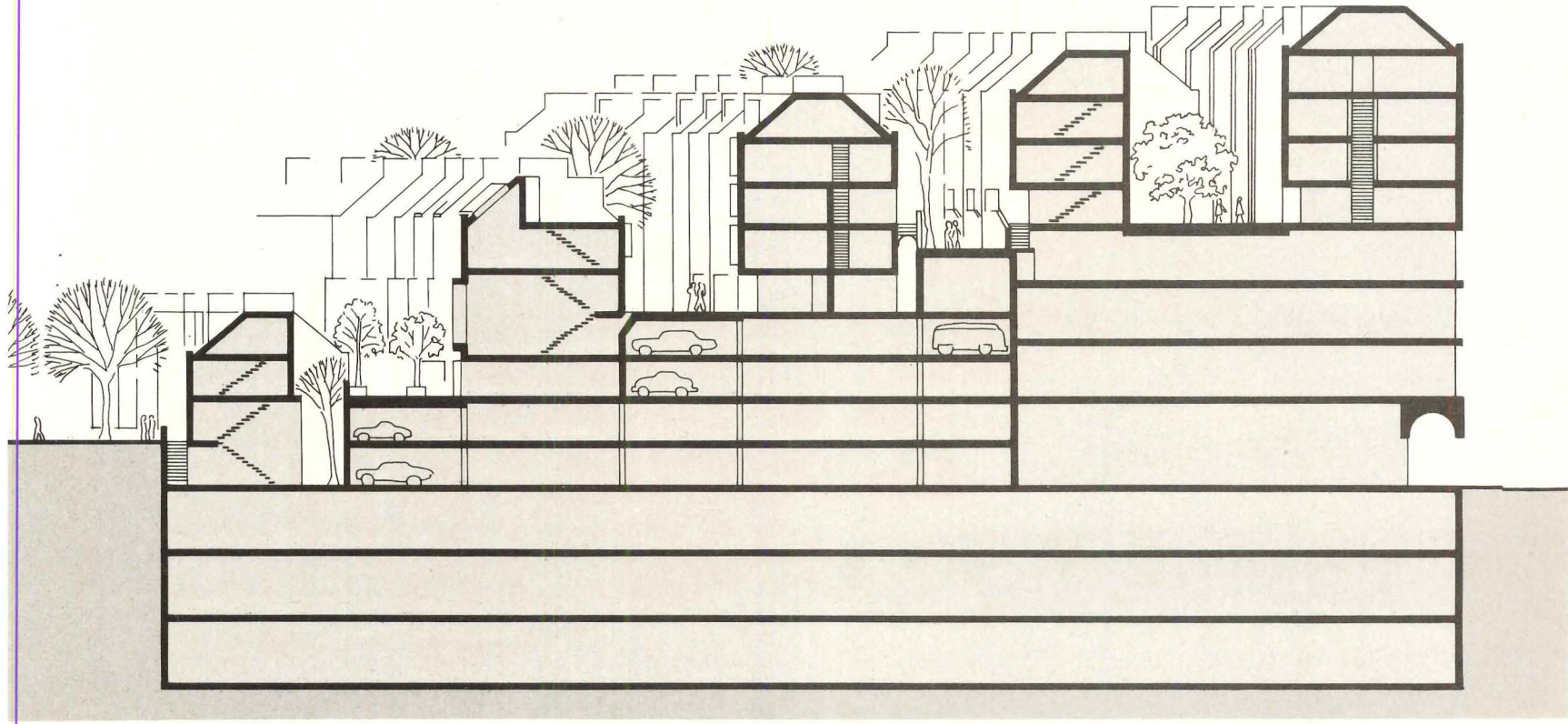
Robert Lautman photos



HOUSING FOR PENNSYLVANIA AVENUE IN WASHINGTON

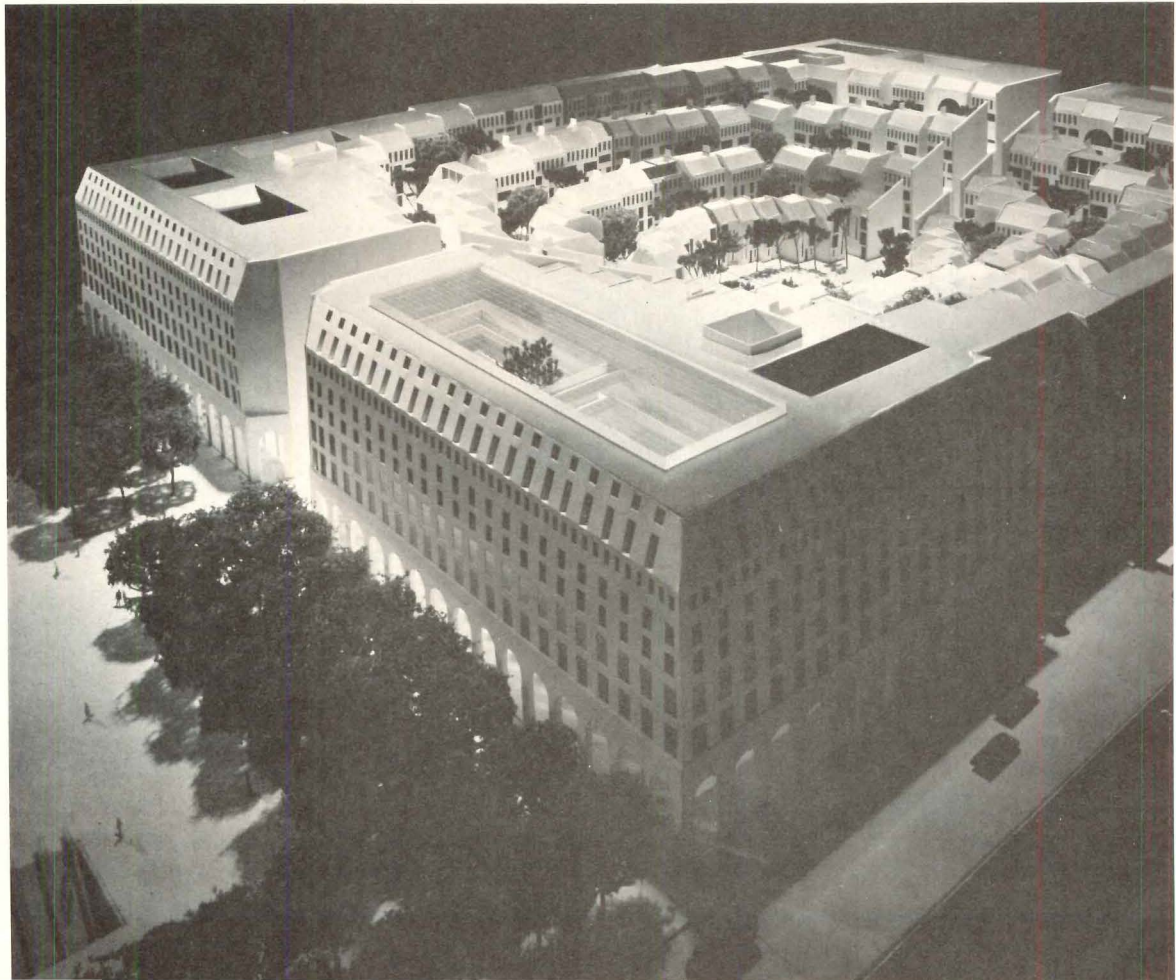
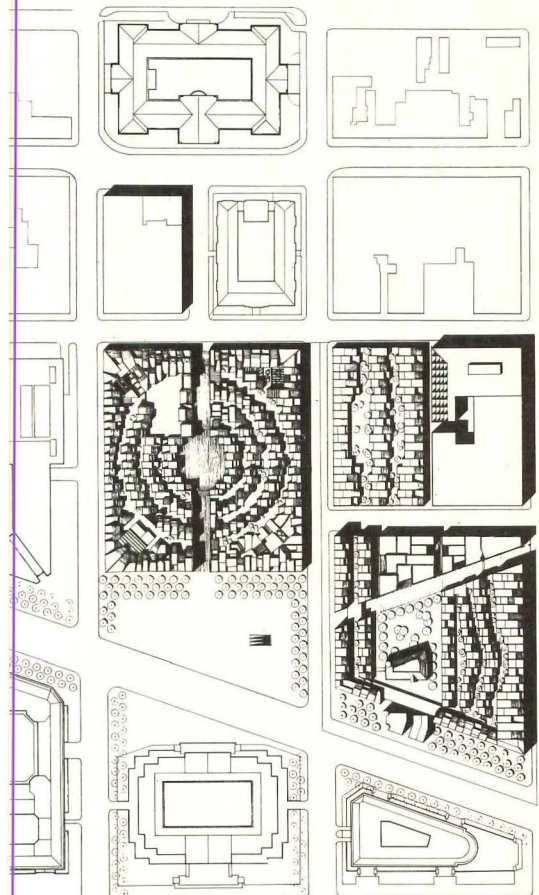
Hugh Jacobsen's housing scheme for the Pennsylvania Avenue Development Corporation (site plan, below center) will occupy a prominent parcel of land consisting of parts of two city blocks and one entire block, close by the new FBI building. The design for this entire block illustrates most clearly the concept of the whole (site plan on the previous page). On the avenue side (photo, below right), the building faces across a large plaza the National Archives, an edifice of monumental size and scale, and, on the opposite side, it opens to a vista of the older and more delicately scaled National Portrait Gallery, one block away. The housing block is conceived from the outside as a single mass composed in accordance with the adjacent buildings on Pennsylvania Avenue in general, and with the National

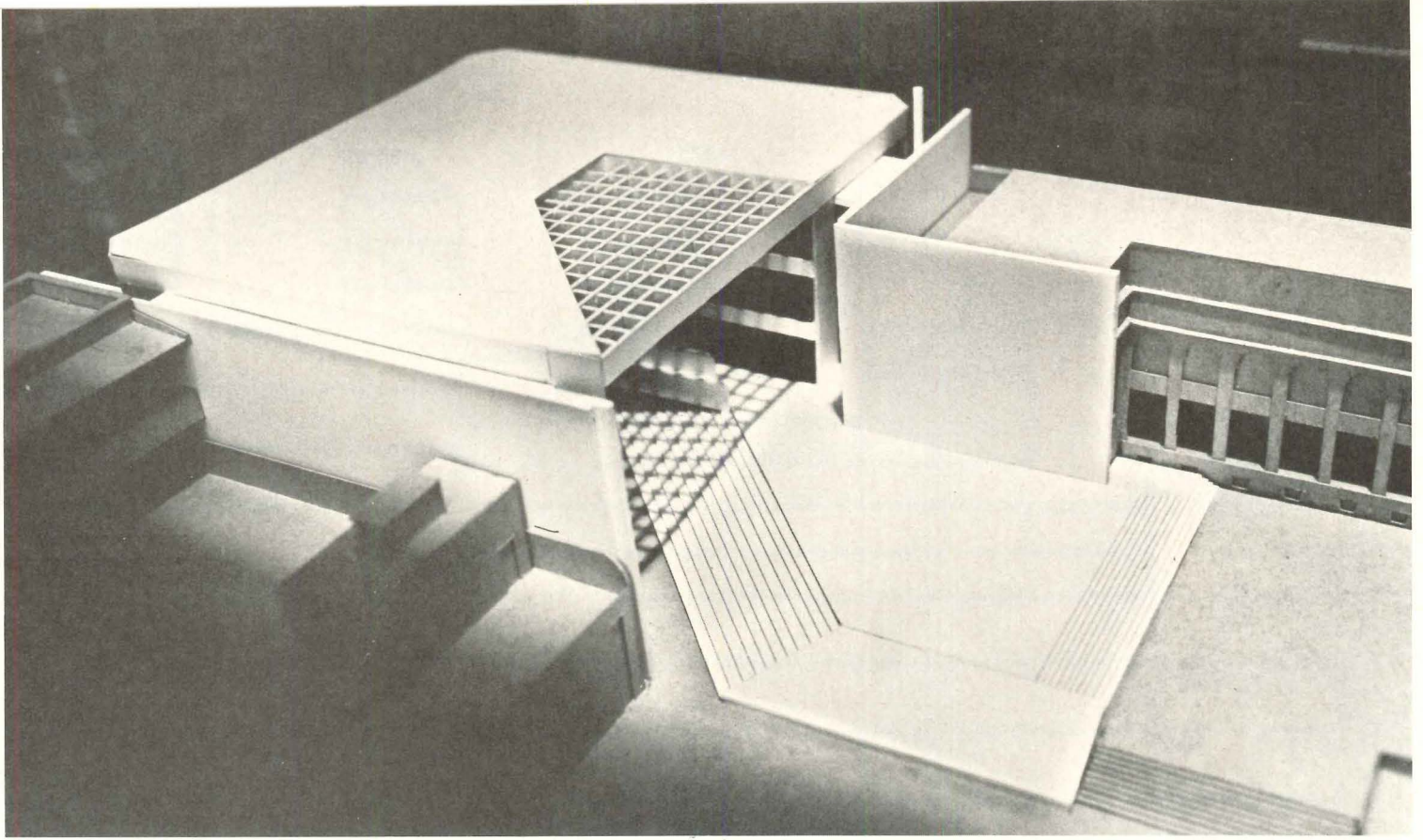




Archives in particular. Through its center a narrow slit is made on the axis between the latter building and the portrait gallery. On the inside, however, both scale and function change radically to provide a collection of houses terraced around an open central space (drawing, below left). As an example of a structure which attempts to have it both/and in a controversial and monumental plan which has seemed to want it all-or-nothing, the Pennsylvania Avenue housing is worth watching as the final marriage bonds between monumental and domestic are achieved.

PENNSYLVANIA AVENUE HOUSING, Washington, D.C. Architectural consultant to the Pennsylvania Avenue Development Corporation: *Hugh Newell Jacobsen*.

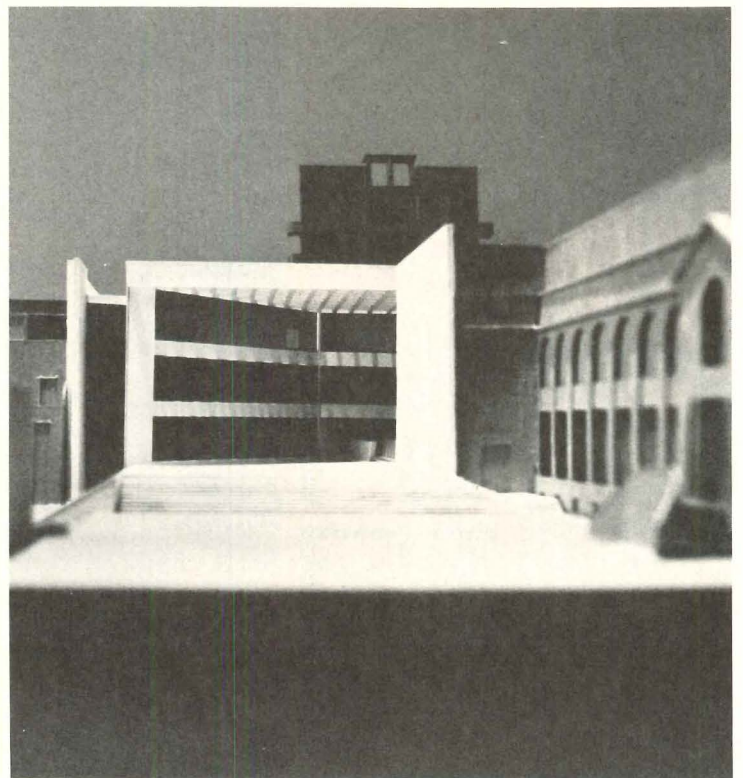
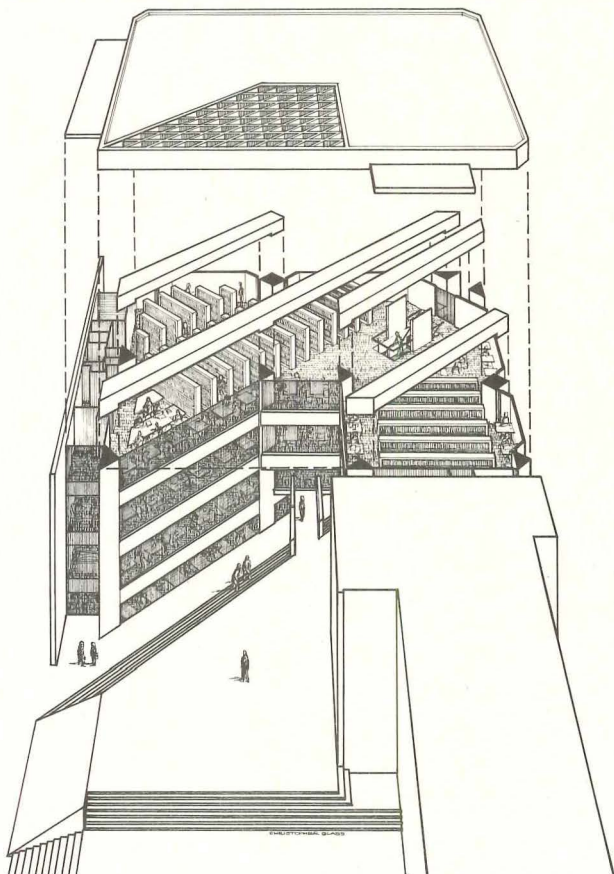


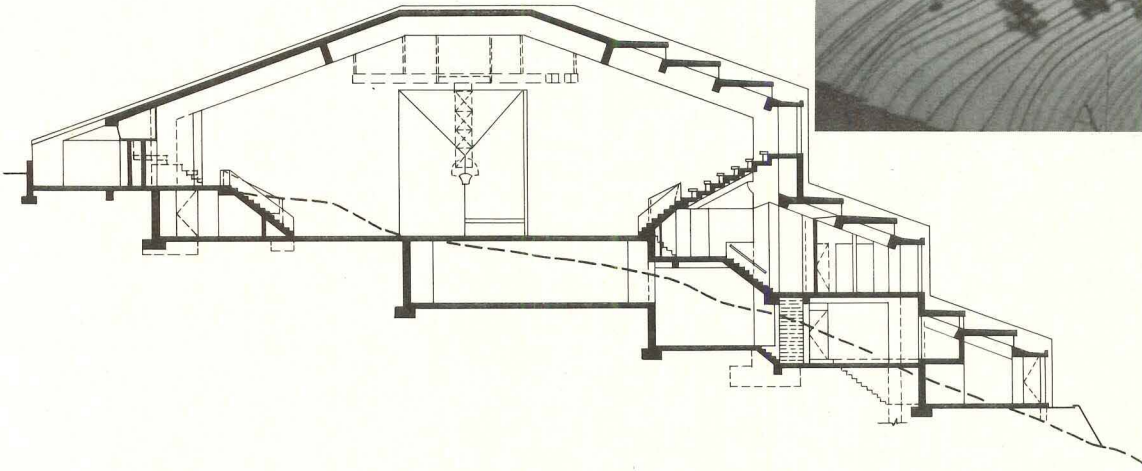
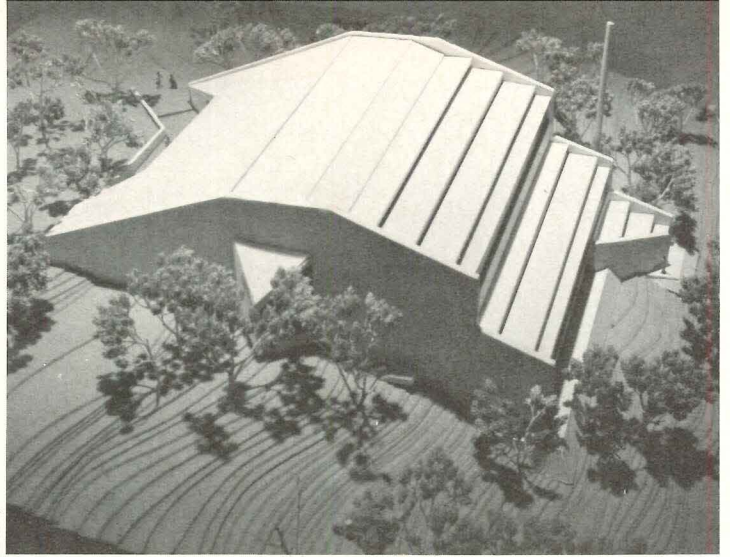


LIBRARY FOR THE AMERICAN UNIVERSITY IN CAIRO

This library building, square in plan, will stand at the intersection of two streets in Cairo, and, since it abuts two college buildings (actually joining one), it will help make an interior courtyard for this part of the campus (photo above). It also provides a controlled entranceway for the interior open space through a diagonal pathway inward from the street corner; on one side of the pathway wide steps lead up to an open plaza, covering a new kitchen for the adjacent building. Inside the library, long beams span the walls on the diagonal, providing complete flexibility of layout.

LIBRARY FOR THE AMERICAN UNIVERSITY IN CAIRO. Architect: *Hugh Newell Jacobsen*. Engineers: *Kraas & Mok* (structural); *Gamze, Korobkin, Caloger, Inc.* (mechanical). Consultant: *Dr. Cecil Byrd* (library).

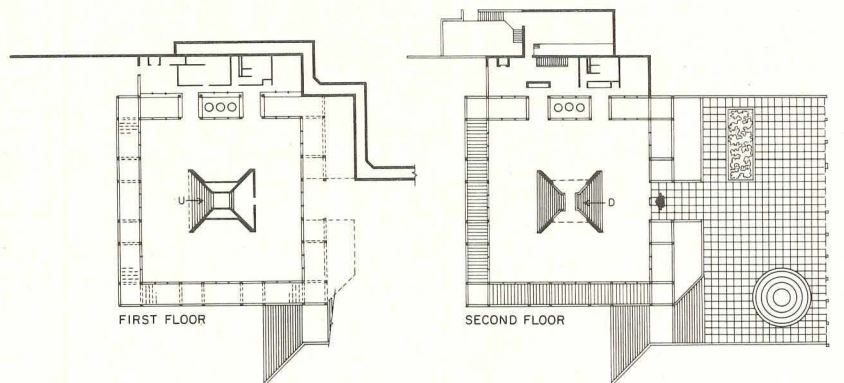
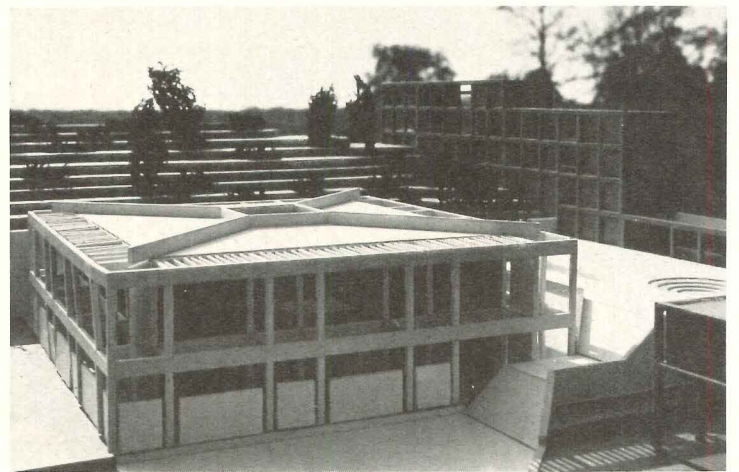
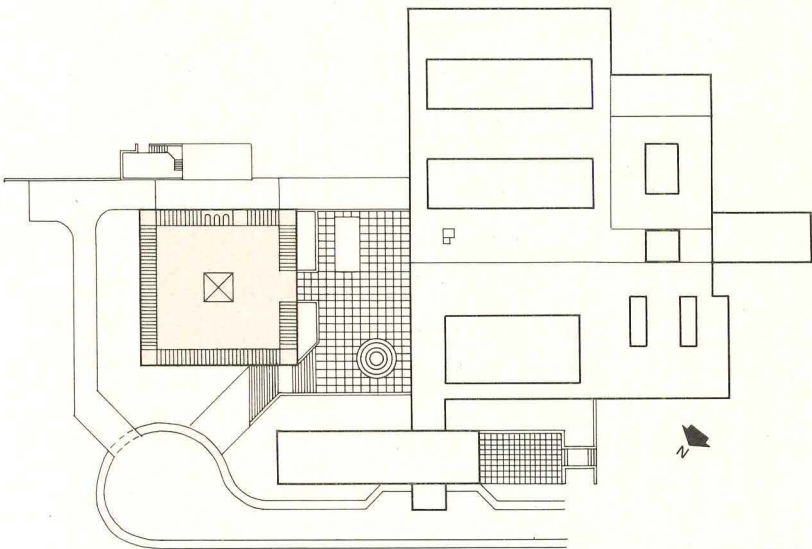


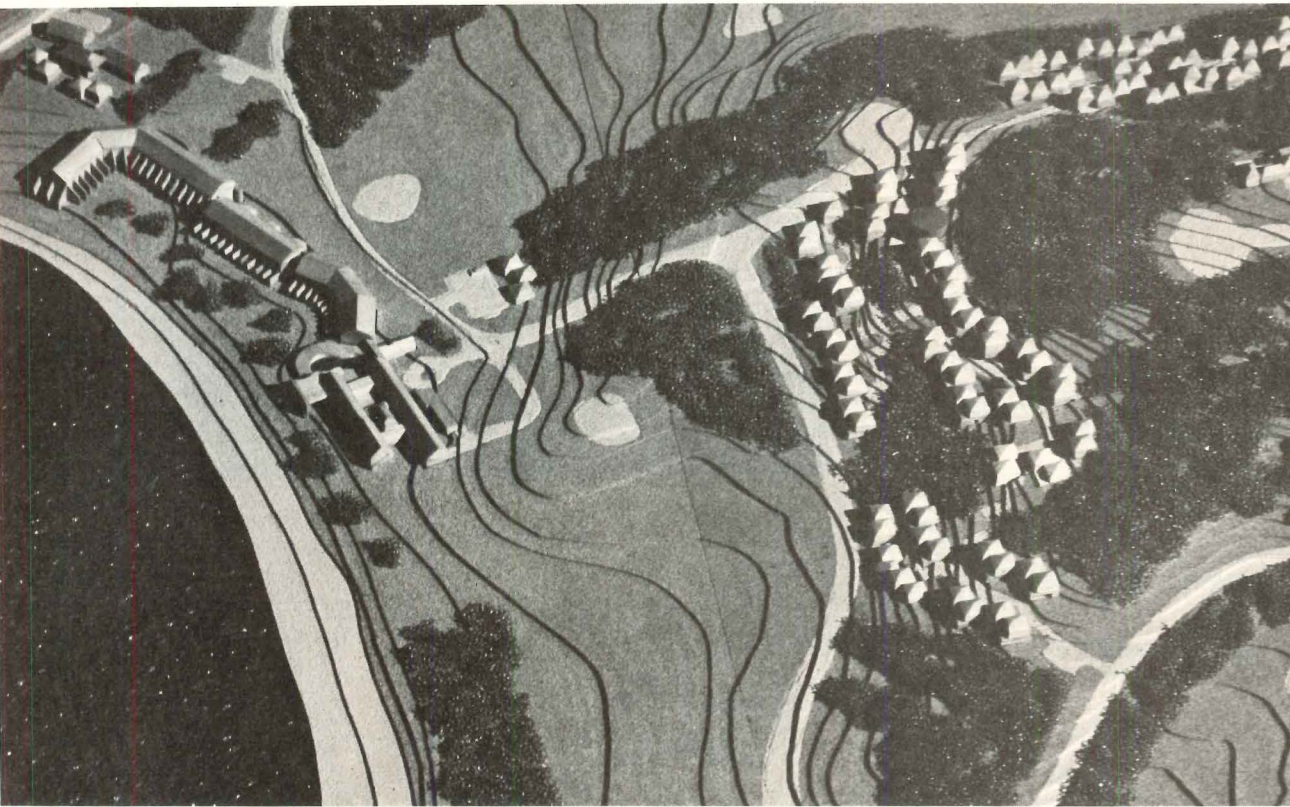


TWO SCHOOL BUILDINGS IN GREECE

The "gymnasium" for Anatolia College (above) is a multi-use building on the brow of a hill; it opens up in the direction of Thessaloniki and the Aegean beyond, while also maintaining a modest profile from the campus side. The library for Pierce College, (below), like the one in Cairo, is square in plan with a virtually column-free interior; on its entrance side it helps to form an open plaza.

"GYMNATORIUM" FOR ANATOLIA COLLEGE, Thessaloniki. Architect: *Hugh Newell Jacobsen*. Associate architect: *Environmental Design Company, Ltd.* Engineers: *Kraas & Mok* (structural); *Dubin, Mindell, Bloom & Associates* (mechanical). LIBRARY FOR PIERCE COLLEGE, Athens. Architect: *Hugh Newell Jacobsen*. Associate architect: *Environmental Design Company, Ltd.* Engineers: *Kraas & Mok* (structural); *Elias & Nicolas Cavoulacos* (mechanical). Consultant: *Dr. Cecil Byrd* (library).

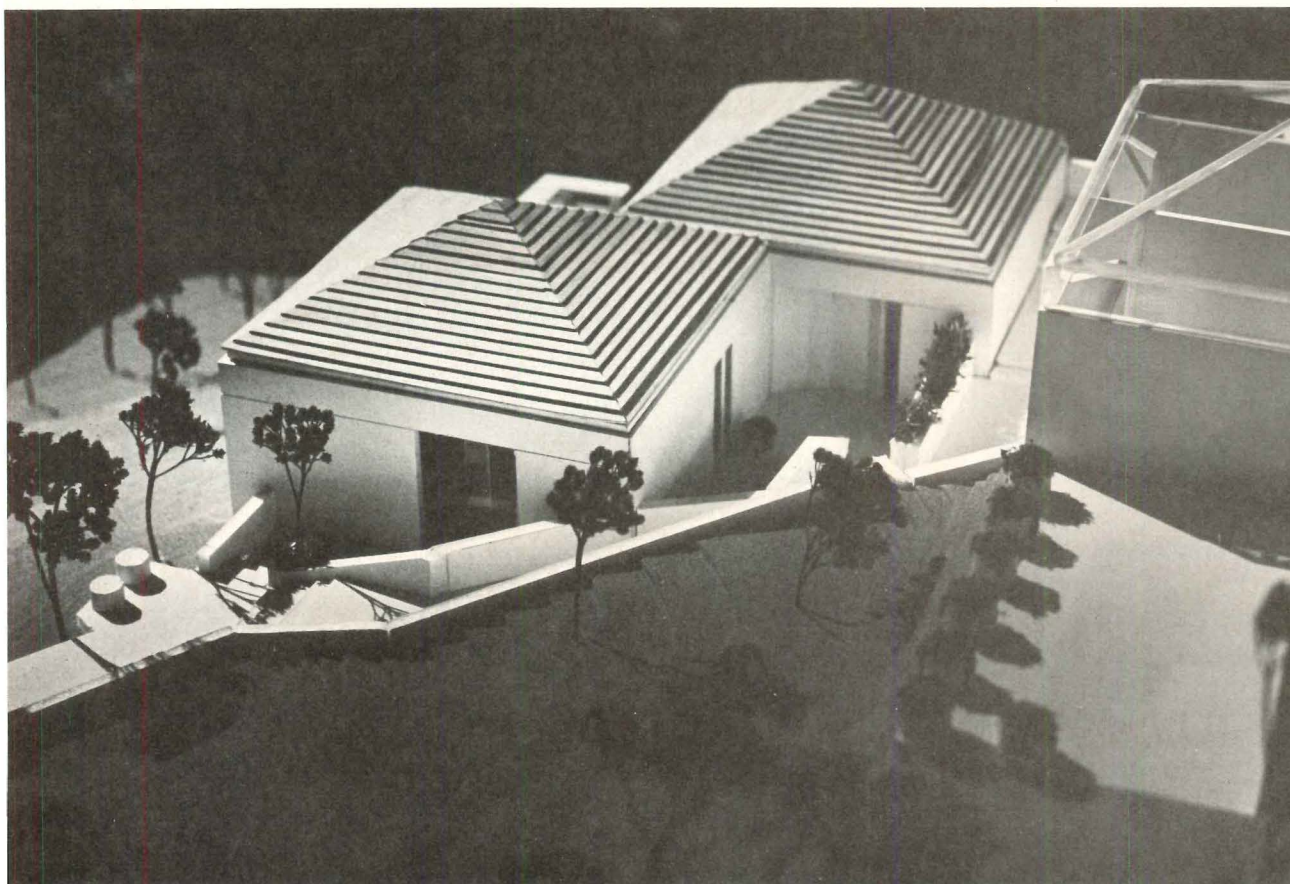




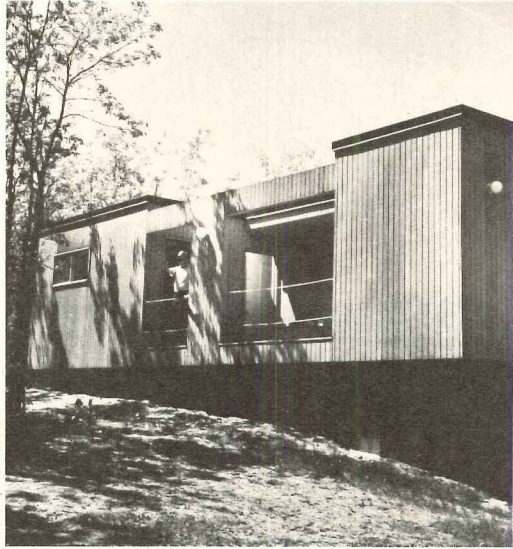
HALF MOON BAY HOTEL AND GOLF CLUB

Hugh Jacobsen's designs for Half Moon Bay, a resort in Antigua, began with the remodeling and extension of an existing hotel (seen in the model photo above, nearest the water) and has further developed into major landplanning for the entire resort and virtually total control of all its visual elements, including graphics, signage and even a special selection of resort clothes. In his effort to respect the spectacular site, the architect has arranged the new housing (photo below) into small-scale linear clusters.

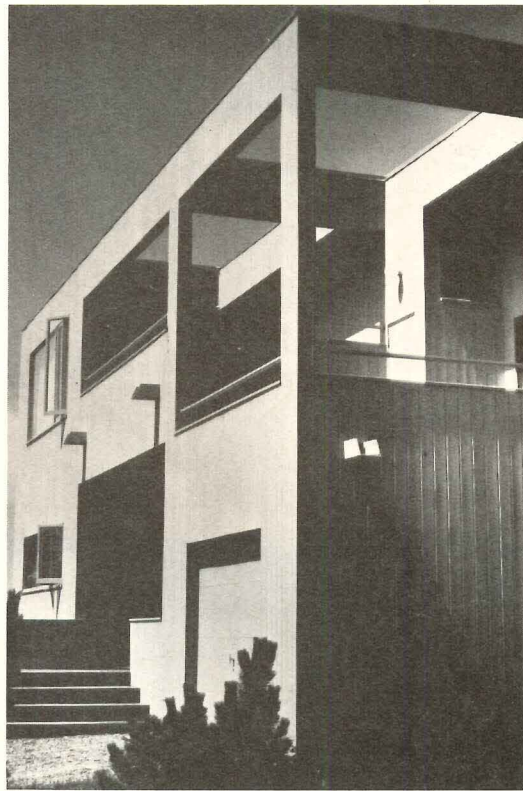
HALF MOON BAY HOTEL AND GOLF CLUB, St. Johns, Antigua, West Indies.
Architect: *Hugh Newell Jacobsen*. Engineers: *Kraas & Mok* (structural);
Dubin, Mindell, Bloom & Associates (mechanical).



BOXES ARE BACK: FOUR LOW-COST HOUSES IN THE HAMPTONS



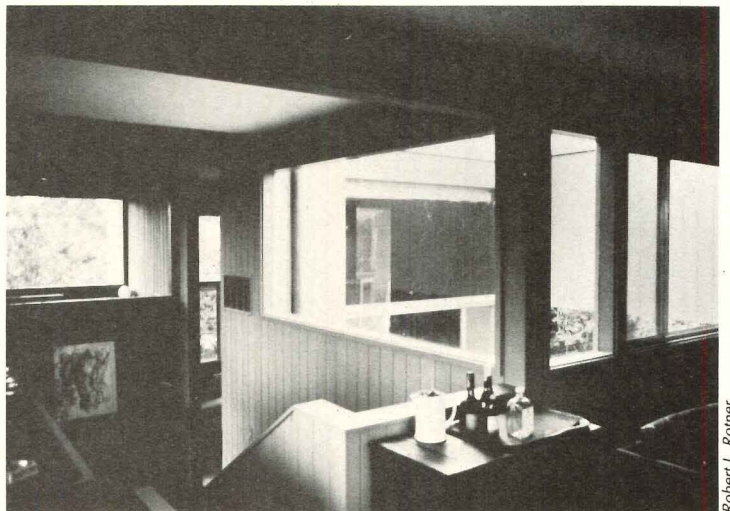
Mildred F. Schmetz



Robert L. Rotner



Robert L. Rotner



Robert L. Rotner

Every architect knows (but some deny) that the cheapest way to build a house is to construct a flat-roofed box. Not everyone, however, wants to live in one. "Less is less!" is the nostalgic cry, and builders and architects respond with sloping roofs and eaves, turrets, dormers, cupolas, widow's walks, finials, barge boards, verandas, projecting wings, bay windows, oriels, fanlights, stone chimneys, or approximations of all these things—forms which delight the eye, warm the heart and make a house a home. Unhappily, the addition of even a few of these grace notes costs money, and unless the client has a lot of it, important things get skimmed—like space.

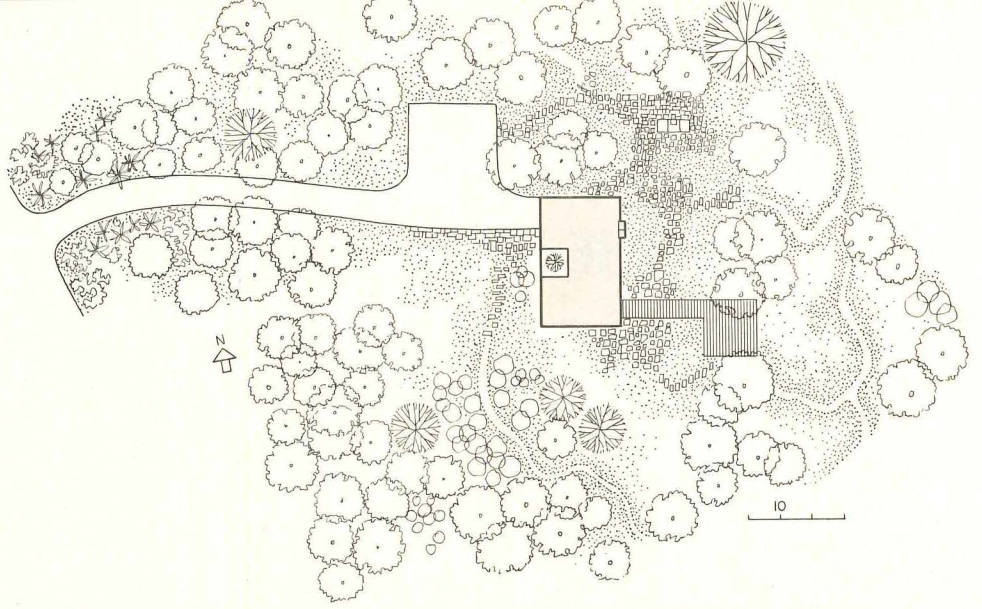
More unfortunately, it takes a lot of nerve to build a simple box anywhere, but particularly in the Hamptons. Famous for 19th century houses which combine all the joyous ornaments just enumerated and more, the Hamptons are also recognized as the birthplace of the Corbu Revival style, now being practiced by both highly skilled and notoriously unskilled hands. Although the real Corbu perpetrated many a modest-priced box, his current followers do not. For those of us who can't afford a 19th century house at one extreme, or a virtuoso performance by one of the best Corbu Revivalists at the other, there should be a better middle ground than exists in the Hamptons.

The four houses shown on the following pages are almost anachronistic on the eastern tip of Long Island, and this is too bad. There should be more like them. Designed by architect Robert L. Rotner, they are straightforward, economical to build, easy to furnish and sensitively oriented. Although from the exterior they may appear to be rigidly confined within their rectilinear perimeters, they are remarkably spacious within—both horizontally and vertically. This spatial complexity has been achieved by varying the floor heights, and by the use of interpenetrating decks or porches.

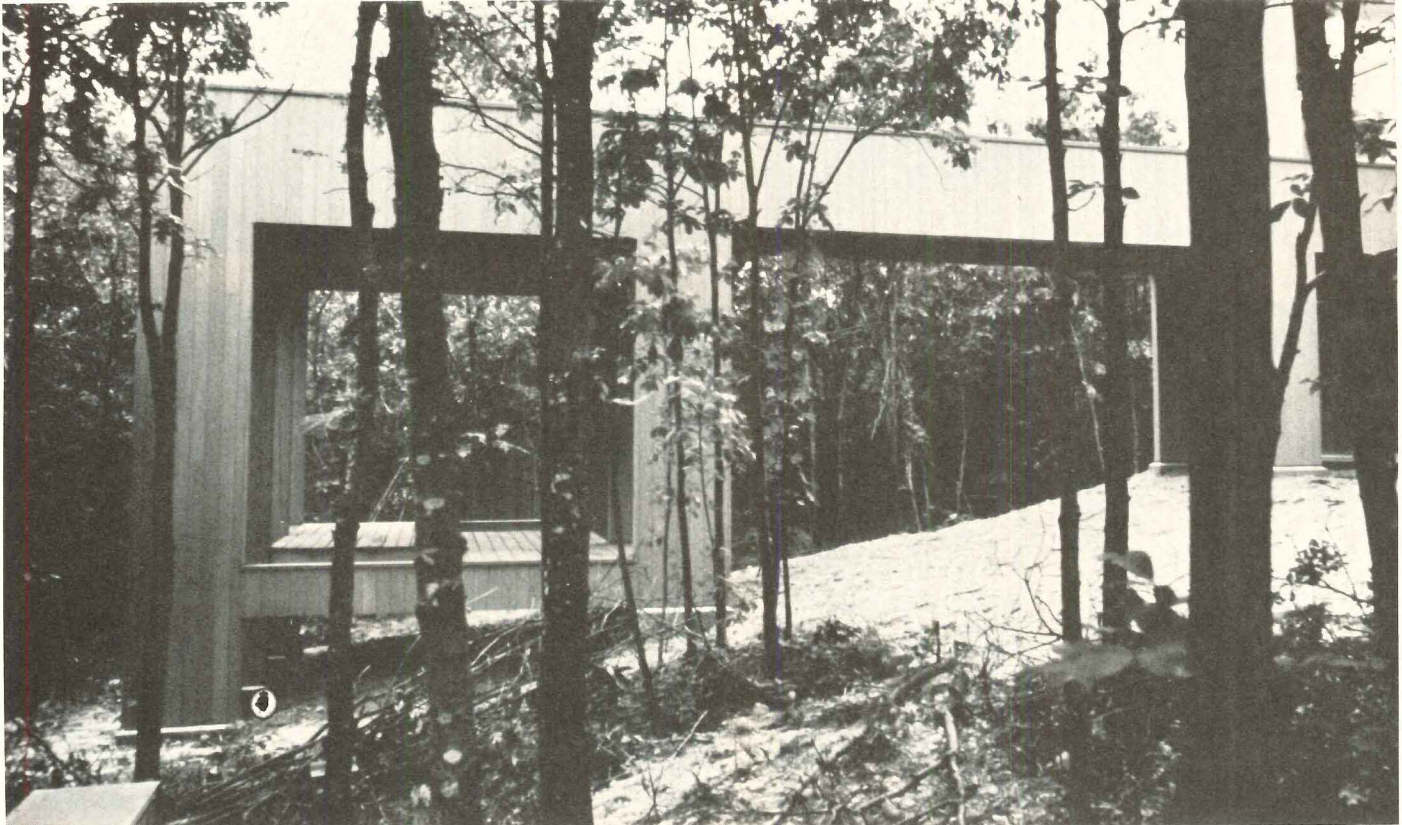
For purposes of comparison, the plans and sections of all four houses are shown at the same scale. The cost figures given are capital construction costs, including the complete house with all built-ins, cabinet work, kitchen and laundry appliances and interior finishes. Also included in these costs are the driveway, water and sewage mains and grading. The square foot costs are based upon the square footage of inhabited space—that is the space which is heated, ventilated, and in the Leader house, air conditioned. The cost figures do not include land costs, planting, furniture or the architect's fees. The structural engineer for all four houses was N. H. Bettigole.

—Mildred F. Schmetz

A TREE-TOP HOUSE WITH A VIEW OF SAG HARBOR, LONG ISLAND



Robert L. Rotner



Architect Rotner's client, Robert Leader, wanted to sit on his terrace in the early evening and gaze upon the church spires of the village. At night he hoped to see the lights of the town. His heavily wooded site, however, offered no vistas, and it soon became clear that the living quarters of the house should perch in the treetops. To find the best elevation for town viewing, Rotner and Leader climbed a few trees and decided the higher the better.

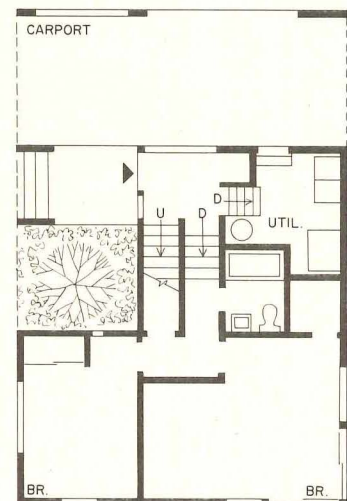
To achieve as much elevation as possible, the house was designed on four levels as the section indicates. Five steps down from the entrance level are the bedrooms and garage and eleven steps up are the kitchen-dining area and the library. Opening off the dining area is a bridge leading to a small dining terrace (opposite page, right). At the top of the last flight of stairs is the living room which at one end overlooks the kitchen so that the owner, who cooks, remains in touch with his guests. From the master bedroom at grade, a path leads to

a gazebo roofed by the dining terrace.

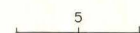
The house has been designed for a bachelor with resale value in mind. It is essentially a three-bedroom, two-bathroom house suitable for a small family, but the bedrooms are so located that one serves Leader conveniently as a combined library and guest bedroom and the other as a combined office and guest bedroom.

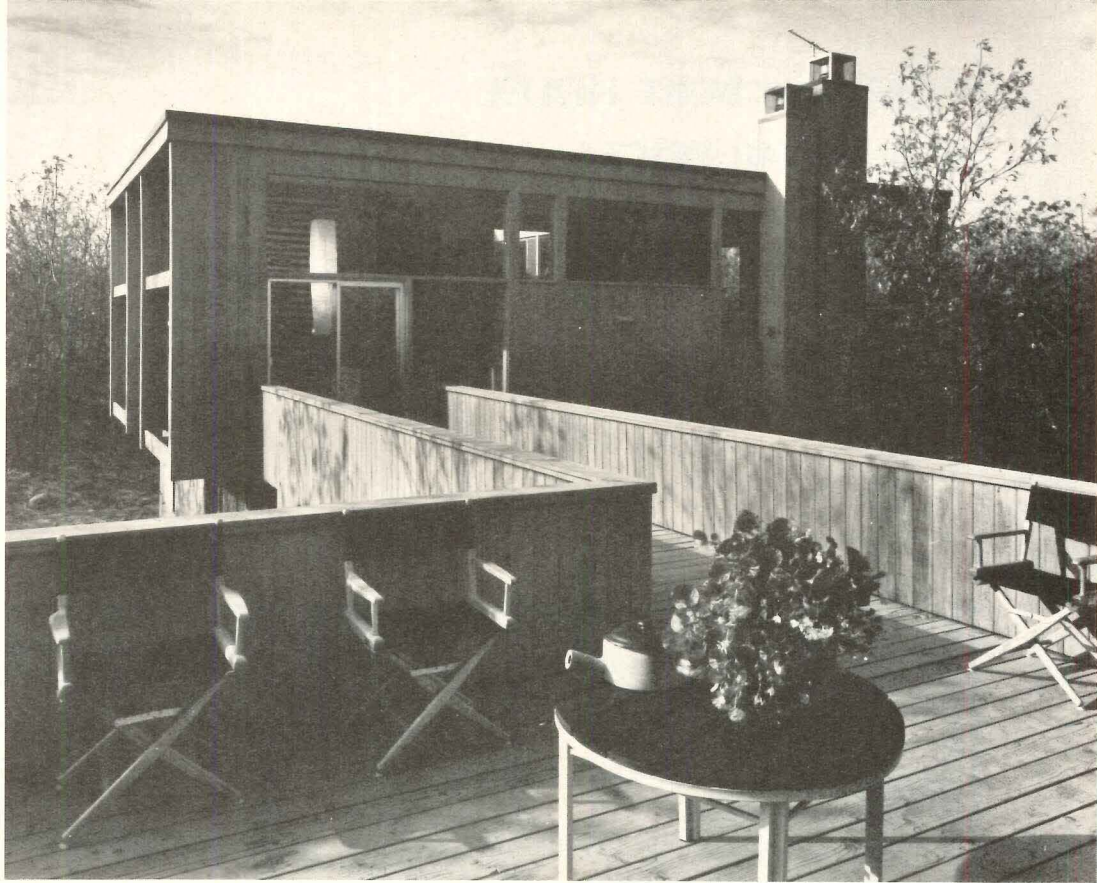
The scheme provides a lot of privacy for a house so small. The sleeping areas are neither underneath nor adjacent to the living room, allowing those who choose peace and quiet to get away from a party. The extended porch with gazebo below economically increases the dimensions of the house and intensifies its relationship to the outdoors.

The house is of wood frame construction with tongue and groove cedar on plywood sheathing. It was built by Hal Young General Construction Co. for approximately \$26 per square foot in 1970-71, for a total of \$52,000.

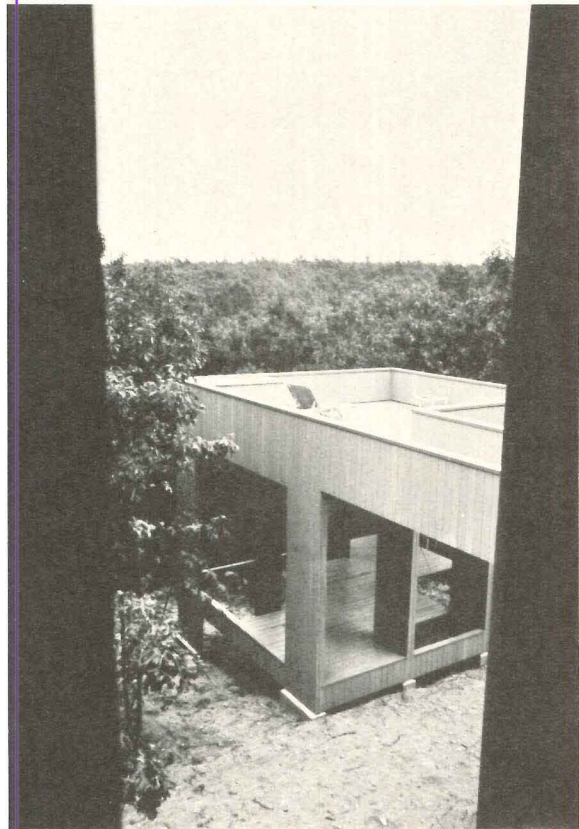


LOWER LEVELS

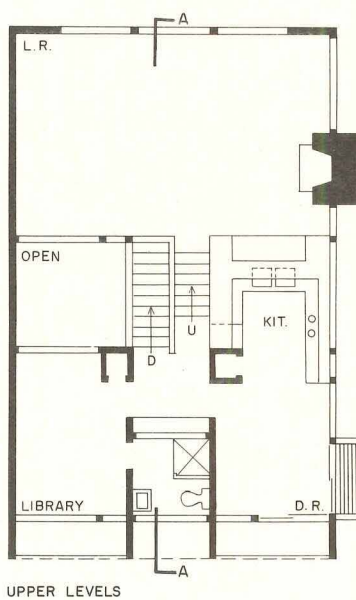




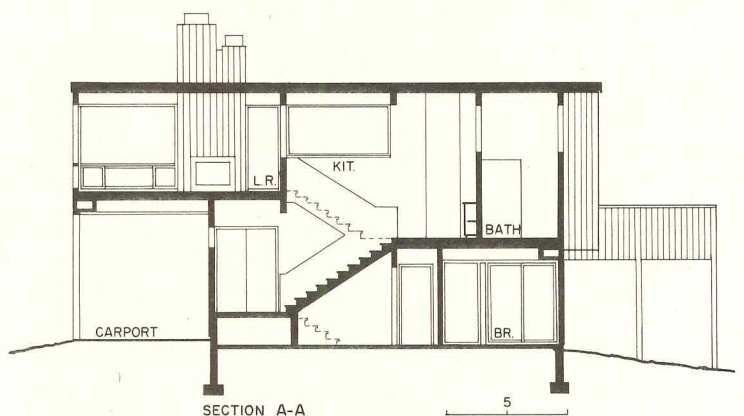
Robert L. Rotner



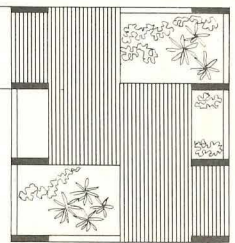
Robert L. Rotner



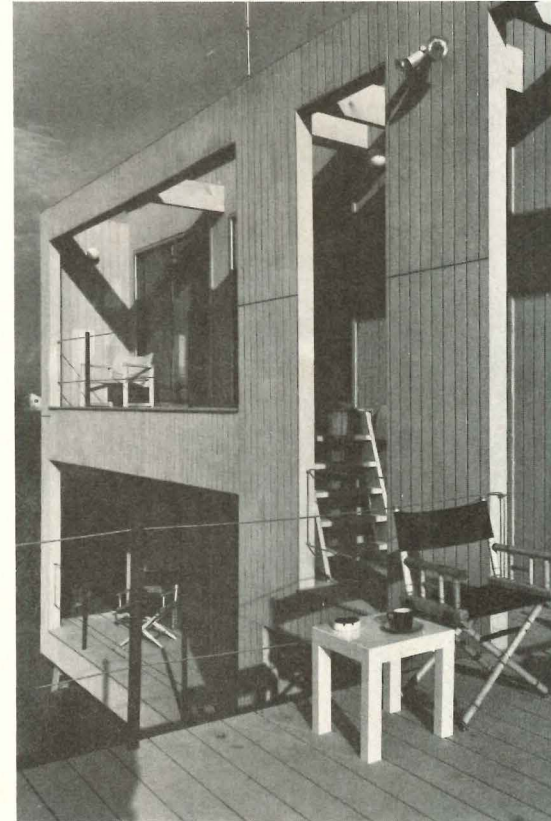
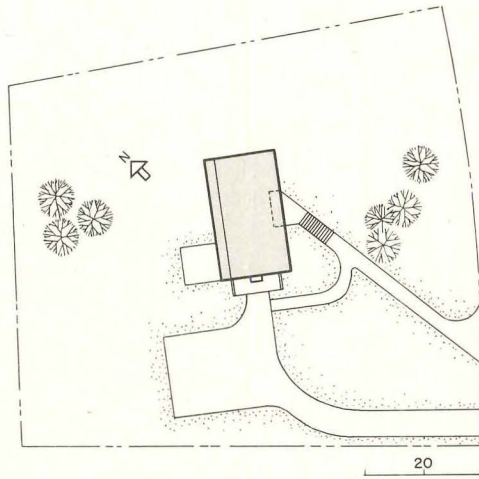
UPPER LEVELS



SECTION A-A



A CUSTOM-BUILT HOUSE AT A PREFAB PRICE



The client, Joseph P. Burke, hoping to build a weekend house on a low budget, had investigated builder and prefab houses before he engaged Rotner. Through strict economy of space and materials, the architect was able to keep the costs down to approximately \$21 per square foot (1970-71) for a total of \$34,000.

The house on a one-half-acre site in Watermill, Long Island overlooks a lake. Because of the high water table, only the garage is at grade. The utility room and first floor bedroom and bath are five steps up, the living room, terrace and kitchen are at midpoint and high enough for a view, and two additional bedrooms are at the top level, one of which overlooks the kitchen and serves as a study.

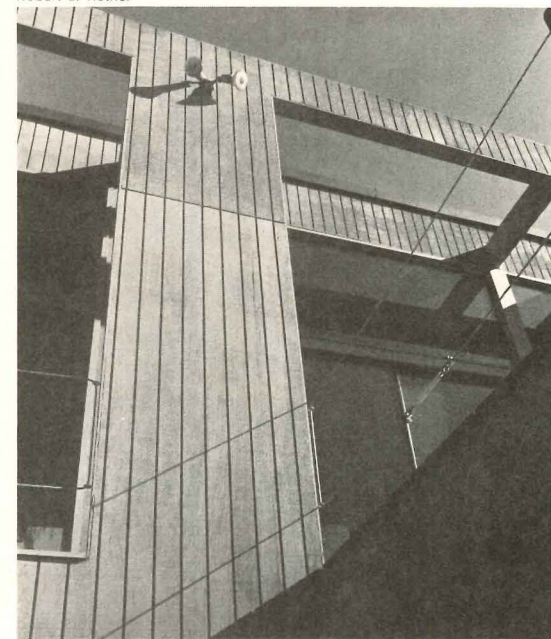
The three masonry walls of the garage carry most of the house. The floor joists of the kitchen and living room are laid on the two parallel bearing walls of the garage and the bedrooms are stacked vertically. As the section indicates, the kitchen and living rooms share a

12-foot ceiling. A secondary wall on the lake side (above right) serves as a *bris soleil* and frames the views. The principal entrance is inset and reached by a flight of stairs (opposite page, right). The window above lights the stairway and entrance hall.

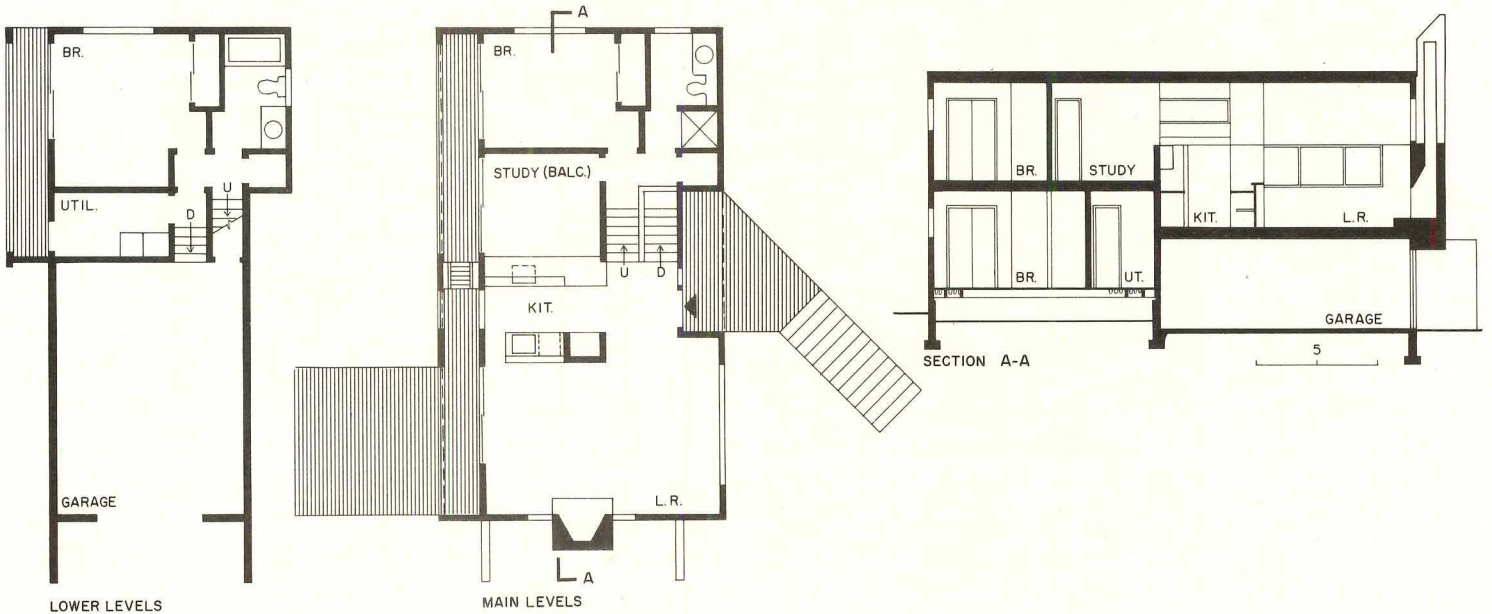
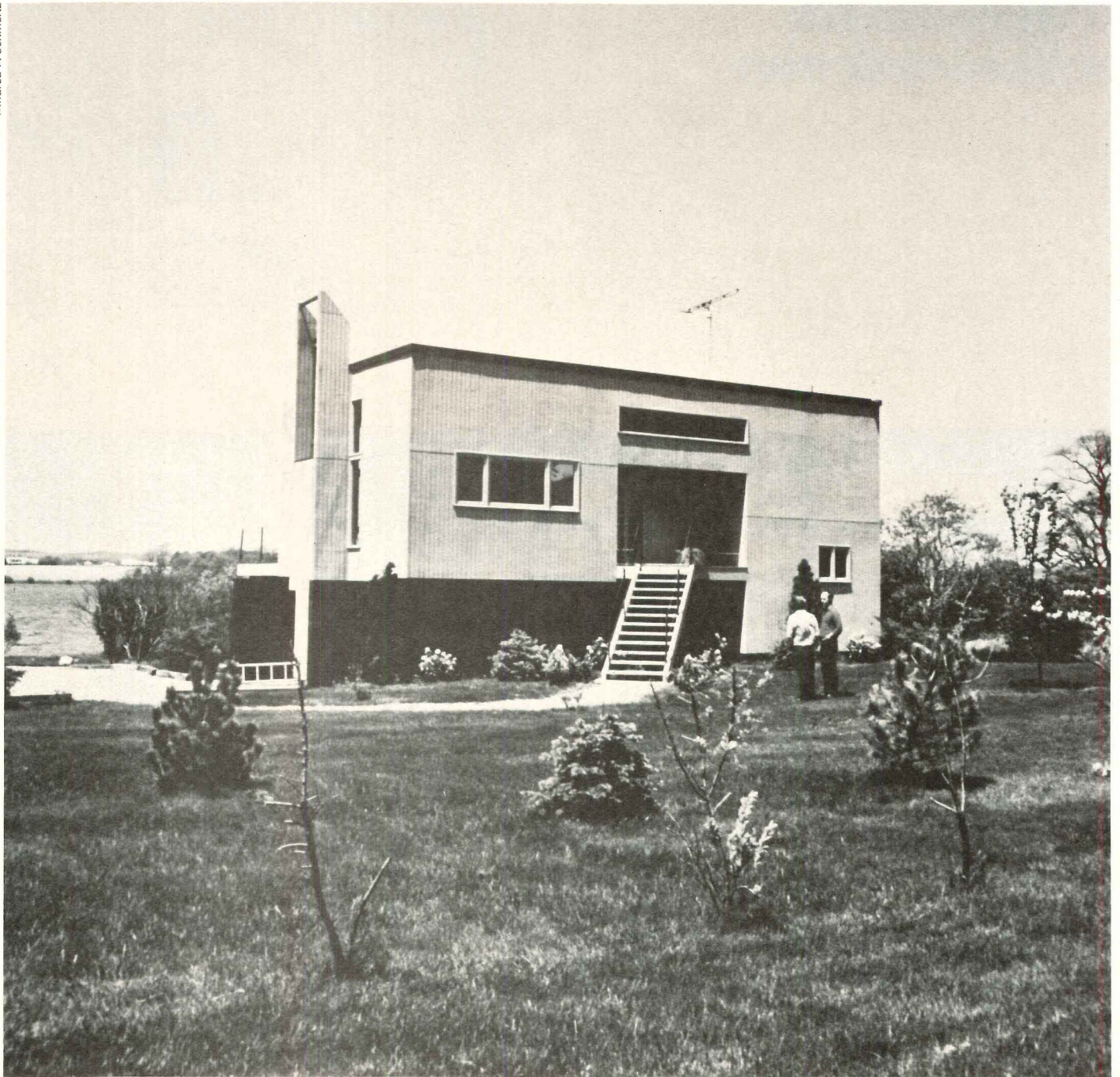
Economies include a prefab chimney and fireplace, stock windows, conventional framing sheathed on the exterior and interior with one layer of grooved plywood and simple metal post and cable railings. Since the decks project over open space they didn't require flashing or waterproofing. Built-ins were done by carpenters on the site, rather than by cabinet shops. The single expensive item in the construction was the use of insulated glass throughout.

The Burke house was designed primarily for a bachelor. The two additional sleeping areas on the top level and the additional bath assures that it can go on the market as a family house. Contractors were Sag Hill Builders, Inc.

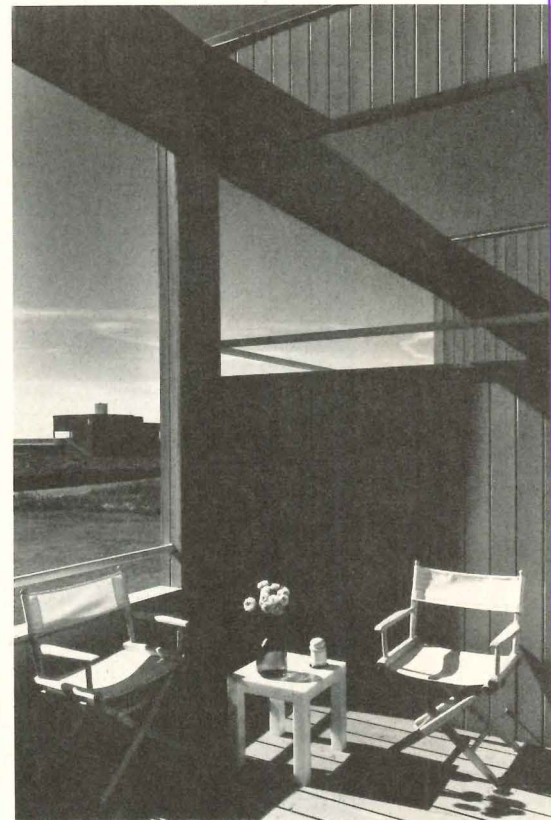
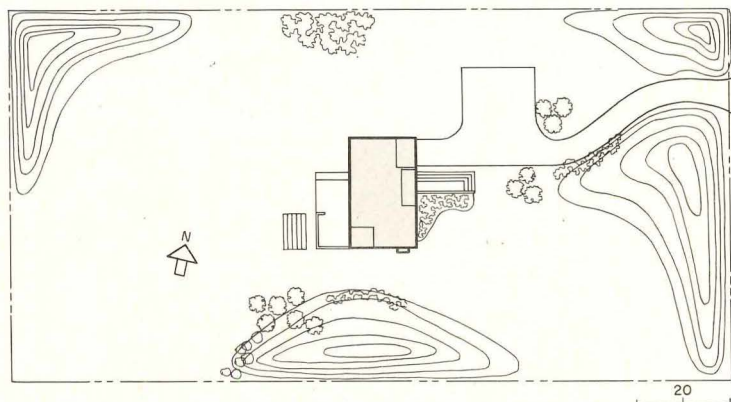
Robert L. Rotner



Mildred F. Schmertz



A PERFORATED BOX FOR A FAMILY OF THREE



Client Sol de Swaan owns a full acre site in the rapidly disappearing Bridgehampton, Long Island potato fields. Although it doesn't front on the ocean, it has an ocean view. De Swaan's budget was \$55,000 and his house cost approximately \$26 per square foot in 1972-73. It is almost identical in size and materials to the Robert Leader house, but quite different spatially, because of differences in family requirements and site.

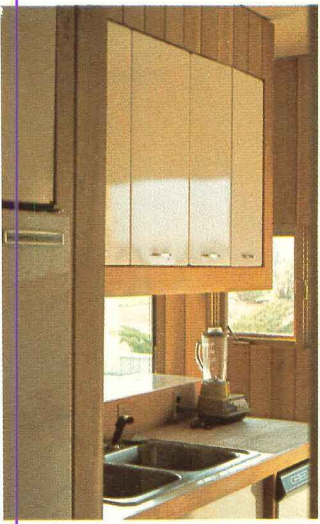
Unlike the Leader and Burke houses which are bachelor residences primarily, although they can be transformed for family use, the de Swaan house was designed from the beginning for a young family with one child. And unlike the Leader house, which is hidden in the woods, the de Swaan house is highly visible from all four sides and demands by its placement to be treated as a work of sculpture in the round. As such, it is highly successful, even though basically it is merely a humble box as the photo (opposite page) indicates.

The view from the living room is to the rear, over the potato fields and the terrace deck is located on this side. The house has four additional decks—one at the entrance and three which adjoin upstairs bedrooms. Each deck has several exposures and two overlook the ocean; all are partially shaded.

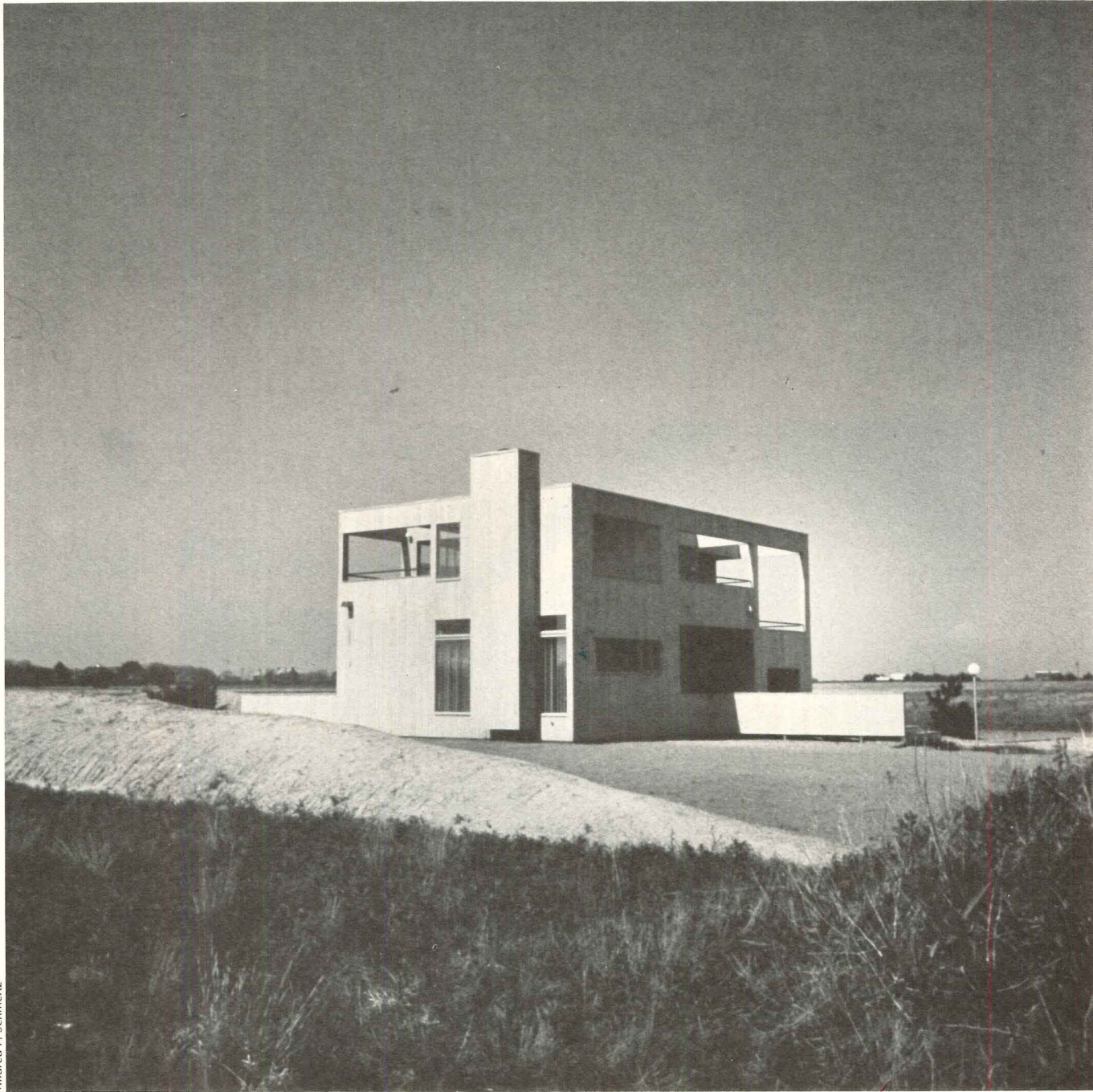
The garage is at grade and four steps above is the living-dining and utility area. Bedrooms, bathrooms, storage and decks occupy the remaining two levels as can be seen in the plans and sections.

The house is finished with red cedar tongue and groove siding over plywood sheathing on the exterior and the identical siding is used throughout the interiors. In all of his houses, architect Rotner uses standard metal kitchen cabinets framed in wood (see detail opposite page top) giving his kitchen installations a custom look. The interior furnishings of this house were selected by the architect. The contractor was Sag Hill Builders, Inc.

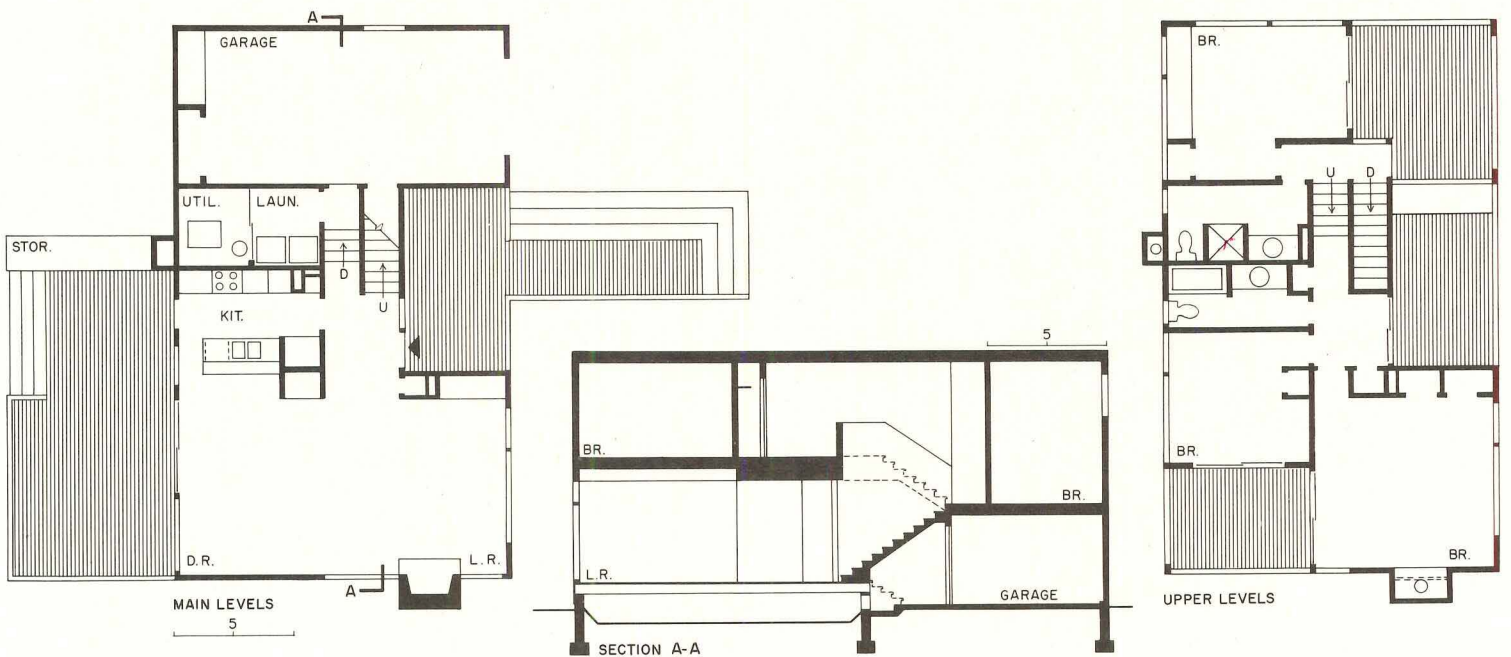




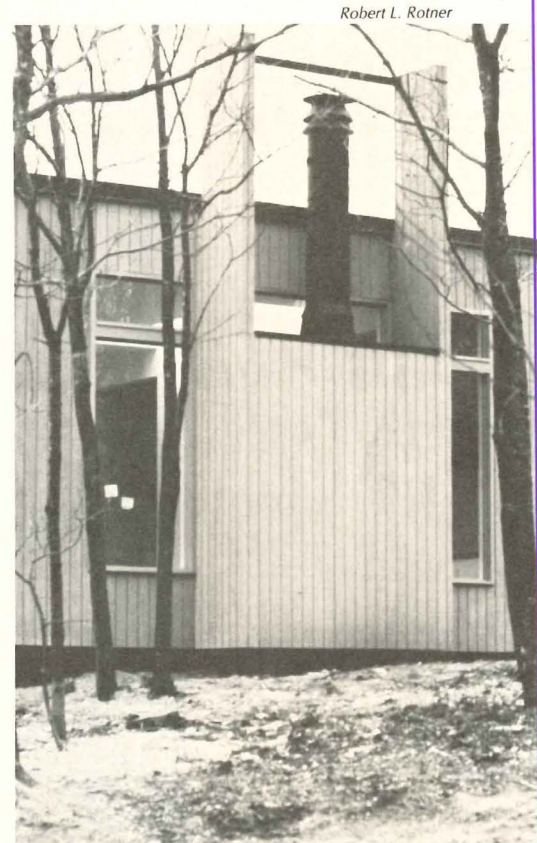
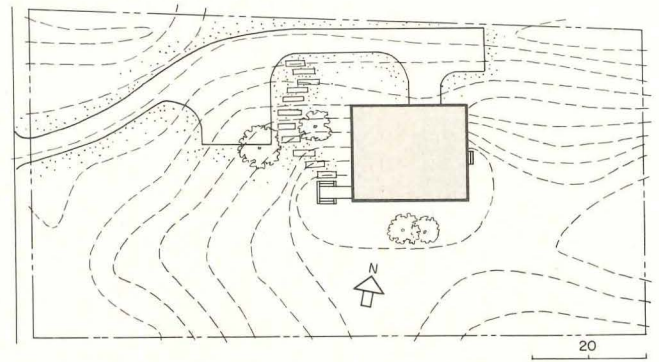
Robert L. Rotner



Mildred F. Schmeitz



A HOUSE BUILT ON SPECULATION TO PLEASE THE AVERAGE SECOND HOME BUYER



Robert L. Rotner

Architect Rotner's client for this house was Robert Leader, who built it on a lot adjoining his own house to protect the view. Like the Burke house, the cost was kept to approximately \$21 per square foot and the total came to \$41,200.

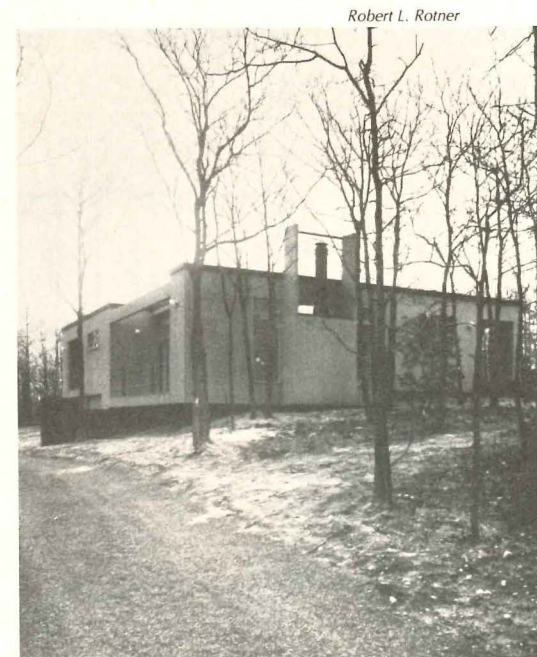
The object was to design a house that could meet the non-specialized requirements of the small family or couple seeking a vacation house. No special built-ins were called for. The rooms were to be conventionally shaped and easy to furnish with basic pieces. In brief, what was wanted was a house without idiosyncracies—a "sensible" house. One last requirement was that the house be kept as low as possible, so it wouldn't impinge upon Leader's vision. How to build such a house on a small budget, within the modern idiom, and still give it character?

Rotner used the simplest means available to him. He put the dining room, kitchen and three bedrooms all on one level, three steps

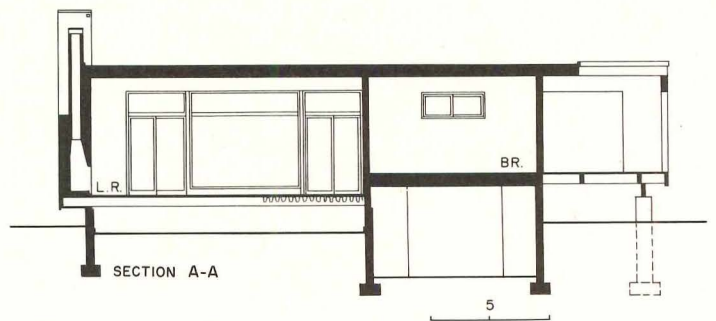
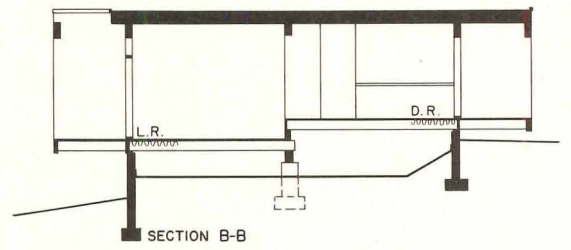
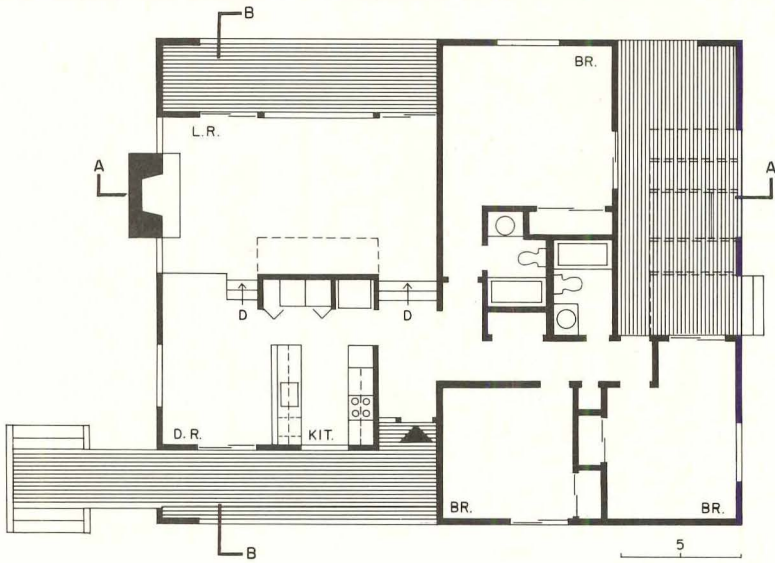
above the living room, tucking the garage under the bedroom wing. The living room is a pleasant shape, with a carefully studied ratio of wall space to window allowing easy and straightforward placement of furniture. Throughout the house the placement of windows and doors allows the rooms to be furnished without special problems.

In orienting the house and in the placement of decks, much attention was given to light. The living room faces north opening upon a deck, with windows to the west as well. The entrance porch is to the south (opposite page, top), and a deck serving all three bedrooms is to the east (above left). On sunny mornings this deck is ideal for breakfast.

As in the Burke house, costs were pared by using single-layer wood frame construction, grooved plywood sheets being used on the exterior. Unlike the other three houses, however, the exterior finish was not carried indoors, wall board painted white being used instead. Other



Robert L. Rotner





economies include standard windows and a prefabricated fireplace and chimney.

Although the furniture in the living room (above) is temporary, and the angle from which the photograph was taken makes the room appear narrower than it is, it can be seen as a simple, carefully detailed and comfortable space. The skylight which illuminates the continuous wall will enhance the room regardless of how it will be furnished in the future. The steps just visible at the rear of the photo lead to the small dining area (right). This space has also been studied with care. The window and dining room table belong together, as they do in all carefully worked out houses. Since this window faces west, early summer evening meals can be enjoyed in the setting sun.

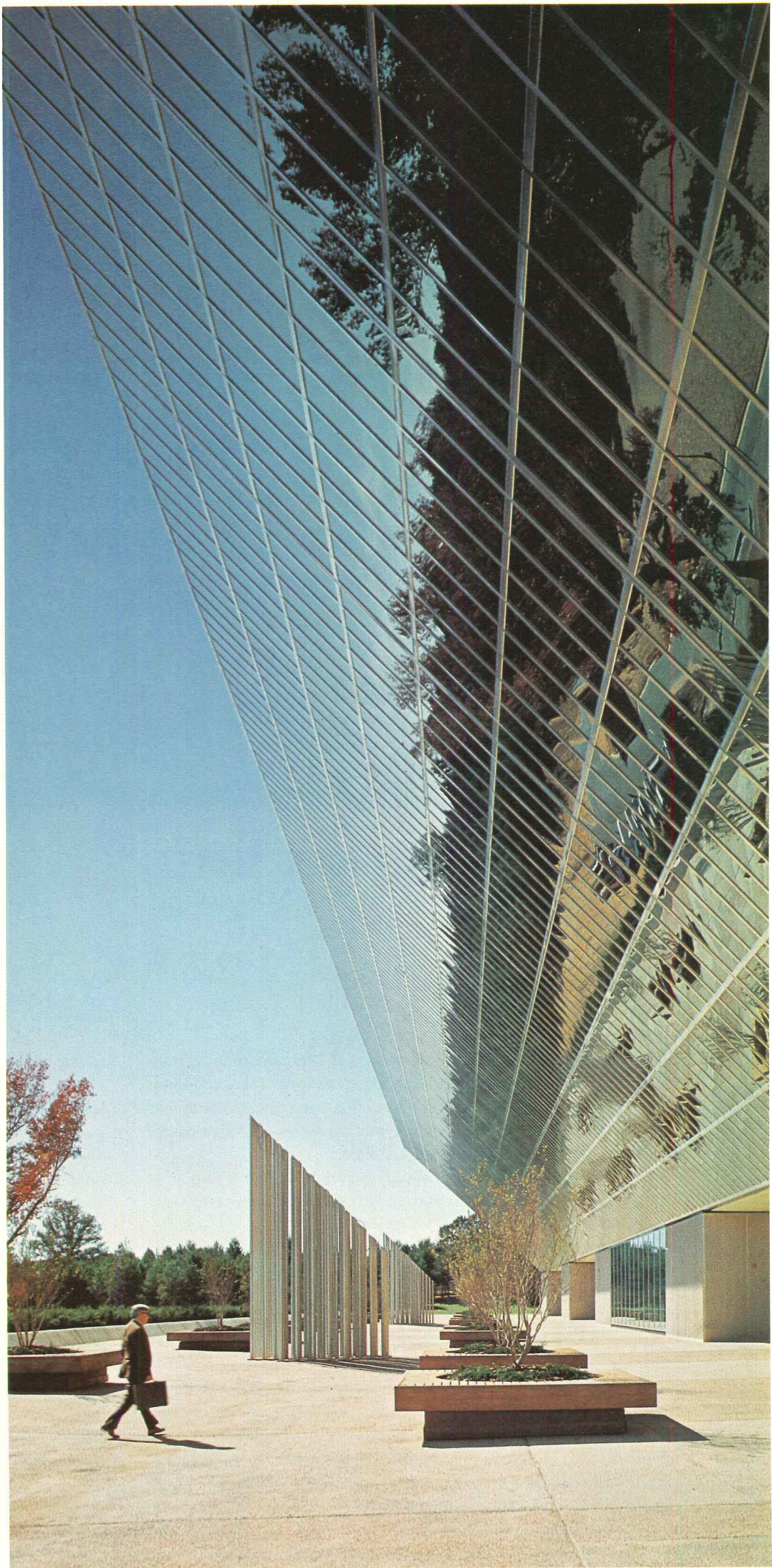
Although at the time the house was completed, it was a buyer's rather than a seller's market, up until the time he finally sold it Leader received a number of good offers attesting to the appeal of the house.

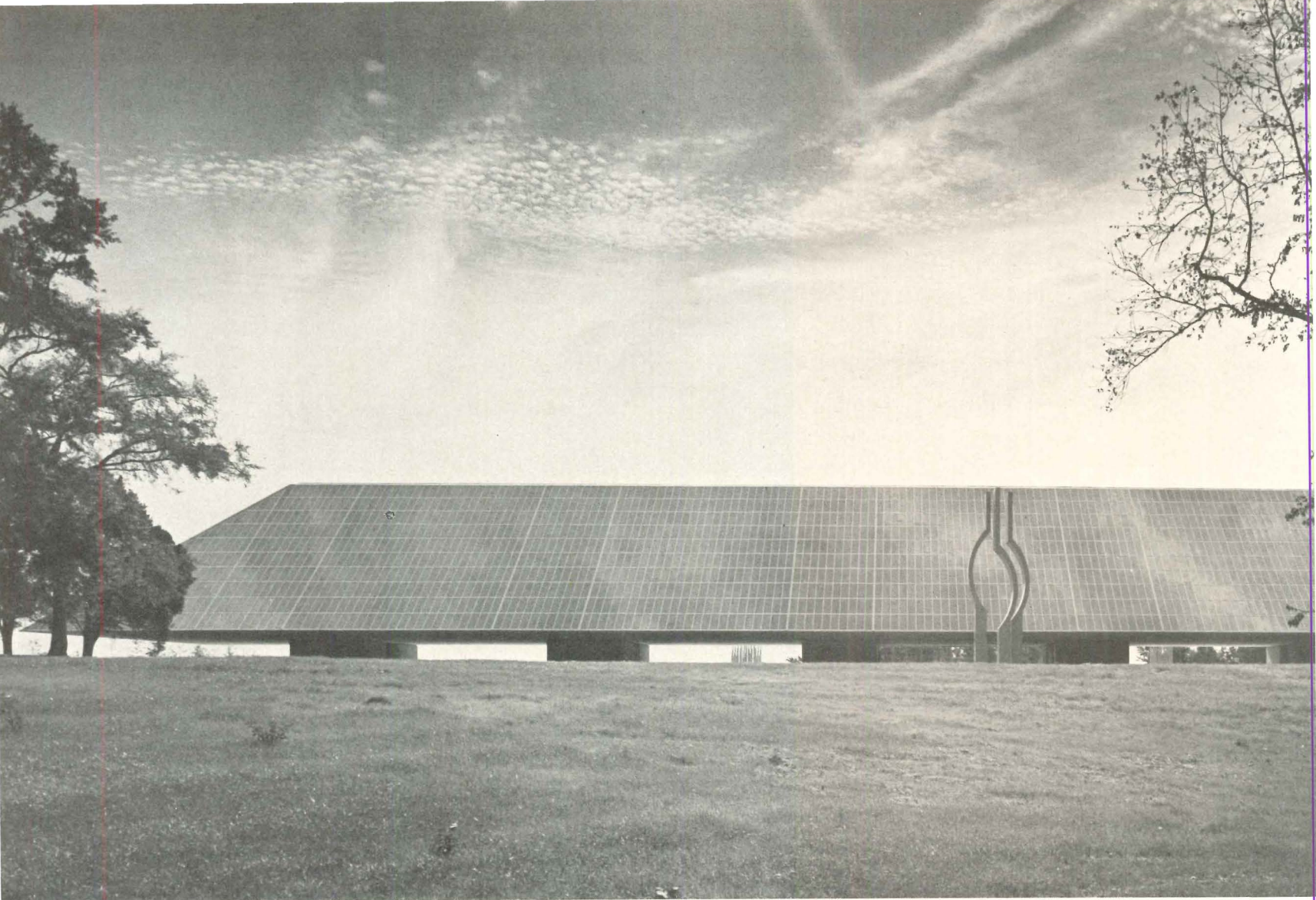


SUBURBAN OFFICE BUILDINGS

The following two projects bear obvious similarities. The striking designs are considerate of the rural landscape, while utilizing bold concepts to convey a desired message about the owners to the car-borne public on nearby major highways. Both have floors which relate like treads on a stair. But the design concepts are really very different, and indicate a range of possibilities to cope with varying programs and achieve individual and successful results.—Charles Hoyt

North Carolina Blue Cross and Blue Shield





BLUE CROSS AND BLUE SHIELD

This regional headquarters houses the day-to-day operations of two recently consolidated health insurance corporations. There are three phases planned, and this—the first—has a floor area of 225,000 square feet and accommodates 1000 employees. The site is a 39-acre parcel of countryside near Durham, North Carolina.

Architects Odell Associates designed a building that is also a literal sign, reflecting in its mirrored glass surfaces the corporate seals (projected by the tops of the rod sculptures seen on page 133) and the pleasant surrounding woodlands. A third of the headquarters volume contains backup services, mechanical equipment and storage, and this is accommodated below grade (see section). The offices for operations visually float, at the highly visible crest of a hill, in a three-dimensional rhomboid which has its long sides exposed to major highways on the north and south.

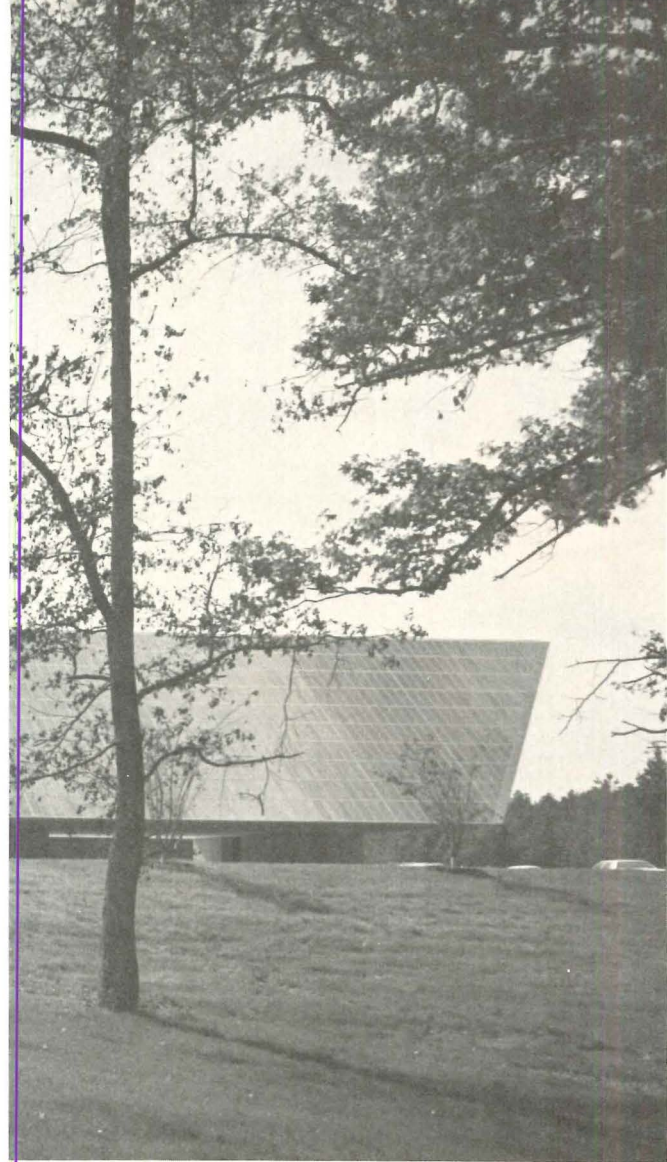
The slope of these exterior walls is more than an "eye-catching" design. It roughly parallels the sun's rays, and reduces the direct energy gain by half of that in a vertical, glass-enclosed building (despite the greater area of exposure). Coupled with the reflective value of the chrome-plated glass, the conditions here reduce the required air coolant compensation for solar heat gain by 90 per cent.

The headquarters has the internal functioning of a vertical building. Mechanical and electrical risers and elevators can go straight up

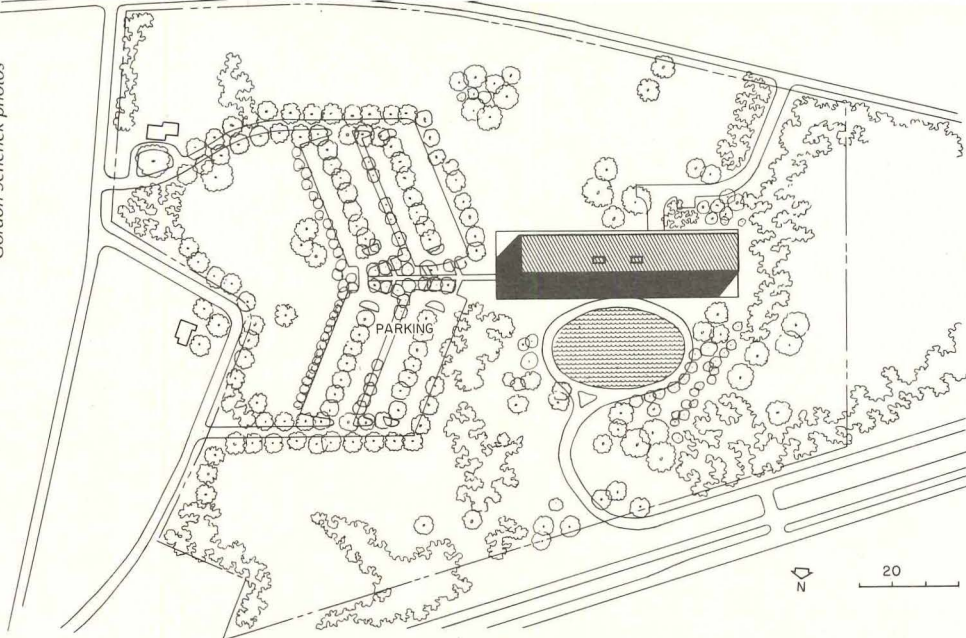
to the top, and the areas of the various floors remain constant. The clients required a large percentage of open-plan work areas. There are few "enclosed" offices, and possible problem of partition to sloping glass junctures did not apply here. There was a preliminary worry about the possibility of the building's shape concentrating wind forces on the open ground floor, but wind tunnel tests proved the worry unfounded.

In the steel structural system, groups of columns define mechanical risers, stairs and elevators and are braced together to provide the building's lateral support. Sixty-two-foot distances between the groups are spanned by deep beams. The cantilevered volumes of the building are supported by series of triangular rigid frames, with a maximum projection of 50 feet, and with a height equal to the three stories. There are two types of frames as the building ends required a special condition. The outer edges of each floor are supported by tensile or compressive members depending on the side of the building. Large floor areas are free of columns and accommodate the flexible planning. The construction cost was 9.3 million dollars.

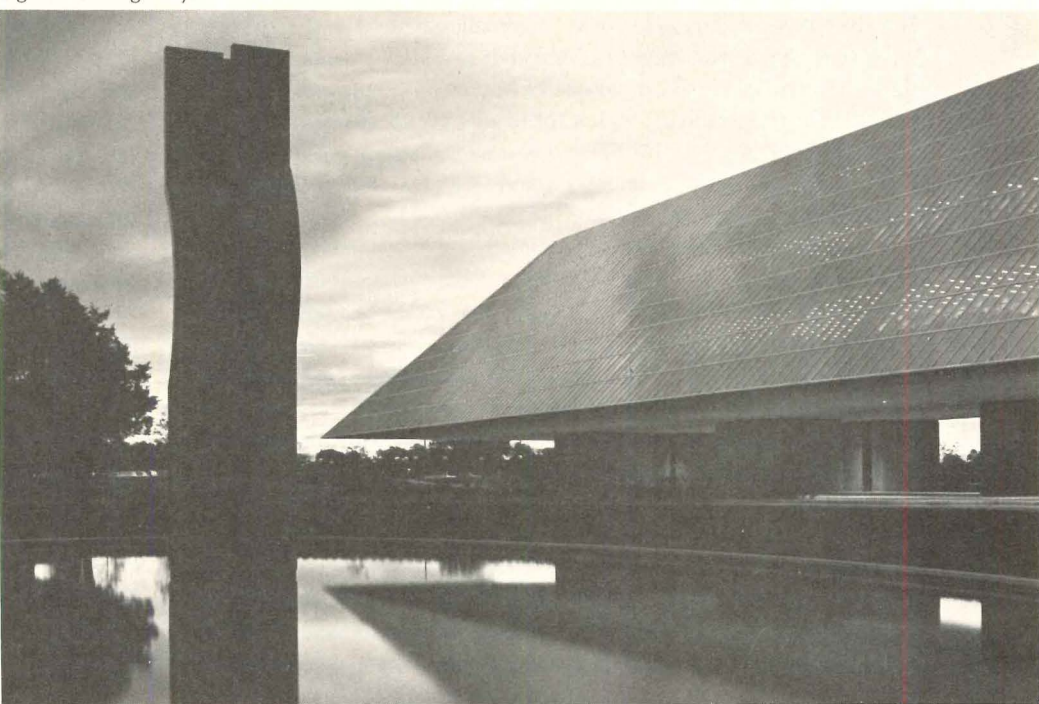
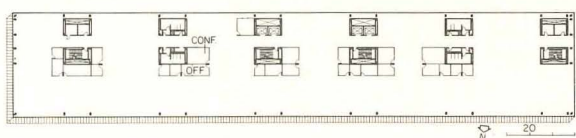
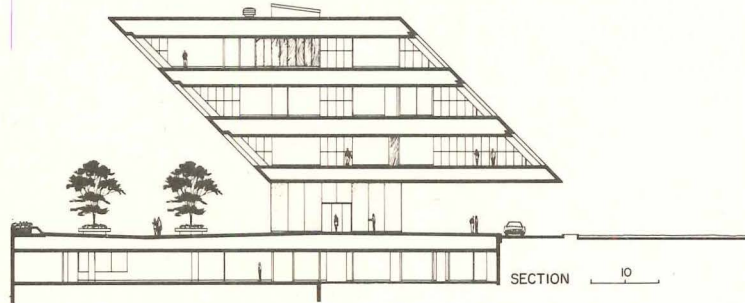
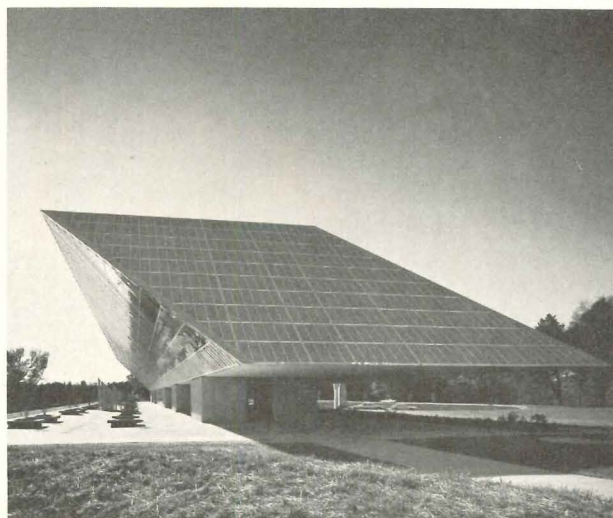
NORTH CAROLINA BLUE CROSS AND BLUE SHIELD HEADQUARTERS BUILDING, Durham, North Carolina. Architects and engineers: *Odell Associates, Inc.* General contractor: *Nello L. Teer Company.*

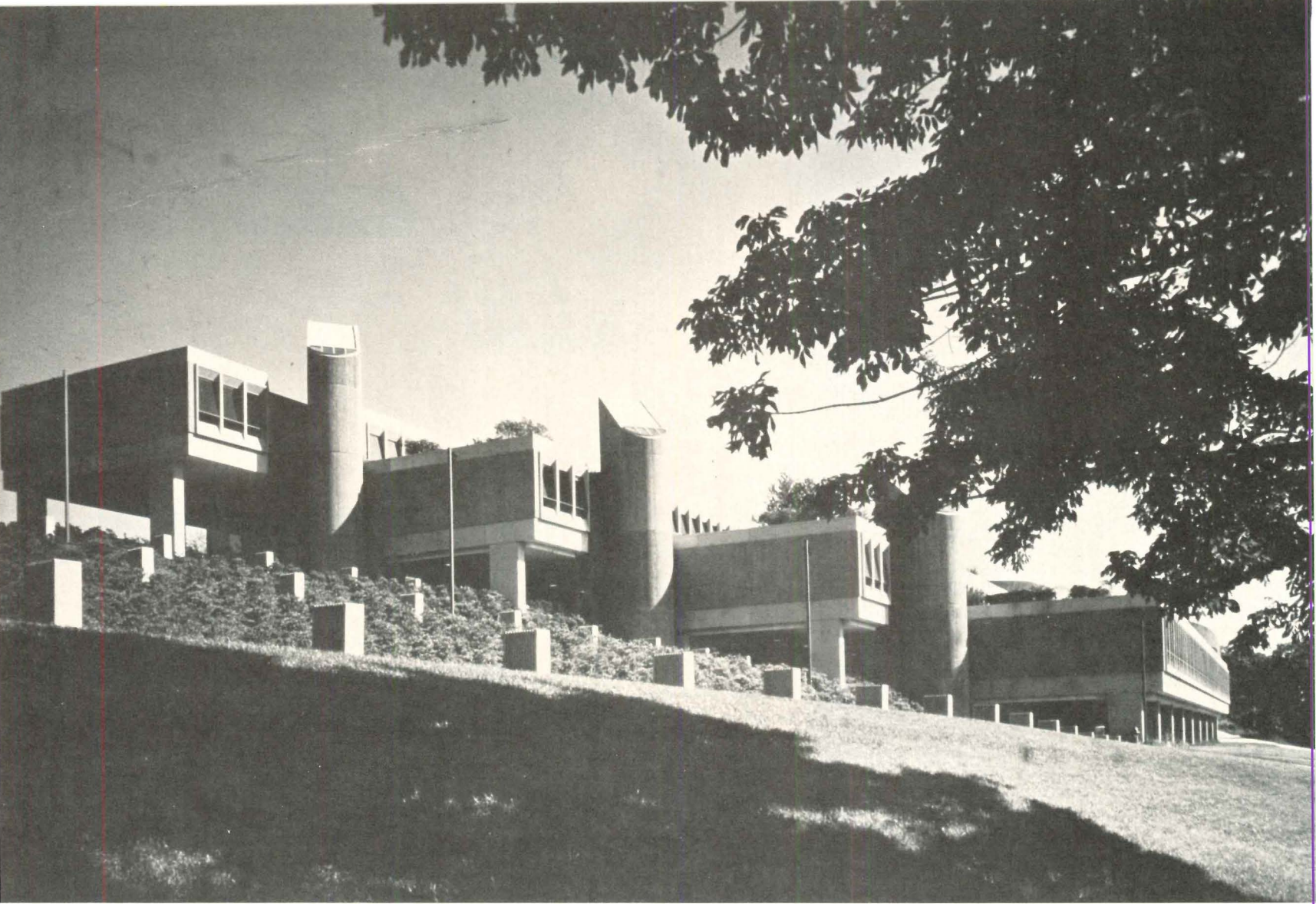


Gordon Schenck photos



Design here is meant to convey a forward-looking image, and it has advantages in reduced solar heat gain for a fully glazed building as well. Walls parallel the sun's rays. Open floor planning facilitates the relation of the angled surfaces to the work areas. Structural members stand free inside of the glass and are covered in white vinyl tubes (below, left). Other careful attention to detailing has included special elevator cabs, and a glazing support system that contains a double drain arrangement within the members to assure that water stays outside. The soffit above the open ground floor was to have been polished aluminum to complete the reflective-building enclosure, but this finish had to be replaced by cement plaster. Open parking is to the west of the building. The main vehicular entrance is on the major highway to the south and a service road enters the site from the north. Many existing trees were maintained and provide screening from the highways.





HEUBLEIN

The executive headquarters of an international food and beverage marketing corporation might be expected to reflect success by large size, but there are more important credentials for a management staff of less than 100 persons: a high level of amenity speaks eloquently of substantial pursuits. The 75,000-square-foot building is located on 20 acres of wooded hillside, facing a major highway and distant views of Hartford, Connecticut.

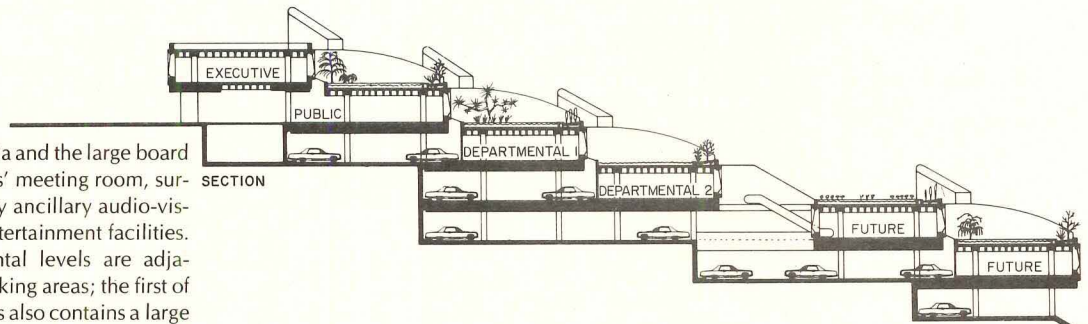
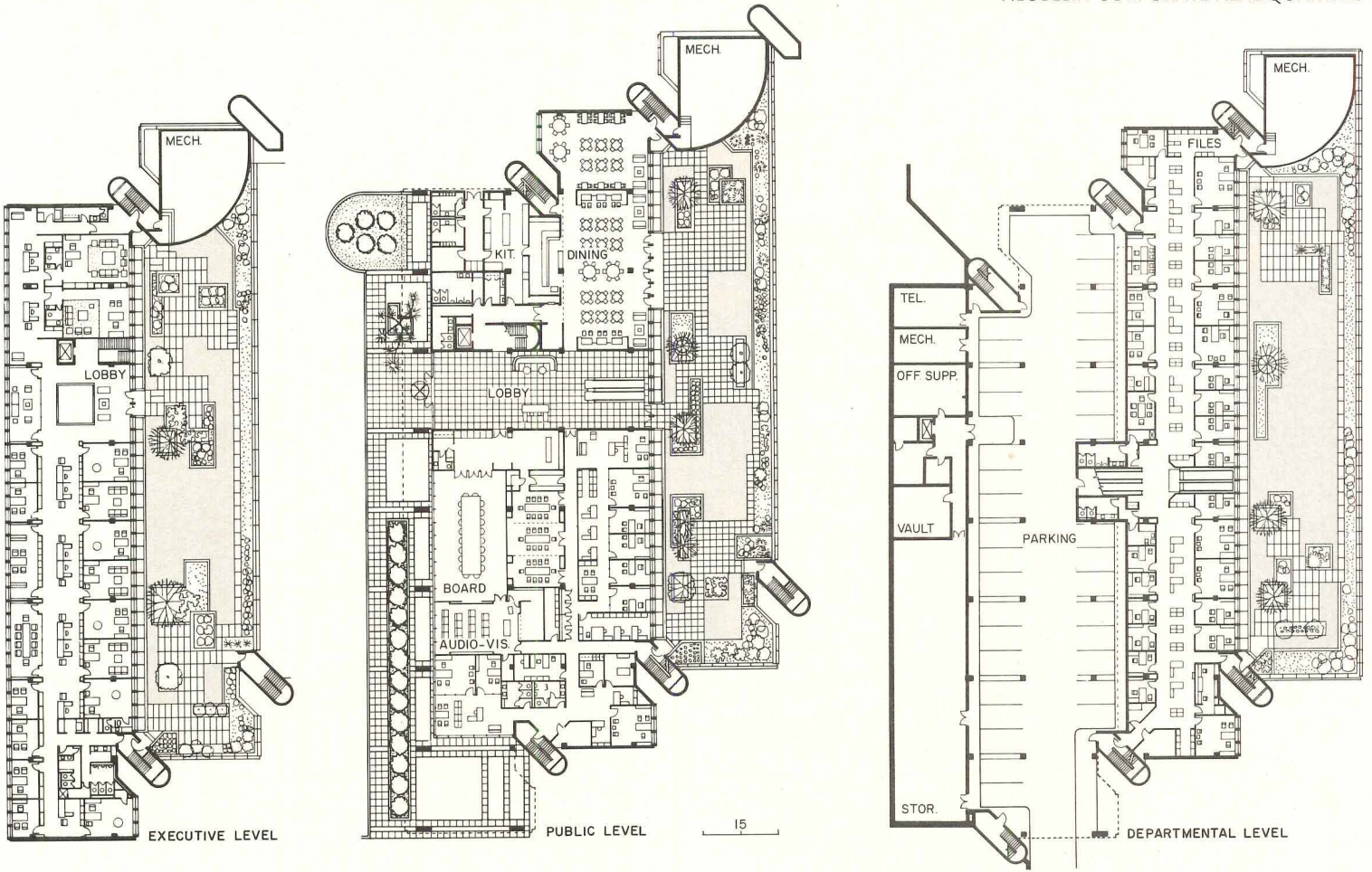
A stair-like-building form was determined after three other alternatives (including a thin tower) had been studied by architects, Russell Gibson von Dohlen. It provides an agreeable image of respect for the terrain by conforming to the natural contours, while asserting its presence by a decisive form. It has a sensible lack of visual conflict with the massive University Medical Center nearby. From the interior, it also provides eye-level views of the surrounding trees, while the projecting roofs screen the highway below.

The relation of floors has a number of interesting functional consequences. The segmented structure allows for non-disruptive expansion that is planned to continue in repetitive increments down the hillside. Covered parking (49,000 square feet) is distributed so that many workers walk directly from car to desk (see section). Vertical access is gained by a continuous line of escalators as elevators are functionally unfeasible (except between the upper two levels).

An integral part of the building's total amenity is the imaginative interior design by ISD Incorporated, which began at an early stage of over-all planning. ISD executive vice-president, Louis Beal, states that the first consideration was reinforcement of a visual relationship to the site; the means are found in the use of natural color, numerous plants and transparent partitions between windowed offices and interior spaces (initial resistance by the office occupants has quieted). A second consideration is apparent in the affluent character here which speaks far better than building size for the corporate image.

The structure is a steel frame, encased in concrete, and the exposed waffle-slab ceilings have a smooth finish. Incandescent and fluorescent lighting are combined for general illumination. Costs for a greater-than-normal foundation area are somewhat offset by reduced individual column loads.

HEUBLEIN CORPORATE HEADQUARTERS, Farmington, Connecticut. Owner: *Corporate Acres*. Architect: *Russell Gibson von Dohlen Inc.—partner-in-charge: Charles Bellingrath; project architect: Steven Turner; designer: Harry Russell*. Engineers: *Loomis and Loomis Inc.* (structural); *Donovan Hammick & Erlandson Associates Inc.* (mechanical/electrical). Consultants: *Ralph Gibson* (acoustics); *Sylvan Shemitz and Associates, Inc.* (lighting); *Currier Anderson and Geda, Inc.* (landscape); *ISD Incorporated—officer-in-charge: Louis Beal; chief designer: Joseph Rosen* (interior). Construction manager: *Lockwood Greene Engineers, Inc.*

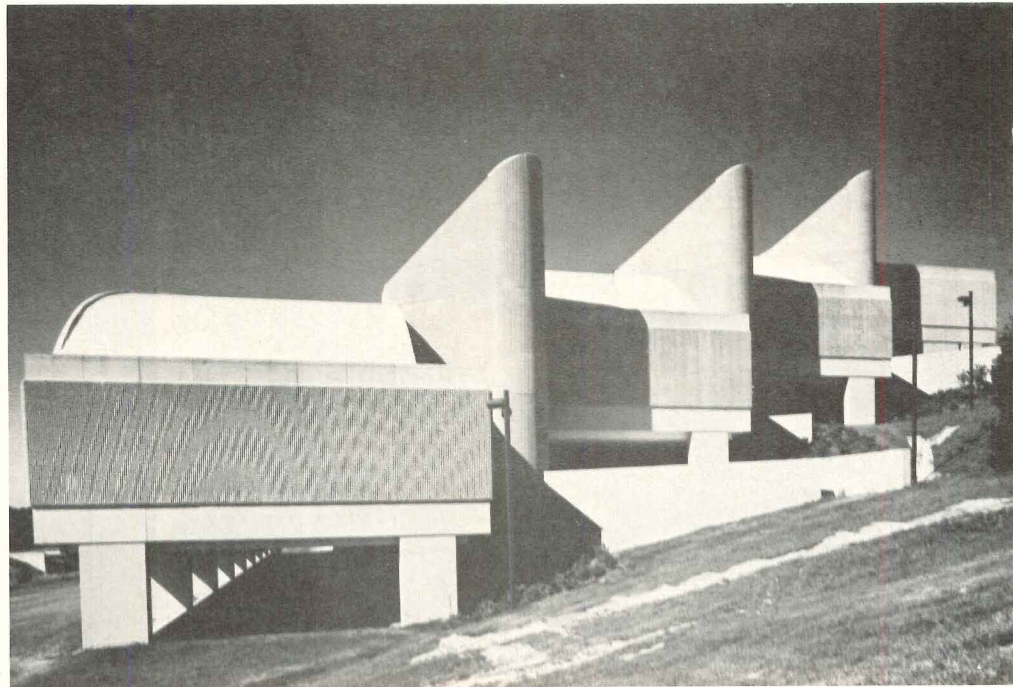
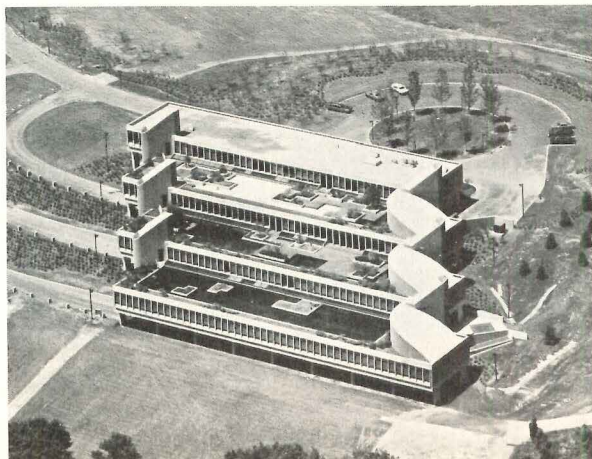
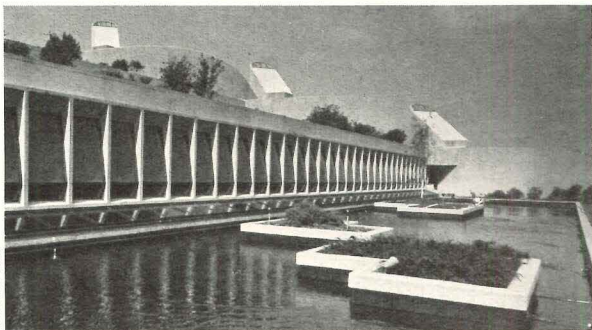


The stair-like relation of floors produces the ambiance of a one-story building on each rooftop garden (below), while presenting the impressive view (opposite) from the highway. Covered parking is reached by curving roads which follow the hillside contours (bottom). The executive level is the highest floor located above the public entrance level. The latter contains

the cafeteria and the large board of directors' meeting room, surrounded by ancillary audio-visual and entertainment facilities. Departmental levels are adjacent to parking areas; the first of these levels also contains a large central utility area. Mechanical equipment is contained in the angled-roof spaces of each floor. Exterior walls are poured-in-place and precast concrete.

SECTION

Robert Ficks



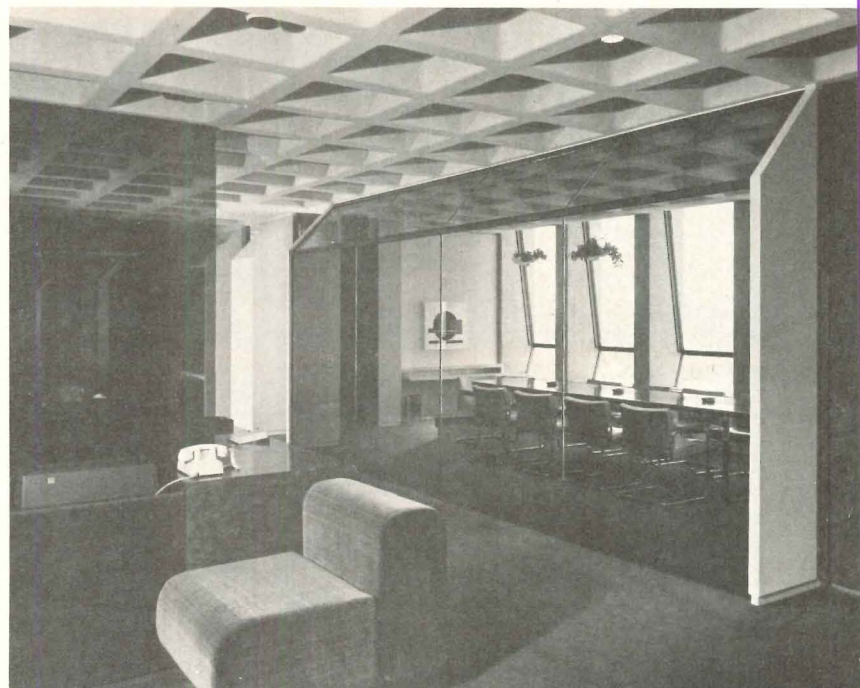
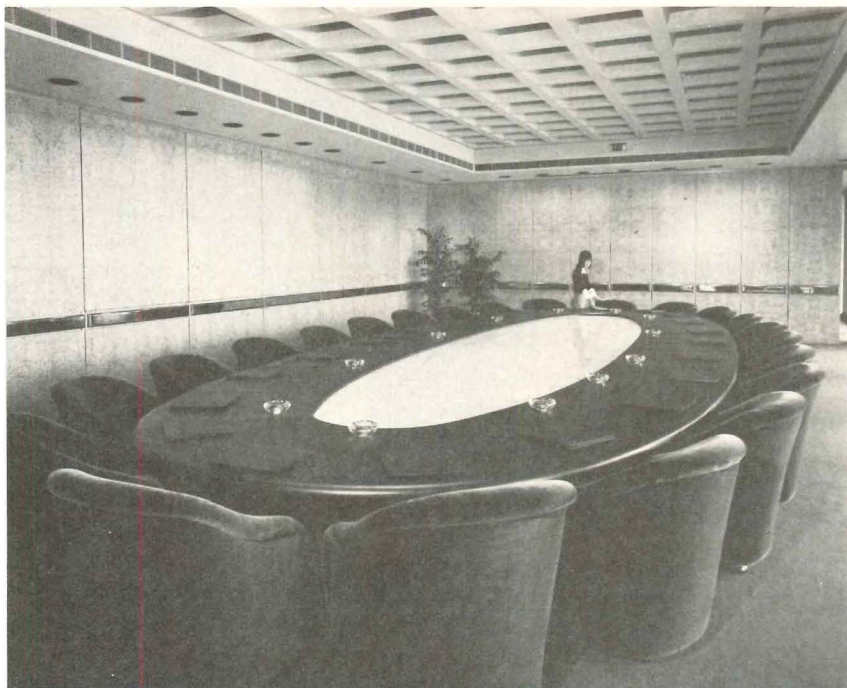


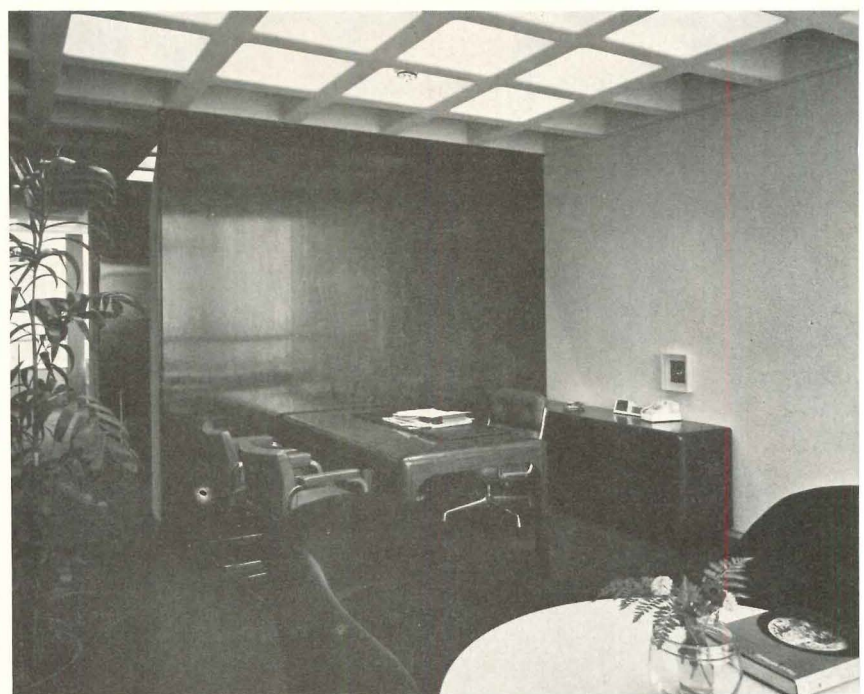
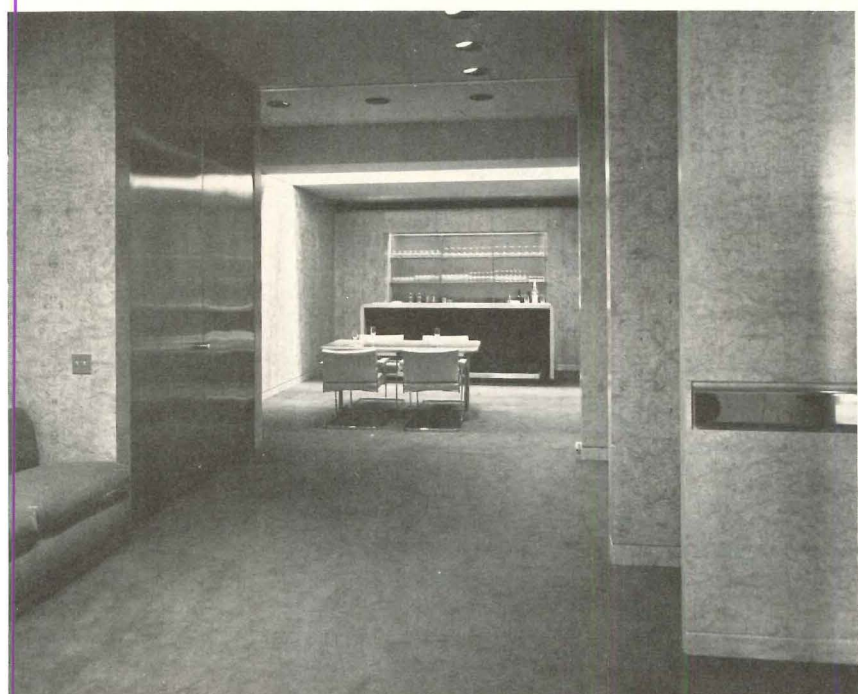
HEUBLEIN CORPORATE HEADQUARTERS

Charles N. Pratt

The main lobby (above, right) is entered under a ceiling opened to the executive floor above. An on-going art acquisition program will include a large sculpture for this location. Escalators to the lower levels and a distant view over a roof-top garden are straight ahead. On the executive floor (above) tinted glass partitions separate secretarial offices, and filing cabinets and duct enclosures, were designed to compliment angled window profiles (below) seen through glass partitions, which bring views to building interiors. The board of directors' meeting room has an ancillary entertainment facility panelled in burl oak. Exposed concrete ceilings contain recessed lighting for general illumination.

Charles N. Pratt



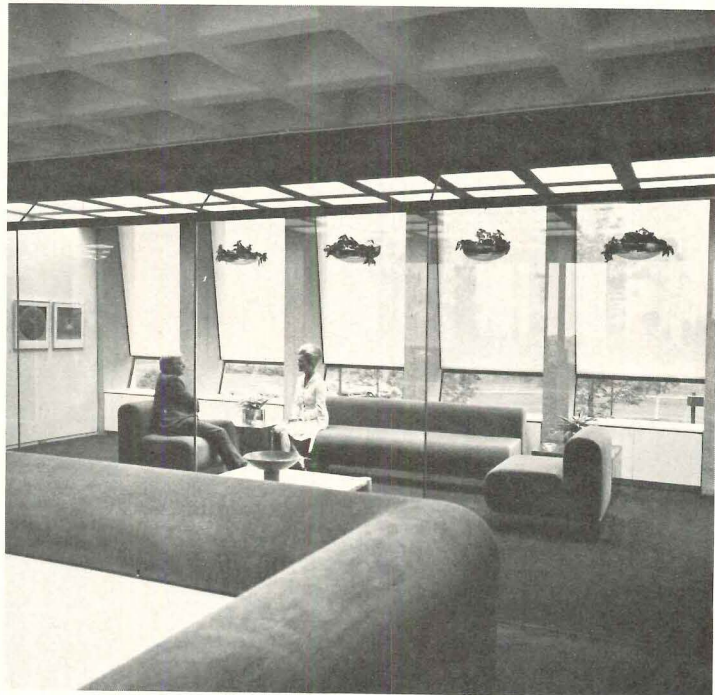




HEUBLEIN CORPORATE HEADQUARTERS

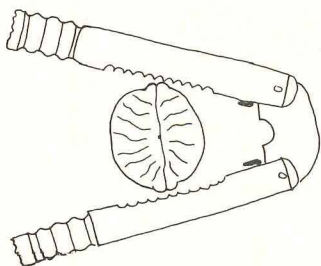
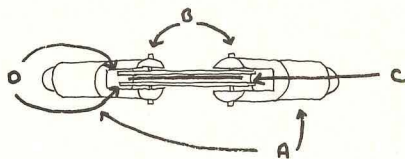
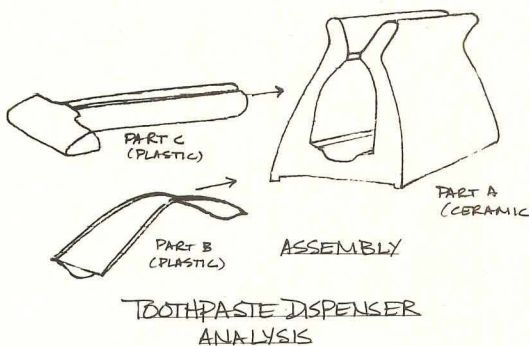
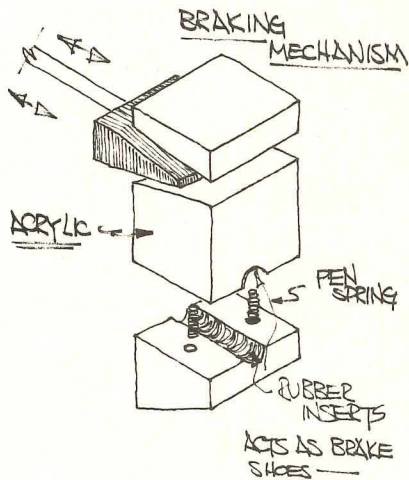
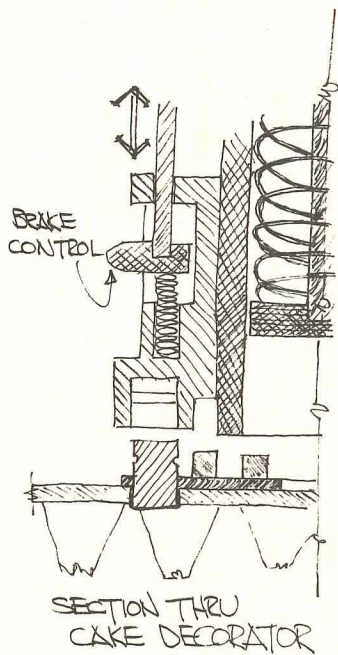
Charles N. Pratt

Office of chairman Stuart Watson (above) is designed to accommodate a low-level seating area for meetings. The cafeteria on the floor below contains brightly colored furniture and specially woven wall hangings. Window blinds were designed to operate in conformance to the angled profiles of the glazing. Plants in hanging containers will eventually trail down.



PEDAGOGICAL ANALOGY

or
How beginning students at Berkeley learn the principles of design by redesigning familiar household objects



"Environmental Design 3" at the University of California at Berkeley is a ten-week course being taught to students who are beginning their study of architecture, landscape architecture or design. The introductory problem, which takes three weeks, deals with devices and objects that in most cases are only tangentially related to the scale and kinds of materials the students will learn to manipulate later on in their education and in their careers. But by the analogy of small to large and humble to great, the redesign of familiar, handy tools reveals a clear and orderly process (or "methodology," to use the buzz-word) relevant to any design problem. The procedural realms here involve "analysis," "problem definition," "solution generation" (i.e., designing the new device), "solution implementation" (i.e., making it), "evaluation" and—last but not least—"presentation." The entire exercise is intended to demonstrate the perils of failure as well as the exhilaration of success, and, judging from some of the results shown on the following pages, it also seems capable of stimulating a lot of creative energy—as well as a few giggles.

Sam Davis, an architect who teaches the course, describes how it works: "First the students are asked to find a household object that performs some familiar function. Then they analyze the objects they've picked, giving careful consideration to two major relationships: that of the individual parts to the whole object, and of the object to the person who uses it. The analysis is done in drawings.

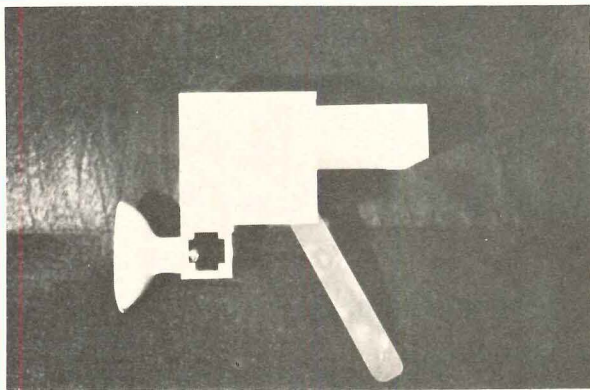
"The student must then write a new program for an object that will perform the function of the original, but avoid its disadvantages or inconveniences. The program has to be written in terms of *performance* specifications, avoiding all solution-oriented statements. This requirement is intended to help the student abstract form and function, and thereby to open up the problem to new ideas.

"At this point the student thinks that his program will be exchanged with another student who will design a new object from it. This deviousness on the instructor's part keeps the student from jumping the gun and designing the object first, then writing the new program. After all of the programs have been presented to the class and accepted, the students are told that they don't have to swap.

"Students can add new statements to their programs if they think they are necessary or desirable characteristics for the new object. These statements become the real determinants of form, and the new objects evolve from them.

"All this takes about a week. The second week is for the 'solution generation,' and the last week is for making a working prototype of the new object in the shop, and also for making a package for the object designed to promote its best features."

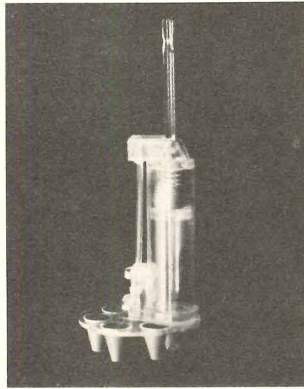
Some of the results of this design problem are shown on the following pages, with brief descriptions of the original object that was analyzed, the major program statements which determined the form of the new object, and the new object itself.—Gerald Allen



José Gutierrez

SOAP DISH

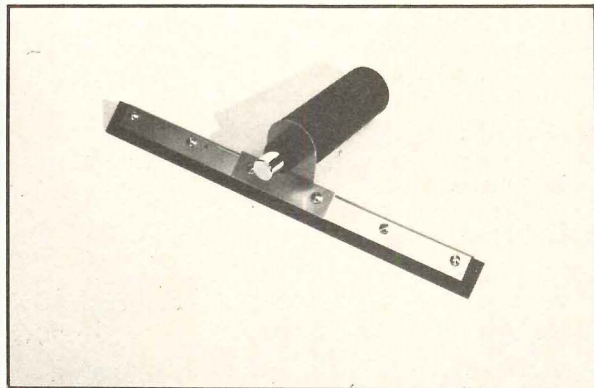
The *original object* was a molded plastic dish with spikes in the bottom to hold the soap.
 The *new program* called for a way to get soap into greasy hands without touching the dish and dirtying it.
 The *new device* is mounted on the wall with a suction cup, and it has a lever that can be operated by leaning against it and that opens a trap door. The surface on which the soap is sitting then disappears into a box, and the soap falls into the hand. Each time the door is opened it is cleaned of soap deposits.



Peter Braun

CAKE DECORATOR

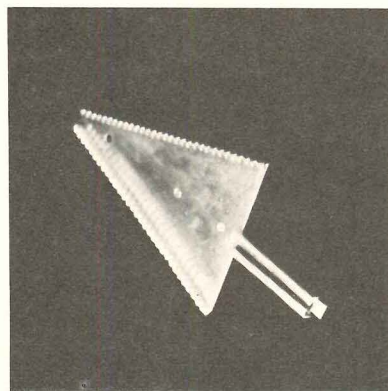
The *original object* was a metal piston-type decorator with screw-on tips.
 The *new program* called for an easier way of changing tips and also for a way of writing more accurately (to operate the original object you had to use two hands).
 The *new device* has a rotating disc with different tips attached, so that no removal is necessary. It also has a spring-loaded cylinder which is released by a finger so you can hold the decorator like a pencil, release the frosting and write—all with one hand.



Nestor Regino

WINDOW WASHER

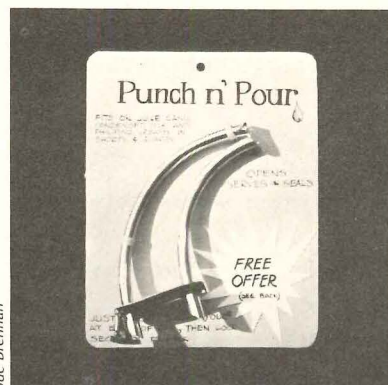
The *original object* was a simple window squeegee.
 The *new program* called for being able to dispense a cleaning liquid without bending over or using two hands.
 The *new device* is an atomizer (refillable) attached to a squeegee; the atomizer is also the handle.



Paul Chan

JAR TOP OPENER

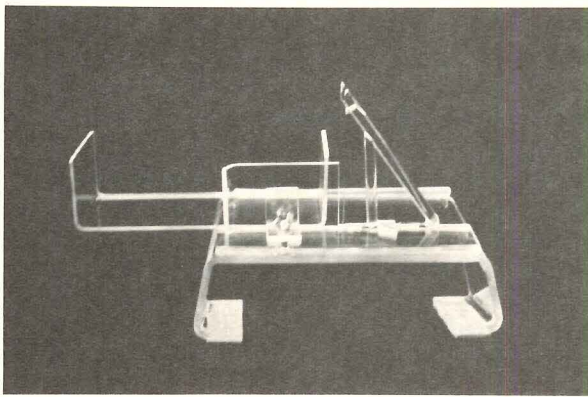
The *original object* was a two-part adjustable metal device.
 The *new program* called for the elimination of moving parts.
 The *new device* relies on geometry to adjust itself to different size jar tops and to hold the tops securely. Because of its shape and its serrated edge the opener holds more tightly as you apply pressure.



Sue Brennan

MILK CAN OPENER AND COVER

The *original object* was a round cap with two hollow spikes on the bottom. It punched holes in the top of a can and also sealed, but it only fit one size.
 The *new program* called for a top that would fit different size cans.
 The *new device* consists of two tubes in the form of a large handle; their ends are covered by a hinged cap that opens as you pour but closes in the upright position. At the base is a spring which is stretched over the can to tighten the pourer to any size.



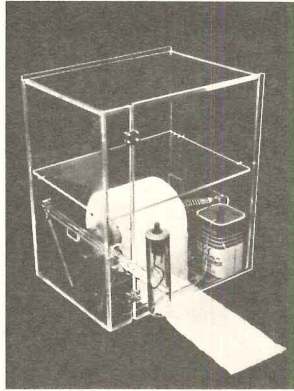
Al Ainsworth

CHEESE SLICER

The *original object* was a wire stretched between a handle shaped like a slingshot. The *new program* called for slicing and stacking in one motion and for variations in the thickness of slices.

The *new device* is like a table saw. There is an adjustable guide for different thicknesses and a sliding holder for the cheese.

The table is angled so that as the cheese slice clears the cutting wire it falls flat on top of the previous slice.



Neil Munn

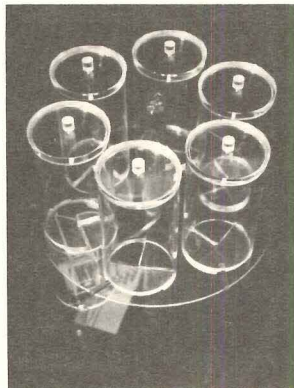
TOILET PAPER DISPENSER

The *original object* was a common ring-type dispenser.

The *new program* called for dispensing a measured amount and cutting it to avoid waste.

The *new device* which was meant to fit discreetly into a bathroom got to be huge. It is battery powered and operated by a button; when the button is released the desired amount of paper falls out of the container.

This and the following device illustrate the dangers of over-design, where esthetics, construction techniques and sheer exuberance get in the way of the program, which is ignored, or achieved only by excessive effort, thus making the cure worse than the disease.



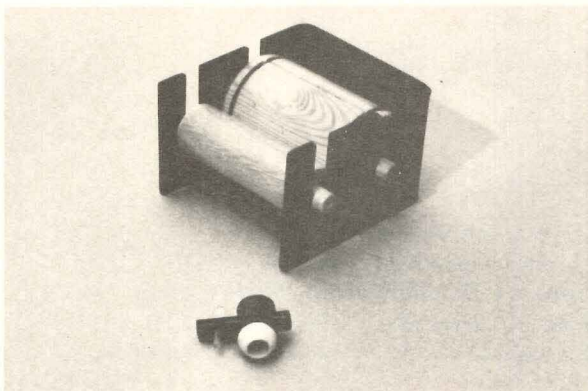
Randy Blackwood

NUT CHOPPER

The *original object* was made of two containers separated by a chopper; nuts were stored in the bottom container. For chopping the device was turned upside down, sending the nuts through the chopper and into the second container, which could then be opened to deposit the pieces of nuts on a cake.

The *new program* called for storage of several different kinds of nuts.

The *new device* works of the same principle as the original, but has a "lazy Susan" for additional containers. The problem is that a cake will not fit under it, so the chopped nuts must be loaded into another container before sprinkling.



Janis Takahashi

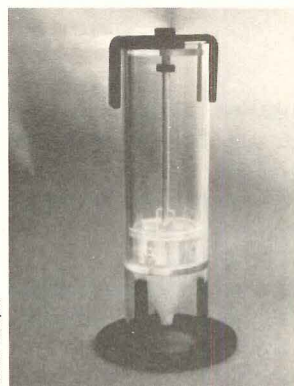
TOOTHPASTE DISPENSER

The *original object* was a ceramic device; you insert the end of the toothpaste and roll it up with a key, thus keeping it neat without wasting toothpaste. But you must use two hands.

The *new program* called for use with a single hand, so the brush could be held in the other hand.

The *new device* is a set of rollers, a plastic bracket for them, a weight (not shown) and a valve to replace the cap on the end of the toothpaste tube.

When you open the valve, the weight, which is attached to one roller, draws the tube between both rollers, producing pressure and pushing out the toothpaste. The device is mounted on the bathroom wall, and you need only put the brush under the valve and turn it on. The tube winds itself onto one roller as it is emptied.



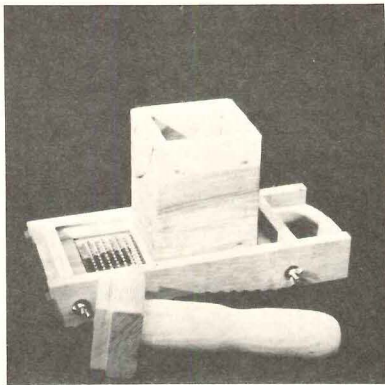
David Cooper

SUGAR DISPENSER

The *original object* was a common glass container.

The *new program* called for dispensing a tablespoon at a time with one hand.

The *new device* is a cylinder which empties into a number of tablespoon-size containers at its base; but it didn't meet the program, because it got too large to be held in one hand.

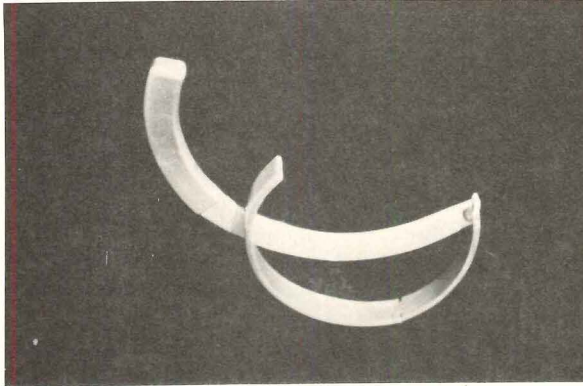


Dennis Anderson

CHEESE GRATER

The *original object* was a sheet of metal with grating holes in it; it was later incorporated into the new design.

The *new program* called for a way of attaching the grater to a bowl so that it wouldn't touch the food and also wouldn't risk grating the grater's knuckles. The *new device* is a wooden holder with a serrated bottom to fit snugly over different size bowls without slipping. The grate is mounted in the holder and can be replaced with different types. On top of the holder is a sliding box where you put in the cheese. A plunger with a handle fits inside the box to press down the cheese, and the handle is used to push the box back and forth.



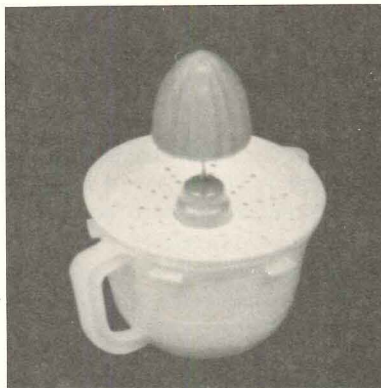
Robert Gornan

JAR TOP OPENER

The *original object* was the same as for the design on page 142.

The *new program* called for less effort and for self-adjustment.

The *new device*, like the version of page 142, relies on geometry, and it embodies the principle of an oil filter remover. The sliding metal strap conforms to the size of the top as it is tightened.



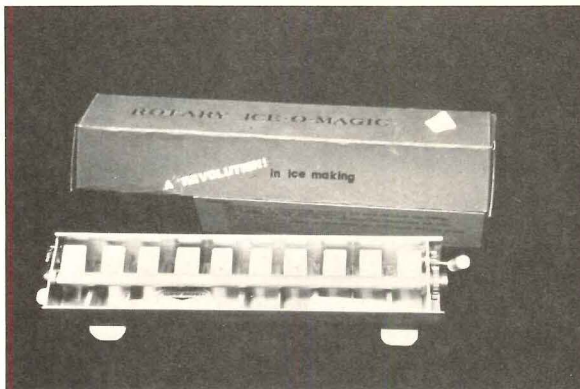
Wendy Price

JUICER

The *original object* was a single-piece, pressed-metal squeezer.

The *new program* called for less effort, a way for measuring and a way to allow for more or less pulp.

The *new device* uses a ratchet mechanism with an orange-shape top. When you press the orange down the force turns the top, and the juice flows through two perforated discs (to adjust the size of the holes) into a measuring cup.



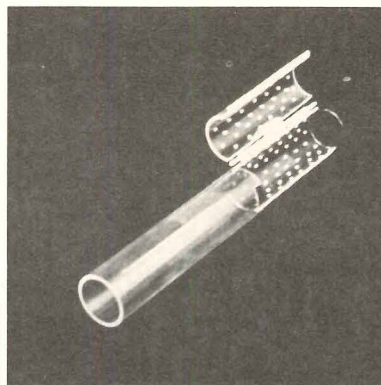
Dan Abrams

ICE TRAY

The *original object* was a common compartmented tray.

The *new program* called for a cleaner and simpler operation.

The *new device* has the ice inside a half-cylindrical tray. Above is a flap operated from the end of the tray by a lever which, when turned, slides the cubes out. The prototype is made of aluminum, but *teflon* or another non-stick surface would be preferable.



Lisa Reitzes

TEA STEEPER

The *original design* was a small metal acorn-shape object which hung from a chain inside the teapot. It had small holes for the liquid to circulate, and a screw top for filling.

The *new program* called for a way of making the tea more or less strong by stirring, and also for being able to see how strong the tea was without pouring it out.

The *new device* is a glass rod about ten inches long and an inch in diameter. The bottom has small holes, so when the rod is placed in the pot as a stirrer the tea flows into the water; when the rod is withdrawn you can see how strong the tea is.

CONVENTION HOTELS

An American hybrid in hotel design

It has been said that the Grand Hotel originated in this country in the nineteenth century, and not in Europe as commonly thought. Whether this is accurate or not, the Grand Hotel has attained perhaps its most grandiose, efficient and complex state in the American convention hotel, the predominate type of hotel being built here today, according to hotel architect Alan Lapidus.

The American expertise in this type of hotel design has even become an export item, with many U.S. architects being asked to work in Europe and elsewhere, to reproduce our marvel of efficiency.

Often a cornerstone in urban renewal concepts, the convention hotel is akin to the economic revitalization of many U.S. cities, which vie intensely for lucrative convention business, using the only bait that counts, space—bedrooms and millions of square feet of exhibit floor, etc.

The architects charged with pulling together the immense complexities and spaces of a convention hotel into a coherent, manageable, comfortable and gracious building have their work cut out. When it is done well, as in the Houston Hyatt Regency shown below, everyone profits.—C. E. H.



DEVELOPING A HOTEL: CLIENTS AND FINANCES HAVE CHANGED by William B. Tabler

In the 28 years he has practiced as principal in the firm that bears his name, William B. Tabler has been closely involved in the planning and design of over 150 hotels around the world, operated by major hotel corporations: Statler, Hilton, Inter-Continental, Stouffer, Sheraton, Sonesta, Americana and others. Because of his particular perspective on hotels, he has delivered three talks to students at the University of Massachusetts hotel school, the most recent being last December. The article here is an edited version of that talk, one that deals with a changing hotel client and changing financial climate for hotel development.—[Ed.]

To be sure, there has been some slowdown in the economy. But for any business, the telephone and mails are no substitute for face-to-face selling, face-to-face problem-solving—and businessmen are going to continue to criss-cross the country and need hotels to stay in. What's more, in today's business climate, more and more industry and trade group meetings are absolutely essential; and we see more and more hotels near airports and in the major convention or airport-hub cities built for this purpose.

Hotel companies do not build anymore; they manage

There is a pattern developing and that is the pattern of hotel companies—including the great old names—not to build hotels, but rather simply to manage hotels built by others. In most of the attractive resort areas in this country, the development of hotels is being handled by the real estate interests—people of firms like Laurence Rockefeller's; the Aga Khan, who has projects in Sardinia and North, West, and East Africa; Moshe Mayer, an Israeli entrepreneur; and Olin Corporation, which is planning a chain of lodges in East Africa. A similar pattern is developing in major commercial centers—except here hotels are being used as catalysts for commercial growth. For example, in Kansas City, Hallmark is developing a new industrial and commercial center (RECORD, October 1973) around their plant, and they built the hotel which is being operated for them by Western International. Similarly, the much-talked about Regency Hyatt in Atlanta was built by the architect as part of his downtown renewal program, and taken over by Hyatt fairly late in the game. One other example is the development of hotels as a catalyst to land sales in the area. Often a real estate developer with a large tract will build a hotel to make the land around it more valuable than it was before. If you look at Figure 1, this page, the breakdown of costs of a typical hotel, certain costs are fixed. One of the variable costs is the building itself, which means that the more the land costs, the more the developer is apt to cut from the cost of the building.

To get the business, architects must cut their own costs

Like hotel-keeping, architecture is being subjected to assaults from all sides, mostly because of costs. Many clients, including developers of hotels, are deeply concerned about the high cost of building.

Architects are trying and learning a variety of new techniques to reduce their costs and thus the fee they must charge; to remain competitive against foreign architects (who sometimes seem to be less costly, but who do not provide the same services; see Figure 2), and against the proliferating groups of designer-builders in the construction industry who try to persuade clients that they "can do it cheaper."

Don't misunderstand—I understand that we cannot return to the days of the Grand Hotels. But that does not mean we are doomed to mediocrity. We can build—within reasonable budgets—hotels that have style, that are appropriate to the cities in which they are located, that offer something special.

Conventionally, it takes a year to design a building of the scale of a hotel; but with experience and the efficiencies of computer drafting and spec writing we're able to get that time down to four months. (See Figure 3.)

Not every building can be designed that fast by every architect—but for our firm, experienced over many years in hotel design, that time frame is par for the course. With a construction time of one to two years, depending on the size and complexity of the project, we can get a hotel open for business in under two years from the decision to study the project. Initially, we prepare for a fee the mortgage package for the developer to take to banks and investors. It will take us one to two months to develop the package: program, schematics, memorandum specifications, cost estimate and rendering.

The point is that in any profession, architecture or hotel-keeping, you have to begin by making use of every labor- and cost-saving technique that's available. But most good architects use these efficiencies for what they are—tools of the trade; and do not mistake them for the end results of good architecture.

The financing of hotels is these days done pretty much by cut-and-dried formula

Within the tough-to-change economic parameters are some other facts of financial life that make it more difficult than it used to be to create a fine hotel. You don't need to be an experienced architect or developer to know that mortgage money is harder to get than ever. The conventional 60 per cent mortgage is a thing of the past. That was the old rule: if the hotel man put up 40 per cent of the hotel cost, the banks would lend the other 60 per cent.

Now that the hotel companies have stopped building, it is often the developer of the downtown renewal, or the land speculator,

Figure 1

	Underdeveloped areas	Developed areas	Overdeveloped areas
Land	1%	10%	20%
Site	5	1½	1
Building (construction)	60	50	40
Furniture, fixtures & equipment	15	15	15
Fees	5	5	5
Finance tax	10	10	10
Operating equipment	1	1½	2
Pre-opening	1	4	4
Inventory	1	1½	1½
Working capital	1	1½	1½
	100%	100%	100%

Figure 2

Fees	(European)	(Tabler)
Architectural	5-6%	5%
Structural	1-2	Incl.
Mechanical	2-2½	Incl.
Quantity surveyor	2-2½	
Total	10-13%	5%
Additional services		
Continuous field representative	1-1½%	1%
Project management	2-5	1

Figure 3

Mortgage package	1 to 2 months
Preliminaries	1 to 2 months
Working drawings	2 to 4 months
	TOTAL 4 to 8 months
Construction	1 to 2 years

Figure 4

Room cost:	\$1000 X room rate
Areas	Convention hotel area per room (450 sq ft BR + 250 sq ft Pub. & Serv. = 700 sq ft/Rm)
	Holiday Inn area per room (450 sq ft BR + 100 sq ft Pub. & Serv. = 550 sq ft/Rm.)
	Bedroom net area 50 per cent (225 sq ft of 450 sq ft)
	Banquet room net area (10 sq ft/person)
	Coffee shop net area (15 sq ft/person)
	Lounge-bar net area (20 sq ft/person)
	Dining room net area (20 sq ft/person)
Feasibility	Cost/sq ft X Rm/sq ft = Rm cost X 2 ÷ 1000 = Rm rate (example: \$200/sq ft X 70 sq ft = \$14,000 X 2 ÷ 1000 = \$28)

who comes up with the equity money—and with different kinds of strings attached than the old hotel operator, whose goal was a good hotel, not a successful land speculation. That's one piece of bad news. Another:

The bank that takes the mortgage, even at today's very high interest rates, wants a piece of the action. In other words, today's smart and aggressive bankers don't just want to loan money in return for interest payments. Having decided that a project will be very successful, they demand, in return for the loan of the money, participation in its success.

The variable mortgage rate is another nice deal for the banker, and not such a good deal for the hotel man. A variable mortgage rate is one in which the interest rate charged on the outstanding portion of the loan is allowed to change with the prevailing market rate. This sounds fair—but it would never work to the advantage of the hotel owner.

One new financing scheme that works is the condominium hotel. This is a relatively new technique, used by developers of housing projects as well as hotel developers. Essentially—and this, of course, drastically reduces both the equity money needed by the developer, and the mortgage—individual rooms in a hotel are sold each to a different owner. He has the use of the room when he wishes, and on other occasions it is rented by the hotel manager to transients.

This is most common in resort areas, but recently, this financing technique has been used to build hotels in convention cities. Here, the purchaser of rooms or suites may be a company that regularly makes a major presentation at trade shows in that city; or which needs a suite for visitors in its headquarters city; or needs a good address in major cities like New York or Chicago or Los Angeles.

What's needed in the financing of hotels is more imagination

One of the many problems of the hotel industry is that there are too few new ideas. The "wunderkind" of the hotel business these days is Trammell Crow, the young Texan who had the nerve to back a young Atlanta architect named John Portman who wanted to build a hotel with a 21-story atrium court—an idea which clearly was extravagant and inefficient and against all the rules of hotel development, except that it worked. Trammell Crow comes up with a new wrinkle per week; one of his newest is persuading cities that they need a hotel and should finance the hotel with municipal revenue bonds at low interest, much as states give industries free land and a big tax break if they locate their new plant in the state. He's also good at finding men with land and persuading them to put in the land as equity if he builds a hotel there, a cost advantage (no land cost) which puts him in a very favorable position to profit from a new hotel.

The reason we need new imagination, new leadership, new concepts is that the only thing that has allowed the industry to keep going under the old ideas is inflation. As I mentioned earlier, construction costs are going up at a rate far in excess of general cost increases; one per cent per month is not uncommon. (For a breakdown of current costs and workable space allocations, see Figure 4.) The rate of inflation has been helping hotel construction. By the time a hotel is complete and ready for occupancy, room rates that would have been too steep at groundbreaking time have become reasonable. When John Portman's 2000-room Times Square hotel opens, rooms will probably rent for \$70 a night. It sounds unreasonable, but it may not be in three or four years.

Room rates may be \$100 per day by 1980

There have been estimates that hotel room rates will double by 1980. And this estimate is made by one of the brightest men in the field, Stephen W. Brener of Helmsley-Spear, the New York City-based realtor. Mr. Brener feels we have reached the end of the line in using inflation to get convention hotels built. In fact, he sees a complete halt in construction of this building type, unless new financing means, coupled with supportive tax measures, are developed soon. Instead, Mr. Brener predicts more non-convention, luxury hotels will be built, with room rates probably reaching \$100 per day by the 1980's. Personal incomes may have gone up some, but surely they will not have doubled. This means that to attract people, we will have to offer something better. And that something better begins with good design.

One example is the Century Plaza Hotel (RECORD, August 1966) in Los Angeles designed by Minoru Yamasaki. The handsome garden behind this hotel forms its own environment, a quiet spot in the center of a rapidly developing area, and creates a view for half the rooms in the hotel.

Now this is not to say that special gardens or multi-story atriums are an essential part of the environment of the hotel of the future. Two or three hotels with atriums have a special appeal; when there are 200 of them an atrium will be nothing special. What we need are more fresh ideas for hotel environments. Unfortunately, developers may be reluctant to invest in extraordinary design as costs soar. Several developers of one lovely new hotel have recently suffered severe losses on it.

Where else do we begin when we try to do something better? Oddly enough, another hope is energy conservation. It's pretty hard to find anything good about the energy and fuel shortages with which we all have just begun to struggle. But many architects see in the energy problems that face us some better opportunities for design, for the reason that we think

the energy crisis will make clear to many clients some basic engineering and cost analysis ideas which we have understood for some time.

We have, in recent years, forgotten some old truths of designing buildings: sun shading; siting of buildings so that the solar load is minimized. A typical rectangular hotel consumes perhaps a third more energy in air conditioning costs if its windows face east and west than it would with a north-south orientation. We've been saving too much money in our equipment and materials—because owners predictably (and this is notably true of hotel developers) keep pressing for lower, lower, lower first costs. As a result, our engineers have been pressed to specify lower-quality (and therefore cheaper) air conditioners, clear (and cheaper) glass where heat-absorbent or reflective glass should be used to cut solar load. We've been forced, by owner pressure, to skimp on insulation, and on sun shading (perhaps in the form of fins, or deep insets of the window).

The new factor—the new hope I see that from this present crisis may come better hotels—is life-cycle costing. It does cost more in first costs to use better glass, more efficient mechanical systems, to add as a design element some form of sun shading. But in the interests of conservation and because fuel and electric power are clearly going to become much more expensive very quickly, the whole cost equation of lower first costs vs. lower operating costs is changing.

Closely related is the question of appropriateness of a hotel to its city. The Plaza in New York with its 19th century ornateness, its plaza out front, its views of Central Park, seems somehow just right for New York.

Hotels like that do something that few new hotels do. These hotels reinforce the uniqueness of the city where they are. San Francisco is a city of not just great physical beauty, but of great spaces: in the Palace Hotel's Garden Court, the rotunda of City Hall, the crystalline lobby of the Crown Zellerbach building, and the court of the old City of Paris store. The 17-story lobby of the new Hyatt Regency San Francisco, by John Portman, is therefore in a tradition of great spaces, as RECORD editor Betty Thompson said in the September 1973 issue, page 145. These are great people spaces.

Let me repeat a phrase I used earlier: I think that—at a time when more and more hotels (like more and more aspects of our life) are becoming standardized—we need more and more hotels that reinforce the character of the city in which they are built.

That takes good architects, and it takes good clients; clients who honor the character of the place where they want to build. Must our highest goal be the lowest common denominator? We must bring the hotel industry back from dullness and sameness.

thumb is to tighten the service circulation. Eliminate long passages; wandering employees are an inefficiency.

In Atlanta, we have designed something special for room service because it is a big convention hotel; in convention hotels, you are going to get a big run on room service. So we developed what we call a flying kitchen; the idea was taken from an airline galley. In this case, we put the galley in a large elevator. There is no limit to the elevator size you can build; hoisting machinery is basically the same. To make a bigger cab and shaft adds practically no extra expense. Of course, elevators are always trailing their cables so you can put anything in the cab; we are installing warming ovens and chillers.

We have a standard airline type menu for breakfast, lunch and dinner. When room service gets the call, it is transmitted to an auto-writer terminal in the elevator. A constantly revolving crew of waiters can deliver the order within ten minutes to any room.

Know what employees are doing, where and when

Depending on the class of service provided, figure on approximately one and a quarter to one and a half employees per guest room, including one maid for every 13-14 rooms. When you plan, you have to not only know how many employees the hotel will use but when they're doing what they do. Maids are trooping in the morning and should be through

by mid-afternoon. The majority of dining room staff come on at night.

When a hotel starts to get sizable, remember the number of service elevators and what they are used for. There is usually heavy use for room service first thing in the morning. The maids also want to use the elevators in the morning. Part of the problem can be solved by having the maids charge their room carts the night before (each maid has her own cart). Therefore a service room on each floor capable of taking one cart for each 13 rooms should be provided for night storage.

The carts could also be brought down at night when the service elevators are empty, brought to housekeeping and charged. If carts are charged in the basement laundry and kept there overnight, you need a bigger holding area in the laundry and less on each floor.

Regardless, the carts must be left under absolute security or the towels and sheets will walk away. So if the cart room is on each floor, it has to be locked independent of the service elevator. You also need linen and trash chutes in the service area on each floor.

We recommend using one passenger elevator for service in the morning. This is a key-operated elevator with a two-way door that can connect to the service area; in the morning when there is a heavy run on room service generally there is not a run on passenger elevator service.

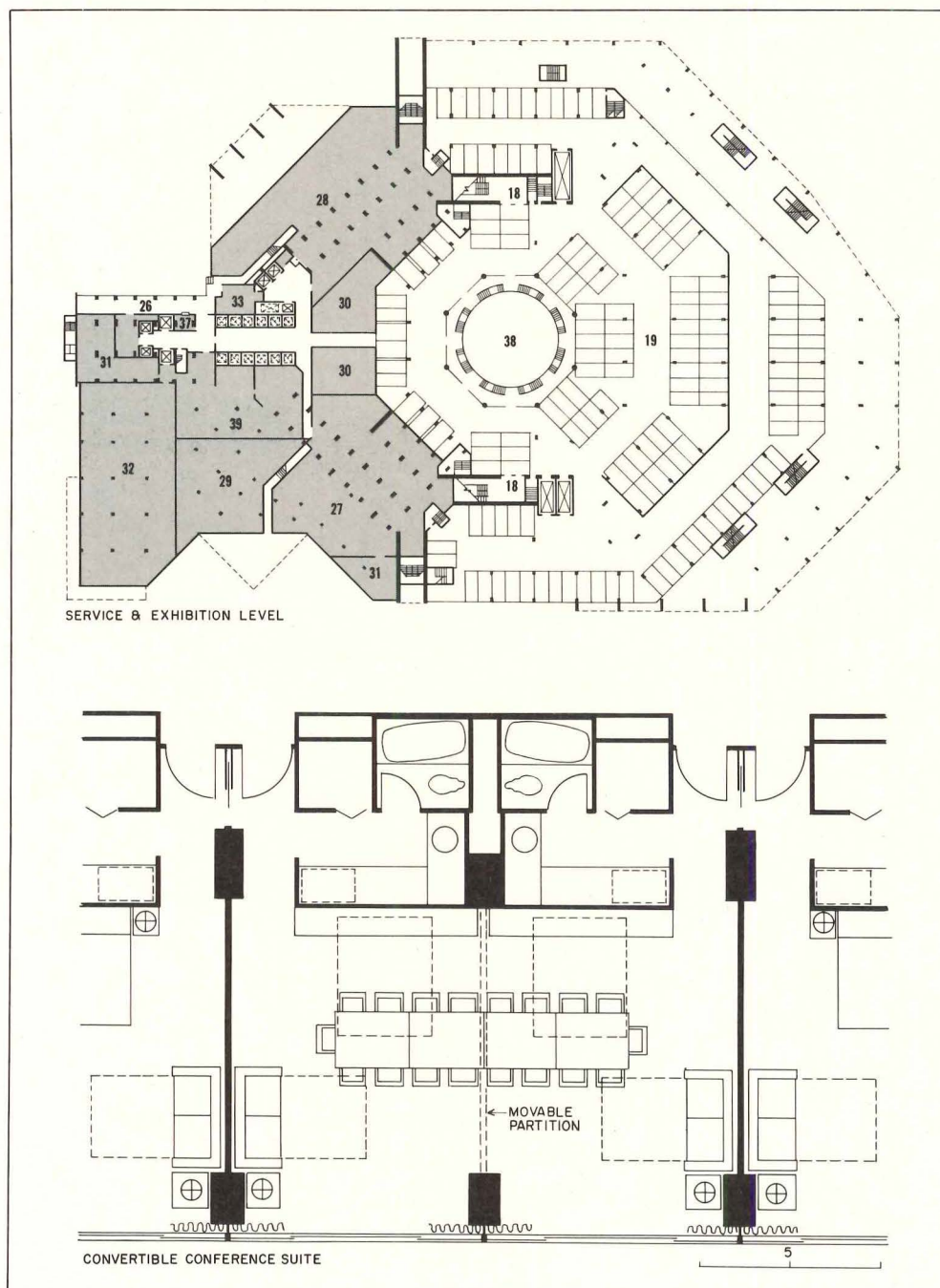
Parking space can do double-duty if planned well

We took a portion of the parking garage in Atlanta, and applied electrical juncture boxes on the columns; we also ran lines for hot and cold water to fan coil units with cut-off valves so they will not run off the plant normally. When an exhibition space is needed, the hotel will paint the space, turn the valves so the fan coil units provide heating and air conditioning, and plug in spot lights. On that level are the loading docks, so heavy equipment can be brought right to the exhibit floor, through folding walls near the elevators.

Plan the rooms for business meetings

There is an enormous need for conference space in convention hotels. For the Phoenix of Atlanta, we found a way to provide the conference space, without sacrificing bedrooms.

On the second floor only, we paired rooms making the common wall a sliding partition (see plan); thus, we have ten conference suites, 18 by 27 ft 6 in. On the wall where we would normally place the double bed, we will install an updated version of the old pull-down bed, in a handsome paneled wall unit. With the bed stored and the partition open, the hotel can rent the room during the day for meetings. Extra storage is provided on this floor for chairs and conference tables.



Make the most of ceremonial spaces, less of the rooms

When we do a hotel, we first separate the ceremonial spaces from the rest and concentrate on these. In other words, a room is a room. We try to make it as good, efficient and comfortable as possible, but I consider it idiocy to spend money on the rooms. Anything spent on the rooms is a repeat cost, so if you have 400 rooms and use a \$100 detail in each, you have—for even a little hotel—a big extra expense you don't need.

In the Charleston project, we did not have the money for the kind of multi-story ceremonial lobby used in Atlanta, and we had only 400 rooms, so we took another ceremonial space: the cocktail lounge-restaurant. People

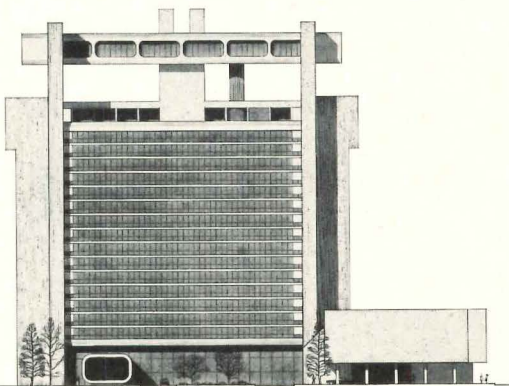
can see this landmark all over the city of Charleston. It is visible; we wanted to pull that out and say this is "special." It is held aloft by the stair towers and mechanical tower, and connected to the top floor of the hotel by a glass elevator. It's a \$200,000 premium we're spending, not very much divided by 400.

The cost is tremendous to put in a separate kitchen and restaurant such as this. It has to be very successful—if they're successful they work. When I designed the restaurant, I also designed the menu. I have to know exactly what will be served there, because that determines the kitchen. When I showed this to the client, I said it was going to be a broiling kitchen. There are no huge steam kettles, tremendous ovens, or extensive ranges. There is

one line of broilers, so the restaurant will serve steaks, chops, lobster tails; with a radar range, fowl can be offered. Vegetables and basic soups that are prepared downstairs can be brought up and held.

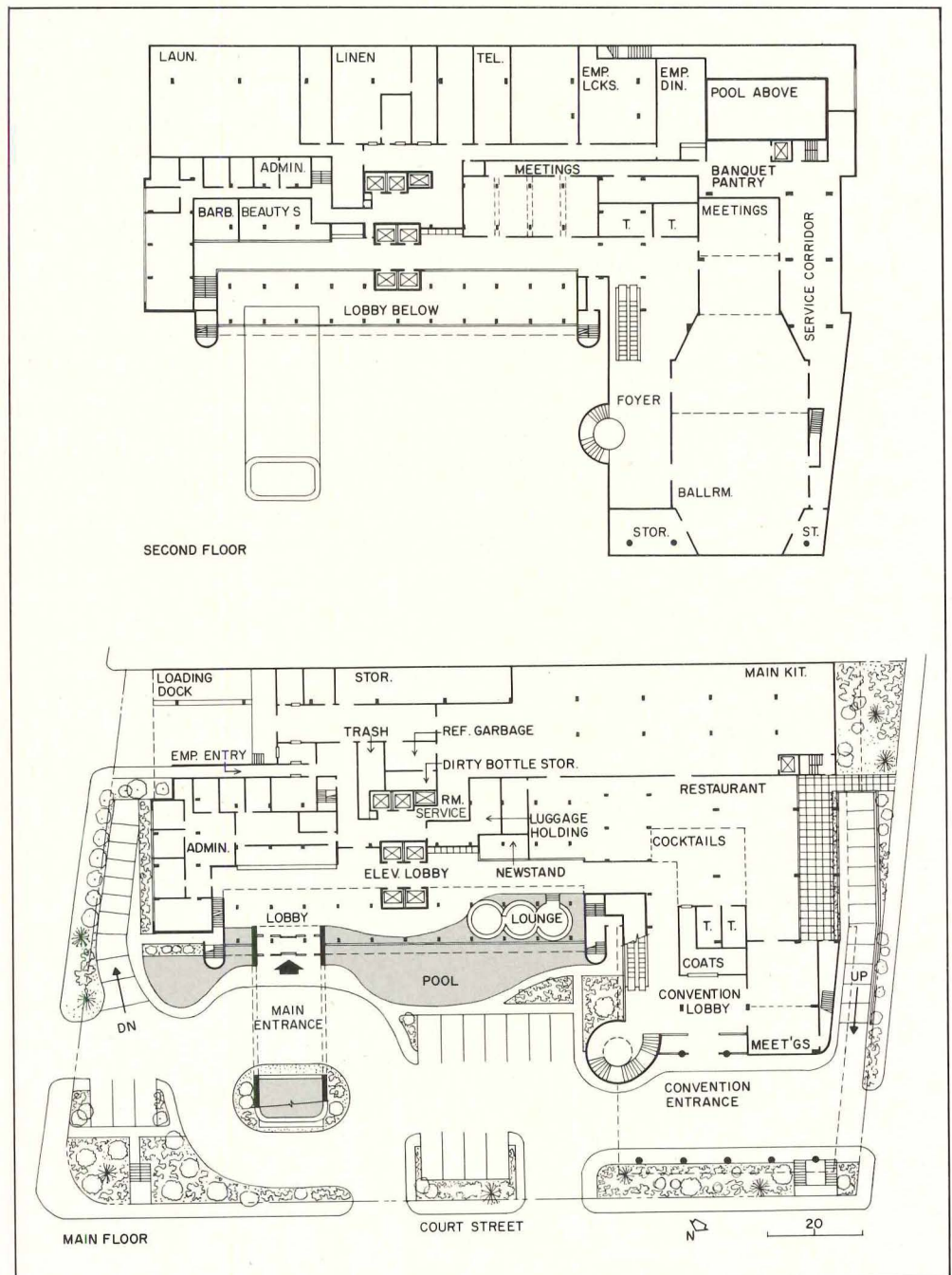
But as I said, there is a cost for remoting a separate kitchen and dishwashing operation. The client cannot have an inexpensive restaurant on top. What usually pays for it is the liquor. The hotel will probably break even on the food, even with outrageous prices, but everyone will go to a restaurant like this for a drink, and liquor is the high profit item.

The guests will be a certain captive trade within the hotel, but if the developer can also have some kind of magnet to attract outsiders, he can make back his investment.



Traffic well-defined in small convention hotel

This small convention hotel proposed for Charleston, West Virginia is part of a major downtown renewal project, as are many new convention hotels being built today. As the plans at the right show, vehicular traffic for the hotel and convention businesses is separated, but interconnected. Inside, service circulation is tight, and designed—as all hotels should be—so that staff never cross public spaces in the performance of their duties. In the Charleston hotel, there is a straight line from receiving, with no other way out of the kitchen for employees and goods, than what is intended. Security and efficiency cannot be overemphasized in planning a hotel. Note the large service hall outside the convention hall. The size is sufficient to accommodate large rolling electric carts used during banquets. Dishes prepared in the main kitchen on the floor below are placed in the carts, which are plugged in near the ballroom doors for easy access by waiters.



HOUSTON'S HYATT REGENCY: COHERENT EXPRESSION OF MULTI-USE SPACE

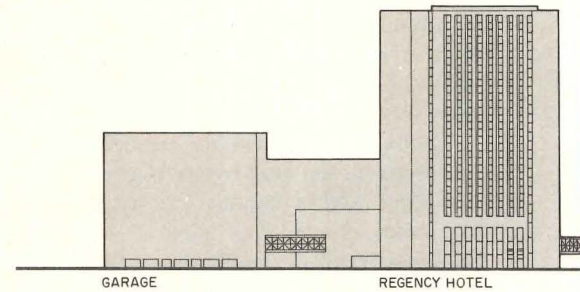
Located in the heart of Houston's business district, the 30-story, 1,020-room Hyatt Regency Hotel can be justly credited with enhancing the city's flourishing convention business.

Developed by a joint venture client, the hotel was also designed by a joint venture: JVIII, consisting of three firms: Koetter Tharp & Cowell; Caudill Rowlett Scott; and Neuhaus & Taylor. The client consists of The Houston National Company, a subsidiary of Tenneco Realty, Incorporated, and the PIC Realty Corporation, a subsidiary of The Prudential Life Insurance Company. Together, these joint ventures are responsible for a complex including the Hyatt hotel, a 15-story public parking garage and a 47-story office building (below, extreme left) known as 1100 Milam. Linked on three

levels, the buildings are related in color—a bronze tone—to the near-by Tenneco building; the complex is in this way further distinguished from the rest of the light-colored downtown buildings such as One Shell Plaza (SOM) shown extreme right, page 153.

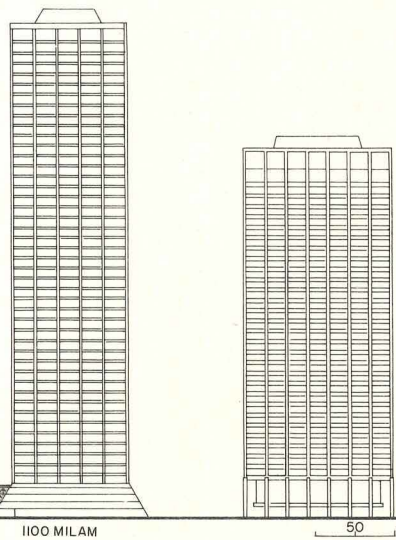
There is also a functional connection between the buildings in that the parking garage accommodates central mechanical services in its penthouse, providing the entire complex with hot and chilled water. This realized some economies, and speeded construction.

With a second-stage office tower planned, it is clear that the hotel—at the convergence of major circulation patterns—is the prominent service center, as well as the most likely oasis, for a growing business community.

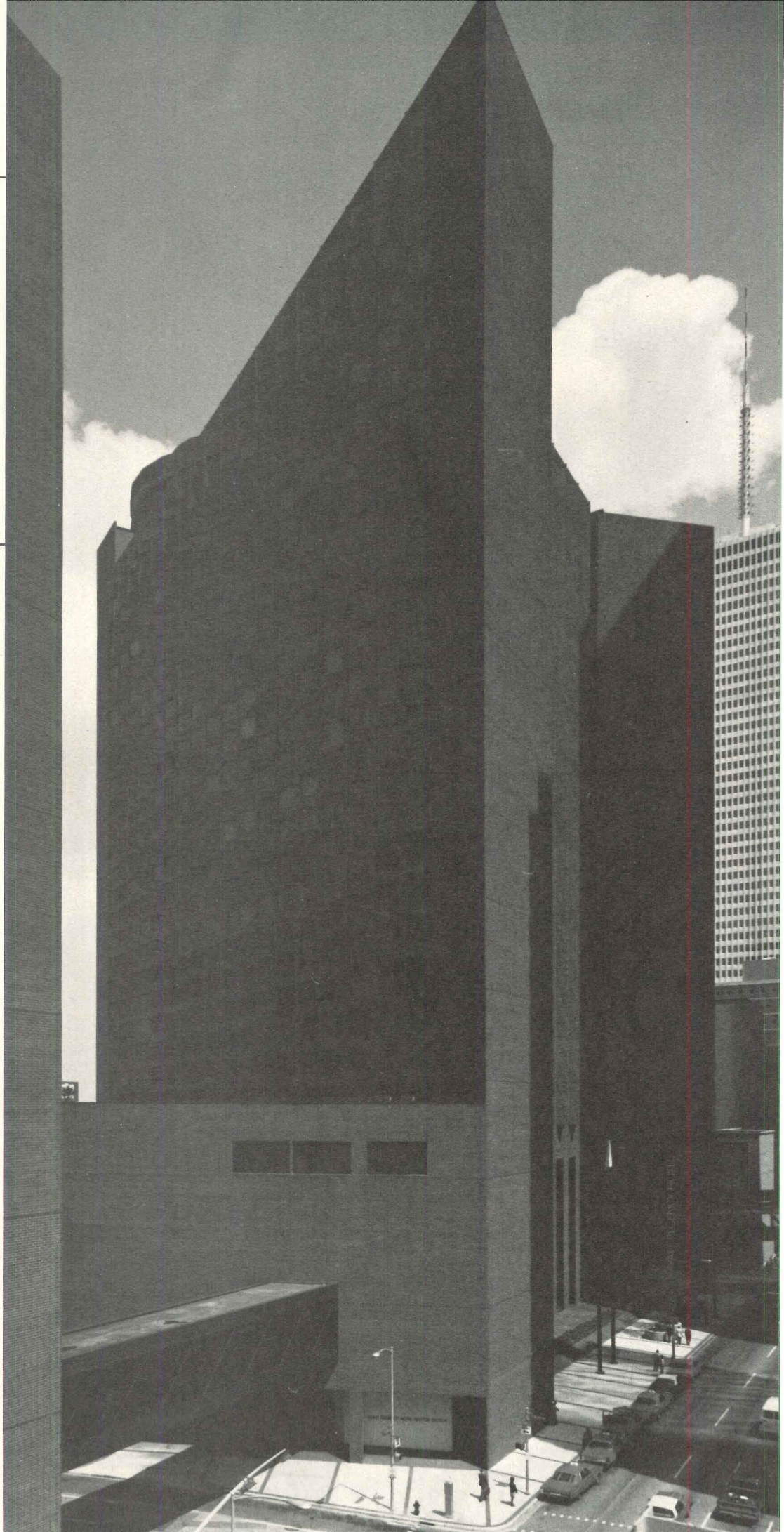
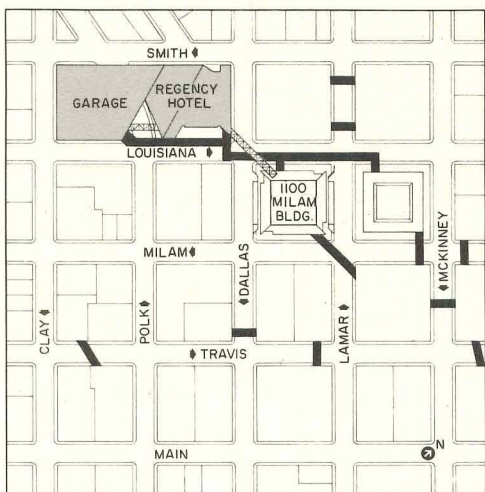


Julius Shulman





Reinforcing the relationship between the hotel and its business neighbors is its connection physically by underground and overhead linkages in the downtown center. A tunnel already existed between the Tenneco building and the hotel site; it was later extended to the garage. The skywalk system (one level above grade) reflects a decision of the building owners to protect people from weather without forcing them into burrows beneath the ground. The bridges also have the advantage of being about half the price of tunnel construction. The strong three-way interlacing of buildings exposes them to every form of traffic, an important factor in their commercial success. The buildings thus are related by circulation routes and by colors and materials. The brick paving of the hotel lobby floor is taken up by inlaid brick strips to break up the concrete surface of the parking garage. The office building's ground floor will be paved in the same brick.





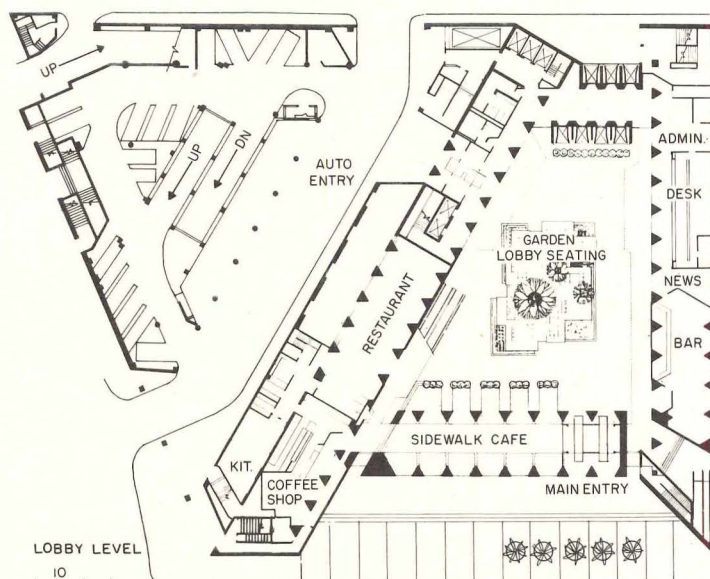
In a city where cars prevail and outdoor spaces are bland and even hostile because of climate conditions, the soaring, light, 30-story atrium of the Houston Hyatt Regency is more than a trademark; it is a much needed amenity, more so than in a city such as San Francisco, where one almost reluctantly leaves the outdoors for the handsome, but artificial environment of the San Francisco Hyatt Regency (RECORD, September 1973, page 145).

In contrast to downtown Houston, this hotel's park-like lobby attracts; it contains trees up to 40 feet high, and colorful flowers border a conversation pit recessed 18 inches into the main floor. Seating arrangements for groups or people alone are supported on teakwood decking. Natural light is admitted through two

skylights (photo, below right), and through a 55-foot high clear glass wall running between the columns on the main entrance side of the building (extreme left).

The triangular floor plan (below) with elevators at the apex shows how pedestrian and vehicular traffic is separated, with pedestrian access oriented to the office structures. Auto traffic to the hotel can discharge passengers and proceed either on its way or to the garage where parking is provided for 2700 cars. Below grade parking is provided for another 300 cars.

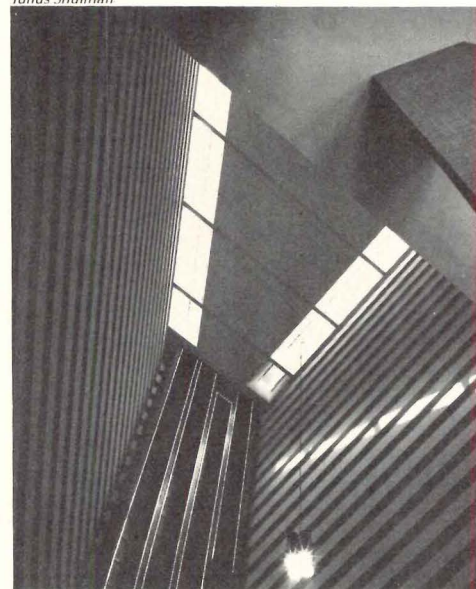
The elevator lobby is served by two lines of glass-sided cabs, four overlooking the atrium and three providing views of the city. Shafts are lined with rows of clear lamps.



Alexandre Georges



Julius Shulman



Alexandre Georges

Served by two glass elevators with views outside the building, the "Spindletop" revolving cocktail lounge (photo and plan, below top) does offer an excellent view of the city, unhampered by buildings too close at hand. Subdued lighting and deep hues were selected to enhance the nighttime view of Houston. Meals are not offered here, but a small kitchen is available for sandwich preparation. Restrooms, reached by stairs, are located one level below.

In contrast to the low-keyed intimacy of the rooftop lounge is the 30,000-sq-ft ballroom (bottom photo) on the third level (plan). Reached by escalators from the ground floor, it will accommodate 2000 persons. The setting can only be described as electric, with red

plush walls and carpeting combining with a ceiling treatment of projecting sonotubes electrostatically sprayed with red fuzz to give a velvet-like appearance.

Movable walls can divide the space into three smaller rooms for minor functions, and a staging kitchen is provided adjacent to the ballroom, and just above the banquet portion of the main kitchen.

Available for closed-circuit television or stage productions, the ballroom can also supplement the hotel's 30,000-sq-ft exhibit space converted from the below-grade parking garage. Displays brought to the ballroom are conveyed in a 24-ft-long freight elevator opening directly to a large service corridor on the perimeter of the main room. The elevator will

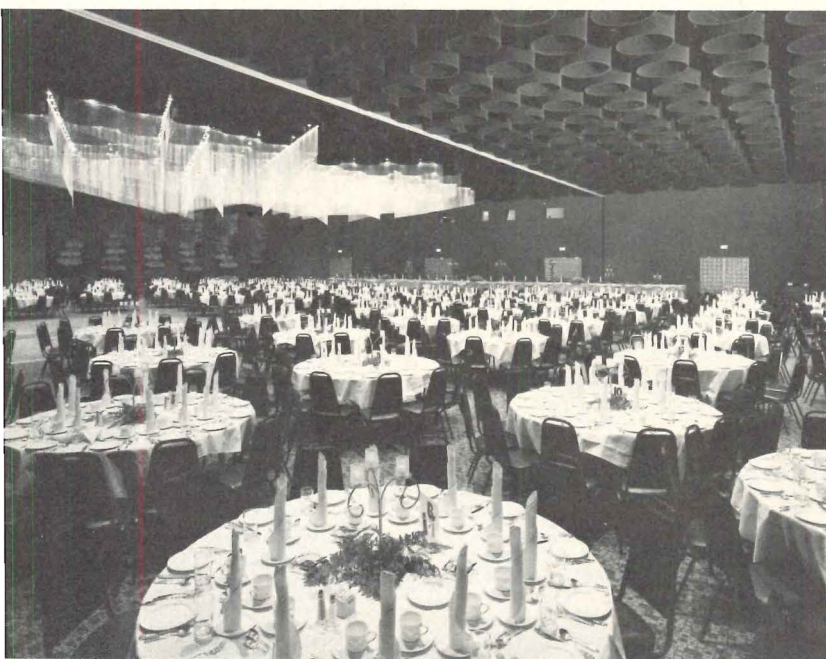
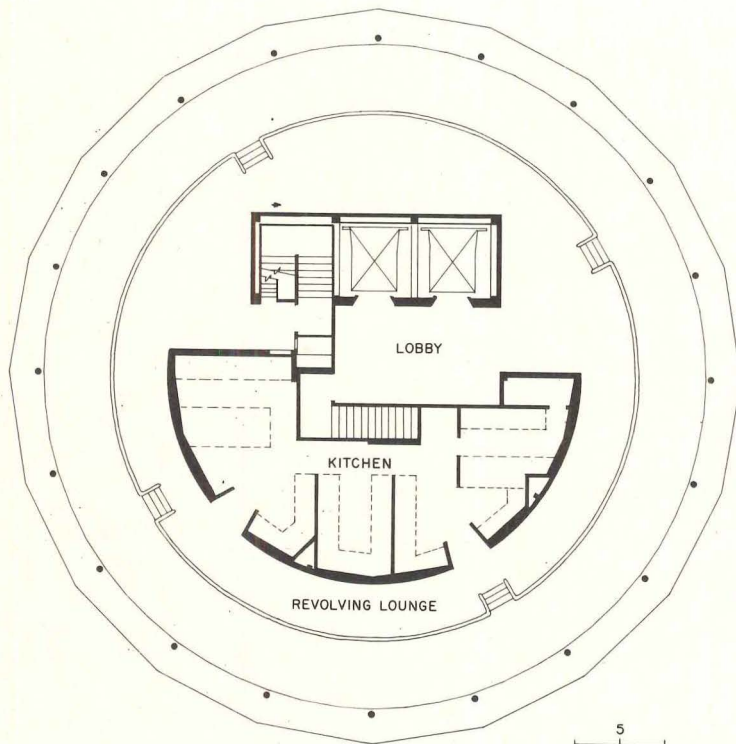
accommodate panel trucks and hearses, common exhibits for the auto shows booked into the hotel. The architects say that without this exhibit potential, the hotel would have to turn down many of the large shows that come to Houston.

Numerous meeting rooms, essential to convention hotels, are provided on levels three and four, with the area on the fourth level surrounding the ballroom devoted to the management office requirements.

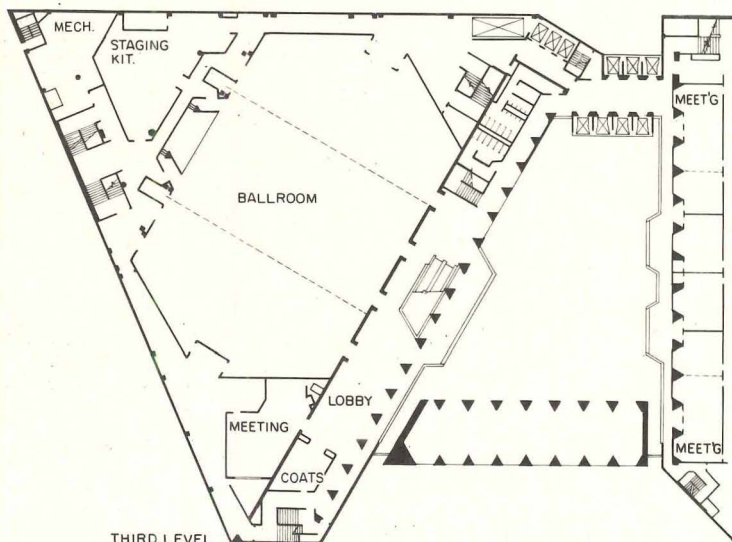
Among the many restaurants in the hotel is the ground floor sidewalk cafe (color photo, right), defined by pairs of bricked triangular columns along the main entrance elevation (see extreme left photo on page 154). Overlooking the street, the cafe opens into the



Alexandre Georges



Alexandre Georges



atrium with projecting fingers (photo right); it is recessed to the 18-inch level of the atrium's conversation area, reinforcing its kinship to the "park." Trees filter the morning sun in the restaurant, which is furnished in butcher block tables set with brightly colored service.

The interiors of this hotel are integral to the building concept, according to Charles Lawrence of CRS and Marc Tucker of Neuhaus + Taylor, who said, "we agreed early in the design process that the interiors should be an extension of the building design."

This is the first Hyatt Regency Hotel to be totally designed by one group. JVIII had responsibility for all interiors, including the guest rooms, which seem to be rarely within the province of hotel architects.



Julius Shulman photos



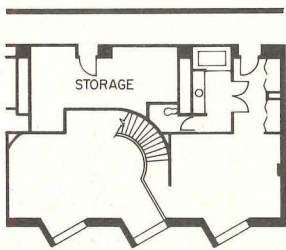
Since many informal meetings take place in a convention hotel's guest rooms, advantage has been taken in this hotel of angled window bays to create seating groups facing away from the hottest rays of the sun. Guest rooms begin at the sixth level, with the typical layout shown below in the plan.

At this particular floor, rooms on one side of the building open to a wide terrace containing the swimming pool. Cabana guest rooms on the terrace side of the building are screened from the pool area, developing their own private outdoor space with access to the larger public terrace.

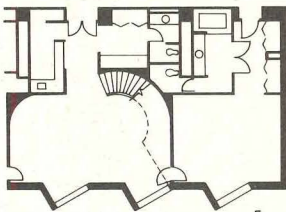
The color scheme in the rooms is basically vivid yellow and orange upholstery used with dark carpeting and light walls. In the

bathrooms, marble counters double as bars. Contemporary room cabinetry features real wood used in the vertical planes, with plastic laminate on the horizontals. The architects designed the room interiors.

HYATT REGENCY HOTEL, Houston, Texas. Architects: *JVIII*, a joint venture of: Koetter, Tharp & Cowell; Caudill Rowlett Scott; Neuhaus + Taylor—partner-in-charge: Charles R. Sikes, Jr., Neuhaus + Taylor; project manager: A. William Modrall, Jr., Koetter, Tharp & Cowell; director of design: Charles E. Lawrence, Caudill Rowlett Scott; director of interiors: Marcus R. Tucker, Neuhaus + Taylor. Engineers: Walter P. Moore & Associates (structural), Chenault & Brady (mechanical). Consultants: William C. Lam & Associates (lighting), Dubose Gallery (art). General contractor: W. S. Bellows.

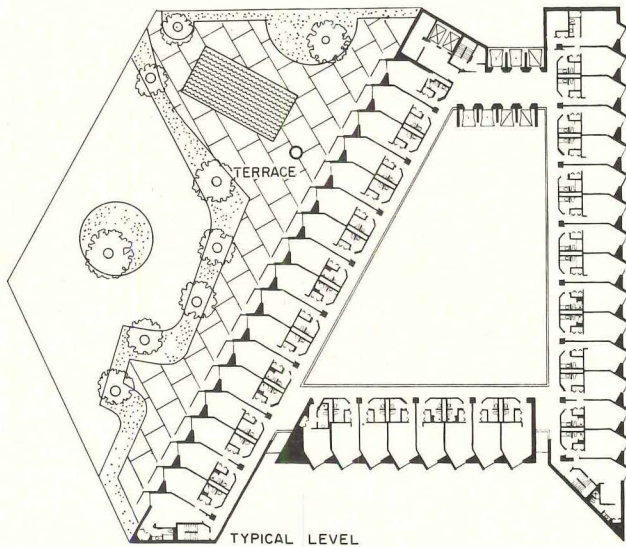


29TH LEVEL SUITES



28TH LEVEL SUITES

The two top floors of the hotel are given over to suites, with two grand suites (see plans, left) with double-story living rooms (photo below). Architect Alan Lapidus says, truth be known, suites are not that expensive to build, and they are very useful in selling a convention. Since the cardinal rule on all hotels is that all rooms must be individually "keyed," the suites of the Houston Hyatt Regency contain bedrooms which can be separated for individual use. Guest rooms usually have to serve daytime business purposes, so they should be planned to function as living rooms, with dressing and bathing well hidden.



TYPICAL LEVEL



Alexandre Georges

Prefabricated space trusses that are both rational and form-giving

Structural engineers Hirsch & Gray of San Francisco have designed a series of space-truss structures for several California architects that are straightforward and pragmatic, but at the same time evoke an esthetic response. Because the buildings have had a variety of shapes, the truss configurations have varied also. This two-part article discusses the logic of the designs and shows the results in three of the buildings.

The primary problem in the assembly of large-span, multi-member space structures has been to find some simple, inexpensive and repetitive way to connect many members into and through a typical joint. The approach developed by structural engineers Hirsch & Gray is to shop fabricate three-dimensional truss units, to ship them to the site, and finally to field bolt them together to form the completed structure. This approach permits the tailoring of individual members and connections to meet the actual forces imposed upon them, and also eases the geometric constraints. Field connections, made by bolting at the nodal intersections of units, can be easily varied as to number, size and type of bolt to suit individual load-transfer requirements. Detailing methods typically employ field connections across low-stress surfaces, with as much stress transfer as possible between units being taken in direct bearing between members.

Benefits of shop prefabrication of large units include minimization of field erection time, and less possibility of error in the field fit due to the greater tolerance control in the shop. Three-dimensional units—designed to be stable in themselves—provide inherent stability for the partially completed structure, requiring only minimal temporary shoring. Also, shop welding is less expensive and more dependable than field welding.

All the structures described in this article and Part 2 to follow, were analyzed with the aid of computers, whose capabilities made practical the computation of stress conditions in these highly indeterminate structures under a wide variety of loading conditions.

The example shown on these four pages is the roof structure for the base lodge for a completely new ski area at Kirkwood Meadows (see RECORD, January 1974) at an elevation of 7800 ft above sea level in the California Sierra Nevada range. The architects, Bull Field Volkman Stockwell, wanted an expression for this new ski complex that would have its own unique identity—enhancing the glamour and

excitement of skiing. The severe snow load in this area required a roof structure that could support a design live load of 250 lb per sq ft—well over 3 million pounds for the entire roof. Furthermore, the site is some 100 miles from the nearest major city, and is covered with snow from late November to early July, leaving only four months' field time for construction.

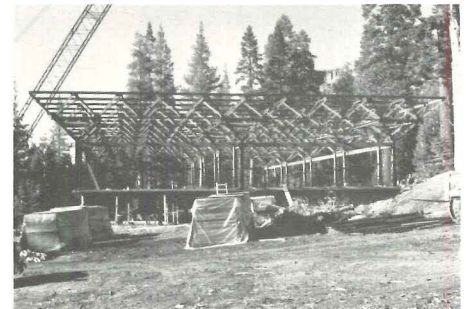
Faced with these problems, the engineers sought a structure that could be fabricated mainly off site in a material and configuration that would satisfy both architectural and structural demands. The steel roof truss design shown here met these criteria.

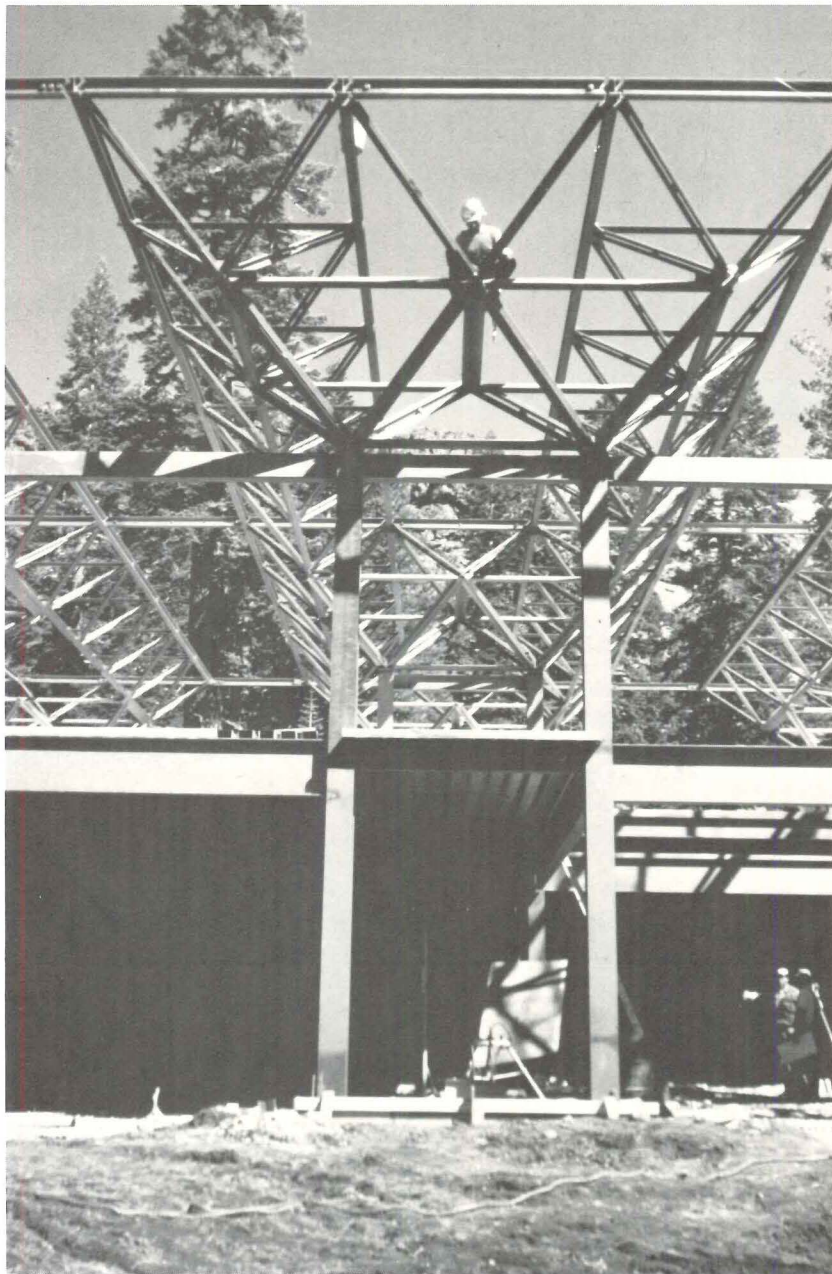
The 8-ft-wide trusses are spaced 16 ft on center. This skipping minimizes material and the total number of connection points, and allows an interesting rhythm to be developed at the supports. The support "trees" are paired columns, 8 ft on center, linked in a prefabricate rigid frame unit for transverse stability—with a typical two-bay truss unit on top, turned at right angles to the main span trusses and supporting them.

Because of the pressures of time, design and fabrication took place almost simultaneously. The entire shop fabrication took four weeks from time of first mock-up and approval to shipment. Shipment and erection of the truss units on the previously erected columns took only two days—exclusive of final placement and tightening of all the field bolts. This was accomplished despite the fabricator's great concern that the required tolerances for bolt holes and general fit were too severe.

At a structural weight of 10 lb per sq ft, the load to weight ratio of the completed structure, designed to carry the high snow load cited earlier, is 25:1.

In designing space structures such as this one, the engineer must take care to simplify geometry, detailing and connections—repeating detail types as much as possible. Hirsch & Gray believe that if the truss system can be designed easily, it also can be built easily. They point out that attention should be paid to shipping dimensions and erection crane capacities as they might affect prefabricated module proportions and over-all size. The engineer also must think about how to minimize field shoring, and, *very importantly*, about the stability of the partially completed structure. Finally, Hirsch & Gray emphasize that the structural engineer must work closely with the architect and the owner to interpret architectural requirements and esthetic intent in practical structural forms.



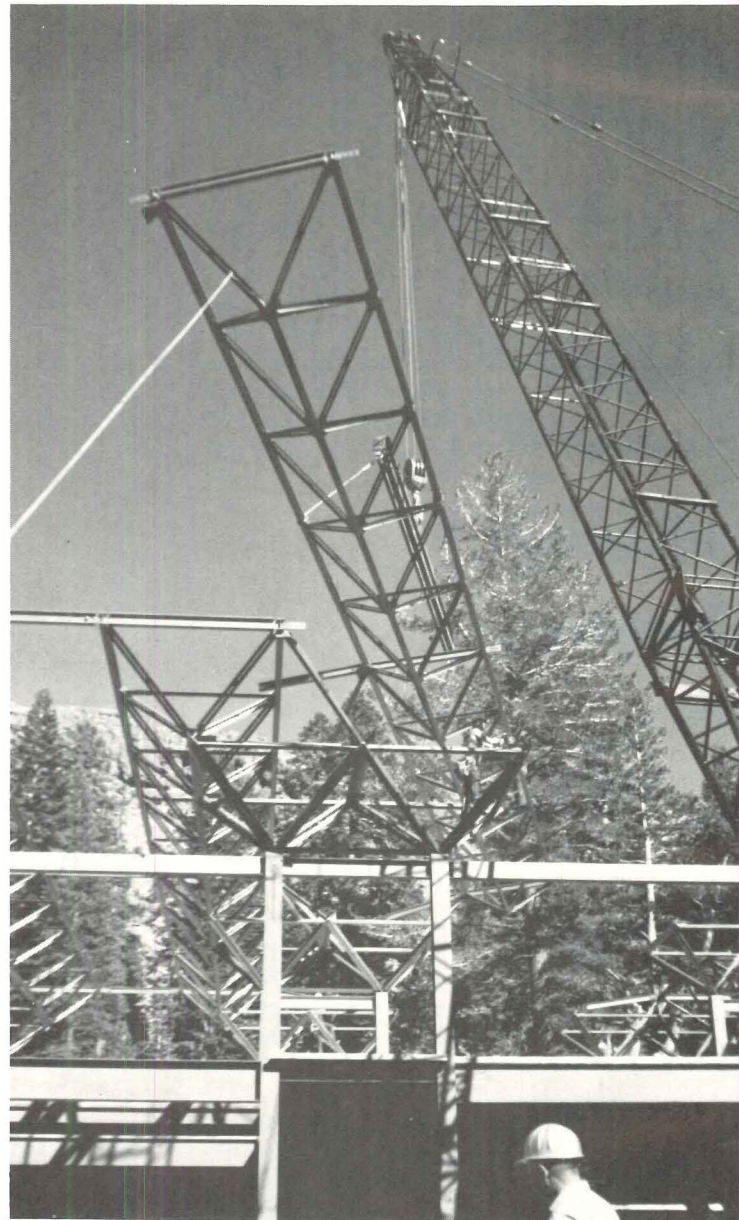


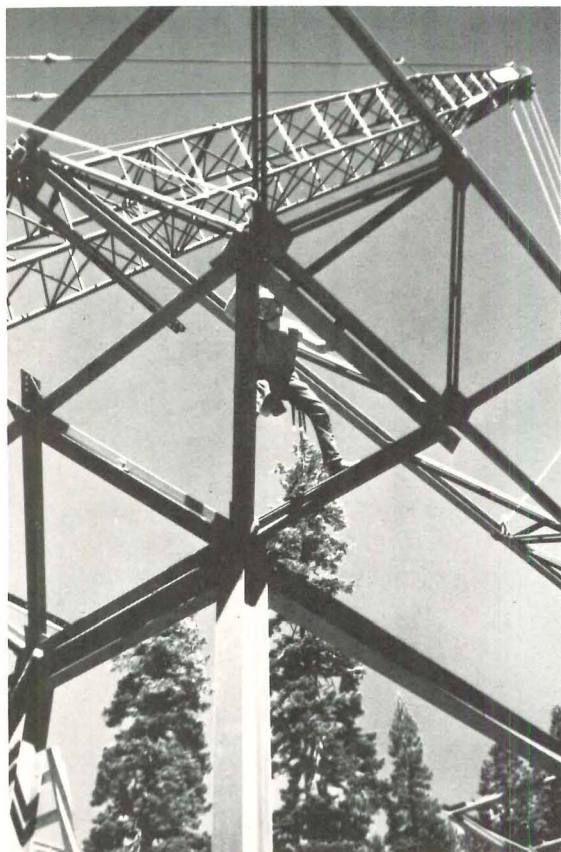
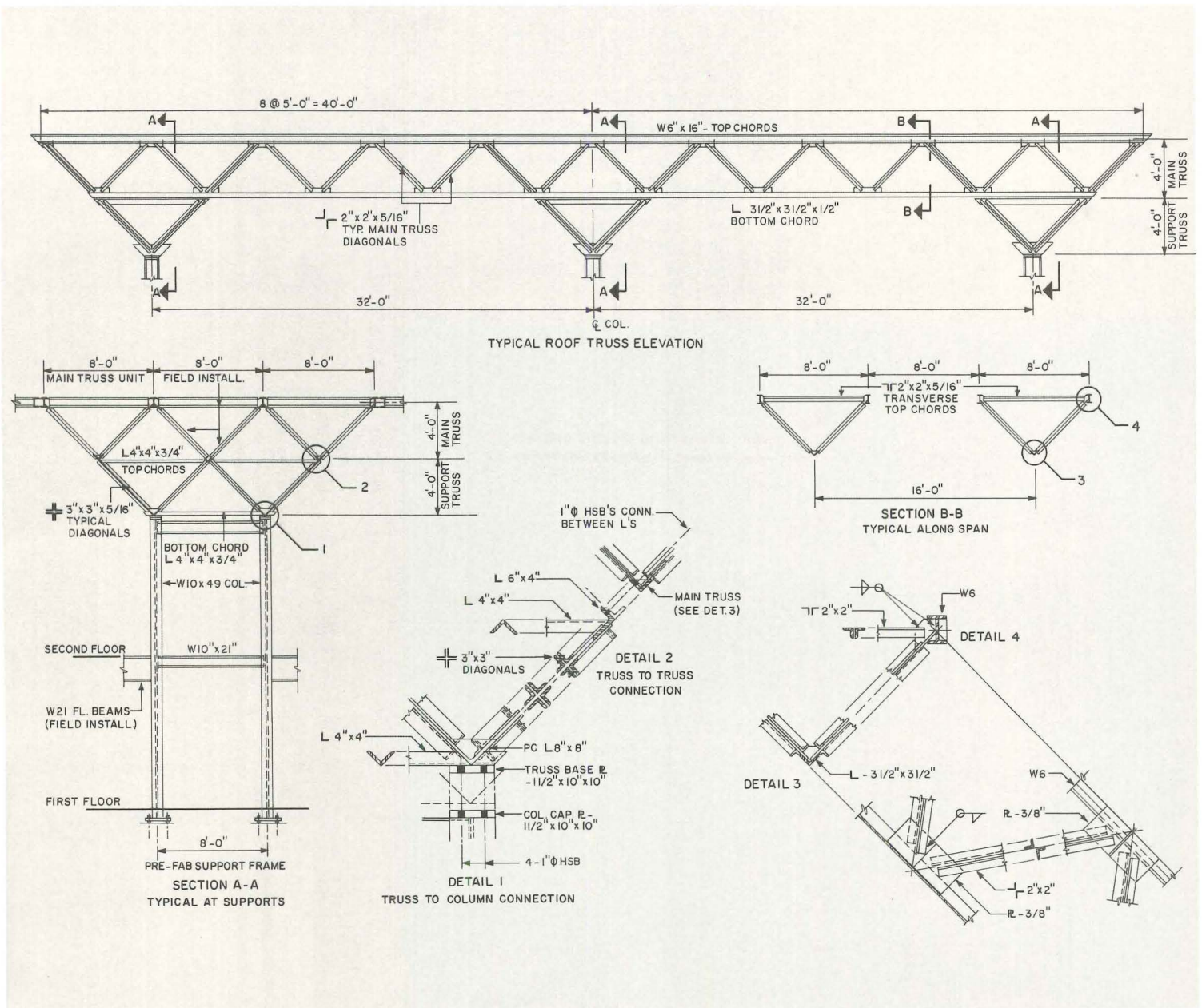
There are four space trusses (as the one above) comprising the roof structure for the lodge. All connections between the column frames, the support trusses, and the main-span trusses are made in the field using high-strength bolts. The 8-ft gap between top chords of the main trusses is spanned by 16-gage corrugated metal decking, 3-in. deep.



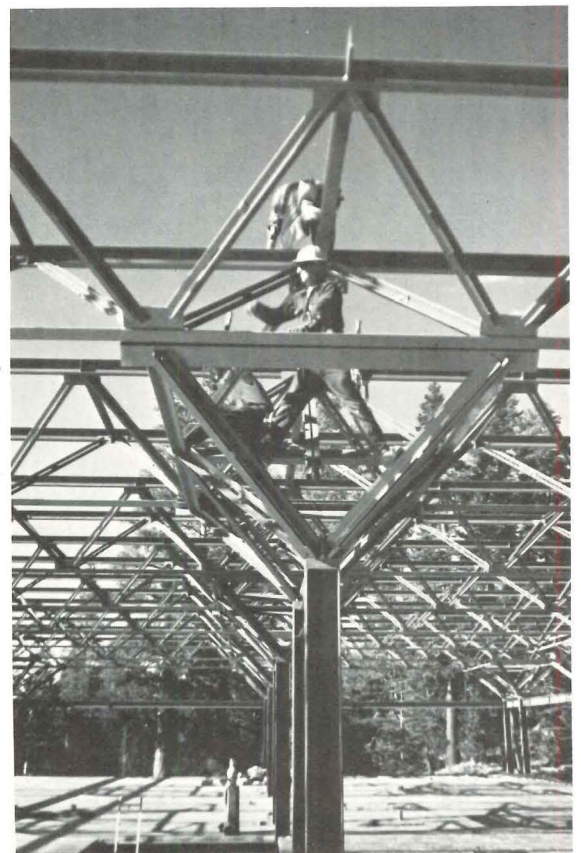
Decision to use a space-truss roof system for Kirkwood Meadow lodge in the ski country of California's Sierra Nevada range was a natural outgrowth of design and construction considerations. These included: the doubtful availability of laminated timbers, a four-month construction season, a site 100 miles from the nearest city, a design snow load of 250 lb per sq ft, a very short design time, and the architect's intent to use the revealed structure as image. The prefabricated steel semi-space trusses took advantage of the long-established shop fabrication capabilities of the steel industry, and permitted shipment by road over two mountain passes.

The system employs 80-ft-long units (below) that span 40 ft from column to column, supported by inverted pyramids atop a column frame.



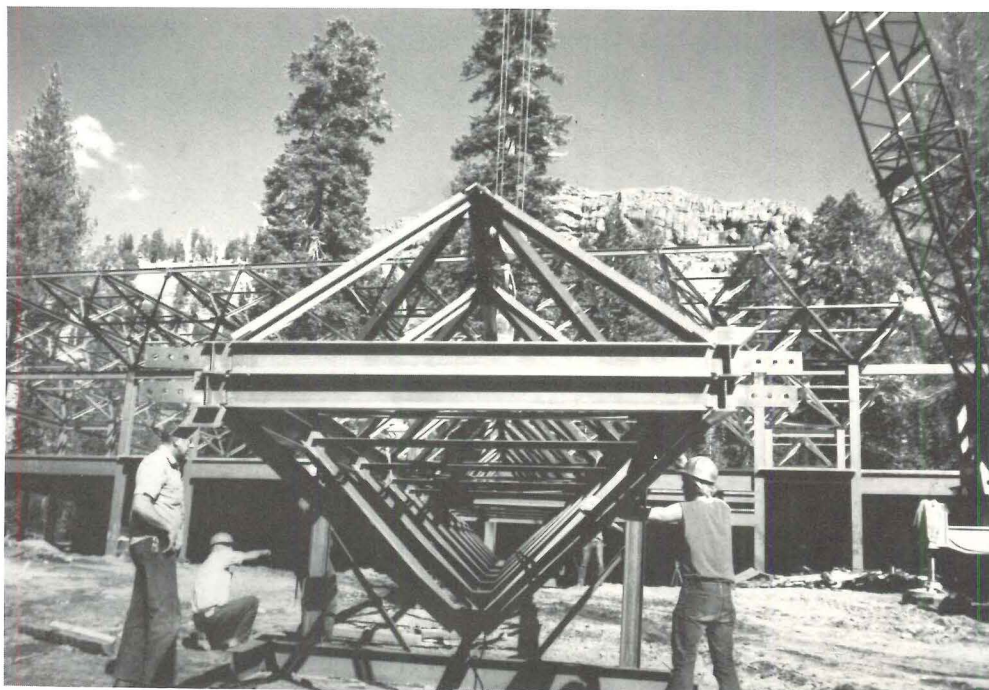
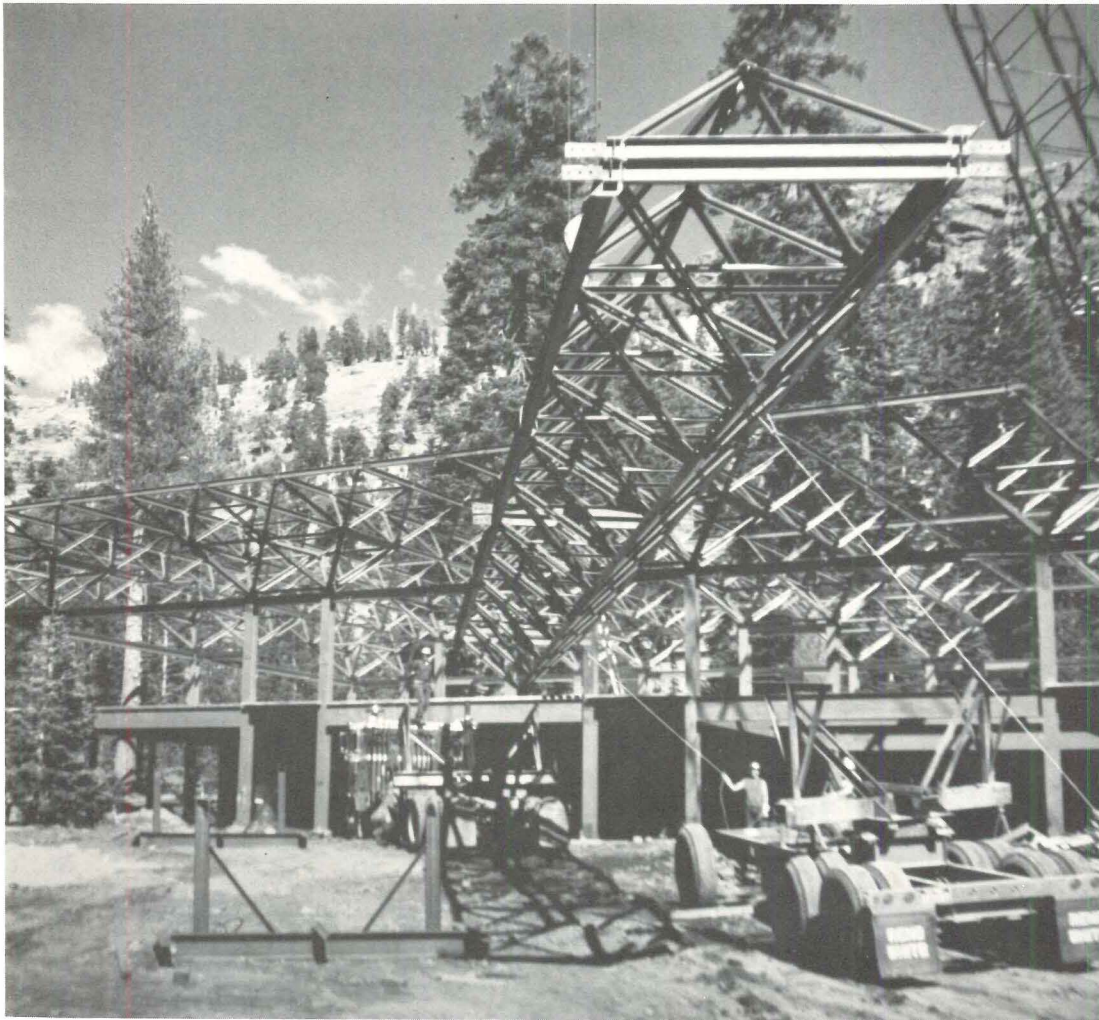


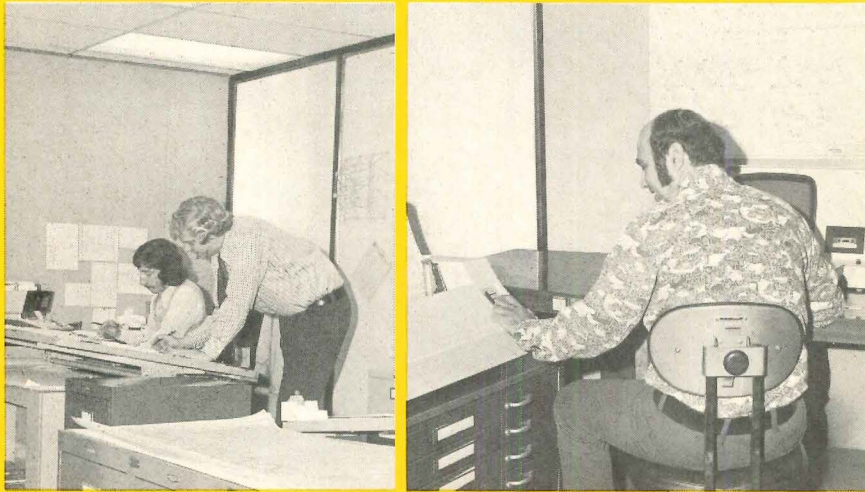
Despite the intricate weblike appearance of the trusses, they have a right-angle geometry, permitting simple jiggling for shop fit and assembly. Also, the planes of the bottom chord and that of the webs coincide, providing planar alignment for connections. The diagonal web members are doubled angles arranged in a star pattern for equal radius of gyration about both axes, and to emphasize the characteristic shapes of steel construction, the slenderness of the members, and the over-all pattern. In regions of high web shear, the angles are quadrupled. The top chords are wide-flange sections, sized for both local bending due to transverse loading between panel points, and direct compression from truss action.



Shipment and erection of the truss units on the previously erected columns took only two days, except for the final tightening of the field bolts. The trusses were stacked in pairs to form their own carriage, using a steerable trailer for support in shipment by truck from the fabricator's plant 100 miles away in Nevada.

Once at the site, these units were set by crane atop "tree" supports and bolted, and were joined at the top chords by means of flanges visible in the photos below.





... software

Too many good, new ideas never leave the starting gate. Often, because they require extra research and greatly increased engineering time. Most project budgets simply can't support the extra expense.

MODUSPAN space-frame systems provide a significant alternative. First, components are mass produced to help keep costs in line. Modular construction permits unusual design freedom while simplifying job-site fabrication. Just as important, the MODUSPAN idea includes step-by-step engineering consultation and support by experienced technicians—technicians whose only job is working with the MODUSPAN system.

The MODUSPAN space-frame system works. It has been used to capture the mystery of ancient pyramids . . . to release the stark power of the cube . . . to create the illusion of a floating grid. More frequently, the multi-directional structural behavior of MODUSPAN is utilized as a roof system for banks, schools, factories and recreational pavilions.

Our latest literature details MODUSPAN projects throughout the Western Hemisphere. Ask for it.

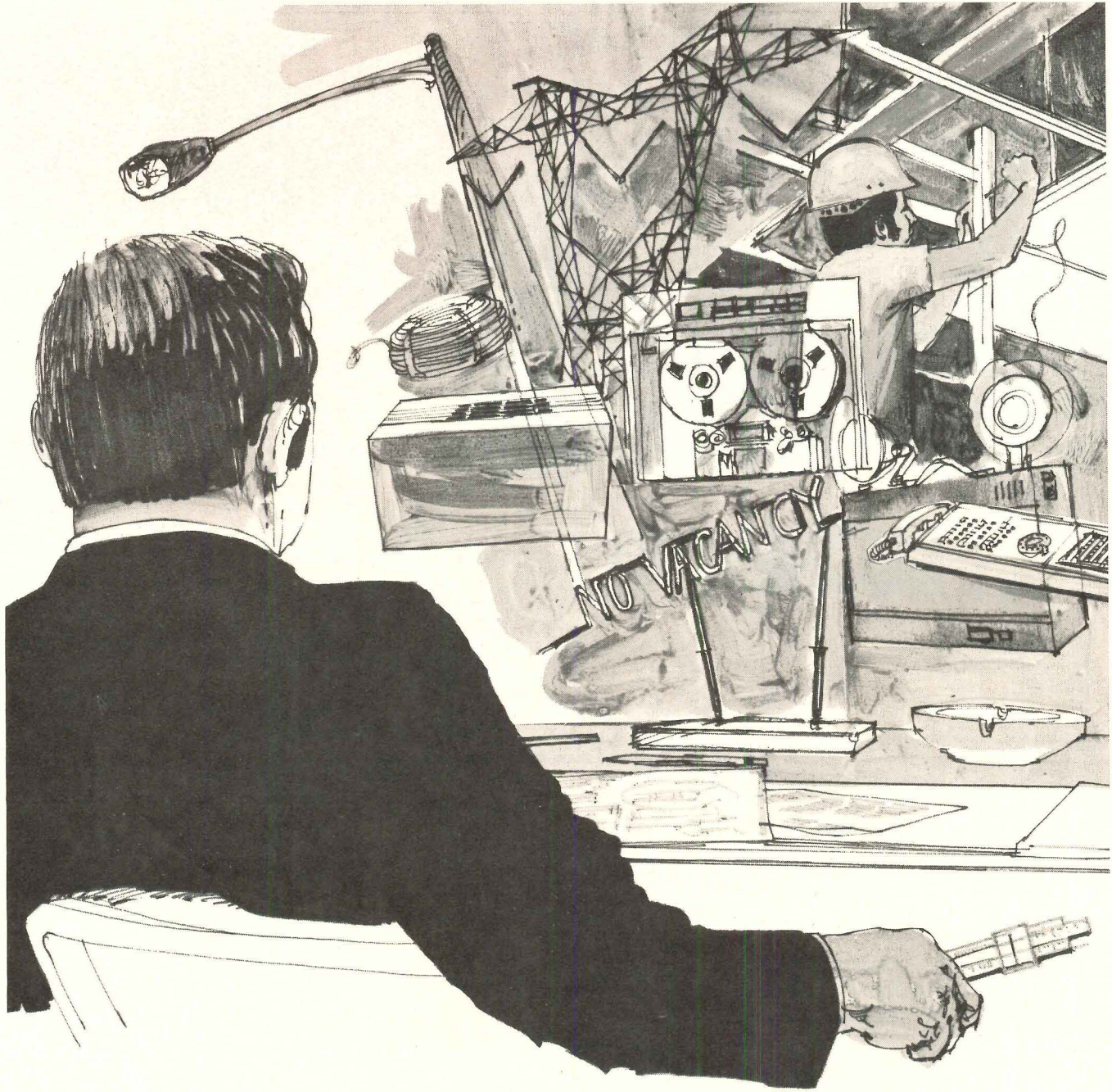


WORLD HEADQUARTERS WAYNE, MICHIGAN 48184
TELEPHONE 721-4040—AREA CODE 313—TELEX 23-5457

For more data, circle 83 on inquiry card

GTE SYLVANIA

What do you expect from electrical contractors?



NECA study reveals opinions of design professionals.

In a study conducted recently by the National Electrical Contractors Association (NECA), questions covered capabilities expected of electrical contractors. Some people seem to feel that electrical contractors mostly pull wire and install lighting fixtures. Not so.

When it comes to capability in electrical systems, professional electrical contractors have it... in a wide range of services. Everything from power distribution and power line construction to standby emergency power sources. From interior and

exterior lighting to communications, electric space conditioning and automatic controls. From integrated ceilings, electric signs, and master clock systems, to motors and motor controls, security systems, fire and smoke detection systems, etc., etc., etc.

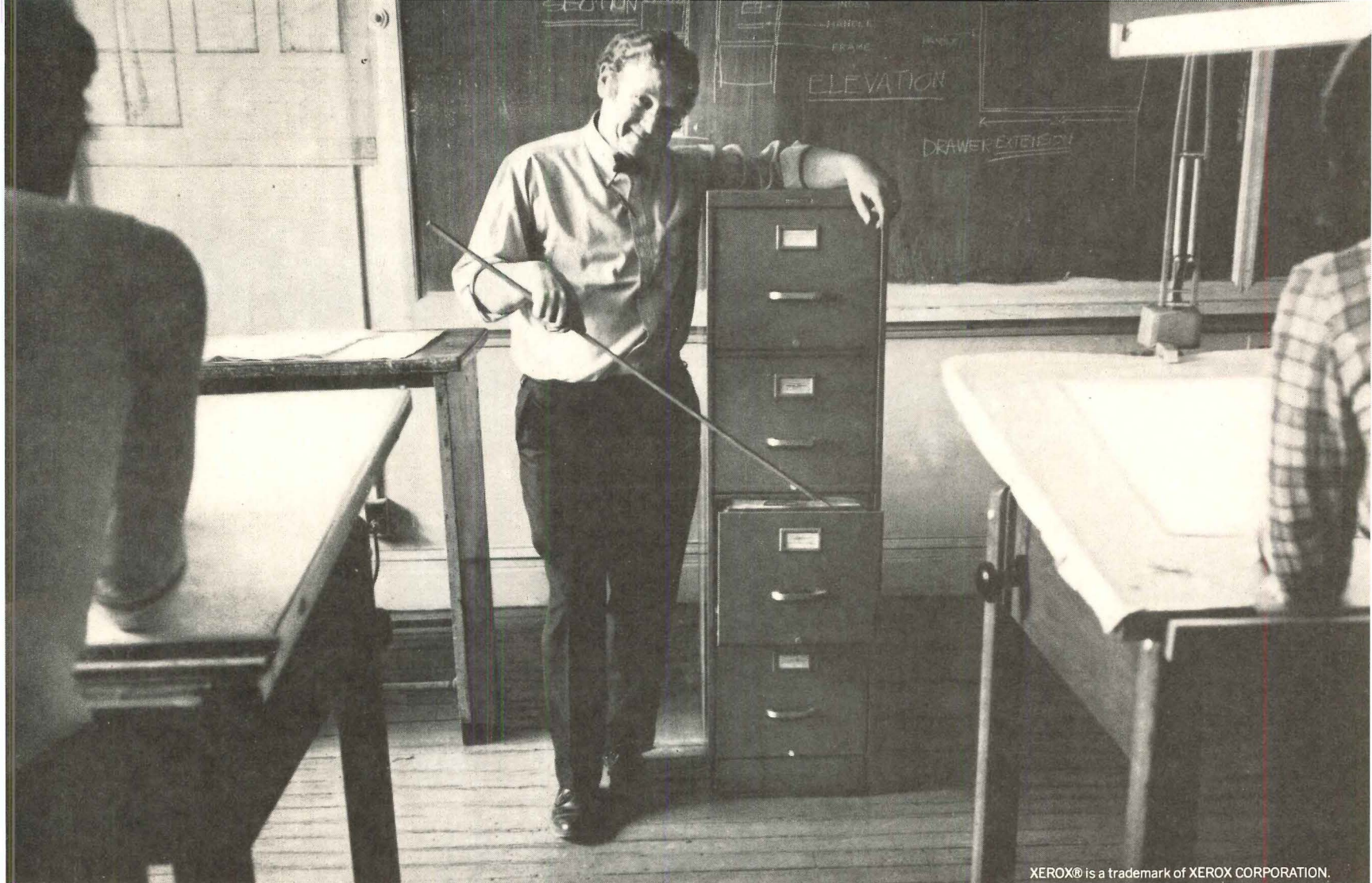
Professional electrical contractors manage a competent and proficient team of skilled, technically trained manpower... experts at accelerating construction schedules, purchasing and expediting materials, obtaining local code inspection approvals, and

translating plans into reality at a profit for everyone concerned. When you consider complex electrical systems, consider the full range of services provided by professional electrical contractors.



National Electrical Contractors Association, Inc.
Washington, D.C. 20014

If electricity makes it possible, electrical contractors make it practical.



XEROX® is a trademark of XEROX CORPORATION.

One thing they don't teach you in drafting class is how to use a drawer.

1. Open the drawer.
2. Take out whatever standard details you need.
3. Use the Xerox duplicator to copy them onto adhesive-backed Mylar.
4. Place the imaged Mylar onto the new working drawings.
5. Put the standard details back in the drawer until the next time you need them.
6. Close the drawer.

For a firsthand lesson, have our Architecture/Construction/Engineering specialists show you all the ways a Xerox duplicator can help you turn repetitive time into creative time.

And then instead of going back to the drawing board, maybe you'll start going back to the drawer.

XEROX

For more data, circle 84 on inquiry card

MYLAR® is a trademark of DuPONT CORPORATION.

The future of design lies right across the street.



An exclusive invitation to senior members of firms attending the 1974 AIA convention.

While you're in Washington, you'll be hearing a lot of talk about the future of design. We'd like to give you an opportunity to see it for yourself — right across the street from the convention.

At the Washington office of architects Perry, Dean and Stewart, they're using a computer-aided design system right now. And they'll be happy to let you see it in operation.

The system is Decision Graphic's ARK-2, based on Digital Equipment Corporation's popular PDP-15/Graphic 76 computer. What it does, very simply, is enable architects to

visualize, evaluate and restructure design solutions far more quickly, accurately — and profitably — than ever before. From project programming through design development and on through specifications, this comprehensive system complements and assists the architect in a natural and flexible way.

The ARK-2 system is not a pie-in-the-sky plaything. It is a working, profit-making system, proven over the years in a wide variety of architectural projects. Installations from Switzerland to Australia are proving this every day.

Take a look. Then judge for yourself.

To arrange for a visit, write

or call: Mr. John Nilsson, Decision Graphics, 905 Park Square Building, Boston, Massachusetts, (617) 482-6829, or

Mr. Richard Devlin, Digital Equipment Corporation, 146 Main Street, Maynard, Massachusetts, (617) 897-5111.

To be sure of a place, we suggest you reply early. If you can't visit us in Washington but would like more information, ask for it. We'll send it right away.

But while you're at the convention, try to pay us a visit. We think you owe it to yourself to see what a Graphic 76/ARK-2 system can do for your firm.

digital

DECISION © GRAPHICS

For more data, circle 85 on inquiry card

KITCHEN-IN-A-CABINET / A fully functional mini-kitchen, *Model CES-39* combines range, refrigerator, sink and storage in one cabinet module. Suited to apartments, motels and dorms, the module features a 4.2 cu ft refrigeration unit with beverage door and freezer zone, two range burners and a life time porcelain sink with disposer provision. The unit measures 42½ in. high by 39 in. wide by 24 in. deep. The cabinet is available in a variety of colors and wood grains. ■ Cervitor Kitchens, Inc., South El Monte, Cal.



Circle 321 on inquiry card

UNDERCOUNTER EQUIPMENT / A line of modular metal undercounter equipment for use in financial institutions, municipalities, hotels/motels, finance and utility companies is now available. Units are available in either the 38½ in. high or 31¾ in. high series. Both series are available in 18¼ in. and 22½ in. depths. All components are constructed of steel with anodized satin finish aluminum flush pulls; units are finished in 16 standard colors. Two-tone and special matching colors are also available. ■ Security Corp., Irvine, Cal.



Circle 322 on inquiry card

OFFICE CHAIRS / The chairs are made of three simple components; a base, a continuous arm frame and the upholstery cushions. High production tooling and a minimum of component parts result in a competitively priced group for office use. The easily replaceable upholstery and the aluminum die cast frames, in either bright polished or a new powder coated finish, are designed for durability. The chairs are available in color ranges suggesting unusual possibilities for the designer, according to the company. ■ Knoll International, New York City.



Circle 323 on inquiry card

FIRE ALARM SYSTEM / Developed especially for hospitals, office buildings, schools and colleges, industrial plants, computer rooms, stores and shopping centers the system features special detectors that react to an incipient fire long before there's a wisp of smoke or hint of flame, according to the company. When a detector spots a fire, it flashes a signal to a modular alarm/control panel that automatically turns on emergency signals throughout the fire zone. Detectors are 8 in. across, 3 in. deep, and project 1½ in. from the ceiling. ■ Honeywell's Commercial Div., Minneapolis, Minn.



Circle 324 on inquiry card

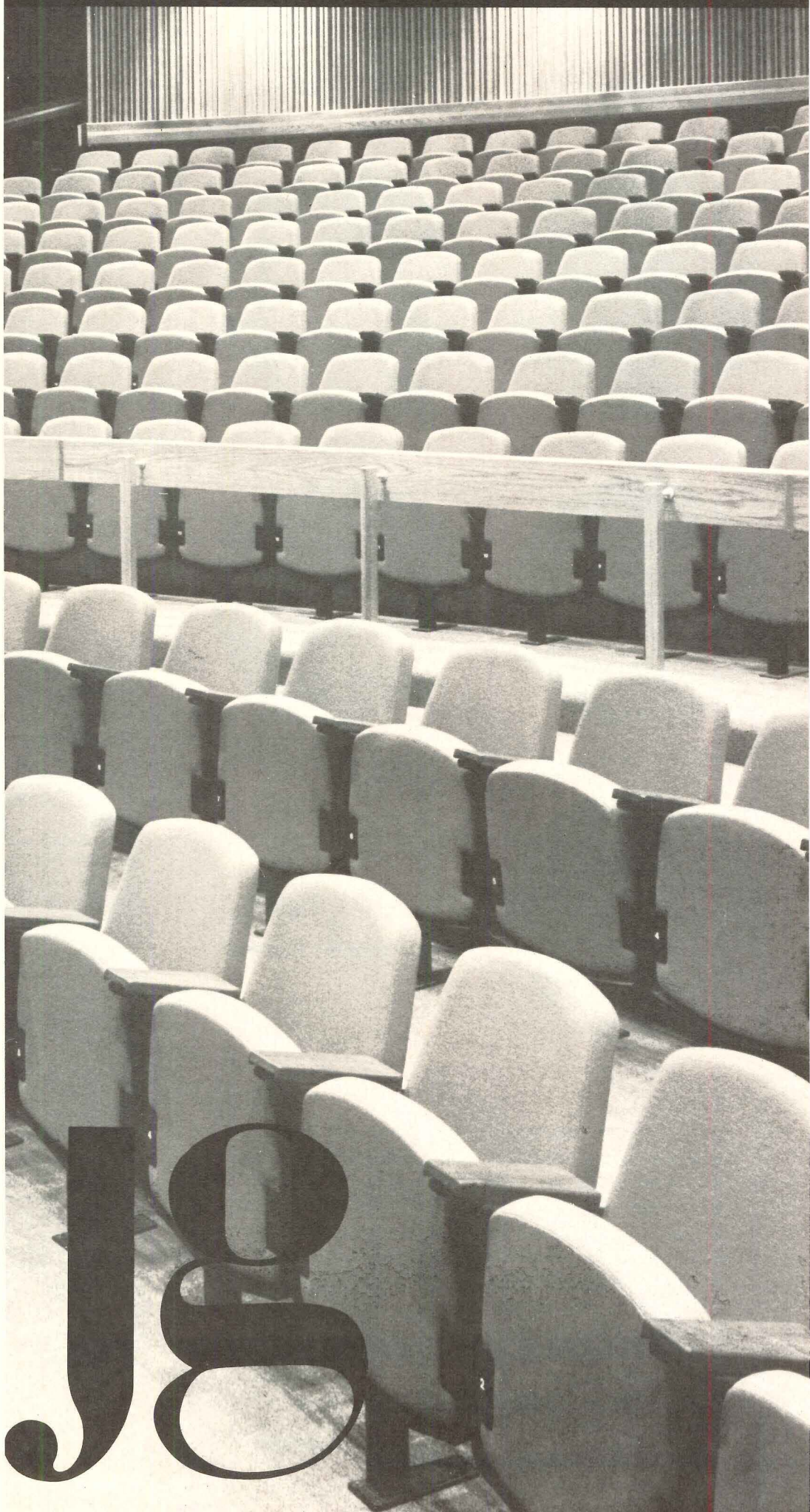
more products on page 183

For more data, circle 86 on inquiry card

62-63

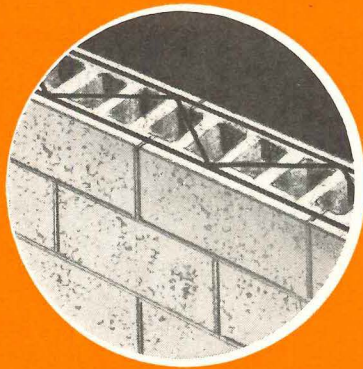
JG Furniture Company, Inc. 121 Park Avenue
Quakertown, Pa. 18951

Auditorium seat designed by Peter Dickinson
Installed at the Jennie King Mellon Library,
Chatham College
Johnstone, McMillin and Assoc., architects,
Pittsburgh, Pa.
Kilham, Beder and Chu, Consulting architects
for design, NYC.



JG

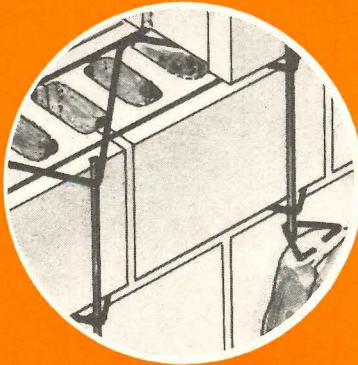
Use the system that works best for you!



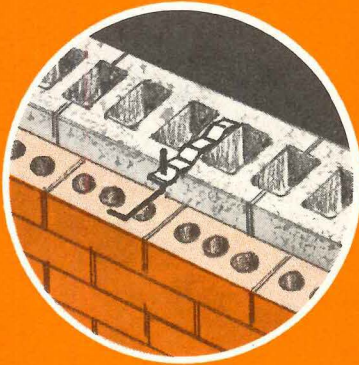
BLOK-TRUS®



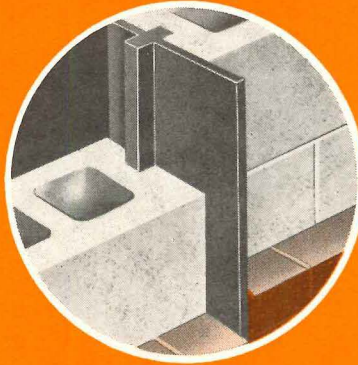
ADJUSTABLE ECONO-LOK®



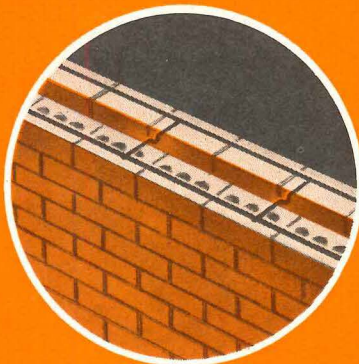
STONE-LOK™



TYPE S ADJUSTABLE TIE



BLOK-TITE® CONTROL JOINT

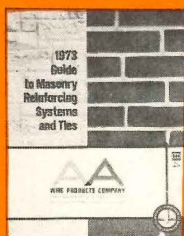


BLOK-LOK®



AA
WIRE PRODUCTS COMPANY

All AA Wire reinforcing and wall tie systems save labor costs. Many of them solve other mason problems such as Adjustable Econo-Lok for tying together double walls where the joints don't line up. Then there's Stone-Lok — the fast way to tie random shaped stone to a backup wall. Select the system that saves you more money and speeds your jobs. Send for your handy free Guide to AA systems. AA Wire Products Company, 6100 South New England Ave., Chicago, Illinois 60638.



For more data, circle 87 on inquiry card



Big-Eye™

Emergency lighting that works instantly. Every time.

BIG-EYE is a major improvement in emergency lighting. Its 2 sealed batteries are automatically kept charged at full rated capacity. They last about 8 years (up to 4 times life of wet cell batteries) without filling or maintenance. When power fails, the two 35W incandescent lamps highlight critical areas for 40 minutes (90 min. with single lamp model).

Only 5 1/8" x 6" x 27 3/8". Mounts horizontally, vertically or upside down on its own brackets. (Heads can mount remotely.) Theft and vandal-resistant. Gasketed model for wet areas and outdoors. Recessed model for

lay-in on T-bar ceilings.

It's another of our Holophane Emergency Lighting Products (H.E.L.P.™).

Call your local Holophane sales engineer for details on BIG-EYE or any of our indoor, outdoor and emergency lighting products. Or write Dept. AR-5, Holophane, Woodbro Division, 13500 Saticoy St., Van Nuys, California 91402.

Holophane®
A Johns-Manville Division

For more data, circle 88 on inquiry card

EPCO PULLS FOR DRAWERS

Here we show four styles from our selection of thirty-three pulls designed for drawers and doors. They are of extruded aluminum finished anodized clear, brass, bronze or black. Standard lengths are 3 7/8" and in 6-ft. lengths, in natural and clear only for cutting on the job or for instances where the designer desires them to extend full width across the top of the drawer. Non standard sizes or finishes are available on quotation. EPCO will also manufacture to your design specifications.

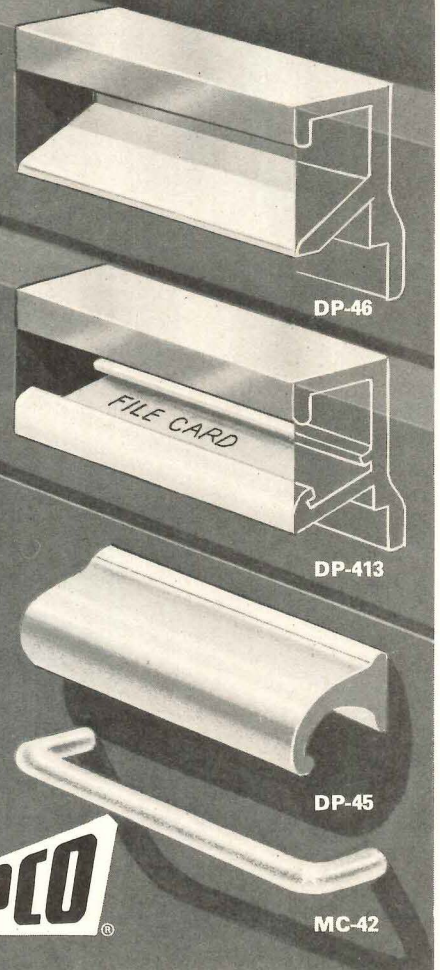
A free 42-page EPCO catalog of pulls, knobs, magnetic catches, track and guides and mirror frames will be sent on request.

See Sweet's catalog in Arch. file 8.34 EN

THE ENGINEERED PRODUCTS CO.



P.O. BOX 108 FLINT, MICHIGAN 48501



For more data, circle 89 on inquiry card



TEST PROVES: NO NYLON FIBER HIDES SOIL BETTER THAN ENKALURE II.

The truth is out about soil-hiding nylon commercial carpet fiber.

Enkalure® II is as good as the best.

It's been tested and proven by the independent testing laboratory, Nationwide Consumer Testing Institute. They placed carpets made of the leading nylon fibers in one of the most heavily traffic'd airports in the country.

And when the results came in, Enkalure II's soil-hiding ability proved to be every bit as good as the best-known soil-hiding nylon.

The reason is that, unlike conventional nylon fibers, Enkalure II bulked continuous filament nylon has no deep grooves to trap and hold dirt. Also, its special multilobal construction causes light actually to bounce off the fiber in every direction. So

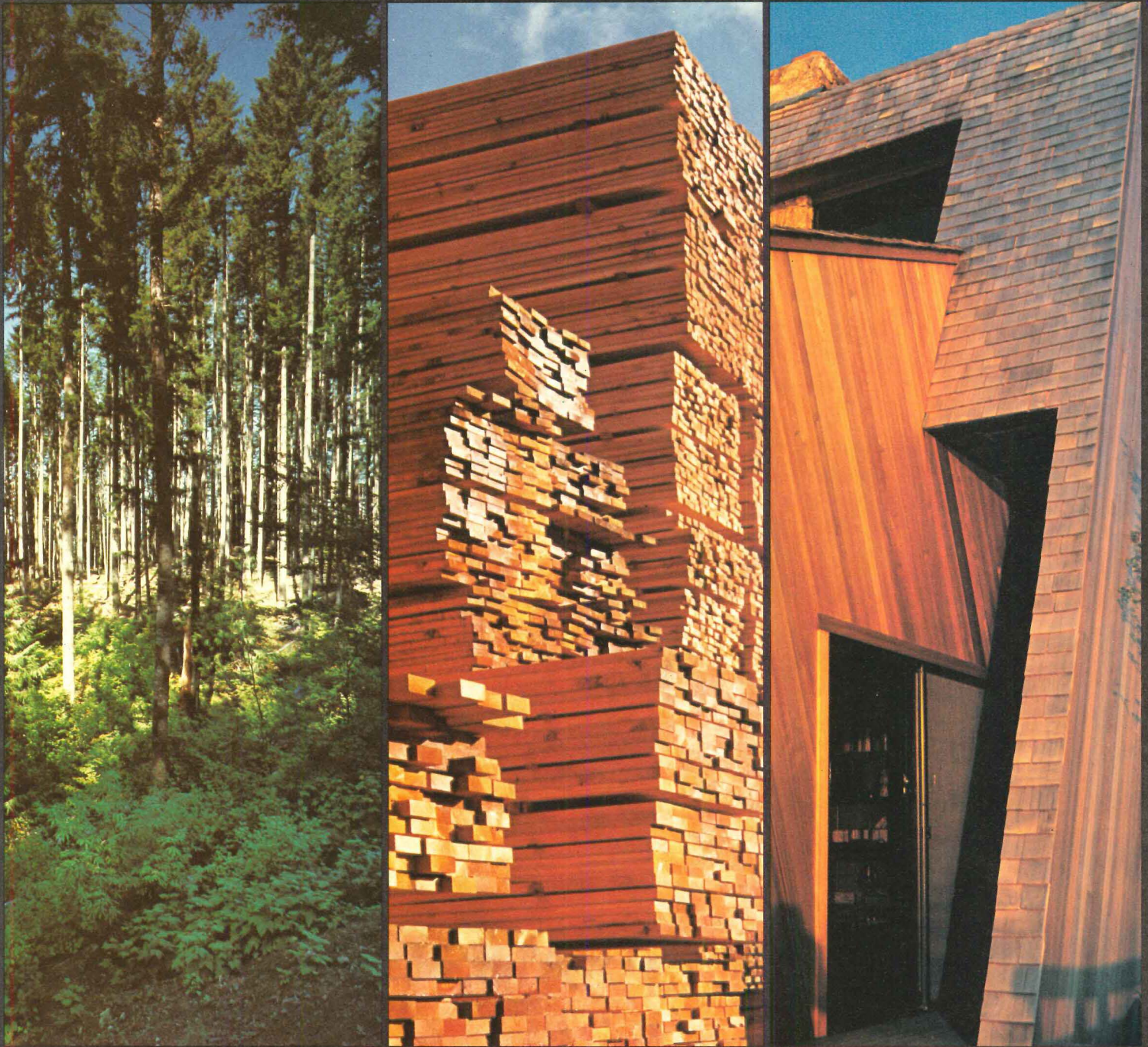
the color looks clean, even when the carpet is dirty.

Then there's another test. Each prototype carpet is tested by Nationwide to make certain it meets our specifications. That's why we can guarantee that Enkalure II carpet will wear no more than an average of 10% for 5 years when certified by Nationwide and the mill, and when properly installed and maintained—or we'll replace it.

If you have the kind of floor that takes a lot of traffic, you should specify Enkalure II.

For specific carpet information and a 14-page report of the test results, contact American Enka (Dept. AR), 530 5th Avenue, N.Y., N.Y. 10036. (212) 661-6600.

**ENKALURE II.
NO NYLON HIDES
SOIL BETTER.
ENKA**



Simpson Redwood. It's available. But be sure to plan ahead.

We're producing Redwood lumber at near record levels this year.

But demand also is near an all-time high. And that can mean temporary shortages.

There are two good ways to beat the problem.

First—Check with your supplier to see if an alternate grade or size is available. The most difficult grade to find is "Clear All Heart"—the top of the line. The next grade—Clear—is more readily available, and a good many customers prefer it for the color variation it provides. (That's Clear in the picture).

Second—Work closely with your supplier. Give him all the lead time you can so he can work back through the distribution chain in anticipation of your needs. And let him

know your specification requirements—including use. It may be that your dealer can find an alternate that will work for you.

In the meantime, we're doing everything we can to make sure you get the Redwood products you need.

And we've invested heavily in forest management practices that increase wood supply now and for the future. In the long run, mother nature is on our side. Redwood is the fastest growing of all the commercial conifers.

We'd like to send you a free copy of our forest resource and Redwood Exterior literature. Just write to Simpson Timber Company, 2000 Washington Building, Seattle, Washington 98101.

Simpson

Trees are a renewable resource.
For more data, circle 95 on inquiry card

TENNIS COURT SURFACES / The brochure explains application procedures and requirements and tells how to select the proper finish system for a variety of recreational surfaces. It also features many photographs of actual installations of *Plexipaver*, the 100 per cent acrylic color-in-depth surface system for asphalt and concrete courts. ■ California Products Corp., Cambridge, Mass.

Circle 412 on inquiry card

GROUND PROTECTIVE EQUIPMENT / The company has issued a new descriptive four-page data sheet on its ground protective equipment. The *Type TP-GLR* test panel indicates when a ground fault is present, indicates control power is available, provides a relay reset switch and permits testing the ground fault system with or without tripping the circuit protective device. Complete electrical, mechanical, and installation information is presented according to the company. ■ Federal Pacific Electric, Newark, N.J.

Circle 413 on inquiry card

WATERPROOFING / A waterproofing and damp-proofing systems manual for building owners and contractors covers membrane systems for waterproofing slabs, foundations, promenade decks and plaza areas and selection and application of materials and systems. ■ The Celotex Corp., Tampa, Fla.

Circle 414 on inquiry card

GENERAL-PURPOSE FLOORING / A full-color brochure describing tough, durable flooring systems for sports and recreation, and for business and industrial use, is available from the company. An advanced urethane technology is a common element in both types of surfacings. ■ 3M Co., St. Paul, Minn.

Circle 415 on inquiry card

VINYL PARTITION SWATCHES / Handy 8- by 10-in. swatch cards featuring actual samples of vinyl surfaces available on the company's partitions, have been developed for architects, designers, and others involved in specifying office interiors. Suitable for insertion into three-ring binders, the swatch cards carry textured samples of four woodgrain reproductions, five accent colors, and six decorator colors. The fire-resistant vinyl coverings are available in widths up to 62 in. on hardboard, particleboard, gypsum board, and acoustical board. ■ Marlite Partition Systems, Dover, Ohio.

Circle 416 on inquiry card

SPORTS EQUIPMENT / A sports and physical education equipment catalog featuring a new aluminum basketball backboard with a lifetime guarantee also describes a large family of indoor/outdoor climbers, an eight-unit obstacle course, swings, slides and seesaws for physical fitness training and playground installation. Contained as well are benches, bleacher seating, picnic tables and bicycle racks for general recreational use. ■ SportsPlay Products, St. Louis,

Circle 417 on inquiry card

TO NEMA AND ANSI WIRING / A comprehensive guide to the NEMA and ANSI requirements for right blade and locking electrical wiring devices has been prepared for architects and consulting engineers, among others. Since *Spec-eez* uses both NEMA and ANSI-approved configurations, it can be used for designing for electrical safety. Consistent with the NEMA or ANSI configurations, there will be no misconnections between electrical outlets and equipment according to the company. ■ Bryant Electric,

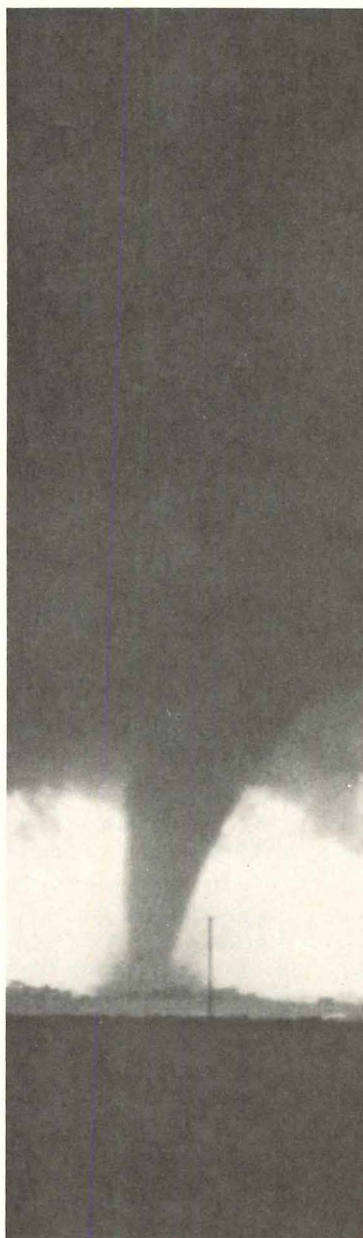
Circle 418 on inquiry card

more literature on page 192

REINFORCED concrete facts

TORNADO!

Reinforced concrete protects against the deadly power of nature's most violent storm.



Tornado damage can be catastrophic in populated areas. Wind velocities may reach 200 mph or higher, creating a loading well beyond "normal" structural limits. The partial vacuum at the funnel's core can result in "explosive" loadings even greater than those produced by wind pressure. And windborne debris constitutes a serious hazard to life and property.

Fortunately, reinforced concrete offers a practical solution to tornado protection. In the Plains States, where incidence of tornadoes is high, new structures have been built and existing buildings redesigned with the built-in protection of reinforced concrete. These structures include schools, hospitals, power plants, and industrial buildings.

Many designs have been employed. For example, an 11-inch reinforced concrete slab forms the floor above the tornado-shelter area in a school building. Walls of 12-inch reinforced concrete have been used to provide protection at ground-floor levels. Reinforced concrete construction of walls and roof, with baffled concrete doorways afford protection against tornadic winds, flying debris, and pressure differentials.

And the inherent strength of reinforced concrete can protect against all types of catastrophic loadings, such as blast loadings, hurricanes, earthquakes.

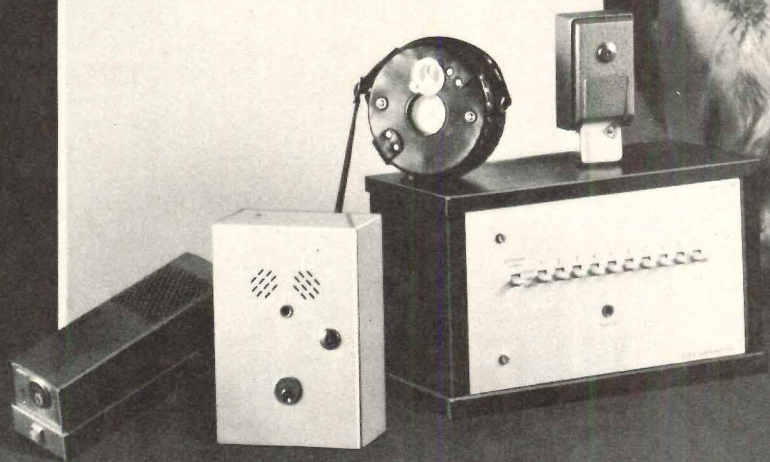
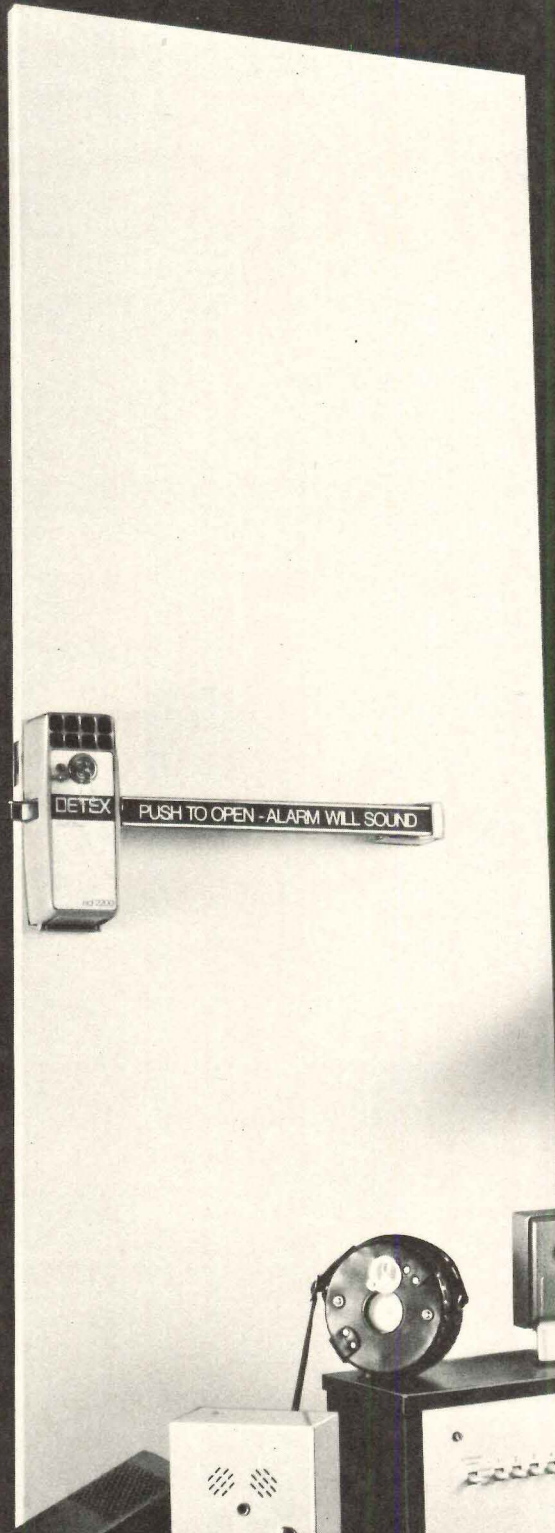
Tornadoes have been reported in all of the 50 states. It's well to remember that protection against their devastating effects is readily available. Reinforced concrete provides that protection, plus economy, easy availability of materials, on-time construction schedules, and maximum design freedom.

With the beautiful strength of reinforced concrete, you can economically withstand the unexpected. Including the awesome power of the tornado.



CRSI CONCRETE REINFORCING STEEL INSTITUTE
FOUNDED 1924
180 North LaSalle Street
Chicago, Illinois 60601
Room 1204

For more data, circle 96 on inquiry card



What do you need in security devices? Detex can furnish all but the furry one. Detex monitoring devices work together or with other components in many combinations to protect

DETTEX

whole buildings — even entire complexes. Included are exit alarms, exit control locks, entry controls, watchclocks, and remote indicating panels. Employed individually, Detex products serve your localized security needs. (And the price won't bite.) Send for information on Detex security systems and components to protect your interests. Detex Corporation • 4147 N. Ravenswood Ave. • Chicago, Ill. 60613 • (312) 348-3377



For more data, circle 100 on inquiry card



Plate No 671

New Primitive tile colors to highlight your floor naturally.

Primitive® ceramic tile is the natural way to treat the floor or wall of an interior you want to dramatize. With these new colors—Mahogany, Leather, Greenstone, Flame, and Aspen, the refreshing neutral above—you now have a dozen colors to work with.

Primitive has an earthy, variegated texture that looks hand-crafted, and catches the light...softly. It comes in six shapes. It provides the ease of maintenance and durability your clients want.

No wonder Primitive feels right in so many design situations.

American Olean Tile Company
1975 Cannon Avenue, Lansdale, Pa. 19446
 Send me literature on Primitive.

Name _____

Firm _____

Street _____

City _____

State _____

Zip _____

CERAMIC TILE
American Olean
A Division of National Gypsum Company

for top
verifiable
building
market
coverage
there's

Architectural Record. Its architect and engineer paid subscribers are responsible for over 90 per cent of the total dollar volume of all architect-planned building, nonresidential and residential, large and small.

A fact documented by Dodge Reports.

With the aid of Dodge Reports, Architectural Record maintains an up-to-date file of the planning activity of the individual architectural offices throughout the U.S. by type of project and dollar volume. Continuing checks of the data against subscriber gallies provides the strongest assurance that your advertising is reaching the active factors in the marketplace.

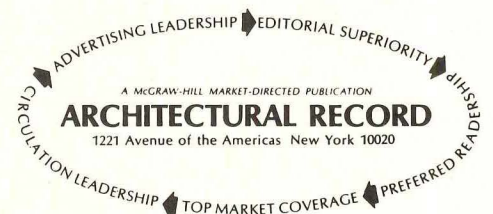
Architectural Record's top market coverage stems from the unequalled quality and quantity of its editorial service to architects and engineers who have consistently voted it their preferred publication in 247 out of 266 studies sponsored by building product manufacturers and their agencies. Not surprisingly, far more architects and engineers in building subscribe to the Record than to any other architectural magazine... at the highest subscription price by far.

Advertisers are impressed. More building product advertisers place more advertising pages in Architectural Record than in any other magazine in the world!

ONE

When one magazine is strongly preferred by the readers you must reach and the companies you must compete with—shouldn't you do the best possible advertising job in THAT ONE?

architectural
magazine



when one advertising value leads to another...and another...and another...you've located the leader

montgomery maintenance system serves over 25,000 installations throughout North America with "PM" elevator/escalator service

Reliable elevator/escalator service. It's as essential to efficient building operation as heat and light. Montgomery's superior Preventive Maintenance program is providing service to thousands of installations in North America. "PM" gives special attention to ride quality. Appearance. Safety. Reliability.

Montgomery's "PM" program is an example of Montgomery's Total Capability in design, manufacturing, installation and Maintenance of elevator, escalator, Power Walk and Power Ramp Systems throughout North America.

Contact your nearest Montgomery office—there are over 170—we're not very far from anywhere in North America.

montgomery moves people



montgomery®

ELEVATORS/ESCALATORS/POWER WALKS & RAMPS

Montgomery Elevator Company, Moline, Illinois 61265 • Montgomery Elevator Co. Limited, Toronto, Ontario M9B3S5 • Offices in Principal Cities of North America

For more data, circle 103 on inquiry card

Seven reasons why your investments deserve Pyrotector photoelectric smoke detectors.

1. They provide earlier detection of incipient (smoldering) fire than ionization detectors. We'll prove this by demonstration.
2. They detect smoke of required density regardless of distance smoke particles have travelled.
3. They have none of the safety problems possible with radioactive devices.
4. They are not "threshold" alarm devices and thus have no threshold-related false alarm or desensitization problems.
5. They are nearly maintenance-free in normal environments.
6. They can be installed in or adjacent to air ducts or entries.
7. They carry all required listings and approvals.

Send the coupon to us at 333 Lincoln St., Hingham, Mass. 02043. We'll send you our brochure with even more reasons why you should protect your investments with Pyrotector photoelectric smoke detectors.

Name, Title _____

Firm _____

Address _____

City, State, Zip _____

PYROTECTOR

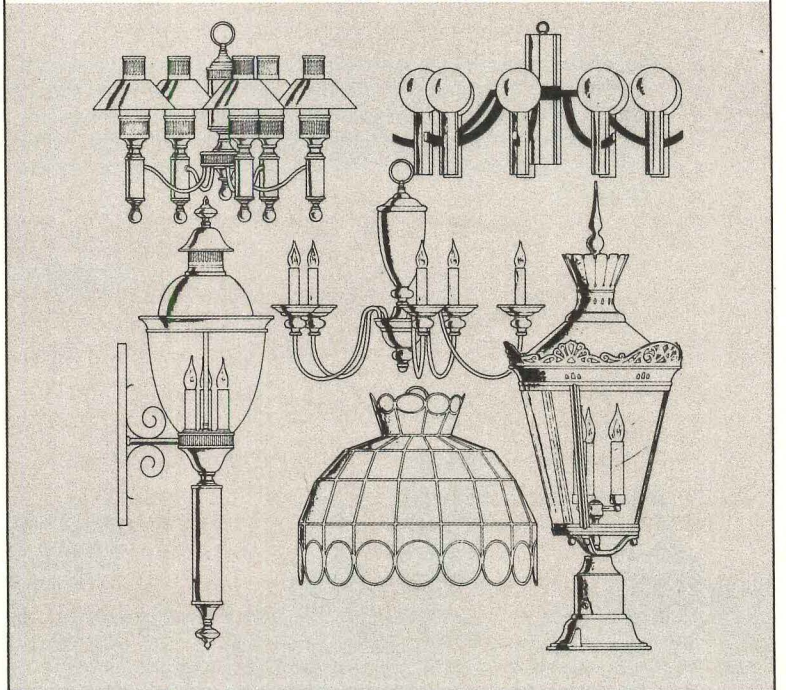
The photoelectric way.

For more data, circle 104 on inquiry card

Now available. Feldman 1974-75 Full Color Lighting Catalog

THE FELDMAN COMPANY
612 South Wall Street
Los Angeles, California 90014

since 1918



For more data, circle 105 on inquiry card

TOUGH... RESILIENT... LONG LASTING

TENNIS COURT COLOR FINISH

44 Years Weather and Wear
Proven On All Concrete Surfaces

Wherever you find recreational, industrial, public utility or commercial concrete construction, you'll likely find Kemiko Col-r-tone.

Col-r-tone's unique chemical composition defies sun, wear, moisture or alkalis for years and years. Won't chip, crack or peel. Non-skid, glare-free in beautiful flat and matte finish. Easily and quickly applied by brush or roller it seeps right in. 8 basic colors that may be intermixed to provide over 50 contemporary colors.

Write today for free illustrated brochure and color chips.

KEMIKO INC.

DEPT. AR-54

2443 N. Naomi St.
Burbank, Calif. 91504



For more data, circle 106 on inquiry card



**Acoustone SEACREST
Ceiling Panels
are foil-backed to
foil temperature loss.**

INSULATING QUALITY.

Foil-backed ACOUSTONE® Ceiling Panels deliver an installed resistance to heat flow to an R-Value of 11.08. Trim heating/cooling costs, help conserve energy.

SOUND CONTROL.

Large module ACOUSTONE panels soak up noise to a quieting .70-.80 NRC; deliver STC of 35-39 to help provide optimum, total-room sound conditioning.

FIRE RATING.

Noncombustible (ASTM E84 test procedure); Type III, Class 25(1), Federal Spec SS-S-118a. Fire hazard classification A: flame spread 15, fuel contributed 15, smoke developed 0-15.

ESTHETICS.

New Seacrest pattern ACOUSTONE panels present a fresh, frothy look that's as textured as a surfing sea; provides high light reflectance; allows energy-saving wattage cut-backs.

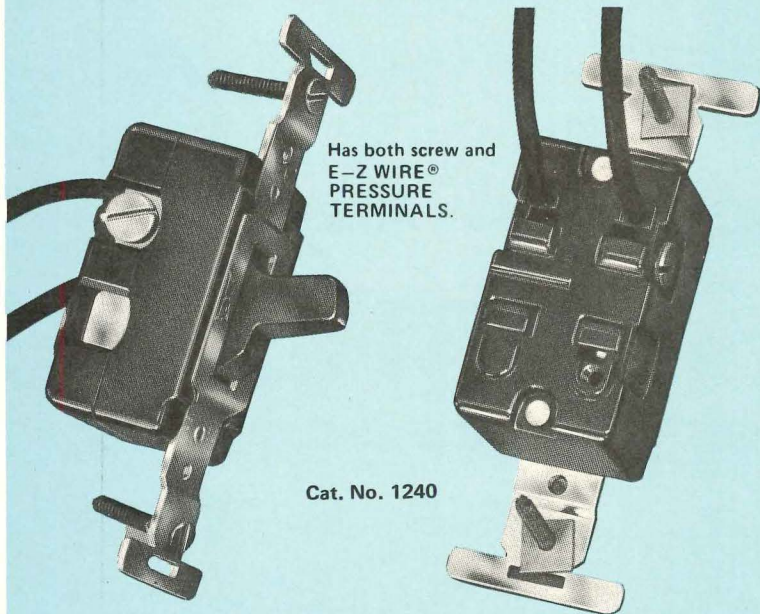
See your U.S.G. Representative for specifics. Or write to us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AR-54.

UNITED STATES GYPSUM 
BUILDING AMERICA

For more data, circle 107 on inquiry card

SWITCHES

Why the Eagle TOUCH-A-MATIC® Switch is the safest, most dependable choice for your electrical specifications.



Has both screw and E-Z WIRE® PRESSURE TERMINALS.

Cat. No. 1240

How it works:

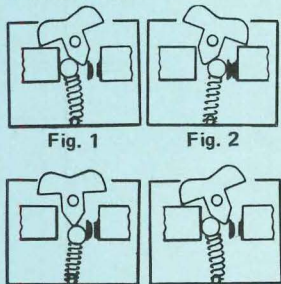


Fig. 1. switch in "off" position (contacts open). As switch lever is rotated, actuating ball compresses the coil spring, but ball must pass pivot point of lever before it can close the contact. As it passes the pivot point it has maximum momentum and closes the contact points positively and rapidly. All independent of hand action (Fig. 2.). As the switch lever is rotated in the opposite direction, Fig. 3, the ball is depressed and slowly releases some spring tension on the contact arm, permitting the contact points to open enough to break the arc slowly. Then as the ball passes the pivot point it completes the cycle (Fig.4.).

The Eagle Heavy Duty Touch-A-Matic Switch operates on a completely different principle than the generally used cam-action switch. This principle is specifically designed for AC use.

Touch-A-Matic is a ball bearing and spring patented principle that assures a fast make and a slow break, (which is independent of hand action); so that arcing is prevented. This means a safer switch action — and less erosion of the contacts, so that the switch lasts longer. In fact, the rigid overload and endurance testing program which Eagle Touch-A-Matic switches must pass is equivalent to turning the switch on and off twice a day at full load for 40 years.

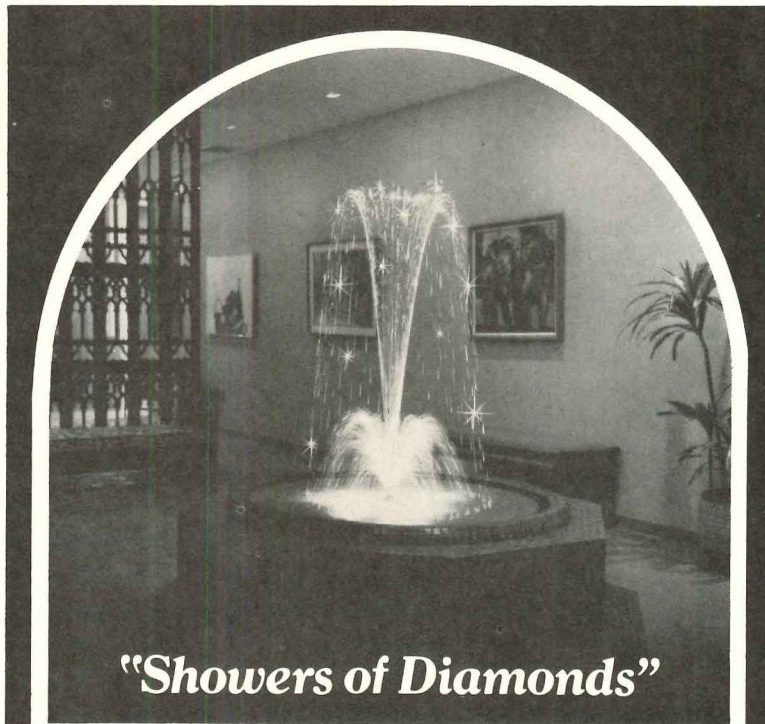
Eagle Touch-A-Matic Switches have both screw and E-Z WIRE® pressure terminals, which permit faster installation at lower cost. Touch-A-Matics are Specification Grade, UL listed and meet Federal Specifications and OSHA standards. Available in Single Pole, 3-way, Double Pole, 4-way; 15 and 20 Amp, 120-277V AC only (½ HP, 120V AC), in brown and ivory; and white in some styles. Lifetime Guarantee. For more information on Touch-A-Matics and the complete line of Eagle wiring devices, send today for a copy of our catalog.



Eagle Electric Mfg. Co., Inc., Long Island City, N.Y. 11101

In Canada: Eagle Electric of Canada Ltd., Ontario

For more data, circle 108 on inquiry card



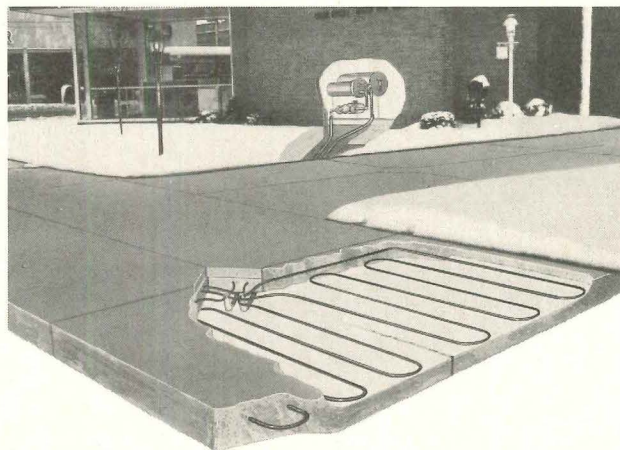
"Showers of Diamonds"

Fountains by RAIN JET

ADD BEAUTY PLUS PROTECTIVE LIGHTING. Patented RAIN JET nozzles form dancing patterns of jewel-like water droplets. Delightful both lighted and unlighted! Exceptionally efficient low-energy pump. Used indoors/outdoors at Disneyworld, Sea World, Rose Parade, etc. Complete Fountain and Bowl Assemblies (no plumbing needed) or Custom Fountain Heads. Send for free full-color literature and prices.

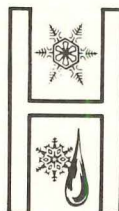
RAIN JET CORP., 301 S. Flower St., Burbank, California 91503
Dept. FW

For more data, circle 109 on inquiry card



AUTOMATIC SNOW CONTROL with GUARANTEED Reliability

The patented Hume system sets state-of-the-art performance standards for in-ground automatic snow melting. So reliable, it's backed by a full five-year pipe system warranty. Our latest illustrated brochure contains full details and system specifications. Send for your copy today or see us in Sweets under Section 15.13.

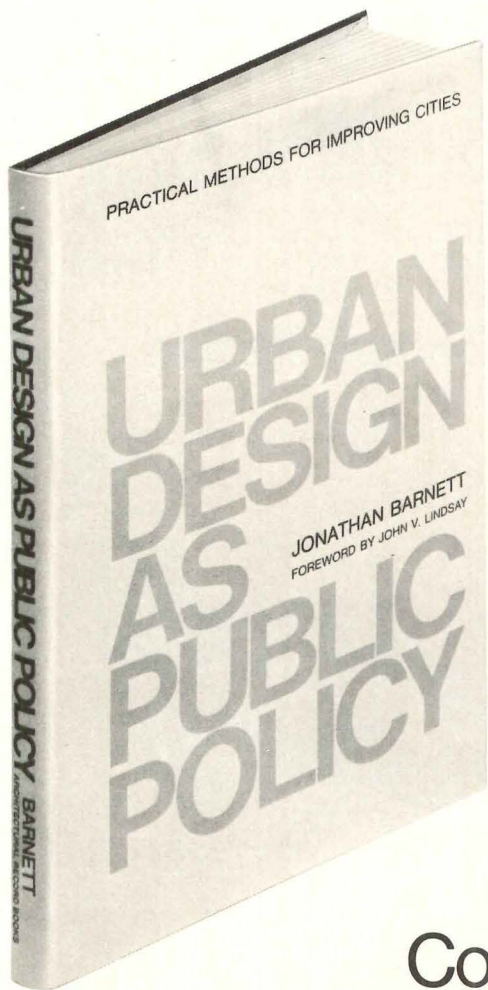


HUME SNOW MELTING SYSTEMS, INC.

4405 FERNLEE AVENUE • ROYAL OAK, MICHIGAN 48073
(313) 549-2830

For more data, circle 110 on inquiry card

"A tell-it-like-it-is document"
Ada Louise Huxtable



The First Book That Focuses on *and tested* Practical Methods For Improving Our Cities.

As a nation of cities with urban problems and promise occupying the forefront of national concern, the urban designer must anticipate the consequences of growth and change, and turn them to positive effect.

In *Urban Design as Public Policy*, Jonathan Barnett, former director of N.Y. City's Urban Design Group, draws on his extensive experience to show how architects, planners, and designers—wherever they may be—can use the New York experience to achieve successful methods for working with political and real estate interests, commercial and community groups, as well as fellow planners.

Fully illustrated with photographs, site plans, and schematics, this 208-page book shows practical and *tested* methods for solving many of the toughest problems facing our cities.

Order your copy through your local bookstore, or use the coupon below. Mail to Architectural Record Books, P.O. Box 682, Dept. A, Hightstown, New Jersey 08520.

Contents

Foreword	by John V. Lindsay	vi
Introduction	City design as a real-life problem	1
1	Private enterprise and public benefit	13
2	Designing cities without designing buildings	29
3	Preserving landmarks and ties to the past	69
4	Neighborhood planning and community participation	85
5	Helping downtown compete with the suburbs	115
6	Transportation, the urban armature	141
7	Design review and environmental quality	173
8	Urban design: a new profession	185
Acknowledgments		193
Index		198

"this description of our efforts in New York will help other cities to study our urban design techniques and adapt our more successful efforts to their own needs."

—From the forward by
Mayor John V. Lindsay

Please send me _____ copies of **URBAN DESIGN AS PUBLIC POLICY** @ \$15.00.

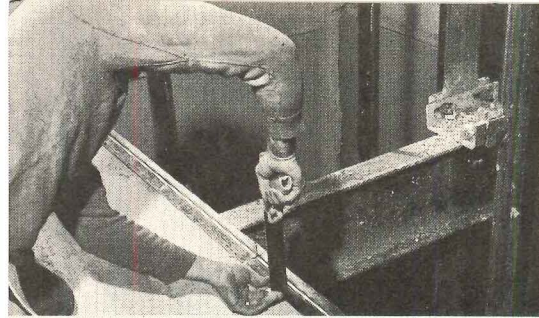
Name: _____

Address: _____

City: _____

State: _____ Zip: _____

AR 5-74



1. Installing floor track.

Here's why G-P Shaft Liner is saving time, and money, for architects and many building owners, operators, and specifiers. First, solid gypsumboard Shaft Liner is much lighter than masonry. So it's easier to handle. And no scaffolding is needed: Shaft Liner installs from the shaft exterior. Shaft Liner is non-progressive. A panel can be

replaced at any time before the face layers are applied. There's a minimum of clean-up with Shaft Liner. Finally, it can be spliced and still meet all fire codes.

Georgia-Pacific has 11 systems designed to meet any of your



2. Installing core panel.

code requirements. All are UL labeled. So, if you're figuring specs for elevator shafts, stairs,



3. Attaching core to T-spline.

4. Applying finish layers.

smoke towers, or air ducts, take time to look into G-P Shaft Liner. Spend a few minutes now, and you can save months on the job. Call your G-P representative for details or look in the G-P catalog in your Sweet's file.

Georgia-Pacific



Gypsum Division Portland, Oregon 97204

For more data, circle 112 on inquiry card



Georgia-Pacific Shaft Liner™
can cut elevator installation
time by 25%."

Donald B. Klienschmidt, Architect
City Center, Albuquerque, New Mexico
Empire Square, Dallas, Texas



WHAT MAKES THIS ALL-GLASS BUILDING SO ENERGY EFFICIENT?



THE GLASS. PPG SOLARBAN® 480

The First International Building in Dallas is a brilliant example of the efficiency of glass buildings.

Its skin is nearly all glass.

Yet the press has hailed it as "... the most energy-efficient building in Dallas."

This is not in spite of being glass, but because it is PPG Solarban 480 Twindow insulating glass.

Where the energy goes.

In planning this building the design team saw (as you can see on the chart) that about 50% of the energy would go to light it.

Another 14% to run the fans, elevators and various office machines.

About 7% to heat it.

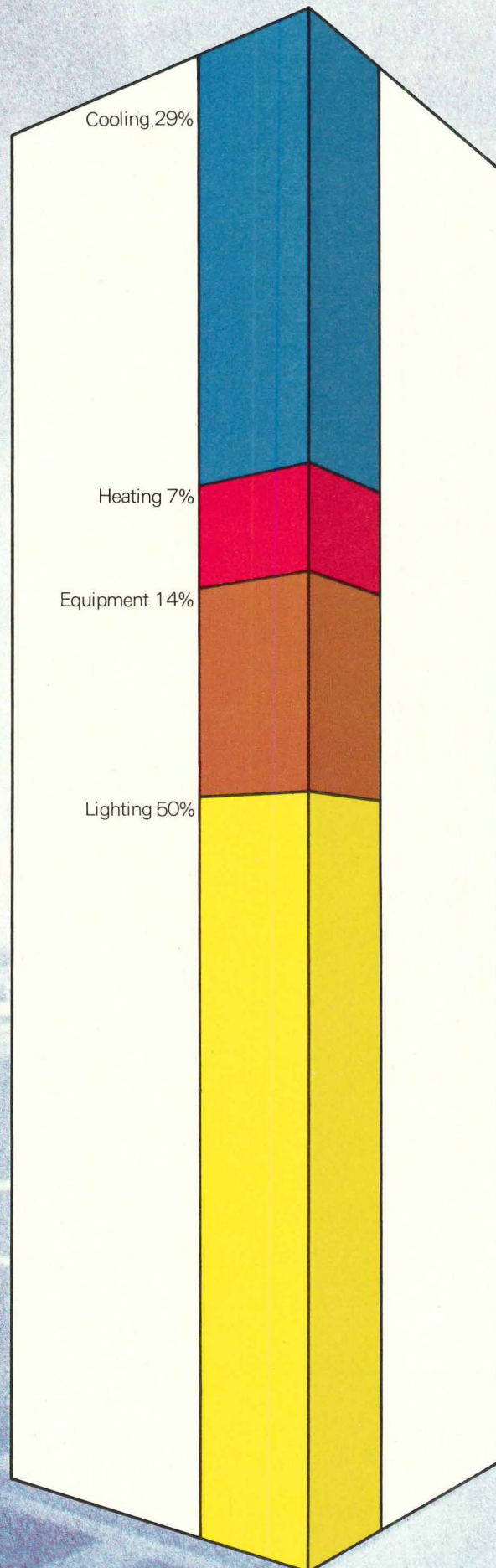
And because it's Dallas, 29% to cool it.

So they decided to cool it—with the most innovative, energy-conserving air-conditioning system technology could provide.

But they needed high-performance glass to do it.

It reflects, insulates and saves.

PPG Solarban 480



Twindow reflective insulating glass has a shading coefficient of 0.22.

This reduces solar heat gain by 78% compared to single-glazed clear glass.

And the double glazing drastically reduces the conducted heat gain (or loss) through the skin of the building.

The bottom line is this:

The innovative, all-air mechanical system saves both energy and money. It reclaims heat from the lighting and large interior spaces and redistributes it for perimeter heating when needed.

And the simplicity of its design saves even more money.

As the Herman Blum Consulting Engineers put it: "If you're going to use an all-air system in a high-rise building, you've almost got to have a high-performance glass."

The right glass is the right answer.

Today, there is a flurry of antiglass invective.

TWINDOW[®] INSULATING GLASS.

People would have you think that less glass used means more energy saved.

Not necessarily so.

It's really a question of quality, not quantity.

And buildings like the First International Building prove it.

Our graph illustrates one important point to keep in mind with "all-glass" buildings.

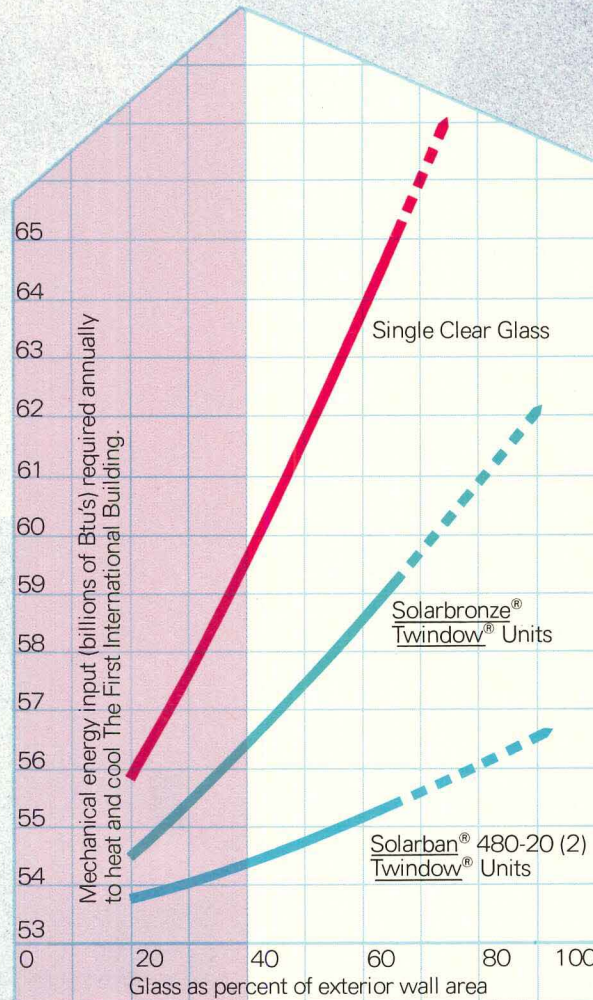
A building that's 70% Solarban 480 Twindow insulating glass (and that's 70% vision glass we're talking about) is more energy efficient than the same building using cramped little clear glass windows totaling only 20% vision area (and that's an 80% opaque wall).

The transparent advantage.

If a glass wall can be used instead of an opaque wall, it's obviously better.

It's transparent.

Experienced owners agree that tenants find a building much more desirable when they can see the outside from the inside. And certainly an important mea-



sure of the success of any building is the effect it has on the satisfaction of its tenants.

Economically, esthetically, psychologically—no matter how you look at it—glass is a building material of remarkable potential.

Especially in conserving energy. An important point to remember.

PPG High Performance Glasses come in a wide range of performance values to suit your building's economic and esthetic considerations.

Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

The First International Building, Dallas, Texas

Owner: First National Bank in Dallas

Architects: Harwood K. Smith & Partners, Dallas and Hellmuth, Obata & Kassabaum, Dallas and St. Louis

Mechanical Engineers: Herman Blum Consulting Engineers, Dallas, Texas

PPG: a Concern for the Future

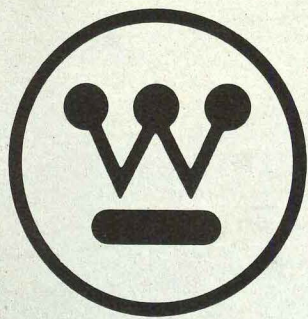
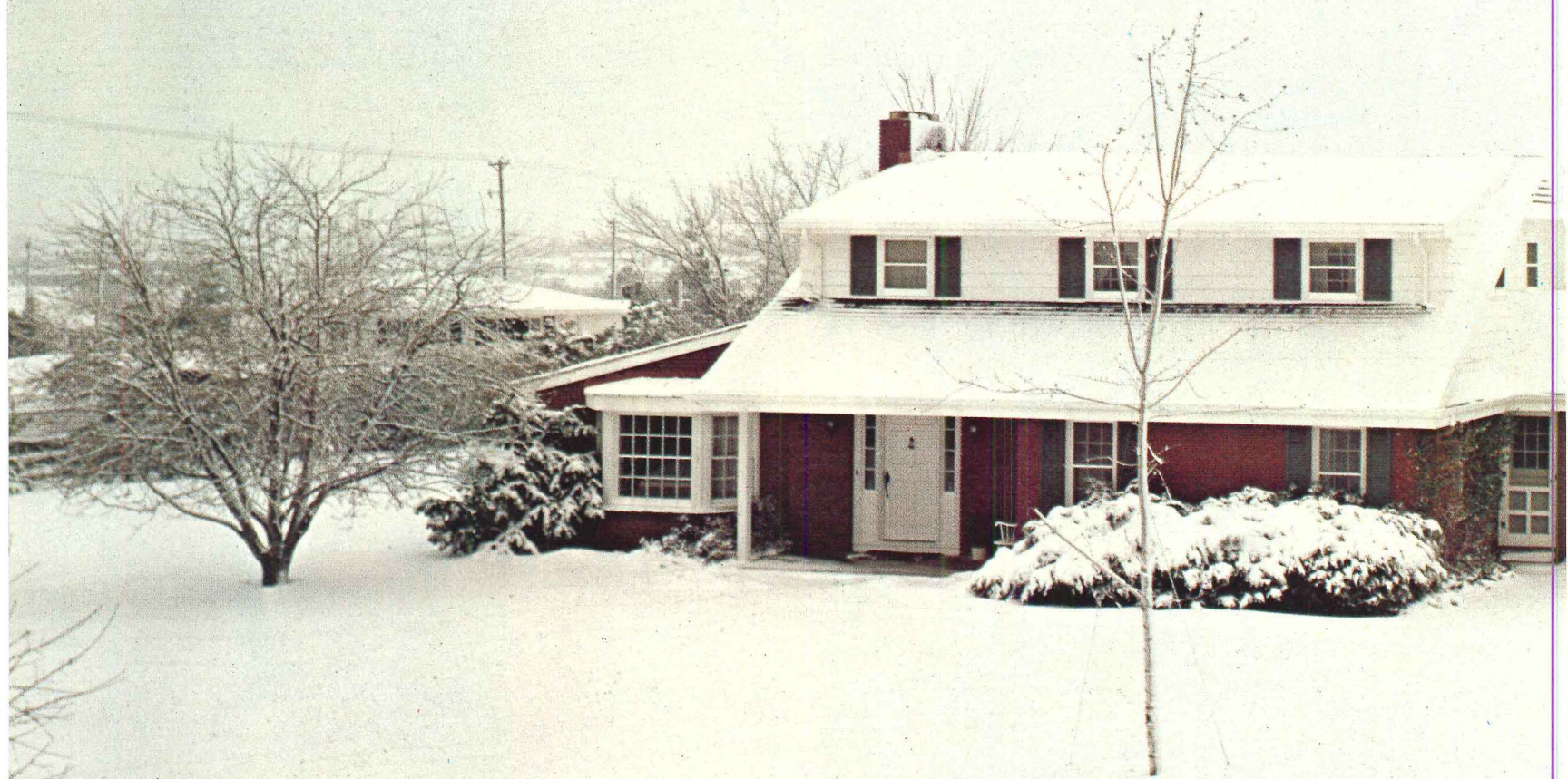


INDUSTRIES

For more data, circle 113 on inquiry card

**On a wintry day,
the outside air can keep your
house warm ...if you
have a heat pump.**

Even in the dead of winter, the outside air has plenty of heat in it, more than enough to heat your house. All you have to do is take the heat out of the air and move it into the house. And that's what a heat pump does. (In summer it just reverses the procedure, pumping heat out to air condition the house.)



Westinghouse

Doesn't burn oil or gas. The heat pump operates on electricity, conserves fuels like oil or gas that are in short supply.

And because the heat pump is just moving heat, not creating it, it's extremely efficient in its use of electricity.

Cuts fuel costs. Right now it will save money on heating costs. As fuels become scarcer, it is expected that the savings will be greater. So the savings in heating costs over the lifetime of a house built today with a heat pump would be considerable.

For complete information on the Westinghouse heat pump write: Westinghouse Electric Corporation, Marketing Department, Central Residential Air Conditioning Division, P.O. Box 1283, Norman, Oklahoma 73069.

For more data, circle 114 on inquiry card



helps make it happen

Come Hail or High Water Tapered FOAMGLAS® Insulation Gives Positive Drainage



The best way to get proper slope for positive water drainage is with Tapered FOAMGLAS Insulation. The blocks come pre-tapered 1/8 inch per foot to provide proper water drainage and an excellent base for built-up roofing.

Pittsburgh Corning guarantees that Tapered FOAMGLAS Roof Insulation will not absorb moisture, will retain its original insulating efficiency and compressive strength and will remain incombustible for 20 years when applied in accordance with the written guarantee.

Tapered FOAMGLAS Insulation, which is available for prompt delivery, provides one-contractor responsibility for the roofing insulation and built-up roofing. And, the new Tapered II system cuts

installation time and material waste.

Learn more about the Pittsburgh Corning guarantee and the unique inorganic closed-cell construction of FOAMGLAS Insulation.

Send in the coupon below.



MAIL TO: Pittsburgh Corning Corporation
 Department AR-54
 800 Presque Isle Drive
 Pittsburgh, Pennsylvania 15239

Yes, I'd like to know more about Tapered FOAMGLAS® Insulation and its guarantee
 I would like to see a Sales Representative

Name _____
 Title _____
 Company _____
 Address _____
 Telephone _____

For more data, circle 136 on inquiry card



H otel after hotel after hotel checks out proven carpet by Bigelow.



If you're doing a hotel job, either new construction or remodeling, you can create your own specifications for the carpet you want. And we can make it for you. However, Bigelow has another practical suggestion: specify carpeting that has already proven it can take the hard use (not to mention abuse) guests, visitors and staff deal out. Carpet that has repeatedly demonstrated it can take a beating year after year after year.

Bigelow has that kind of proven in actual hotel use carpeting ready for you in a wide selection of carpet styles and patterns. Carpet that is the result of research and development combined with the realistic experience gained in hundreds of hotel installations.

And Bigelow will do more than just sell you proven carpet. We'll give you expert counselling in installation and through our Karpet Kare® Division, we'll give you the best advice available on maintenance. It's a total package designed to assure you that you can specify Bigelow with total confidence.



Bigelow-Sanford, Inc., Dept. A
140 Madison Avenue, New York, N.Y. 10016

I'd like to hear the proof on Bigelow's proven carpets for hotels.

NAME _____ Print Clearly

TITLE _____

ADDRESS _____

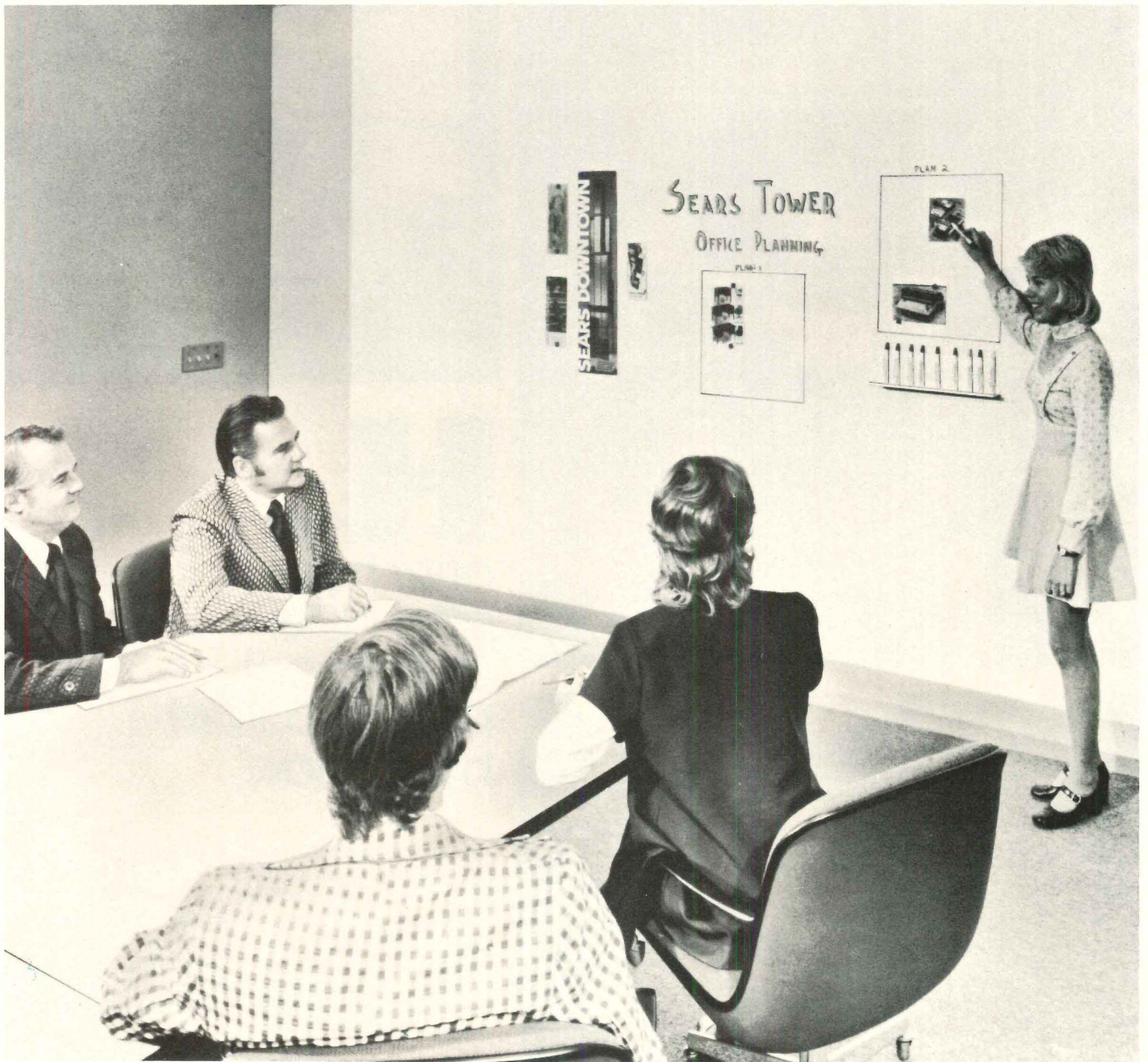
CITY _____

STATE _____ ZIP _____

Bigelow[®]
RUGS & CARPETS SINCE 1825

AMERICA'S MOST EXPERIENCED CARPET MAKER

For more data, circle 115 on inquiry card



Specify Eberhard Faber - Boards and turn blank walls into communications walls.

More and more leading architects are specifying our Eberhard Faber-Board® panels for some of the biggest jobs going up today. Like the new Sears Tower and Standard Oil building in Chicago. And the World Trade Center in New York. They're versatile. Eberhard Faber-Boards are appli-

cable for new or present construction or renovations. They're the visual aid panels that really aid communications. Because they're three communications areas in one. The surface lets you write with Eberhard Faber-Board color markers because it's white. Lets you project without distortion because

it's lenticular. And lets you post or schedule without hang-ups because it has magnetic capability. For a kit with sample material, information on types, sizes and all specifications on the visual aid panels of the future, write today.

EF EBERHARD FABER®
CRESTWOOD, WILKES-BARRE, PA. - 18703
 Products for Graphic Communications.

For more data, circle 125 on inquiry card



HOW TO MAKE A MONUMENTAL DIFFERENCE.

It's exciting, sweeping, bold, beautiful and versatile.

It's designed to take the wraps off your imagination. To make for a grand design, on a truly large scale.

The Alcan Planar Aluminum Ceiling System.

There's no size limitation to work around. No weight problem. No maintenance headache.

Just durable, adaptable aluminum that even holds up in high-chlorine, high-humidity environments, with a tough silicone polyester finish you only have to wipe to clean.

And because it's aluminum, it makes as good a soffit as a floating ceiling.

In case you want to carry the look inside to the outside, with a curtain wall or the like.

What's more, it's not a system in name only. It's all there, all in one place, all at Alcan: panels, lighting fixtures, invisible air diffusers, everything. Including sound insulation if you need it.

All of which makes our Planar Ceiling System monumentally sensational.

For details, write Alcan Building Products, Department I, P.O. Box 511, Warren, Ohio 44482.

ALCAN ALUMINUM



For more data, circle 116 on inquiry card

PROFESSIONALS AT WORK

- * *Mall Designer:* Dan Morganelli, Hewmann & Associates, Los Angeles
- * *Mall Architect:* Loeffler, Johnson and Associates, Pittsburgh
- * *Mall General Contractor:* Magnum Construction Corp., Pittsburgh
- * *Mall Mechanical Contractor:* Limbach Co., Pittsburgh
- * *Mall Developer:* Oxford Development Co., Pittsburgh
- * *Gimbel's Store Architects & Engineers:* Abbott, Merkt & Company, New York
- * *Mechanical Contractor:* Sauer Inc., Pittsburgh
- * *Gimbel Corp. Director of Construction:* Tom DeAngelo
- * *Joseph Horne Co.: Mechanical Contractor:* Sauer Inc., Pittsburgh
- * *General Contractor:* Mellon Stewart Co., Pittsburgh



Suburban Pittsburgh's Monroeville Mall serves 300,000 shoppers a week with 1.3 million sq. ft. of sales area. Besides 126 specialty shops and four major stores, the complex features an Olympic size skating rink, community auditorium, church chapel and a branch of the Carnegie library.

A single duct variable volume system supplies cooled air with lighting and people functioning as a heat source. A warm-up override control supplies warm air when needed.



Aerofin Coils contribute to the Custom Climate for one of the Top Ten Malls

Aerofin Heat Transfer Coils have been a part of many advanced technology heat recovery systems for shopping malls, publishing plants, high-rise office buildings. Depending on the system design, Aerofin "Deep" Coils produce a large temperature rise for cooling, and a corresponding drop for heating. That equates into smaller pipes, pumps, valves, less insulation—and significant savings. Ask for engineering help in Atlanta, Boston, Chicago, Cleveland, Dallas, Los Angeles, New York, Philadelphia, San Francisco, Toronto, Montreal.



AEROFIN CORPORATION
LYNCHBURG, VIRGINIA 24505

Aerofin is sold only by nationally advertised fan manufacturers. Ask for list.

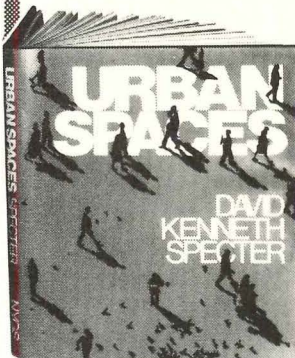
The architect of New York's "The Galleria" reveals the environmental pleasures possible in cities

URBAN SPACES

by David Kenneth Specter, A.I.A.
foreword by Walter McQuade

Drawing examples from Venice to Boston, David Specter explores a multitude of urban spaces that enhance the quality of city life. With fascinating photographs he shows possible uses for paving, fountains, waterfronts, lighting, graphics, surface enrichment, cafés, shopping streets, covered pedestrian malls, and much more. Illuminating the elements that create urban amenities, this is a book enthralling to the layman, essential for the designer.

40 color, 234 b & w ills. 144 pp. 9 x 10 ins.
\$15.00 at your bookstore, or use coupon to order today.



NEW YORK GRAPHIC SOCIETY
140 Greenwich Ave., Greenwich, Conn. 06830

Please send me _____ copy(ies) of URBAN SPACES by David Kenneth Specter at \$15.00 plus 75¢ postage and handling per copy. I enclose \$ _____ check or money order.

Name _____

Address _____

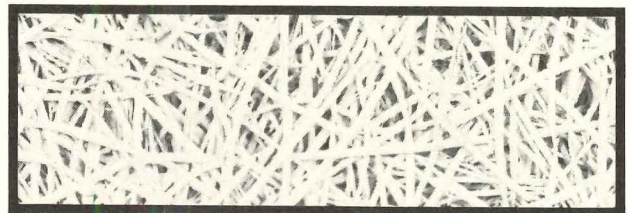
City, State & Zip _____

Conn. residents please add 6½% sales tax.

Save pennies per square foot

Petrical® Roof-Decks do more.

- Structural Roof-Deck
- Low "U" value
- Noise reduction coefficient up to .85
- Moisture resistant
- U.L. classified
- I.C.B.O. approved
- Non-combustible
- Diaphragm tested
- Wall panel
- Form board
- Prime painted white
- Attractive
- Durable



Call or write:

CORNELL CORPORATION

808 South Third Street
Cornell, WI 54732 • Phone: (715) 239-6411
See Sweet's Architectural File.

For more data, circle 118 on inquiry card

For more data, circle 119 on inquiry card

When a job calls for beautiful, textured doors with better durability than wood . . .

Next to the three prefinished embossed hardboard door facings in the Legacy Series from Masonite Corporation, any other door facing is out of its depth.

No flat surface door with a mere grain finish has the deep-textured feeling of Legacy or its deep-rooted durability.

Legacy comes closer to nature than competitively priced doors. The texture is embossed into the substrate before the durable finish is applied. It won't scratch off. The total effect mirrors that of an actual wooden planked surface, each plank with

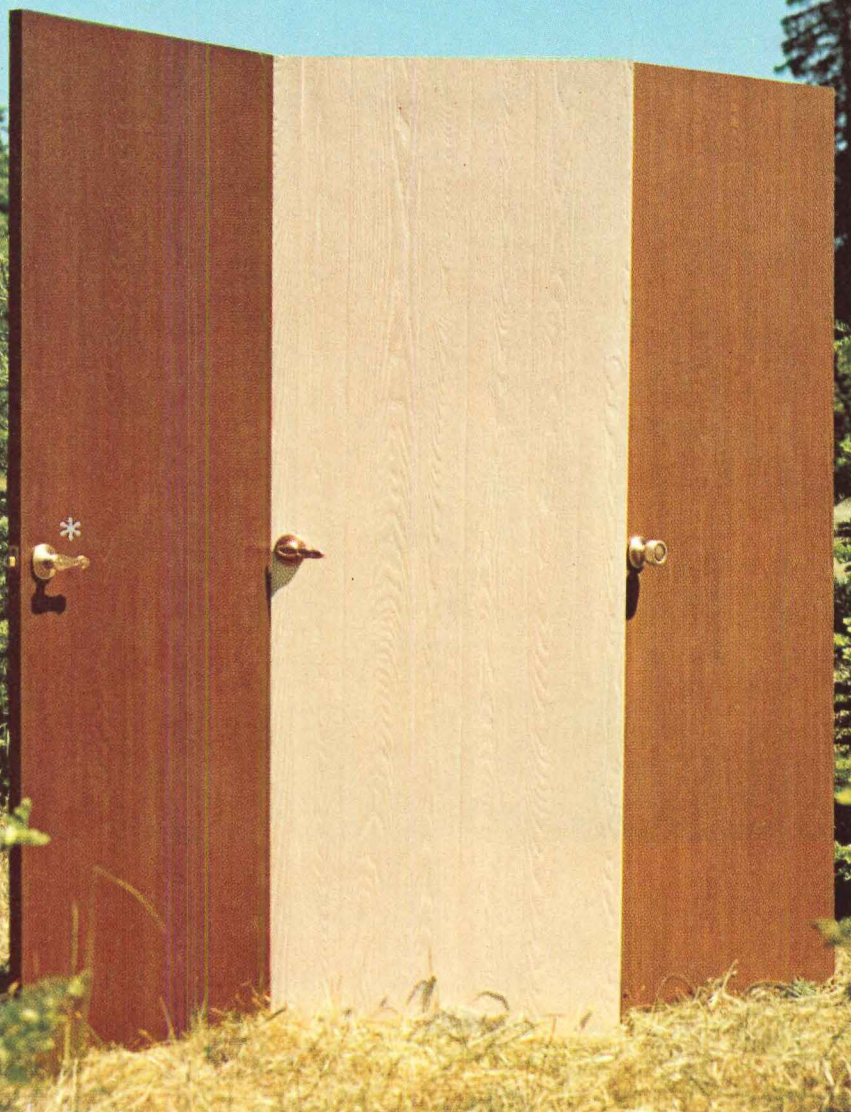
its own personality.

Mar-resistant Legacy won't split, splinter, crack or check. It can be easily repaired on site in event of damage. Legacy's high dimensional stability and great structural strength make it suitable for use with both solid and hollow core doors.

And the price is right.

Want the names of some quality door manufacturers currently using Legacy? Write Masonite Corporation, 29 North Wacker Drive, Chicago, Illinois 60606.

Legacy and Masonite are trademarks of Masonite Corporation.



Legacy series of embossed hardboard door facings: Walnut tone, New White and Oak tone.

*Locksets by Kwikset®.



The closer you get the better Legacy looks.

...Legacy™ stands alone.

For more data, circle 120 on inquiry card

VERT-I-PAK SLIDE 'N' SWING

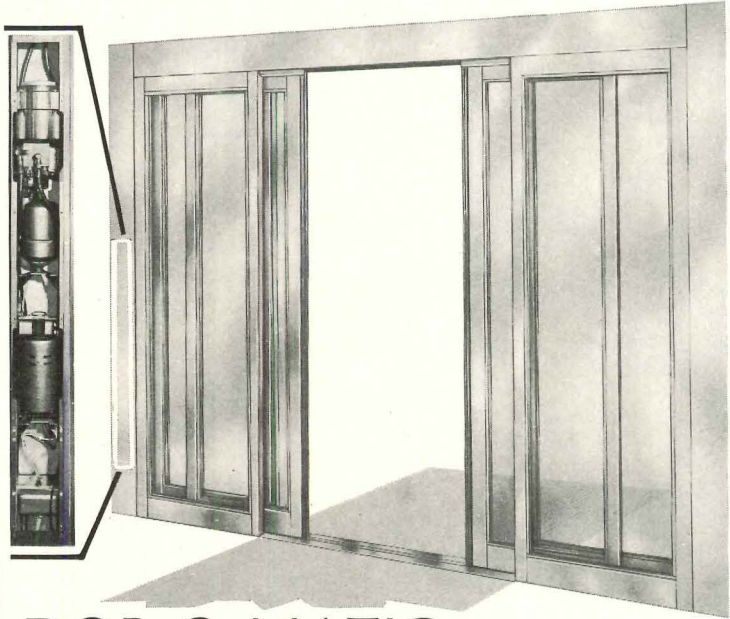
(The VIP/SNS)

Dor-O-Matic smooth-gliding Slide 'n' Swing automatic sliding doors feature bi-parting action in everyday use . . . life-safety swing-open action in any emergency. Now available with exclusive, low maintenance Vert-I-Pak self-contained hydraulic power unit . . . vertically mounted in side jamb.

FEATURES

- Fast, safe sliding doors
- Near-silent operation
- Easy installation, convenient service
- Standard 115V, 1 Ph, 60 Hz, 10 Amp power
- Meets 6'6" electrical height codes
- Clear or Dor-Cote finishes available
- Also available for swing doors
- Many other features

REQUEST BROCHURE



6922

DOR-O-MATIC

Division of Republic Industries, Inc.

7350 West Wilson Avenue, Chicago, Illinois 60656 312/867-7400

For more data, circle 117 on inquiry card

At last! A wall system that can match your imagination!

Solid hardwood prefinished wall planks

Random width, random length genuine solid hardwood wall planks, lovingly prefinished, in a choice of 13 woods with the full natural beauty and richness that no imitation can match. Send today for Designer's Sample Kit containing 13 full-size sample species, textures and finishes.



Townsend® Paneling

Potlatch Corporation
P.O. Box 916, Stuttgart, Arkansas 72160

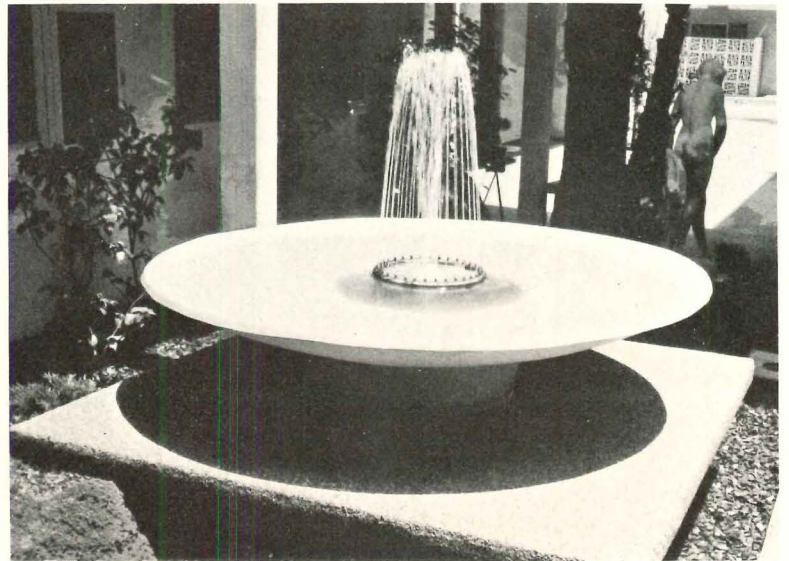


- Enclosed is my check for \$3 to cover cost of my sample kit.
- Please send additional literature.

Name _____ Phone _____
Firm _____
Title _____
Street No. _____
City _____ State _____ Zip _____

For more data, circle 122 on inquiry card

NOW THERE IS AN EASY WAY TO DECORATE WITH WATER!



Decorative water displays are now available in kit form. All hardware, including pumps, connecting piping and lights are shipped to the job site ready to hook up to a source of power.

Send for a FREE CATALOG today!

ROMAN FOUNTAINS, INC.
P.O. Box 10190
Albuquerque, NM 87114
Area Code (505) 898-3311

For more data, circle 123 on inquiry card

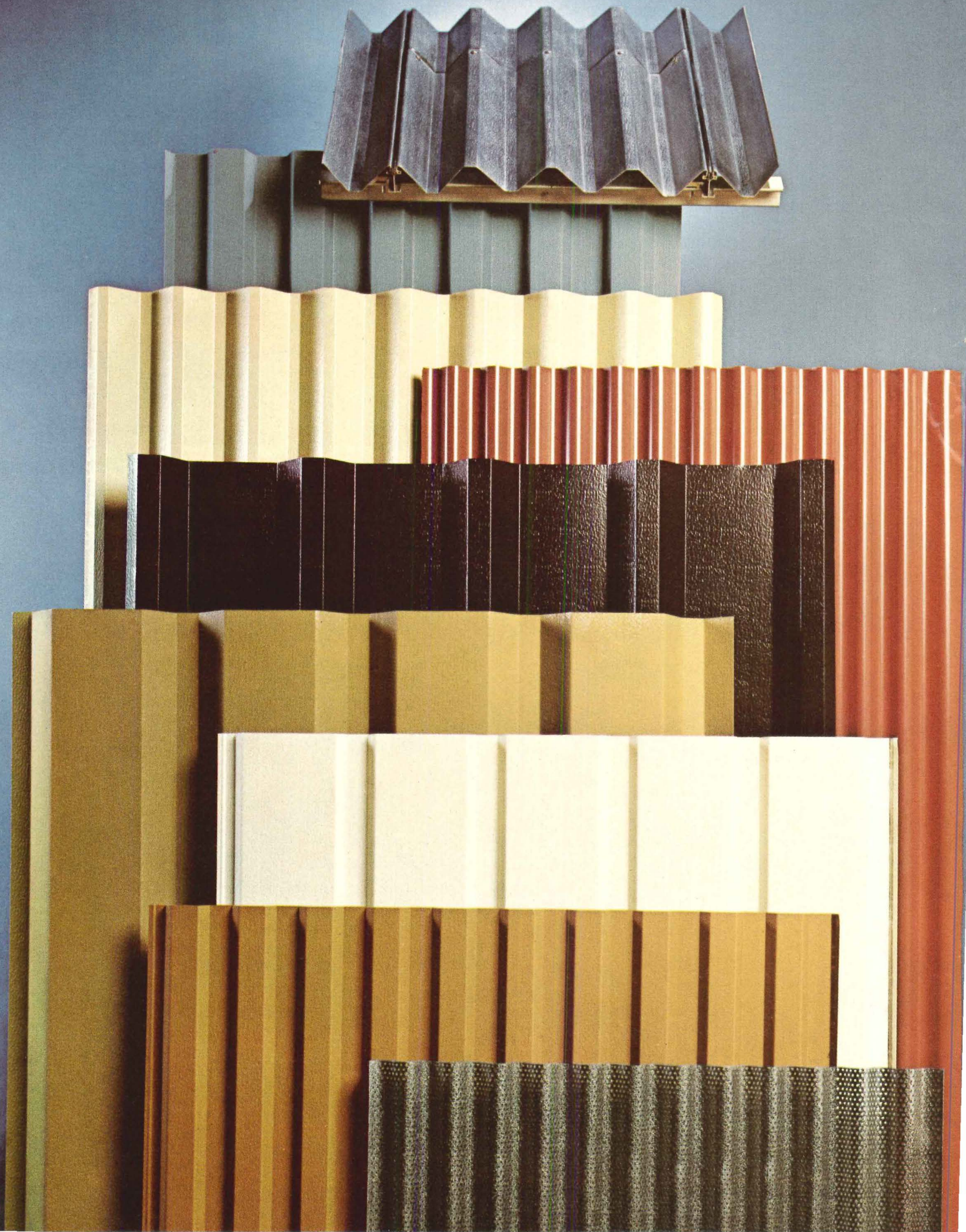
when is terrazzo not a floor?

A picture is worth a thousand words. And our six pictures show just a few, among the great number, of applications where the infinite possibilities in color, design and texture take form in areas other than floors. On walls, fascia and trim. Ornamental, decorative and functional structures. Benches, statues, fountains. In pre-cast forms for stairs, window sills. Sometimes, the unusual and artistic textures disguise the identity of terrazzo—even when it *is* a floor. Such as in quartz, granite or a myriad of unusual aggregates. In textured mosaics. And new blends of marble chips. □ The ancient art of terrazzo has been changing. It's really a new technology with new versatility. New methods. New materials. Many of its applications today are truly innovative. For further information or technical assistance, contact your terrazzo contractor or regional technical representative. Or write **terrazzo** 716 Church Street, Alexandria, VA 22314. (703) 836-6765.

For more data, circle 124 on inquiry card

terr a z z o





Look ahead.

To shape, shadow line and color as you conceived them. To long service life and low maintenance costs. For now and for years from now. Alcoa® aluminum industrial building products.

What meets the eye

Formed aluminum industrial siding products with deep profiles for added strength (V-Beam) . . . profiles that blend texture and shadow line (Bold Rib I and II sheet and Box Beam) . . . profiles that combine function and economy (4-inch and 8-inch ribbed and corrugated sheet) . . . and special-purpose profiles (perforated corrugated and curved corrugated). Plus a roofing system that resists water leakage by eliminating through-fasteners (Snug Rib® roofing). All Alcoa industrial building products

can be finished in any of the 10 attractive colors of Alcoa Super Aluma-lure® finish, a baked-on, factory-applied, fluoropolymer enamel, rich in beauty and color integrity.

What doesn't

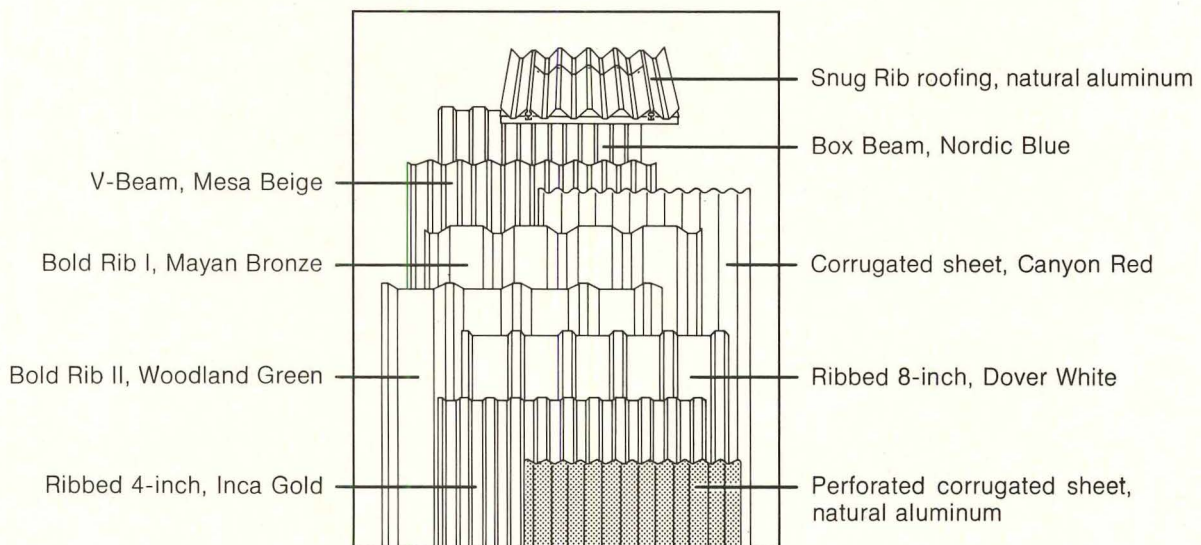
Aluminum's hidden advantages. Begin with the fact that aluminum takes care of itself *and* your budget. It resists corrosion by forming a protective film of aluminum oxide. So, unpainted aluminum is all some buildings need. However, if you want color, all the more reason to choose aluminum. It's the substrate that provides additional protection should the coating be scratched. The natural aluminum oxide film that forms, resists corrosion and discourages flaking or adhesion

loss, staining or streaking. Aluminum actually *helps* a coating last. It holds a finish beautifully.

And, the Super Aluma-lure finish is a long-lasting film that won't peel, flake or chip. Its fluoropolymer resin is tough, durable Kynar* that gives a high degree of protection from chemical attack and has a projected service life of more than 20 years, based on exposure and weathering tests.

For complete information on our commercial and industrial building products, see *Sweet's Architectural or Industrial* files. Or write Aluminum Company of America, 1056-E Alcoa Building, Pittsburgh, Pa. 15219.

*Trademark of Pennwalt Corporation

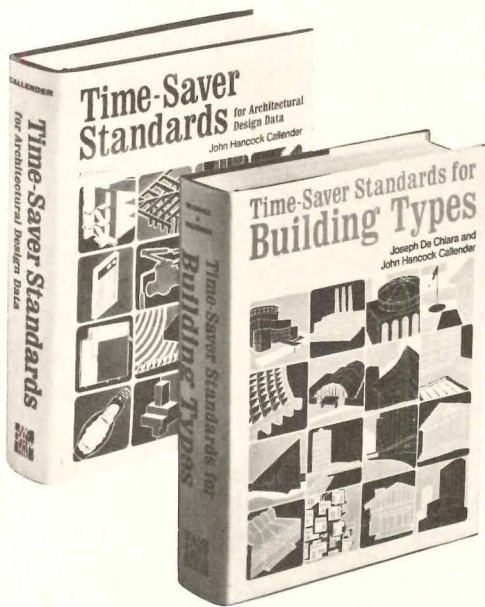


Change for the better with
Alcoa Aluminum



For more data, circle 127 on inquiry card

For the Architect's bookshelf—McGraw-Hill Recommends...



TIME-SAVER STANDARDS: A Handbook of Architectural Design, 4 Ed.

By John Hancock Callender
1,299 pp. 8½" x 11", 2,000 illus.

This classic has been greatly revised and expanded to provide coverage on such new material as steel domes—space frames—suspension structures—plastic design—high strength steel—reinforced concrete beam and slab tables, etc. Also included for the first time are—motels—shopping centers—housing for the

aged—residential air conditioning—cavity wall construction—plank and beam construction—welded connections, and much more. Illustrations, diagrams, charts, and tables make it easy for you to visualize and utilize the information given.

Time-Saver Standards for Building Types

Edited by Joseph De Chiara and John Hancock Callender
1,065 pp. 8½" x 11", over 1,500 illus.

Evolving from and following the practical features of the past 4 editions of the famed Time-Saver Standards, here is an altogether new master reference for your profession. It gives you instant access to the most needed design criteria for major types of buildings, including: residential—educational—cultural—

health—religious—government and public—commercial—transportation—industrial—recreation and entertainment—et al. You will constantly find yourself referring to Time-Saver Standards for Building Types for specific solutions to all your design problems.

INTERIOR SPACES DESIGNED BY ARCHITECTS

An Architectural Record Book
Edited by Barclay F. Gordon, Assoc. Ed.,
Architectural Record
256 pp., 9" x 12", 800 illus.

Here in one volume are some of the best examples of architectural interiors, reflecting the increased interest in the architectural profession for this expanding area of practice. Taken together, the numerous illustrations and detailed descriptions constitute a visual and analytical definition of interior architectural design, 1968-1973. Designing for today and tomorrow as well is the theme, and the articles abound in fresh, striking, imaginative, and innovative ideas for both new construction and renovations.

CAMPUS PLANNING AND DESIGN

An Architectural Record Book
Edited by Mildred F. Schmertz, A.I.A.,
Senior Editor, Architectural Record
264 pp., 9" x 12", 710 illus.

If you're taking on a project in campus development or expansion, you'll find this a really practical and rewarding source of information and inspiration. Each chapter is based on feature articles from Architectural Record and prefaced by an introduction highlighting special problems and solutions explored therein—designing the single building—designing the campus library—single building or complex designed as part of campus master plan—architecture giving the campus the unity of a

single building—campus performing art centers—designing campus interiors.

HOW TO MARKET PROFESSIONAL DESIGN SERVICES

By Gerre L. Jones, Marketing and
Public Relations Consultant
368 pp., 35 illus.

This book has one specific purpose—to help you bring in more business. Eminently practical, it shows how and where to find prospects... build bridges to them... and sell them—with carefully planned presentations and proven follow-up techniques. The author explains the obstacles and pitfalls of professional services marketing, shows how to spotlight best selling points of your firm and gives clear-cut blueprints for demonstrating why yours is the best firm for the job.

ARCHITECTURAL DELINEATION: A Photographic Approach to Presentation

By Ernest Burden
310 pp., 8½" x 11¼" over 600 illus.

You have probably often felt that traditional rendering methods are tedious, cumbersome, time-consuming, and inflexible. Now an award-winning architect has developed a totally new approach—a simple, flexible method that employs photography and can be used at your workbench or in the field, enabling you to depict architectural projects in true perspective... and in less time than you'd ever imagine.

ENCYCLOPEDIA OF URBAN PLANNING

Arnold Whittick, Editor-in-Chief
1,204 pp., 7½" x 9¼", 592 illus.

70 outstanding international authorities contributed to this long-needed reference. It brings to your desk the most complete compilation of urban planning information ever assembled in a single source. Its scope is so vast, its coverage so detailed, that you can turn to it for expert intelligence on such far-ranging matters as: what to include in comprehensive surveys for urban development plans; economic and social considerations involved in developing new residential or industrial areas; whether a proposed plan has been previously used and with what results.

NEW DIMENSIONS IN SHOPPING CENTERS AND STORES

By Louis G. Redstone, F.A.I.A.
323 pp., 8½" x 11"

This book will save valuable time and effort. It outlines step-by-step procedures necessary in making initial decisions to build a shopping center. It stimulates new ideas by presenting complete portfolios of over 30 representative centers and individual stores throughout the world. There is a short history of the shopping center development to date as well as specific material serving as a guide or manual. It is definitely a practical resource book showing just how to proceed with the development of a shopping center.

FREE EXAMINATION CARD—MAIL TODAY—NO POSTAGE NEEDED

ARCHITECTURAL RECORD
1221 AVENUE OF AMERICA, NEW YORK, N.Y. 10020

SEND ME the book(s) checked for 10 days on approval. At the end of that time I will remit for the book(s) I keep plus local tax, postage and handling, and return the unwanted book(s) postpaid.

I PREFER TO BUY ON TERMS. In 10 days I will remit one-third of the total price of the books retained, plus local tax, postage and handling. I will pay the balance in not more than 2 equal installments every 30 days. (Minimum order for terms is \$18.00.)

There is no finance charge for purchases under these terms.

This order subject to acceptance by McGraw-Hill

PRINT NAME _____

STREET _____

CITY _____

STATE _____ ZIP _____

**PAY NOW AND
SAVE MONEY!**

Remit in full with this order, plus local tax and McGraw-Hill pays all postage and handling costs.

Return books in 10 days for full refund if not completely satisfied.

- TIME-SAVER STANDARDS, 4 Ed. (07-009646-5) \$28.50
- TIME-SAVER STANDARDS FOR BUILDING TYPES (07-016218-2) \$27.50
- INTERIOR SPACES DESIGNED BY ARCHITECTS (07-002220-8) \$22.50
- HOW TO MARKET PROFESSIONAL SERVICES (07-32800-5) \$14.50
- ENCYCLOPEDIA OF URBAN PLANNING (07-070075-3) \$29.50
- CAMPUS PLANNING AND DESIGN (07-002216-X) \$22.50
- ARCHITECTURAL DELINEATION (07-008924-8) \$19.95
- NEW DIMENSIONS IN SHOPPING CENTERS AND STORES (07-051365-1) \$21.85



23-K102-4000-3

For more data, circle 129 on inquiry card



Construction Boss

At Dow Badische he provides carpet manufacturers using our fibers and yarns with right-on style and construction specifications to assure top performance.

Think of all the things you look for when you specify carpet for a job. There are overall aesthetic appearance, style and color. Wearability. Ease of maintenance. Soil hiding. Static control. But how can you be sure you're getting everything you want?

Look for the Dow Badische Performance Certification label on a carpet. There are a lot of people behind that label making sure for you.

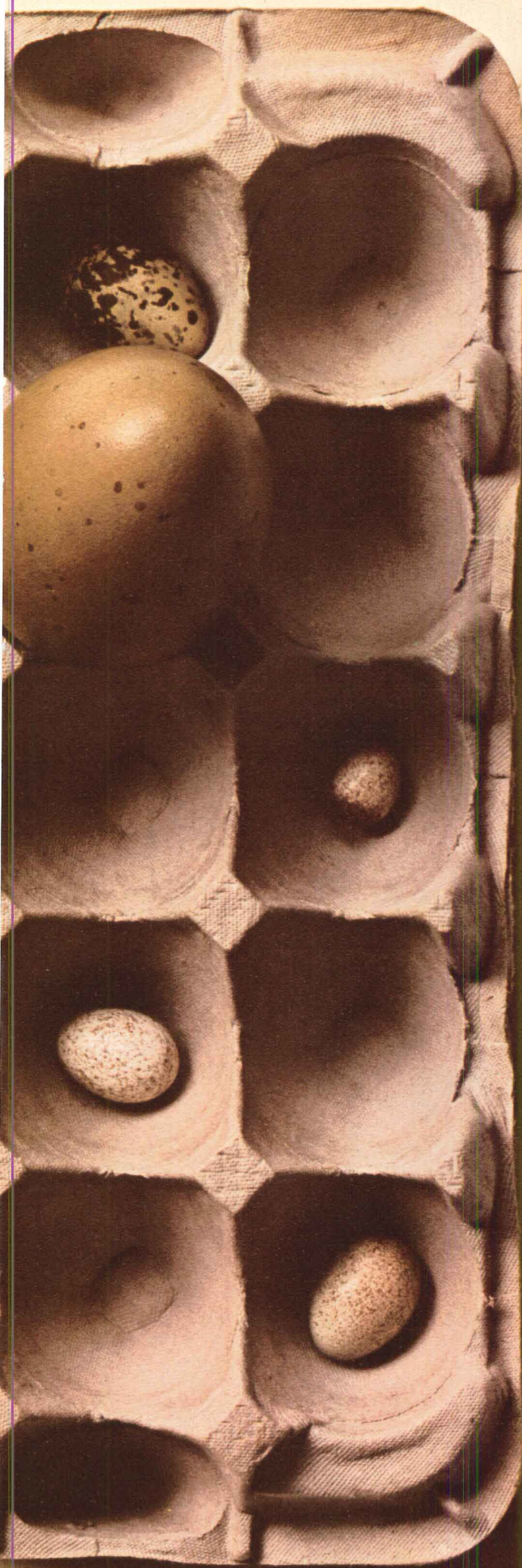
Take our "construction bosses." They provide carpet manufacturers using our specially engineered products with exact style and construction specifications for every one of our carpet fibers and yarns. And if these specifications are followed in the manufacturing, the carpet you specify for a specific end use, will perform the way you want it to. For sure? For sure—or you won't find our Performance Certification label on it.

Look for that label whenever you specify contract carpet. It's the only way to be sure, when you're not sure.



Dow Badische Company
Williamsburg, Va. 23185
(804) 887-6573





Obviously, no one egg crate can accommodate all these different sizes and shapes of eggs.

No more so than one office chair can accommodate all the different sizes and shapes of the human body. Neither eggs nor people fit such an inflexible mold.

Westinghouse has done something about this. We have designed a new group of office seating that fits chairs to people, relates the chair to the job function.

We cordially invite you to share this new chair experience at NEOCON.

Westinghouse
Architectural Systems Department
4300 36th Street, S.E.
Grand Rapids, Michigan 49508

For more data, circle 130 on inquiry card

Westinghouse

ASD Chair Group

INTEGRITY IN DESIGN

Skandia by Thonet.

Minimal mass yet uncommon strength.

Skandia.

Now as dining chairs and lounge chairs,
two and three seaters.

With distinguished coordinating tables.

Skandia.

With nothing between you and the wood but honesty.

At Thonet Centers of Design

New York, Chicago, Los Angeles, Dallas.

Or write

Thonet Industries, Inc.

491 East Princess Street

York, Pa. 17405

Telephone (717) 845-6666

For more data, circle 131 on inquiry card

THONET
CENTER OF DESIGN





ASG

Our name says the Glass Company,
and that's saying a lot.

Over the years, ASG has come to stand for both pioneering and innovation. And ASG is constantly working to bring you new and better products in everything from float, plate and window glasses to insulating, reflective, tempered, wired, laminated, patterned and lighting glasses. We're always on the lookout for new developments to help you perform your job better and more easily. And ASG backs what it sells with service that

makes a difference. Service that includes the willingness and expertise to work with you on special projects and problems. ASG service also means things like delivery where and when you want it, along with the most advanced package designs in the industry. Just a few of the things that make ASG, the Glass Company, the only name to look to for versatility plus quality in both product and service. Write us for complete information.

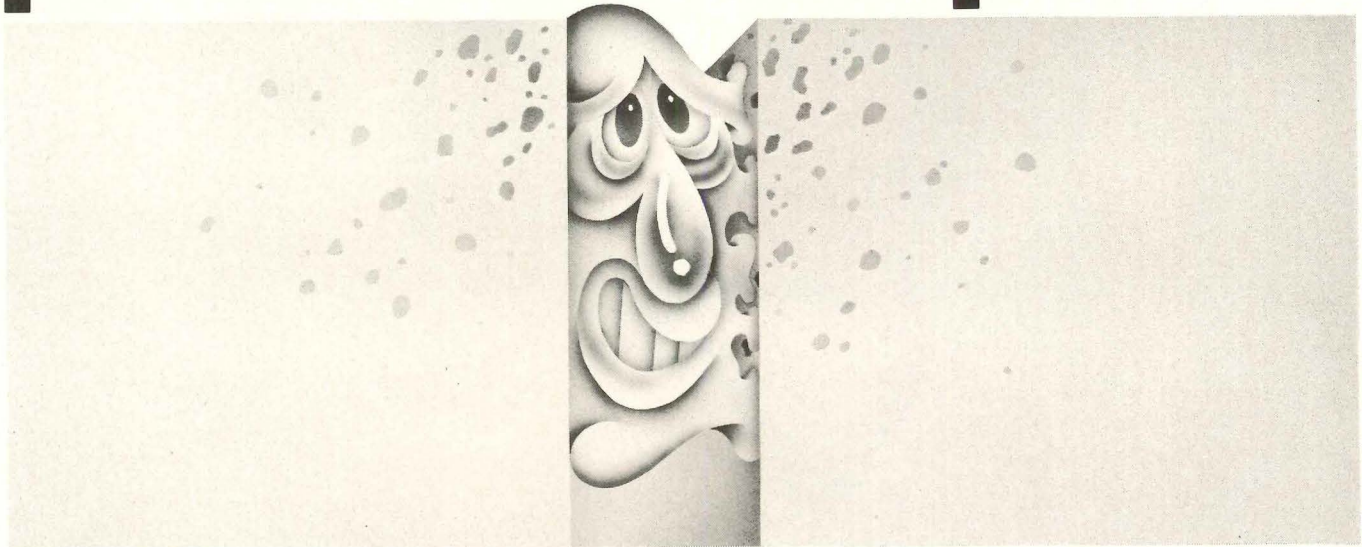


ASG Industries Inc.

The Glass Company, P.O. BOX 929, KINGSPORT, TENN. 37662

For more data, circle 132 on inquiry card

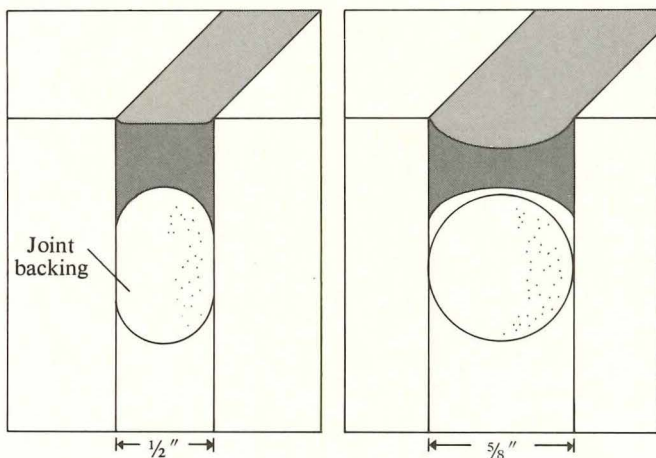
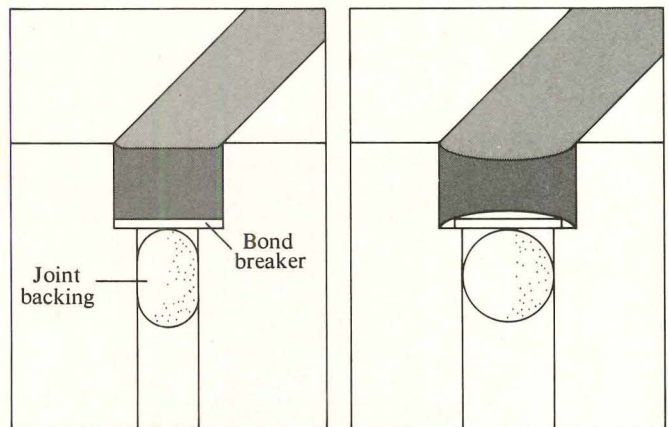
How to avoid sealant problems when you design precast concrete panels.



Obviously, you don't want sealant-adhesive failure in the joints between precast panels. And certainly we — Tremco — don't want it. So here's a brief guide to potential problem areas and tips on how to avoid them.

Let's start with design. When you're designing a joint, be sure it's wide enough to allow the sealant to move within its capabilities. If the joint is found to be too small on-site, it will have to be saw-cut to sufficient width — a costly procedure. A good rule of thumb is to design 1/2-inch wide joints for panels up to 15 feet, 5/8-inch or wider, for longer panels. An even better rule of thumb is to consult your Tremco man while you're in the design stage.

Two ways we help. Tremco has been solving sealant problems for more than 45 years, so our man can bring a lot of



experience to bear on your problems. Second, in response to the special needs of the precast industry, we've developed DYmeric®, a two-part polymer sealant designed to take the stress and movement common to precast cladding. It's also capable of sealing joints up to 2 inches wide in one application, without sagging. And you don't need a primer. With this kind of help, the odds are you can avoid a lot of the following problems.

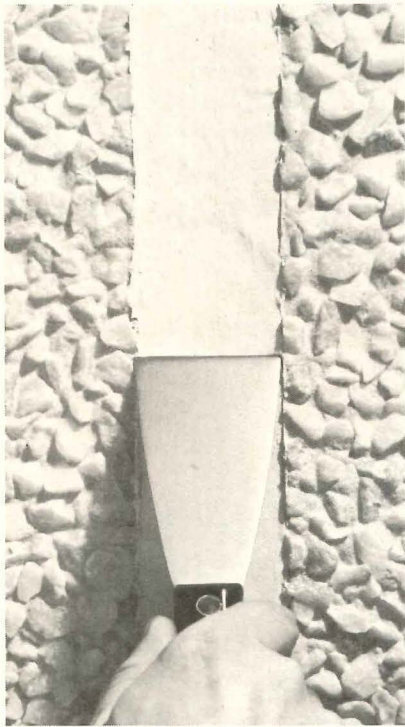
Form release agents: friend and foe. Form release agents are a necessity, but they can also create major problems for sealants.

The same action that prevents adhesion between the panel and the form can impair adhesion of the sealant bead to the joint interface. This could happen weeks or months after caulking, depending on the type of sealant,

the type of release agent and the amount of joint movement.

Some release agents are less troublesome than others. However, you can only be sure of good sealant adhesion if two things are done. First, the joint interface should be thoroughly cleaned the same time as the panel face, when it is removed from the form.

Second, be sure the joint interface is cleaned just before caulking. Your Tremco man can help you find the most economical way to get this done.

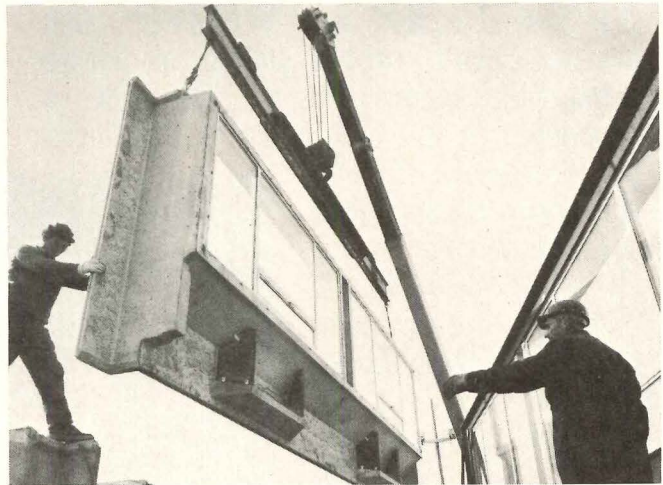


Don't take a powder. Another common problem that affects sealant adhesion is laitance on the joint interface. A frequent cause of this powdery surface condition is the use of retarder on exposed aggregate panels. A slight change in joint design can often help prevent the retarder from migrating to the joint face.

However, it's a good idea to specify that high pressure water spray be used on the joint surface as well as the face of the panel, during the

process of exposing the aggregate. Even then, though laitance has been successfully removed, the joint has to be thoroughly cleaned just before caulking. Since each case is different, your best bet is still to talk to your Tremco man and use DYmeric.

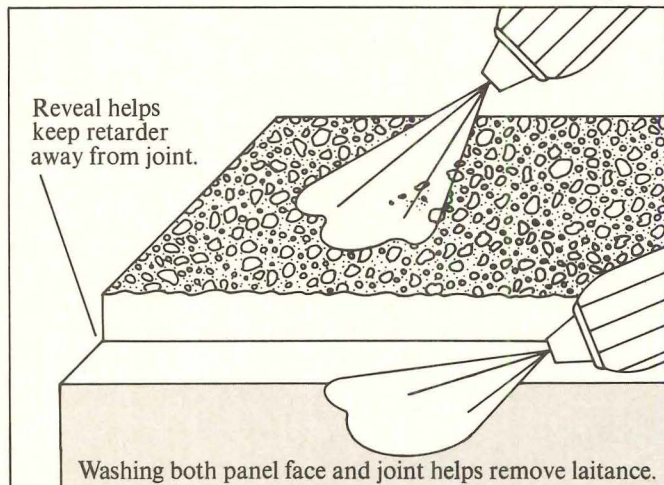
Waterproofing woes. While Tremco makes clear waterproofing coatings for masonry panels, we want to warn you that ours, like all the others, can cause sealant failure when they're improperly used.



Our advice is to caulk first, then waterproof. But sometimes specifications call for waterproofing at the factory, to protect the panels during transit and storage. If so, the joint should be protected from overspray. Your best bet, as always, is thorough cleaning of the joint interfaces just prior to caulking. Your Tremco man can help you decide on the right cleaning method for specific circumstances.

To sum it all up you can count on Tremco to help seal and weatherproof precast buildings better because it's the kind of thing we've been doing for more than 45 years. With some 15 basic job-proven sealants to choose from, such as MONO[®], DYmeric[®], and Lasto-Meric[®], and our unique TREMProof[®] waterproofing systems and our roof edging system, Tremline[®], your Tremco man can recommend the systems that are exactly right for your job.

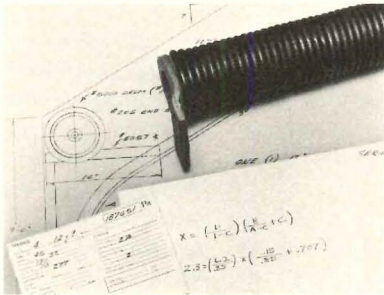
So talk to Tremco first. And you won't have joint sealing problems later. For help, contact your Tremco rep. Or Tremco, Cleveland, Ohio 44104. Toronto, Ontario M4H 1G7.



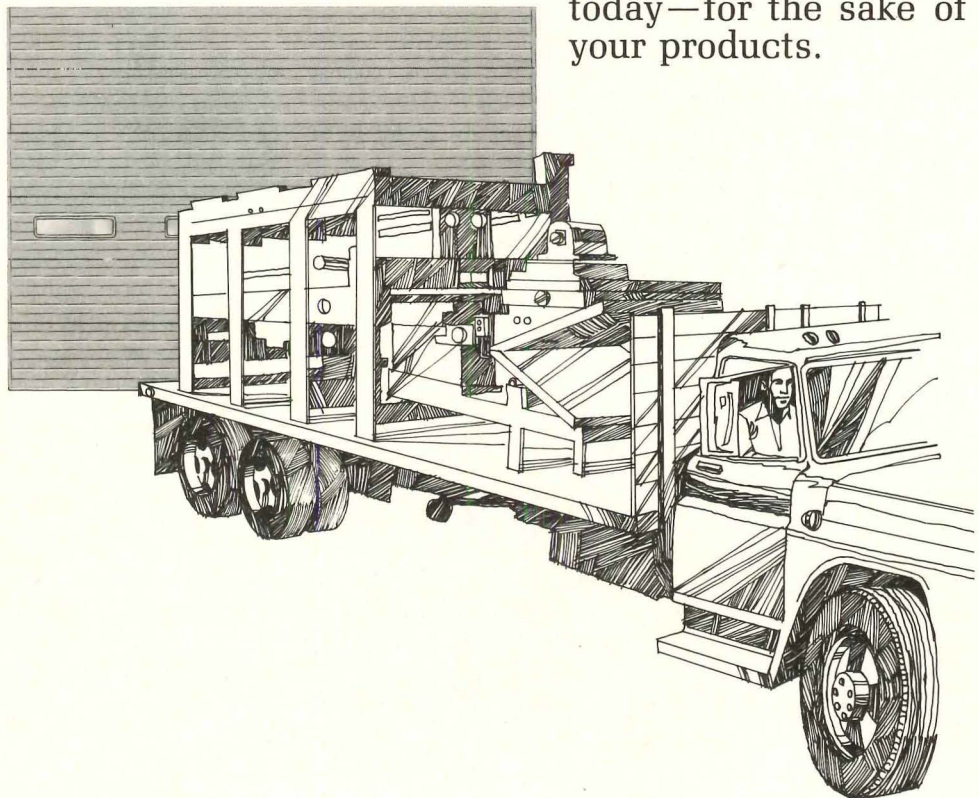
TREMCO[®]

If It's Worth Manufacturing, The Building Deserves A Raynor Garage Door

Raynor offers one of the widest selections of garage door styles and sizes — in steel, aluminum, fiberglass or wood. This means you can job-match Raynor doors to your production facilities. Whether you manufacture small parts or huge industrial machinery, there's a Raynor garage door that's right for your needs. Every Raynor door has custom features, and they're yours at "stock" prices. Springs are custom wound and tested, all hardware is custom made just for



a certain door model. And if accidents ever occur, now or years later, all the detailed information is kept on data film at Raynor. Replacement of parts is sure. It's reassuring to know that Raynor takes extra steps in manufacturing doors. So that your products receive the trouble-free protection they deserve. Send for free Raynor catalog today—for the sake of your products.



Raynor
The Brand
You Can
Depend
On

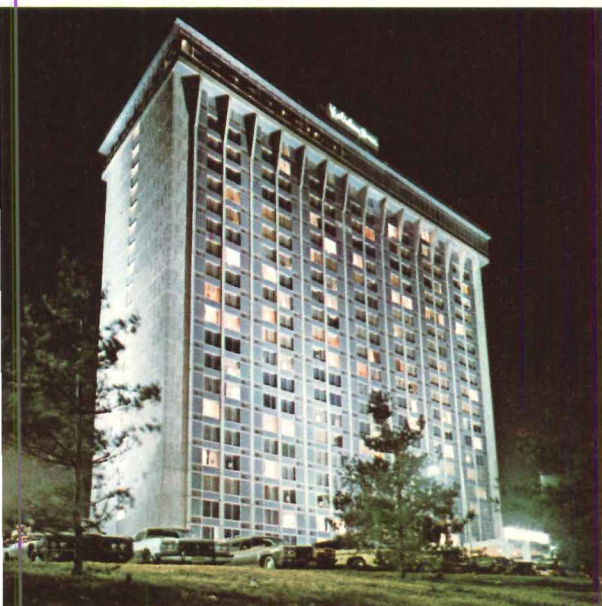


S SEE OUR CATALOG IN SWEET'S

RAYNOR MANUFACTURING COMPANY Dept. AR-5 Dixon, Illinois 61021

For more data, circle 134 on inquiry card

“After 4 years of typical Holiday Inn traffic,
carpet would be threadbare.”



Tuff-Lite[®] epoxy terrazzo is doing beautifully with a weekly wet mopping.”

Jay King, Chief Engineer, City Line Holiday Inn[®] Philadelphia

Ease of maintenance and predictable cost of maintenance were important considerations when City Line Holiday Inn-Philadelphia was in the planning stage. They still are.

And its Tuff-Lite epoxy terrazzo flooring by the H. B. Fuller Company is living up to expectations.

Carpeting would have been spot cleaned many times, completely cleaned several times and possibly replaced. Other than mopping, Tuff-Lite requires just a programmed semi-annual seal treatment.

H. B. Fuller also supplies light-weight, epoxy-based wall matrix for beautifully textured interior and exterior walls.

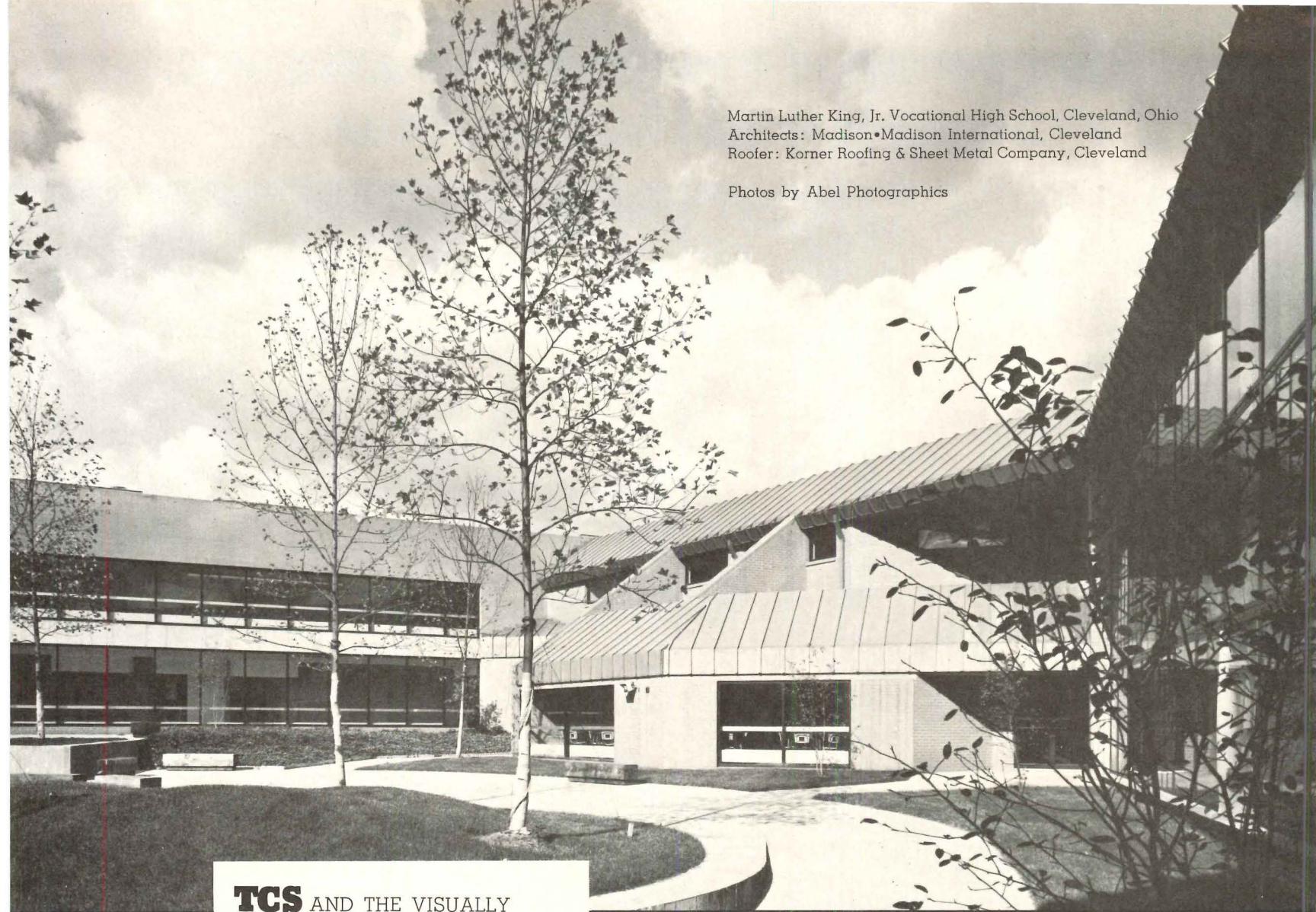


For help with specifying, selection or application information call our toll free number — 800/323-7407.

 **HB FULLER COMPANY**

Architectural Products Division
315 S. Hicks Rd., Palatine, Ill. 60067, Dept. 526

For more data, circle 135 on inquiry card



Martin Luther King, Jr. Vocational High School, Cleveland, Ohio
Architects: Madison•Madison International, Cleveland
Roofers: Korner Roofing & Sheet Metal Company, Cleveland

Photos by Abel Photographics



TCS AND THE VISUALLY
SIGNIFICANT ROOF

TCS is stainless steel coated on both sides with a terne alloy of 80% lead and 20% tin.

TCS has no equal among standard architectural metals in resistance to atmospheric corrosion.

TCS solders perfectly without the need for expensive pre-tinning, acid fluxes or neutralizing agents.

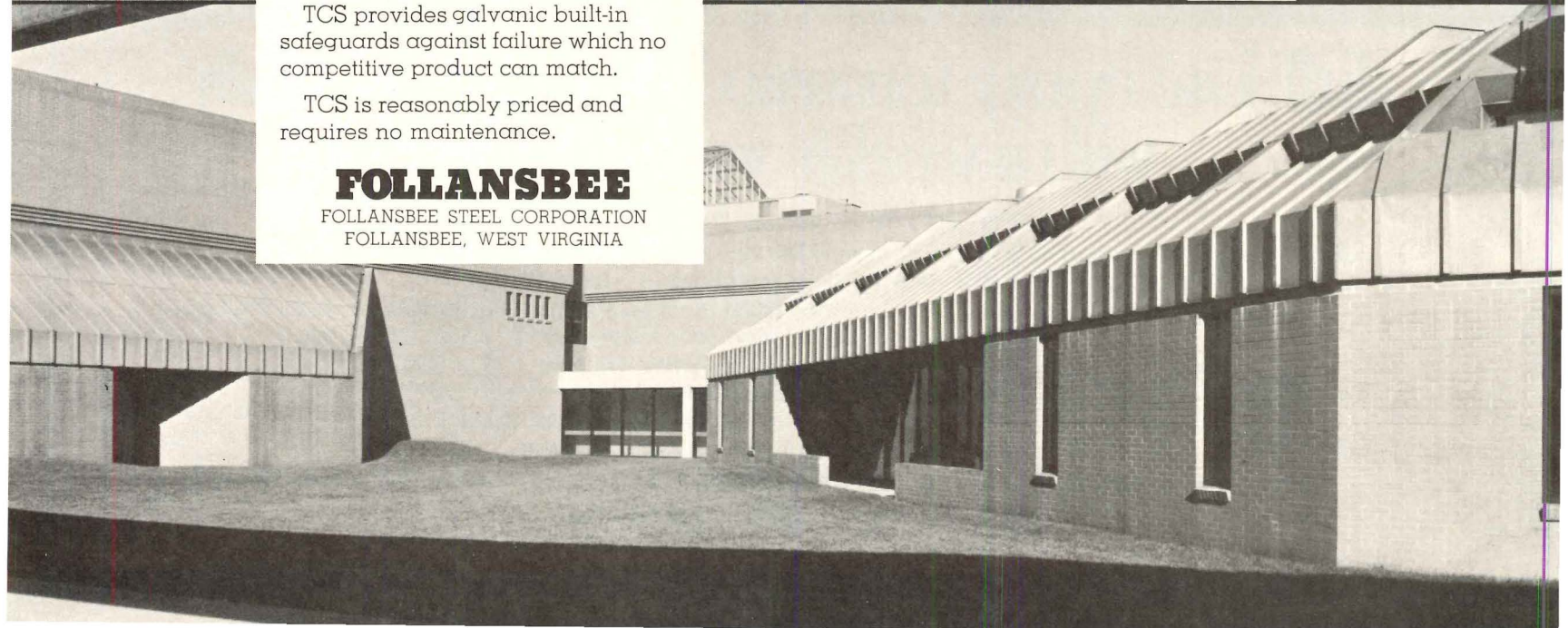
TCS weathers naturally to a uniform dark gray and does not stain.

TCS provides galvanic built-in safeguards against failure which no competitive product can match.

TCS is reasonably priced and requires no maintenance.

FOLLANSBEE

FOLLANSBEE STEEL CORPORATION
FOLLANSBEE, WEST VIRGINIA





Only ULTRAWALL®
Movable Partition System

gives you all these "ultra" advantages

1. LUXURY LOOKS. ULTRAWALL conceals all attachments; installs flush for that "permanent" look. No battens. Tough vinyl surfaces. 27 colors. 5 patterns.

2. SPEEDY ASSEMBLY. Simplified design concept, prefinished panels and trim make installations easier.

3. ECONOMY. Initial installation costs run comparable to, or less than, decorated fixed partitions; relocation costs are a fraction as much.

4. TRULY MOVABLE. ULTRAWALL lets you meet changing space needs fast with minimum disruption to occupants, no loss of tenancy.

5. EXCELLENT RATINGS. One-hour fire, 42 STC ratings as is. Also available : 48 to 50 STC.

6. DESIGN FLEXIBILITY. ULTRAWALL systems give you a choice of bank rail, cornice height, full ceiling height; maximum glazing capabilities.

7. NO SHAKE OR RATTLE. These assemblies offer unusual rigidity; the solid "feel" of permanent walls.

8. NEW DOOR FRAME. Self-mortising, reversible DELTA door frame accommodates any hinge location, no need to specify rights or lefts.

Compare these superior partition systems point for point with other "movables" as well as permanent walls. You'll find ULTRAWALL truly "ultra" in every way. Get specifics from your U.S.G. Technical Representative. Or write to us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AR-54.

UNITED STATES GYPSUM 
BUILDING AMERICA

For more data, circle 137 on inquiry card

ARCHITECTURAL RECORD

PRESENTS

HOW TO MARKET PROFESSIONAL DESIGN SERVICES

A series of two-day PROFESSIONAL MARKETING WORKSHOPS® produced for ARCHITECTURAL RECORD by the Continuing Education Division of Building Industry Development Services, Washington, D.C.

- Understanding marketing fundamentals
- Organizing for a productive, professional business development program
- Where and how to attract new clients—while retaining the old ones
- Planning for change, expansion and professional growth
- Evaluating existing and potential markets
- Using business development tools—from job histories to preparation of Standard Form 251
- Specialized intelligence gathering and investigation of leads
- Effective selling preparations—what to do before, during and after the interview
- Successful strategies for getting the job
- Political action
- Associations and joint ventures

"Up to now, the design professional traditionally has had to learn selling techniques essentially by experience, through trial and error, and with no real standards against which to measure the degree of his successes and failures."

from HOW TO MARKET PROFESSIONAL DESIGN SERVICES
a McGraw-Hill book by Gerre L. Jones

These workshops are *not* for the design professional who believes that his client acquisition activities have reached a stage of perfection—or for the firm that, for whatever reasons, is satisfied that it has more clients and contracts than it can comfortably handle over the next 3 to 6 years.

Nor are the workshops geared to firms whose principals are convinced they have achieved the ultimate in

- organization and staff participation in business development
- practice and client mix
- productive, customized, *selling* presentations
- public relations
- all of the tools of job search and acquisition

If you have never attended a professional workshop or seminar on business development, be assured that ARCHITECTURAL RECORD and Building Industry Development Services have assembled the faculty from among the most experienced, knowledgeable people in the field. Discussion leaders will include successful, sales oriented directors of business development from small-to-large firms and client representatives of both public and private sectors. For the first time, participants in ARCHITECTURAL RECORD's Professional Marketing Workshops® will have the opportunity to hear it like it is—from both sides of the marketing fence.

Senior coordinator for the workshops is Gerre L. Jones, executive vice president of Building Industry Development Services, and author of the authoritative McGraw-Hill book, HOW TO MARKET PROFESSIONAL DESIGN SERVICES.

Each participant will receive a set of invaluable course materials for his continuing use. The specially produced course handbook contains ideas, suggestions and sample materials available from no other source.

A unique periodic follow-up program to the workshops assures every participant of continuing interest and advice for up to six months beyond the concentrated two-day workshop session itself.

b.i.d.s.

Building Industry Development Services • 202/785-2133

1301 20th St., N.W., Suite 104, Washington, D.C. 20036

Please enter ___ reservations in my name for the Professional Marketing Workshop® checked at the right of this form and rush complete details about the workshop.

Name _____

Title _____

Firm Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____

Architect Engineer Planner Designer

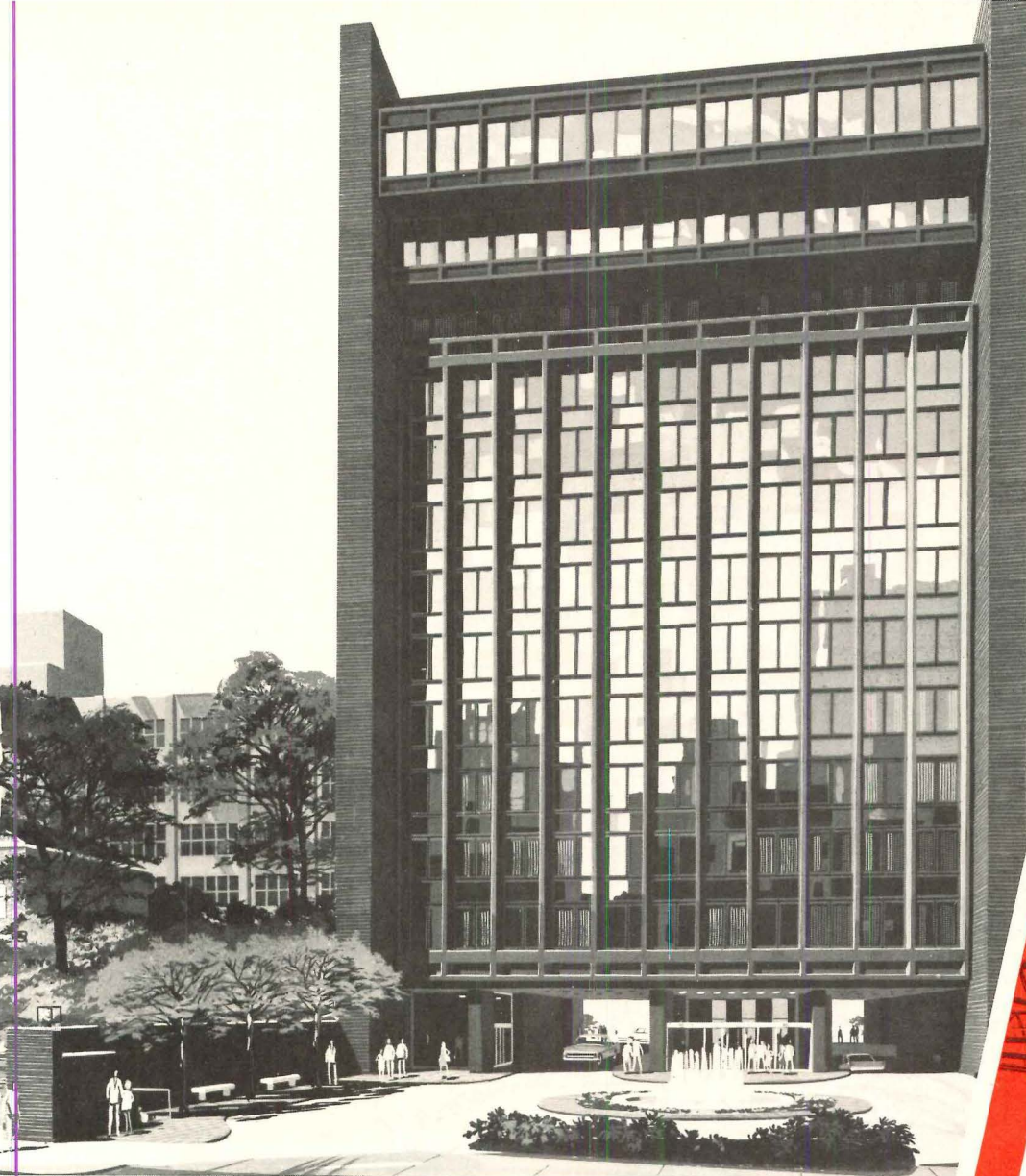
Other _____

Check for \$350, payable to Architectural Record-PMW Enclosed.

1974 Professional Marketing Workshops® are planned for the following cities:

<input type="checkbox"/> Chicago, Illinois	June	6- 7
<input type="checkbox"/> Newark, New Jersey	September	5- 6
<input type="checkbox"/> Tulsa, Oklahoma	October	7- 8
<input type="checkbox"/> Houston, Texas	November	4- 5
<input type="checkbox"/> Phoenix, Arizona	December	5- 6

Dates and locations of workshops in other areas for 1975-1976 will be announced.



*Why steel joists
were the
right answer to
this building need*



THE PROFESSIONAL BUILDING: STEEL JOISTS WERE PRESCRIBED FOR ERECTION SPEED AND ECONOMY

Kalikow Realty's Professional Building in New York City provides attractive and efficient office facilities for the medical profession. The 14-story structure, designed by architects Liebman-Liebman & Associates, also includes a 66,000 square foot, 3-level underground garage.

Open web steel joists were used as structural members throughout the building. "Using open web steel joists gave us highly desirable economy and speed of erection," the architects stated.

Economy is just one of many advantages offered by open web steel joists, the versatile structural members that lend themselves so well to virtually every type of building design and construction. For detailed information, send coupon today for new combined Specifications and Load Tables which encompass Open Web Steel Joists, Longspan Steel Joists and Deep Longspan Steel Joists.



STEEL JOIST INSTITUTE

2001 Jefferson Davis Highway
Arlington, Virginia 22202

Mail to:

STEEL JOIST INSTITUTE

7th Floor, 2001 Jefferson Davis Hwy.
Arlington, Va. 22202

Please send me your new copy of Specifications and Load Tables.

NAME _____

TITLE _____

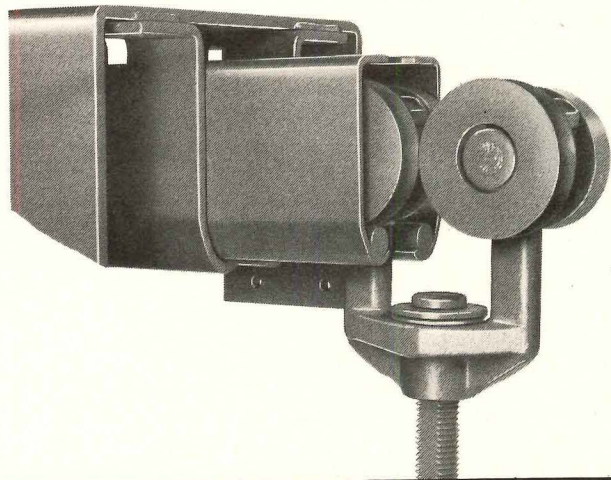
FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

73005

Hang Tough



Slide Easy

Richards-Wilcox Operable Walls for 53 years have provided the superior track and hanger system. That's why "life cycle costing" is a welcome evaluation concept. We invite comparison with our long-life 9 gauge steel tracks, cold-rolled bar runways for easy operation, and unique hanger design with four sealed ball bearings. Doesn't it make sense that the leading company in overhead conveyor innovations would manufacture the highest quality track and hangers for operable walls?

Check the design and construction of panels, floor and top seals, and hardware, too. Richards-Wilcox operable walls and Air-Wall® portable partitions are the *quiet quality* way to divide rooms of any size.

Contact us for specifying information on operable walls that hang tough, slide easy.



Richards-Wilcox

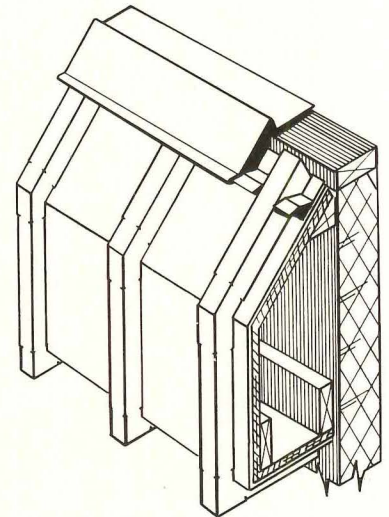
MANUFACTURING COMPANY

116 Third Street, Aurora, Illinois 60507
Phone: (312) 897-6951

One of the White Consolidated Industries
WCI

A NEW IDEA FROM MERCHANT & EVANS

M & E FORMED BATTEN AND PAN



The first and only formed batten available for mansard roof construction. The batten is manufactured from the same pre-finished Kynar 500® or baked enamel on aluminum for absolute uniformity of finish, reduced costs and positive deliveries.

Customform FORMED TO FIT YOUR NEED

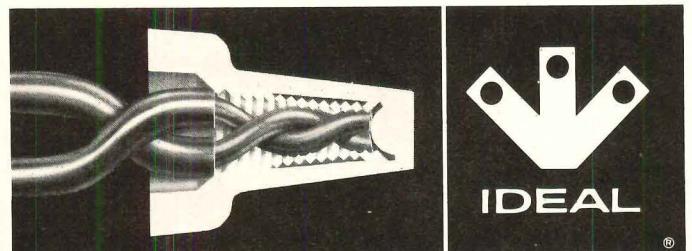
MANSARD SYSTEMS • FASCIA PANELS • GRAVEL STOP COPING • SOFFIT • PLASTIC FASCIA • FORMED BATTENS

MERCHANT & EVANS COMPANY

suppliers of architectural products since 1866

2035 WASHINGTON AVE., PHILA., PENNA. 19146
215 KI 5-0820

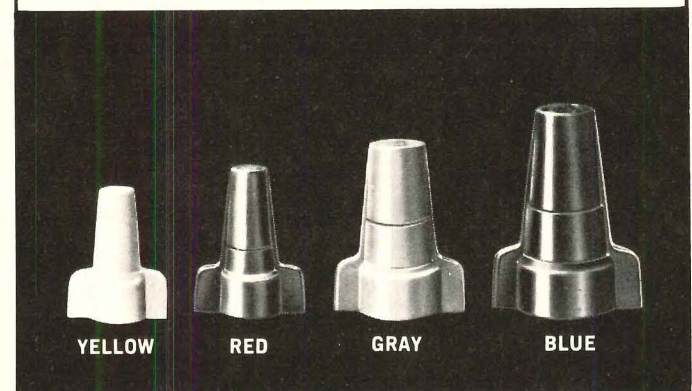
For more data, circle 139 on inquiry card



Ideal Wing-Nut Connectors screw on easy; grip tight!

Ideal Wing-Nuts come in four color-coded sizes to let you select the most economical connector to fit any branch circuit wiring job. Send for FREE SAMPLES and the Ideal Connector Guide. It describes the industry's biggest line of solderless wire connectors.

IDEAL INDUSTRIES, INC., 1328-E Becker Place, Sycamore, Ill. 60178. In Canada: IDI ELECTRIC (Canada) LTD., Ontario.



YELLOW

RED

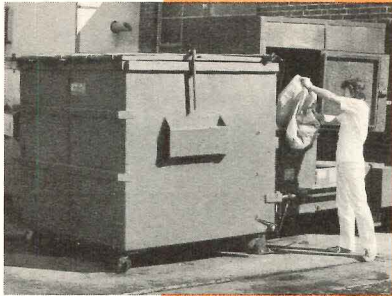
GRAY

BLUE

For more data, circle 140 on inquiry card

◆ For more data, circle 167 on inquiry card

WASTE DISPOSAL... Big Volume or Small Dempster Wrote the Book on REFUSE PACKERS



Small Dempster Refuse Packer saves space and packs into many types and sizes of refuse containers.



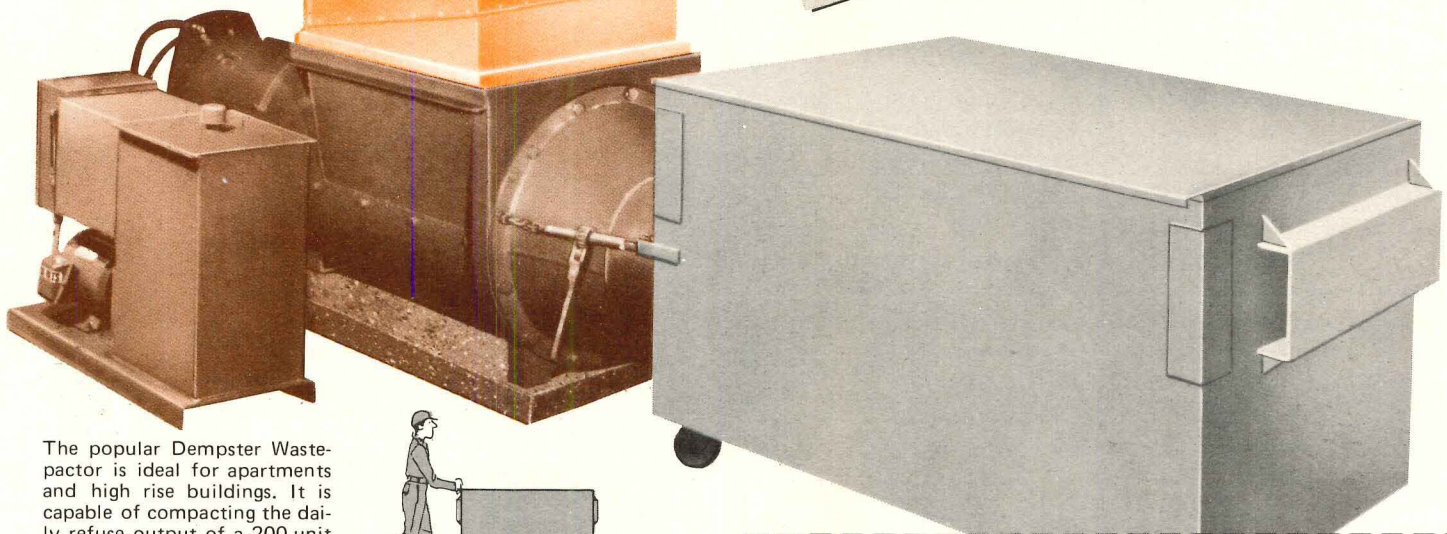
Through-the-wall loading into a Dempster Packer provides a convenient, all-weather refuse disposal system.

Whatever the installation, Dempster can give you a choice of models with varying packing capacities so you can pick the packer that is best for your application, refuse volume, and type of material.

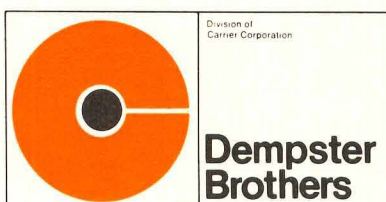
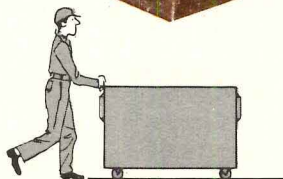
Dempster has the know-how to help you set up your stationary packer as a component in a total system . . . as simple or as exotic as your needs and economics dictate.

Your nearby Dempster Refuse Consultant helped write the book. He is a walking, talking encyclopedia on the subject of refuse handling and his counsel could save you hours of work. Write today for his name or for the name of a well-equipped private hauler who provides dependable service near you.

Send for Free Literature



The popular Dempster Waste-pactor is ideal for apartments and high rise buildings. It is capable of compacting the daily refuse output of a 200 unit apartment complex into a one cubic yard container.



Home Office: P.O. Box 3127, Knoxville, Tennessee 37917
Western Division: P.O. Box 5703, Compton, California 90221

For more data, circle 148 on inquiry card

- Yes . . . I would like Dempster to help me plan a packer installation. (please check)
- Please send information and literature on Dempster Waste-pactor.
 - Please send information and literature on larger Dempster Packers.
 - Please send name of Dempster Refuse Consultant.
 - Please send name of nearby private hauler. AR

Name _____ Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone No. _____

Mail to: Dempster Brothers, P.O. Box 3127, Knoxville, Tenn. 37917

Al Kaline— the ALL-STAR Tiger— durable, dependable— just like our *Aquapon*[®] and *Pitt-Glaze*[®] Coatings

When Al Kaline of the Detroit Tigers steps to the plate or slides for home, you know this veteran American League All-Star will give you everything he's got. Al's well respected and he earned his reputation as one of baseball's most durable players—one of its toughest competitors.

Just think of the punishment tough professional athletes like Al Kaline give a team locker room. The tromping of cleats, the mud and cinders, steaming hot water from the showers—day in, day out, all season long give any wall or floor coating a good going over.

Pittsburgh Paints has a durable duo that can meet this kind of punishment head-on, not only in locker rooms, but in all hard-use industrial and commercial areas—such as corridors, kitchens, machine shops, laboratories, and the like.

For the concrete block walls, there's *Pitt-Glaze* Coating, the Polyester-epoxy that looks and feels like tile.

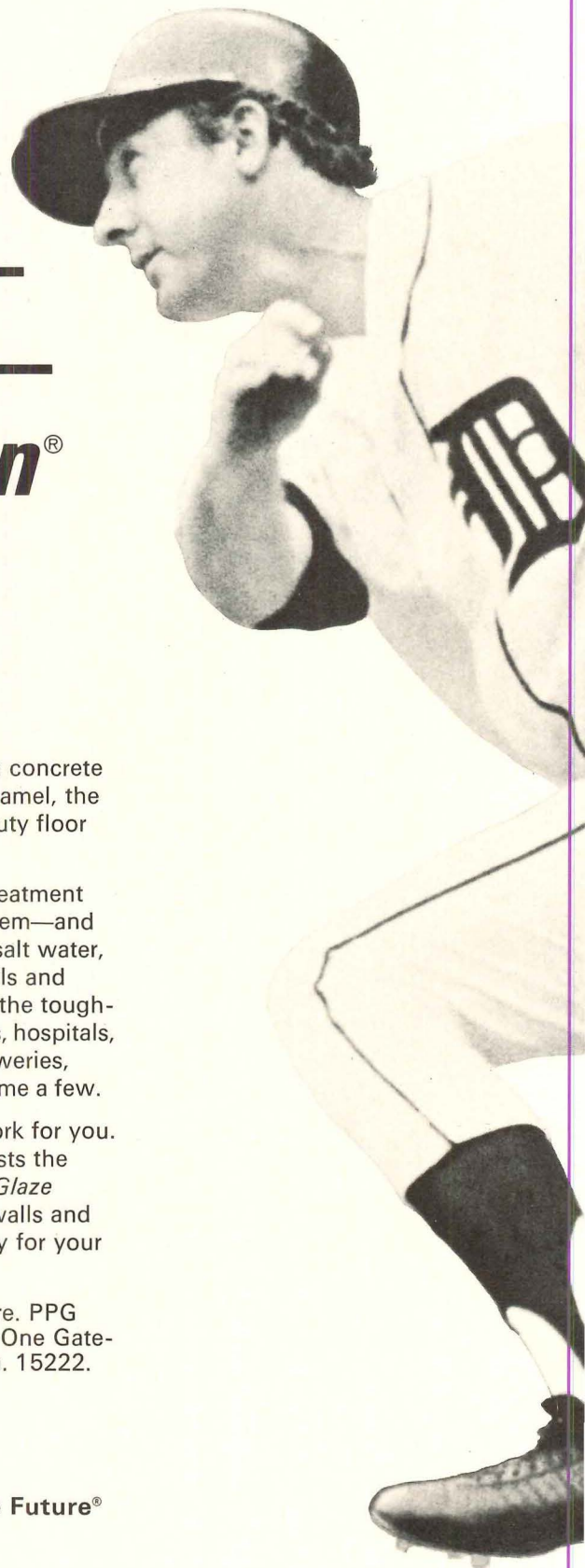
And for heavy-duty use on concrete floors, there's *Aquapon* Enamel, the Polyamide-epoxy heavy-duty floor coating.

Both can take the kind of treatment the "pros" can throw at them—and more. They're resistant to salt water, alkalis, acids, plus many oils and chemicals. Both can meet the toughest requirements of schools, hospitals, motels, hotels, dairies, breweries, and industrial plants, to name a few.

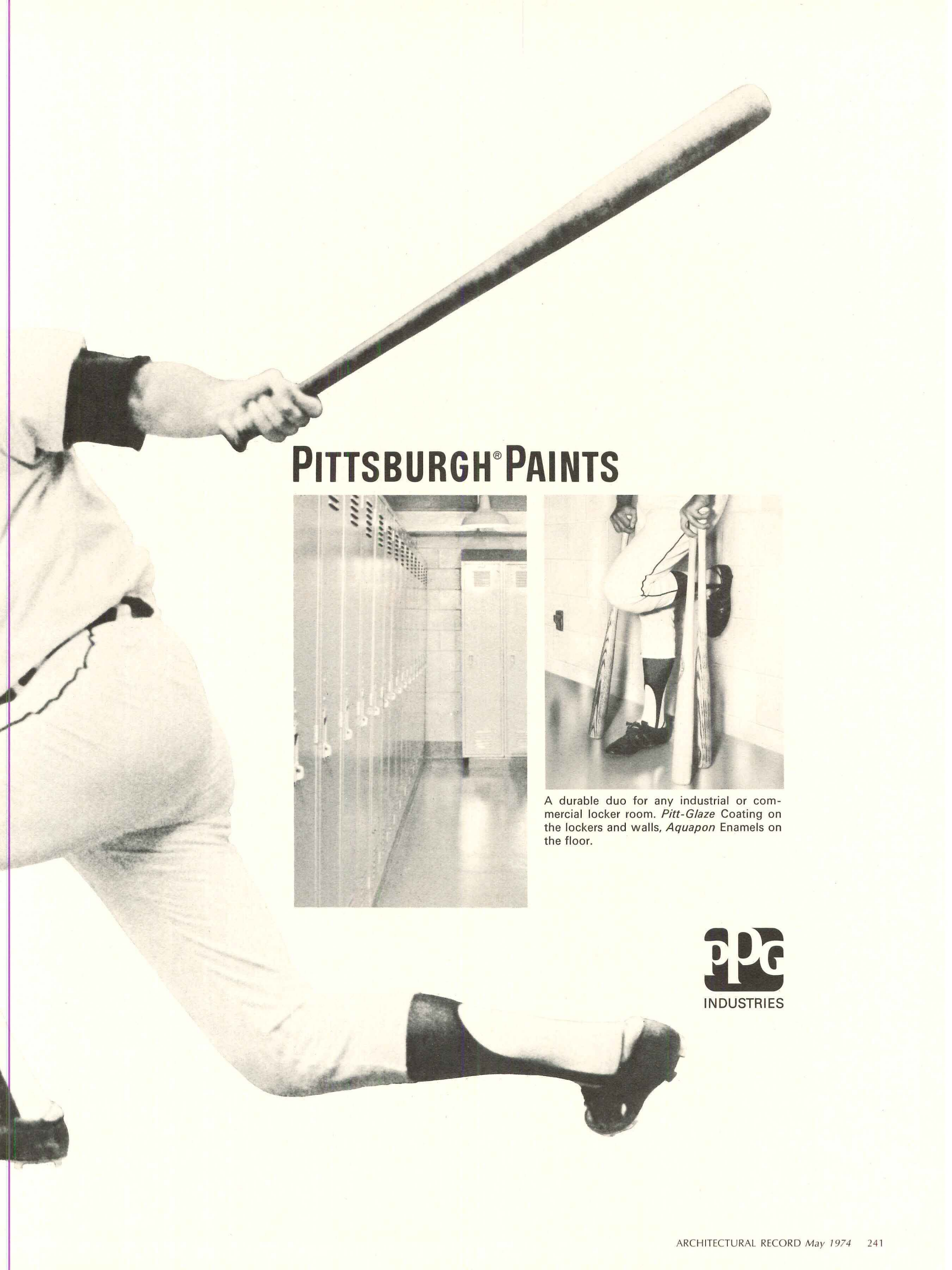
Put this durable duo to work for you. Give your maintenance costs the one-two punch with *Pitt-Glaze* Polyester-epoxy for your walls and *Aquapon* Polyamide-epoxy for your floors.

Write for complete literature. PPG Industries, Inc., Dept. AR, One Gateway Center, Pittsburgh, Pa. 15222.

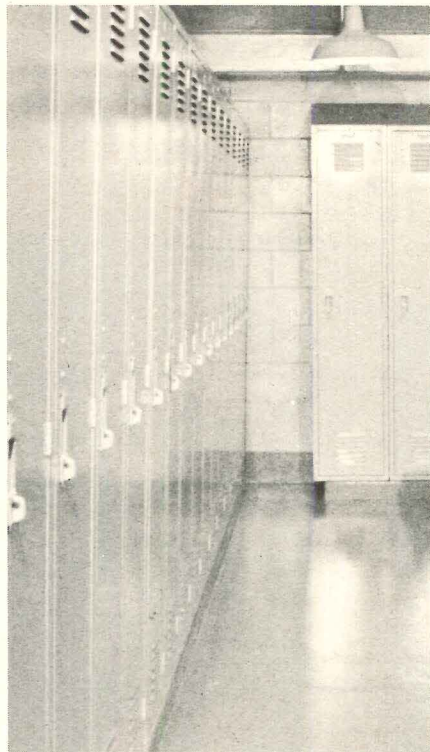
PPG: a Concern for the Future[®]



For more data, circle 142 on inquiry card

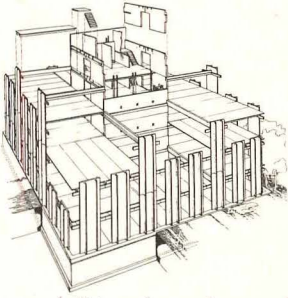


PITTSBURGH® PAINTS



A durable duo for any industrial or commercial locker room. *Pitt-Glaze* Coating on the lockers and walls, *Aquapon* Enamels on the floor.





CHOICE OF MICRO-SQUARED™ OR SEAMLESS conductive flooring for hospital operating rooms is now offered by Vinyl Plastics, Inc. Every Conductile® 12" x 12" tile is Micro-Squared to a tolerance of ±.002" to assure uniformity. Seamless floors are seam-welded. Both systems are installed with conductive adhesive and provide positive sterile floor capabilities. A modern, subtle pattern in four pastel colors and two new dark tones provides design flexibility. For complete information send for your 1974 Conductile Catalog.

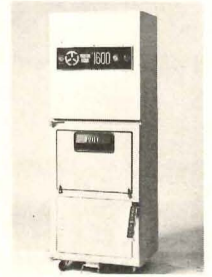
For more data, circle 143 on inquiry card

VANTAGE-SPACE MULTI-STORY OFFICE BUILDINGS . . . are now available through Precast Systems, Inc. member/affiliates from coast to coast and in Canada. The system features a fire-resistant precast service core, precast concrete floors and load-bearing walls, column-free space for greater flexibility in planning, an excellent ratio of rentable floor area to total floor area, fast construction, reduced operating costs and attractive appearance. Write Precast Systems, Inc., Dept. AR 74, 10400 West Higgins Road, Rosemont (Chicago), Ill. 60018. Telephone: 312/298-5570.



For more data, circle 144 on inquiry card

PORTABLE SOLID WASTE AND REFUSE COMPACTORS and systems from The Tony Team, Inc. includes four sizes and great versatility. Pollution Packer™ compactors bale, bag and box all types of wastes and refuse, wet or dry. Machine capacities range from .8 C. Y. to 4½ C. Y. of loose wastes at 10 to 1 compaction ratio . . . operate on low amperage, 110-V60 cycle service. For hospitals, hotels, schools, colleges, restaurants, office and apartment bldgs. Simple adaptation to chute-type disposal systems. Spec sheets and literature available from: The Tony Team, Inc., 7399 Bush Lake Road, Mpls., Minn. 55435.



For more data, circle 145 on inquiry card

RECORD IMPRESSIONS CATALOG

SEND FOR A COMPLETE, DETAILED CATALOG of "Record Impressions." A convenient service offering reprints of Building Type Studies, Interiors and Special Reports. Offered are more than 30 items including back issues of Record Houses 1968 and 1970; Product Reports '73 and the practical reference guide, "Air Conditioning: A New Interpretation."

Address your request to: Record Impressions, Architectural Record, 1221 Avenue of the Americas, New York, New York 10020, Att: Joseph R. Wunk

Haws Dual Use Water Cooler for Wheelchair Users and Foot Traffic.

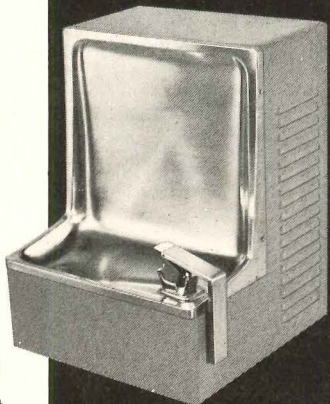
Haws HWC-6 water cooler is designed particularly for persons in wheelchairs, yet it effectively provides service to foot traffic.

It extends out from the wall and is mounted at a convenient height from the floor so that a person can easily wheel up to it. Compound-action bubbler valve actuates cooler from a push on the side or top, making it easy to operate by handicapped persons. Simple installation requires no wall recess.

Model HWC-6 helps you comply with public law 90-480.

Available in stainless steel at extra cost. Write for detailed information.

Haws Drinking Faucet Co., 4th and Page St., Berkeley, Ca. 94710.

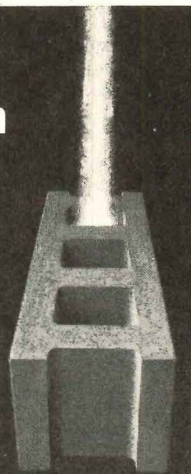


WATER COOLERS

For more data, circle 159 on inquiry card

Space age insulation for masonry walls available now!

For space age insulation in cavity wall construction, specify Permalite perlite. It's the material used more than any other in cryogenic installations to insulate rocket and other exotic fuels stored at temperatures as low as -400 degrees F.



SILICONE TREATED Permalite®

PERLITE MASONRY FILL INSULATION

Stays dry because it's silicone treated. Out-performs other types of loose fills, but costs no more. Provides permanence; fire-proofness; freedom from rot, termites, vermin. Write for data and name of nearest processor. *He can fill orders promptly!* GREFCO, Inc., Building Products Division, 3450 Wilshire Blvd., Los Angeles, CA 90010

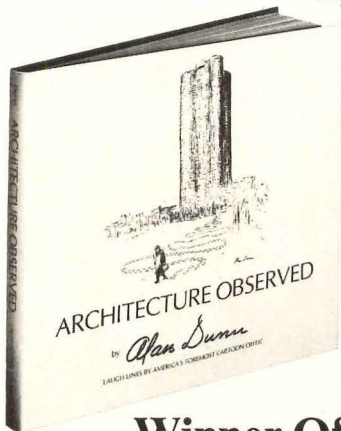


A subsidiary of General Refractories Company

For more data, circle 147 on inquiry card

“Dunn Has Cleared The Air For Us By His Laughter”

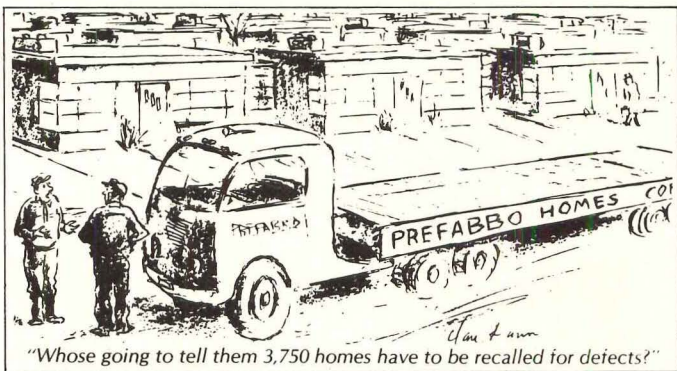
—Lewis Mumford



Alan Dunn's
Architecture
Observed

Laugh Lines by
America's Foremost
Architecture Critic

Winner Of The 1973
AIA Architecture Critics' Award



You and your friends will enjoy this sparkling collection of cartoons by a man universally recognized as America's funniest, most amiable and most incisive commentator on the foibles of American Architecture, its practitioners, and a sometimes baffled public.

Always in the avant garde of ideas and trends, Alan Dunn is one of the most knowledgeable and effective critics of architecture today. In this role he consistently and wittily reminds us that architecture is for people and language is for communication; if he notes any tendency towards excesses in architectural fads, cliches, or obscure jargon, he quickly brings us laughingly back to reality.

A fine and funny book for everyone involved in architecture — or those just interested in the design profession . . . a great gift for family or friends!

Architectural Record Books, Box 682, Hightstown,
New Jersey 08520

Please send _____ copies of Architecture Observed
at @\$6.95 each

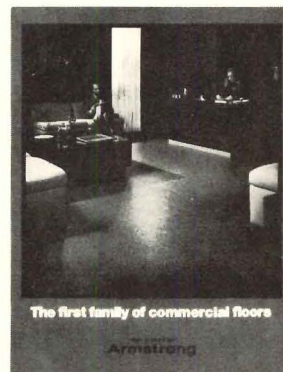
Name _____

Address _____

_____ Zip _____

AR5-74

Send us this coupon, and we'll send you this folder. It will tell you about all our commercial floors.



FREE

Name _____

Company _____

City _____ State _____ Zip _____

Armstrong Cork Co.
111 Rock Street
Lancaster, PA 17604



For more data, circle 1 on inquiry card

RECORD IMPRESSIONS CATALOG

SEND FOR A COMPLETE, DETAILED CATALOG of "Record Impressions." A convenient service offering reprints of Building Type Studies, Interiors and Special Reports. Offered are more than 30 items including back issues of Record Houses 1968 and 1970; Product Reports '73 and the practical reference guide, "Air Conditioning: A New Interpretation."

Address your request to: Record Impressions, Architectural Record,
1221 Avenue of the Americas, New York, New York 10020, Attn:
Joseph R. Wunk

If you understood lumens-per-watt the way you understand miles-per-gallon, you might just scrap your company's present lighting system.

The "lumen" and the "watt" may not be as familiar to you as the "mile" and the "gallon." But the principle is exactly the same.

And if more American businessmen realized that, more American businesses would be saving money on lighting.

The lumen-per-watt. It's simpler than it sounds.

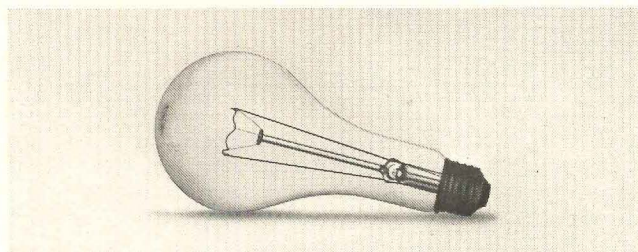
A lumen is nothing more than a unit of light. A lamp that gives 100 lumens is giving twice as much light as a lamp that gives 50 lumens.

A watt is a unit of electrical power. How much electricity it takes a fan or a toaster or a light bulb to do its job. Something that uses 100 watts is using twice as much electricity as something that uses 50 watts.

Now, it doesn't take a degree in engineering to figure out that the lamp that gives the most lumens-per-watt is the most efficient lamp. Just like the car that gives the most miles-per-gallon is the most efficient car.

And that's about all the fancy, technical language you're going to need to start evaluating your company's lighting system.

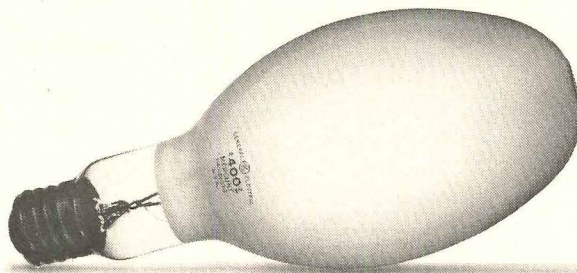
Some light bulbs you've heard of... and some we're pretty sure you haven't.



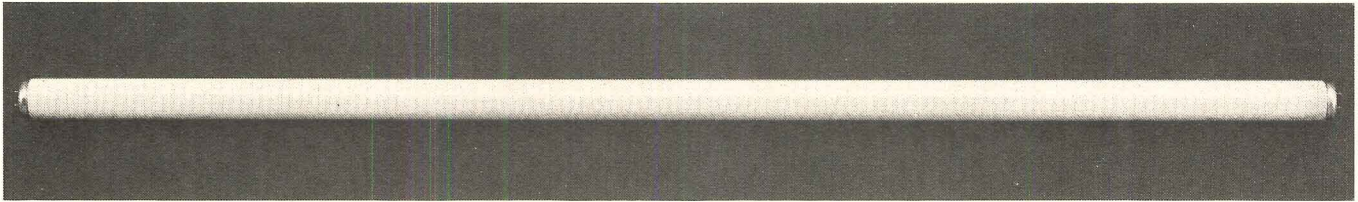
**The incandescent light bulb.
About 10 to 23 lumens-per-watt.**

The incandescent light bulb. A very flexible lamp that can be used almost anywhere. Nevertheless, an incandescent bulb is usually the least efficient lamp you can buy. Only 10 to 23 lumens-per-watt. (Efficiency increases as wattage goes up.)

The mercury lamp. A definite improvement. On the average, one 100-watt mercury lamp gives as much light as two 100-watt incandescent light bulbs. (Higher wattage mercury lamps are even more efficient.)



**The mercury lamp.
About 42 to 63 lumens-per-watt.**



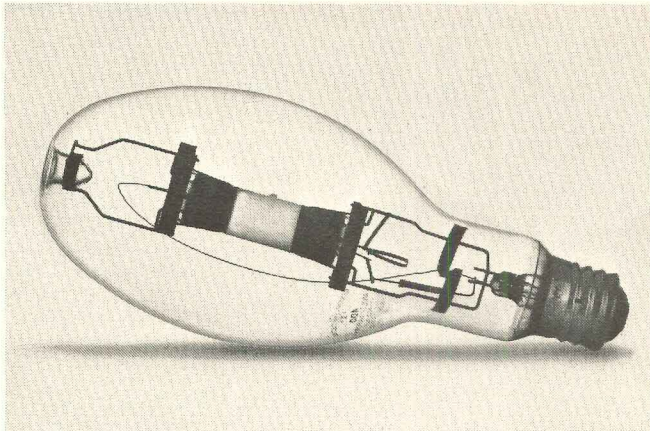
The fluorescent lamp.
About 55 to 83 lumens-per-watt.

The fluorescent lamp. It's used a lot. It could be used a lot more, especially in place of incandescent bulbs. Typically, one four-foot, 40-watt fluorescent lamp gives as much light as a 150-watt incandescent light bulb... for about 1/3 the electricity.

three 1,000-watt mercury lamps. Or, six 1,000-watt incandescent light bulbs.

So what's our point?
 Simply this.

Your company can probably get the light it needs more efficiently.



The Multi-Vapor® lamp.
About 85 to 100 lumens-per-watt.

The Multi-Vapor® lamp. Often used to light glamorous places like baseball and football stadiums. Also used in slightly less glamorous places like parking lots, factory buildings and warehouses. It's the second most efficient lamp we make. A single 1,000-watt Multi-Vapor lamp gives nearly as much light as four 1,000-watt incandescent lamps. (In other words, the same light for about 1/4 the electricity.)

Right now, your company may be using too many lamps near the top of this list and not enough near the bottom.

If you were using some of the newer, more efficient lamp types, you might be able to get the same amount of light you're getting now for substantially less electricity.

It won't be free.

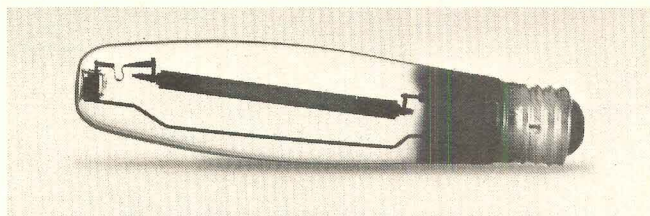
Updating your company's lighting system to make it more efficient will cost you money. Usually, it requires new fixtures and ballasts. And, generally speaking, the more efficient lamp types are also more expensive. But before you let this discourage you, remember this. When you save electricity, you're not only saving energy. You're also saving money. In fact, the money you save in the first couple of years of operation can often pay for the cost of a new Lucalox lighting system.

Something that is free.

One thing we can give you for free is more information.

If this ad has even partly interested you in updating your company's lighting system, we ask you to take one small, but important next step. Find out more. Call your local GE lamp representative.

Or write us. General Electric Lamp Business Division, Dept. C-406, Nela Park, Cleveland, Ohio 44112.



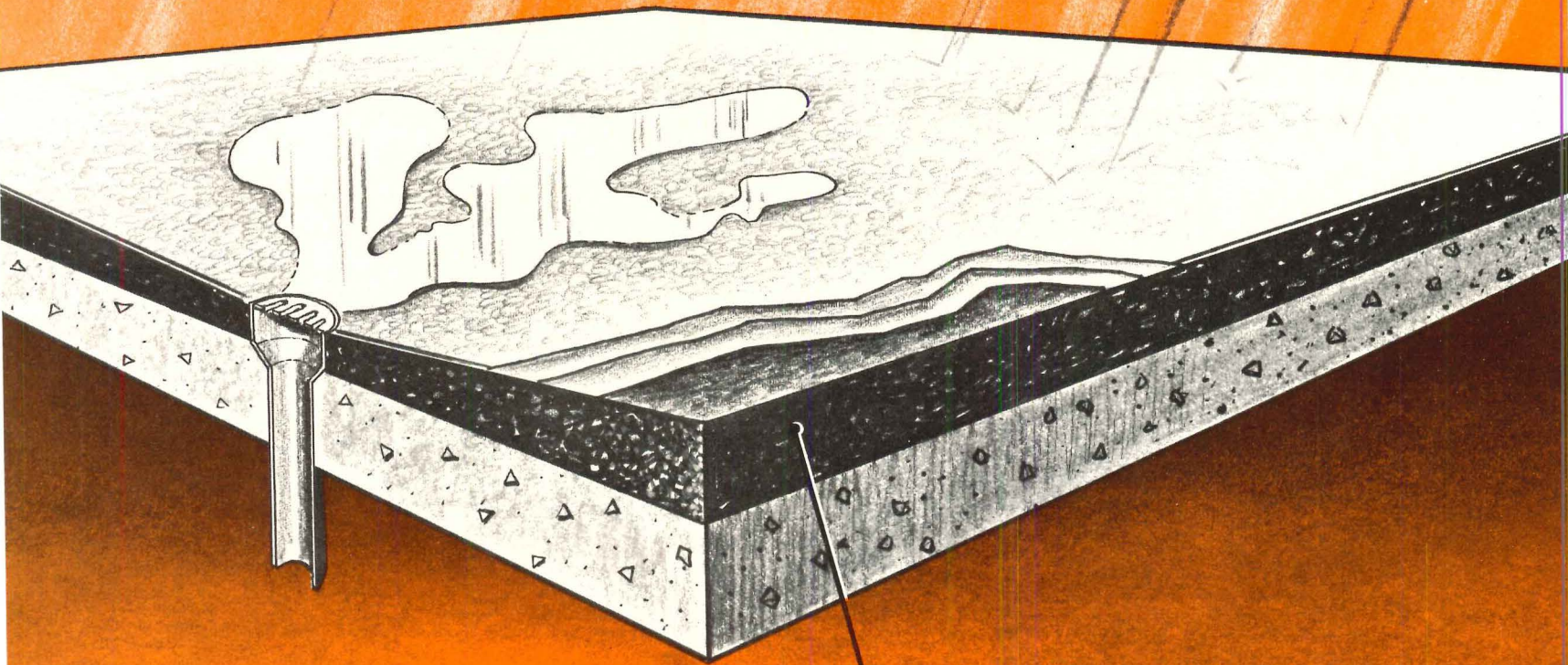
The Lucalox® lamp.
About 102 to 140 lumens-per-watt.

The Lucalox® lamp. The high-pressure sodium vapor lamp is the most efficient lamp we make. To equal the light of one 1,000-watt Lucalox lamp, it would take

**We can help
 make every watt count.**

GENERAL  ELECTRIC

For more data, circle 150 on inquiry card




All-weather Crete[®]
INSULATION

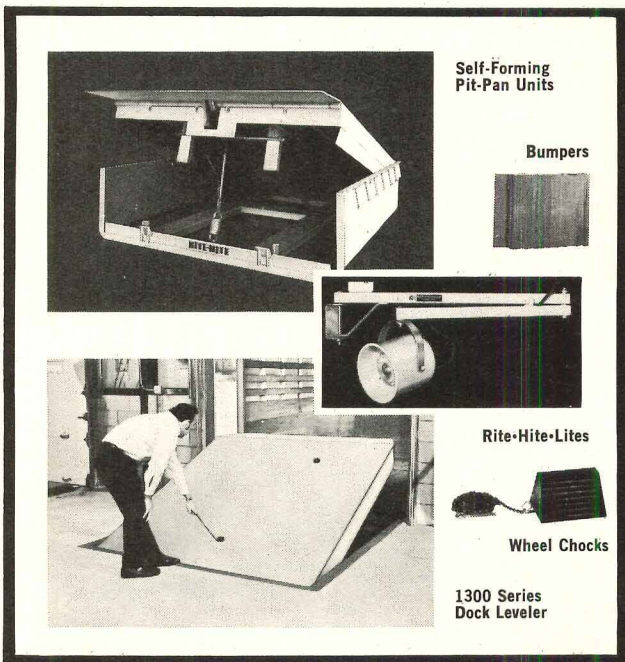
How to achieve slope to drains when you insulate the roof deck!

Few things deteriorate a roof and cause leaks faster than ponding water. That's why roofing experts, architects and engineers unanimously agree that roof decks should slope to drains. The efficient, economical way to accomplish this is with All-weather Crete Insulation! This unique material not only provides the finest insulating value ($K=.40$) of any poured fill insulation, but it can be positively sloped to drains, all in the same operation. All-weather Crete is applied hot and dry (even in freezing temperatures) and compacted to form a smooth, seamless, sloped to drain deck which is ready for roofing immediately - no curing is necessary. It speeds construction!

No wonder All-weather Crete is also a top choice for plazas where slope to drains is critical. Compare the life/cycle costs of All-weather Crete with other methods. None can surpass it in the thousands of dollars saved through energy conservation and roof life longevity. Get the facts - contact your local All-weather Crete applicator or Silbrico Corporation, 6300 River Rd., Hodgkins, Ill. 60525, (312) 735-3322.


SILBRICO
CORPORATION

For more data, circle 151 on inquiry card



THE RITE APPROACH TO DOCK SAFETY

Your most complete line of fully-mechanical truck and railcar dock levelers plus bumpers, chocks, door seals, loading-lites, and safety signs. Meets OSHA standards.

**RITE[®]
HITE
CORPORATION**

FREE . . . Send today for full line catalog

6005 S. Pennsylvania Ave., Cudahy, WI 53110
Phone: 414/769-8700

For more data, circle 152 on inquiry card

GOOF PROOF



TRANS-LOGIC[™] pneumatic tube systems are people-proof. Carrier can't be dispatched until closed properly. Can't open in transit. Can't be inserted wrong. All terminals standard—anyone who can operate one—can operate them all. No mistakes possible in dispatching or receiving. 4" and 6" dia. carriers.

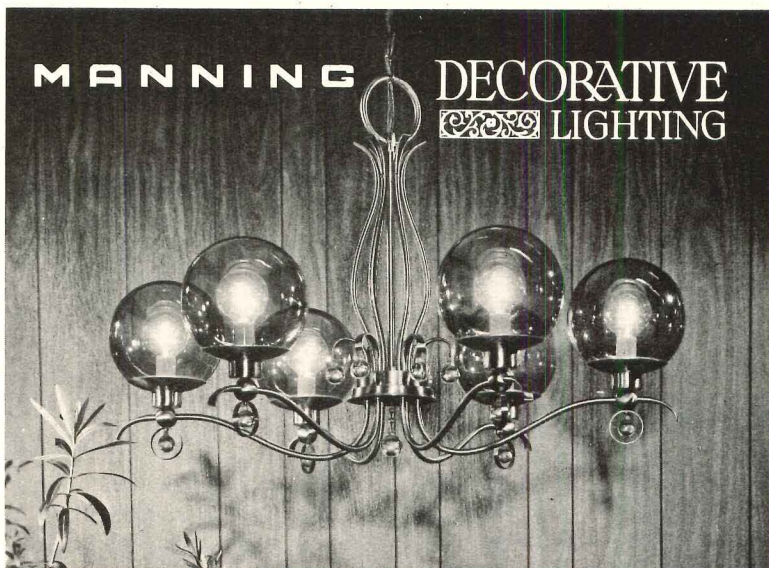
Trans-Logic, the breakthrough system.



POWERS

Powers Regulator Co. Transitube Division
Skokie, Illinois 60076

For more data, circle 154 on inquiry card



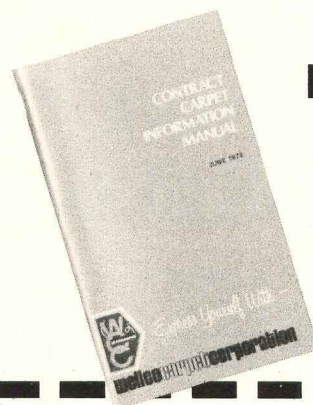
NEW

Complete line of decorative lighting equipment—specifically designed for commercial interiors.

REQUEST FULL COLOR CATALOG "M"

R.A. MANNING COMPANY INC.
P.O. BOX 643 SHEBOYGAN, WIS. 53081

For more data, circle 153 on inquiry card



Please send me the

welco

**Contract Carpet
Information
Manual**

Tech information: fiber characteristics, test information for acoustic and flammability ratings, FHA requirements, installation techniques, cleaning and maintenance procedures.

Manufacturing flexibilities: inventoried lines with specification information; specifier lines with color, yarn, face weight, modular and backing options.

Pocket size, 116 page booklet stuffed with facts and charts. Technical, yet understandable. Address to: Don Thompson, Advertising Manager, Dept. R5



Because we're committed to commercial quality and nothing else

welco carpet corporation

WELCO CARPET CORPORATION □ P. O. BOX 281 □ CALHOUN, GEORGIA 30701 □ TELEPHONE: 404/629-9276
A WHOLLY OWNED SUBSIDIARY OF MANNINGTON MILLS, INC., SALEM, N. J.

name _____

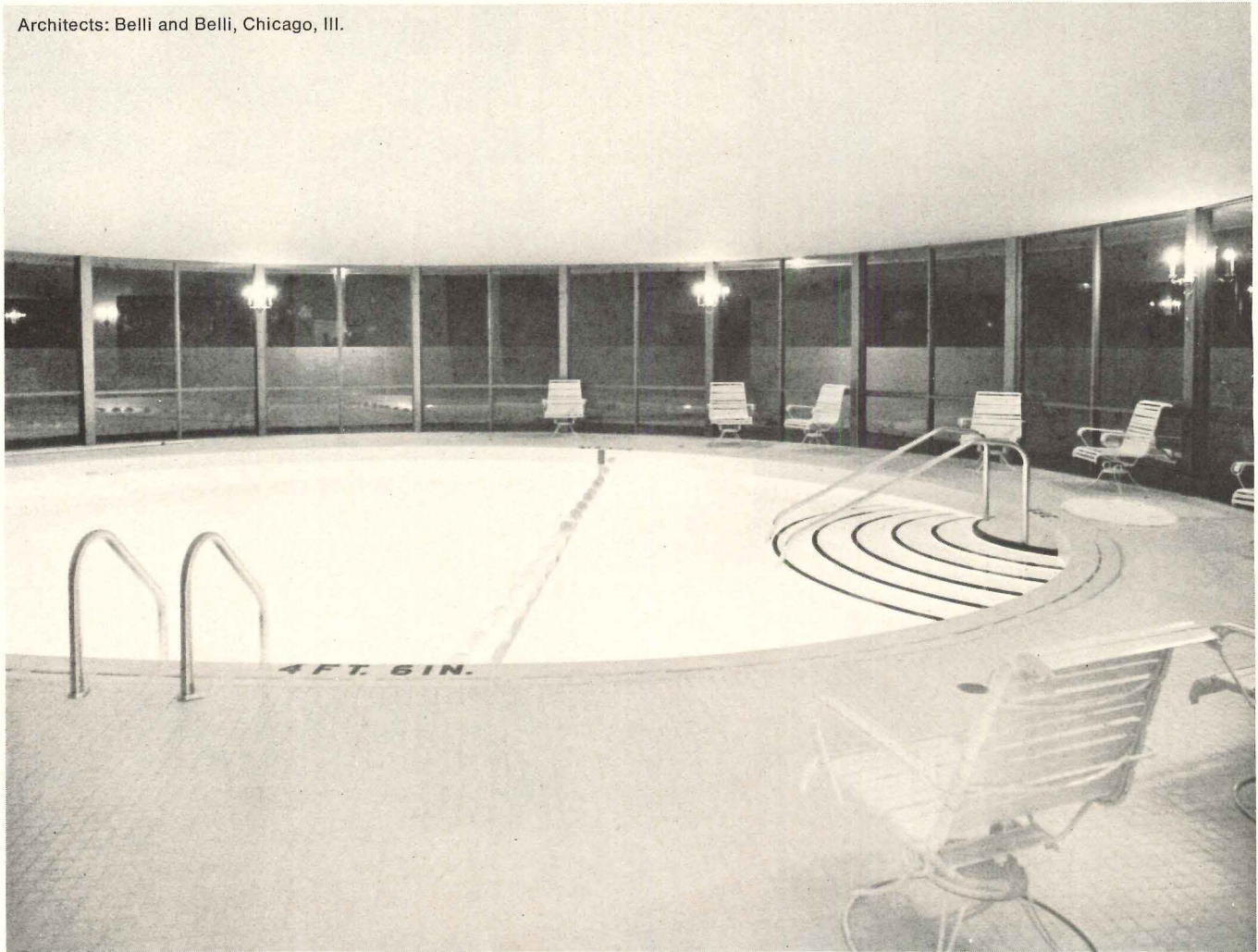
firm _____ title _____

address _____

city _____ state _____ zip _____

For more data, circle 155 on inquiry card

Architects: Belli and Belli, Chicago, Ill.

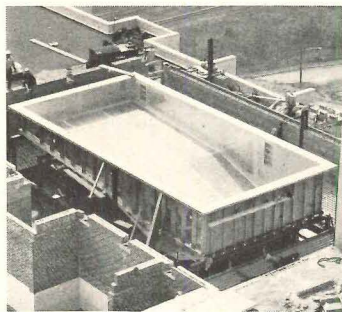


Overly makes the metal pools that others don't.

Like this one, on top of a 15-story high rise in Phoenix, Arizona. It's a custom-designed swimming and therapy pool, with more complex geometry than ordinary pools because the bottom is configured so a swimmer will be within an arm's reach of a hand hold no matter how far he is from the side.

Rooftop pools or unique designs are never a problem at Overly. Our pools can easily be adapted to the tops of buildings, or anywhere else, indoors or outdoors. Every one is custom designed and fabricated, then field assembled quickly and economically. They are warranted against leakage for five years,

and resist corrosion, cracks and spalling. Overly pools never need grouting, sealants or caulking, because they're welded. And, they come complete with filtration systems and all accessories.



Overly also designs, fabricates and installs therapy pools, including our new modular pool that needs no excavation. No matter what kind of metal swimming pool you want, and no matter where you want to put it, you can get it from Overly. We have plants in Greensburg, Pa., and Los Angeles, Calif. See us in Sweets or contact Overly Manufacturing Co., 574 West Otterman Street, Greensburg, Pa. 15601.

overly
MANUFACTURING CO.
DOES WHAT OTHERS DON'T

For more data, circle 156 on inquiry card

NOW! School Walls and Ceilings That Are Fire-Resistant, Vandal-Proof and Maintenance-Free.



Laminated to Type X fire-coded gypsumboard, AllianceWall porcelain-on-steel panels create a fire-resistant barrier with a "0" rating for Flame Combustion, Smoke Development and Fuel contribution. No painting or expensive maintenance is ever required. Interior panels are guaranteed for 50 years.

AllianceWall porcelain comes in 112 standard colors.

For further information write:

AllianceWall[®]
CORPORATION
BOX 247
ALLIANCE, OHIO 44601

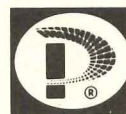
Plants in Alliance, Ohio; Okmulgee, Okla.; Genk, Belgium and Odense, Denmark

For more data, circle 146 on inquiry card

TRANS-LOGIC[™] pneumatic tube systems can be expanded to 999 stations—more than any conceivable requirement. As your needs grow—so can your system. No central exchangers. Upgrade from the simple System 200 to the computerized System 400. Trans-Logic grows with you. 4" and 6" dia. carriers.



Trans-Logic, the breakthrough system.

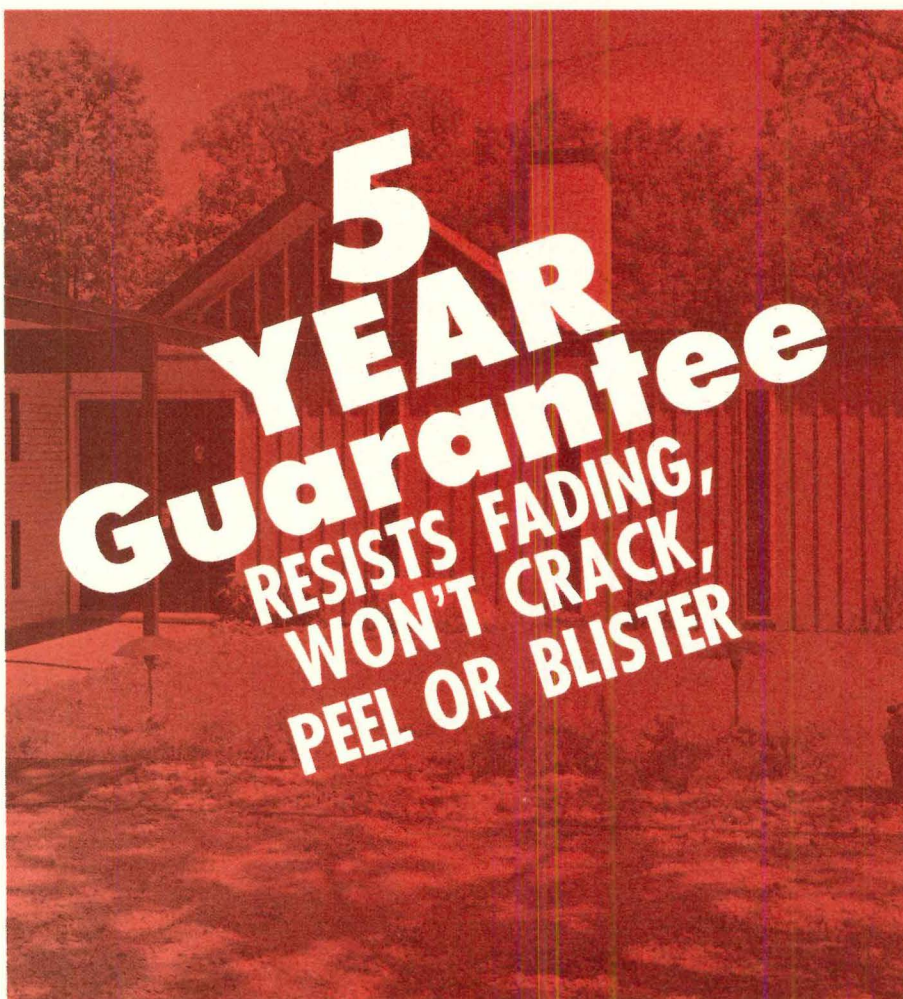


POWERS

Powers Regulator Co. Transitube Division
Skokie, Illinois 60076

UNLIMITED EXPANSION

For more data, circle 157 on inquiry card



Rez[®]

Solid Color Latex Stain

On exterior or interior wood surfaces, REZ Latex Stain forms a tough, flexible film—so tough that we **guarantee*** that it won't crack, peel or blister for 5 years. And the color stays "like new."

There are other advantages, too—like easy application with less spattering, fast dry, and soap and water cleanup. Choose from 38 vogue solid or semi-transparent colors.

Detailed information on REZ Natural Wood Finishes can be found in Sweet's Catalog (9.9/Re). Or write to The REZ Company, One Gateway Center, Pittsburgh, PA 15222.



*** Guarantee**

REZ Latex Stain is guaranteed for 5 years to resist fading and not crack, peel or blister if applied according to the instructions on the label. If REZ Latex Stain fails to perform as stated in this guarantee, replacement stain will be furnished without cost or a refund will be made of the purchase price.

Rez[®] Natural Wood Finishes
by

PITTSBURGH PAINTS

For more data, circle 158 on inquiry card

ADVERTISING INDEX

Prefiled catalogs of the manufacturers listed below are available in the 1974 Sweet's Catalog File as follows.

- A Architectural File (green)
- I Industrial Construction File (blue)
- L Light Construction File (yellow)
- D Interior Design File (black)

A

A-I AA Wire	182
Aerofin Corp.	214
A-L Alcan Aluminum Corp.	213
A AllianceWall Corporation	249
D Allied Chemical Corp., Fibers Div.	192-193
All-Steel Equipment Inc.	68
A-I-L Aluminum Co. of America	222-223
American Enka Corp.	189
A-L American Olean Tile Company	197
A-I American Smelting & Refining Co.	171
A-I American Standard, Plumbing & Heating Div.	80B
A-I American Telephone & Telegraph Co.	46-47
A-L Andersen Corp.	60-61
A Apache Foam Co.	94
Architectural Record	198
Architectural Record Books	32-2, 203, 220, 243
Armor Elevator Co. Inc.	106
A-I-L Armstrong Cork Co.	243
A-I-L ASG Industries Inc.	229

B

A Bally Case & Cooler, Inc.	97
A-I Bell Telephone System	46-47
A Bigelow-Sanford Inc.	211
A Bobrick Corporation, The	109
A-I Bradley Corporation	52-53
A-L Brick Institute of America	81

C

A Carpetner & Co., Inc., L.E.	28-29
A-I-L Carrier Air Conditioning Co.	90
Carpet Cushion Council	55
A-I Ceco Corp.	27
A-I Celotex Corp.	88-89, 172
A-I Chicago Metallic Corp.	1
A-I Clark Door Co., Inc.	96
Columbia Lighting Inc.	62
A Combustion Engineering—C-E Glass Division	22-23
Conco Mortgage Co.	173
A-I Conwed Corp.	100-101
Cornell Corporation	214
A-I CPR Division of the Ujohn Co.	36
CRS Industries Inc.	191

D

Delta Air Lines	183
A-I Dempster Brothers, Inc.	239
Design Tex	72
DeSoto, Inc.	32
Detex Corp.	196
Digital Equipment Corp.	180
A Dor-O-Matic Div. of Republic Industries Inc.	218
A Dover Corp., Elevator Div.	2-3
D Dow Badische Co.	225
DuPont De Neumours & Co., Inc., E.I.—Pneumacel	24-25
A DuPont De Nemours & Co., Inc., E.I.	102-103

E

Eagle Electric Mfg. Co. Inc.	202
Eastman Kodak Co.	74
A Eberhard Faber Inc.	212
A-I ECI Air Flyte Corp.—Sub. of Eastern Cyclone	54
Economics Laboratory Inc.	221

Electric Energy Association	185 to 188
A-I Elkay Mfg. Company	38
The Engineered Products Co.	182

F

Feldman Lighting Co.	200
A-I Fenestra, Inc.	170
A Follansbee Steel Corp.	234
Forms & Surfaces	75
A-I H.B. Fuller Co.	233

G

A-I-L-D GAF Corp., Building Products Division	110
A Game Time Inc.	6
A-I-L General Electric Co.	98-99, 244-245
General Portland Inc., Trinity White	3rd cover
A-I Georgia-Pacific Corporation	204
A Granco Steel Products C.	48
A-I Grefco Inc., Building Products Division	242
Guth Lighting—Div. Sola Basic Industries	17

H

Hager Hinge Company	49
A Haws Drinking Faucet Company	242
Herman Miller Inc.	194-195
A Holophane, A Johns-Manville Division	182
A Hume Snow Melting Systems Inc.	202

I

Ideal Industries Inc.	238
Information Handling Services	31
A-I Inland-Ryerson Construction Products Co.	20-21
A Interform	192
International Masonry Institute	95

J

J.G. Furniture Company, Inc.	181
Johnson Service Co.	80
Jute Carpet Backing Council, Inc.	80D

K

A-I-L Kaiser Aluminum & Chemical Corp.	91
A Kalwall Corp.	70
Kawneer Co.	8-9
Kemiko Inc.	200
A-I Koppers Company	165 to 168
A-D Krueger	16

L

A Levolor Lorentzen Inc.	18-19
Ludowici-Celadon Co.	5

M

Manning Co. Inc., R.A.	247
A-I-L Masonite Corp.	215
Masonry Industry Advancement Committee	32-2-32-3
A Matthehs & Co., J.H.	2nd cover
McGraw-Hill Books	224
A Merchant & Evans Co.	238
A Montgomery Elevator Co.	199
A Monsanto Company, Textiles Div.	80A
Mo-Sai Institute Inc.	66
Mosler/Airmatic Systems Division	104-105

N

National Electrical Contractors Association	178
A-I-L-D National Gypsum Co.	86-87
A-D National Terrazzo	219
New York Graphic Society	214
A-I-L-D Nord Co., E.A.	12
Nucor Corp. Vulcraft Div.	82-83

O

Ottawa Silica Co.	251
A Overly Mfg.	248
A-I-L-D Owens-Corning Fiberglas Corp.	50-51, 56-57, 63

P

A Parker Co., Charles	46
A-L Pella Rolscreen Co.	76-77
Pierce Div. of Kroy Industries Inc.	183
A-I Pittsburgh Corning Corp.	210
A-L Pomona	197
Ponderosa Pine Woodwork	92-93
A-I-L-D Potlatch Corp.	218
Powers Regulator	247, 249
A-I PPG Industries Inc.—Coatings & Resins	240-241
A-L PPG Industries, Inc., Commercial Glass	205 to 207
PPG Industries Inc., Rez	249
Precast Systems, Inc.	242
Pyrotector Inc.	200

R

Rain Jet Corp.	202
A-I Raynor Mfg. Co.	232
A-L Red Cedar Shingle & Handsplit Shake Bureau	80C
A-I Richards-Wilcox Mfg. Co.	238
A-I Rite Hite Corporation	247
A Robbins Flooring Div. of E.L. Bruce & Co.	78-79
A-I Robertson Co., H.H.	58-59
A-L Rohm & Haas Company	216-217
Roman Fountains Inc.	218
Russwin, Div. Emhart Corp.	64

S

San Valle Tile Kilns	32-1
A-I Silbrico Corp.	246
A-I Simpson Timber Co.	32-4, 190
Soan Valve Company	4th Cover
A Soss Mfg. Co.	30
A Span Deck Inc.	7
Square D Company	184
Steel Joist Institute	237

T

A-I Taylor Co., The Halsey W.	26
A-I Thiokol Chemical Corp.	45
Thonet American Chair Company	228
A Tile Council of America Inc.	15
Tony Team Inc., The	242
A-I Tremco Mfg. Co.	230-231
Trinity White, General Portland, Inc.	3rd cover
Trus Joist Corp.	42

U

A-I Unistrut Corporation	176-177
A-I-D-L United States Gypsum Co.	201, 235
A-I-D-L U.S. Plywood Corp.	107
A-I U.S. Steel Corp. Cyclone Fence Div.	84-85

V

Vinyl Plastics, Inc.	242
A Vogel-Peterson Co.	175

W

Wellco Carpet	247
Westinghouse Electric Corp.— Architectural Systems	226-227
Westinghouse Electric—Corporate	208-209
A-I Westinghouse Electric Corp.— Water Coolers	174

X

Xerox Corp.	179
-------------	-----

Mystic White®

A multi-purpose quartz aggregate.
— Architectural and landscape stone,
and architectural sand.

It's a lively white!



ARCHITECTURAL RECORD

McGraw-Hill, Inc., 1221 Avenue of the Americas, New York
New York 10020
Advertising Sales Mgr.: Louis F. Kutscher (212) 997-2838
Eastern Sales Mgr.: Robert G. Kliesch (215) 568-6161
Western Sales Mgr.: James A. Anderson (312) 751-3770
Advertising Services Mgr.: Joseph R. Wunk (212) 997-2793
Marketing Services Mgr.: Elizabeth Hayman (212) 997-2858
Research Mgr.: Camille Padula (212) 997-2814
Classified Advertising: (212) 997-2557

District Offices:

Atlanta 30309

Edward G. Graves, 100 Colony Square, 1175 Peachtree St., N.E.
(404) 892-2868

Boston 02116

Robert L. Tagen, 607 Boylston St., (617) 262-1160

Chicago 60611

James A. Anderson, Robert T. Franden, Edward R. Novak,
645 N. Michigan Ave. (312) 751-3770

Cleveland 44113

Willis W. Ingersoll, 55 Public Square, (216) 781-7000

Denver 80202

Harry B. Doyle, 1700 Broadway (303) 266-3863

Detroit 48202

1400 Fisher Bldg., (313) 873-7410

Los Angeles 90010

Richard R. Butera, 3200 Wilshire Blvd.-South Tower (213) 487-1160

New York 10020

Blair McClenachan (212) 997-3584

Philadelphia 19102

Robert G. Kliesch, George T. Broskey, Three Parkway
(215) 568-6161

Pittsburgh 15222

Edward C. Weil, III, 4 Gateway Center, (412) 391-1314

St. Louis 63011

Richard Grater, Manchester Rd., (314) 227-1600

San Francisco 94111

Richard R. Butera, 425 Battery Street (415) 362-4600

Overseas Offices:

Brussels

Galerie Porte de Namur, 22-26, Chaussée de Wavre
1050 Brussels, Belgium

Frankfurt/Main

Elsa-Brandstroen Str. 2, Frankfurt/Main, Germany

London

34 Dover Street, London W.1, England

Milan

Via Baracchini No. 1, Milan, Italy

Paris

17, rue Georges Bizet, 75 Paris 16e, France

Tokyo

2-5, 3-chome, Kasumigaseki, Chiyoda-ku, Tokyo, Japan

Mystic White® is the distinctive name given to this family of lively white aggregates and architectural sand: Architectural Stone, in ¼" to 1½" sizes, for architectural concrete, and ornamental and landscape applications—decorative planters and ground cover. Architectural Sand, the whitest available, provides the "white-look" when using gray or white cement. For specialty concrete products, architectural finishes. It's beautiful and lasts, and lasts, and lasts. Write for brochure and become acquainted with Mystic White.



OTTAWA SILICA COMPANY

Connecticut Silica Division
RSD #7, Box 855
Ledyard, Connecticut 06339

For more data, circle 160 on inquiry card

CLASSIFIED SECTION

POSITIONS VACANT

ARTISTS-ILLUSTRATORS

Opportunities available within unique group, nationally recognized as finest in field of architectural illustration and related advertising. Broad range of illustration needs provide situations for creative artists excelling in figures-cars-landscapes, advertising art, brochure and logo design, perspective layout, building rendering, working art director. All openings require fast creative artists who want to spend all their time illustrating. Compensation guaranteed highest in all related fields for top personnel, we're not interested in less. Send any available samples to Art Associates Inc. All promptly returned confidentially.

ART ASSOCIATES INC.
4041 W. Central Ave.
Toledo, Ohio 43606

ARCHITECTS

Detroit based A/E/P firm has positions for architectural designers with minimum 5 years experience. Must be capable of leading design team for major projects, of developing building programs, of conducting client meetings, of following projects through construction documents and construction.

Write in confidence to:

James M. Leefe, AIA
Giffels Associates, Inc.
243 W. Congress
Detroit, MI. 48226
or call collect (313) 961-2084

An Equal Opportunity Employer, M/F.

ARCHITECTS—PEACE CORPS/VISTA

ACTION. Volunteer overseas and U.S....Low-income housing projects, design of schools, hospitals, community centers, etc. Most openings: singles, some couples. Information: Bruce Mazine

ACTION

OCP Box A-1, Washington, D.C. 20525.

Director of Design—Minneapolis A-E firm of 75, with diverse, regional/national practice, seeks imaginative, aggressive architect for position of Director of Design. Must have degree, registration, and extensive experience as a senior architectural designer. Primary responsibility is for all visual design office-wide. Director is design consultant for all projects, and chief critic and spokesman for architectural designers. Send confidential resume and salary history to William Scott, Setter, Leach & Lindstrom, Inc., 133 Foshay Tower, Minneapolis, Minnesota 55402.

Landscape Architect—Expanding multi-disciplined A/E/P firm has opening for Landscape Architect. Registered or qualified to be registered in Ohio. Upon proven performance, position can lead to department head status. Send complete resume and technical references to: Samborn, Steketee, Otis and Evans, Inc., 600 LOF Building, Toledo, Ohio 43624 (419-248-6271). An Equal Opportunity M/F Employer.

Recent Graduates having first professional degrees in architecture, to join the architectural staff of Southwestern Bell in St. Louis. The position offers the opportunities of preparing working drawings under supervision of a registered architect (ultimate registration required) while learning business and evolving to a Project Architect handling all facets of construction. Reply to: Mr. L.L. Huges, General Architect, Southwestern Bell Telephone Company, 720 Olive Street, Room 2705, St. Louis, Missouri 63101.

Major Florida Developer Seeks Architect—NCARB, Registered or Qualified for Registration in the State of Florida. Outstanding opportunity for a permanent future with a dynamic central Florida firm. This position requires an Architect with extensive experience in design-build administration and management in planned unit developments (condominiums—apartments), office buildings, and warehouses. Top compensation. Executive position. Qualified candidates should address a confidential resume to P-5055, Architectural Record.

Architects—We have many career openings for architects to serve as project architects for large designer-builder of medical and institutional facilities. Excellent companies. Good salary, bonus and car compensation packages. Send resume. Management Recruiters of Green Bay, 115 S. Jefferson St., Green Bay, Wis., 54301. Or direct dial 414/437-4353.

POSITIONS WANTED

Architect/Planner—35, family, multiple degrees, NCARB, principal of firm, with comprehensive experience in top-level management, marketing, conceptual design, client relations and financing for large scale hospital and development projects, seeks partnership/equity position with architectural, consulting or development firm. Reply: PW-5087, Architectural Record.

Architect, A.I.A., NCARB, 38 registered in several states, seventeen years experience including five years in Europe. Strong architectural/engineering/construction/financial management background; interested in organization, client relations, consulting, coordination and of complex projects. Seeks affiliation or position with architect/engineer/developer. Prefer New York, New Jersey or Pennsylvania area but will also relocate for the right opportunity. Write to PW-5172, Architectural Record.

EMPLOYMENT OPPORTUNITIES

PROJECT MANAGERS

for
Interior Design Projects
Institutional and Commercial.
Relocation Paid
Caudill Rowlett Scott
1111 West Loop South
Houston, Texas 77027
An Equal Opportunity Employer

EMPLOYMENT SERVICE

Edwards and Shepard Agency: An architectural and interior placement service for professionals seeking knowledge, guidance, confidentiality and informed representation. Bill Shepard, a Pratt graduate, offers effective results to: Architects, Planners, Production Specialists and Industrial Designers. Interviews by appointment—(212) 725-1280, 1170 Broadway, New York, N.Y. 10001.

SPECIAL SERVICES

ARCHITECTURAL RENDERINGS

A complete source for the finest in architectural illustrations is described in a color brochure, available from Kinsey Architectural Arts.

Examples of full color and vignette style renderings graduated in cost are included. Additional services include building color selection and photo prints of renderings in a wide variety of sizes.

For a cost quotation forward floor plan, elevations and site plan. We will acknowledge by phone the same day received.

As a valuable addition to your office file write for your copy of our color brochure.

Kinsey Architectural Arts
2144 Alexis Dept. 5-A
Toledo, Ohio 43613
Phone: (419) 475-7011

Classified Section Non-Display Order Form

To place a non-display advertisement, fill out this form, including your name, street address, city & state with ZIP code, attach it to a separate sheet containing your advertising copy, and mail it to:

ARCHITECTURAL RECORD/
P.O. BOX 900
NEW YORK, N.Y./10020

Rates: \$4.00 per line, minimum insertion three lines, six words to a line, box number counts as one additional line. Display rates on request.

Payment Enclosed \$ Bill me
 Use Name & Address Use Box No.
Advertisement to appear time(s)

.....
Signature

Concrete for people.



Concrete can be more than simply a structural material.
Especially when you want to create an
attractive environment for people.

To help you meet this objective, Trinity has assembled
an experienced team of architectural concrete professionals.
We are available to help you plan and to help your contractor execute.

Trinity White

*trinity
warmtone®*



General Portland Inc.

P. O. Box 47524, Dallas, Texas 75247

P. O. Box 22348, Tampa, Florida 33622

OFFICES: Dallas • Houston • Tampa • Miami • Chattanooga • Fort Wayne • Oklahoma City • Los Angeles

For more data, circle 161 on inquiry card

**FASTEST, EASIEST
BEDPAN WASHING
EVER...RIGHT IN
THE PATIENT'S ROOM**

NEW! **Sloan BPW-1000 Bedpan Washer**

■ Just lower the spray arm to the bedpan, and activate the flush valve. Sloan's double-action: (1) washes and rinses the bedpan in seconds, while (2) balance of water flushes the fixture. Sloan's BPW-1000 bedpan washer is efficient—saves valuable water and time. Kept fresh and clean, the bedpan never leaves the patient's room.

■ For nearly 70 years, Sloan has set the highest standards in flush valve design. The slim, handsome BPW-1000 carries on that tradition. It's the first and only bedpan washer that installs on the plumbing center line. Sloan's unique in-line diverter arm thus directs maximum water force through its spray head without splash or after drip. A few simple connections give you a permanent, rigid installation at modest cost.

■ Sloan's new BPW-1000 can save you money around the clock. Here, indeed, is a modern device keyed to better hospital service and operating economy. Learn more about the BPW-1000. Write for details.

 **SLOAN VALVE COMPANY**
10500 SEYMOUR AVENUE • FRANKLIN PARK, ILLINOIS 60131

For more data, circle 162 on inquiry card