DESIGNED FOR THE PRACTICE OF ARCHITECTURE: TAC'S OWN OFFICE BUILDING

SPECIAL REPORT: WIND, SUN, RAIN AND THE EXTERIOR WALL

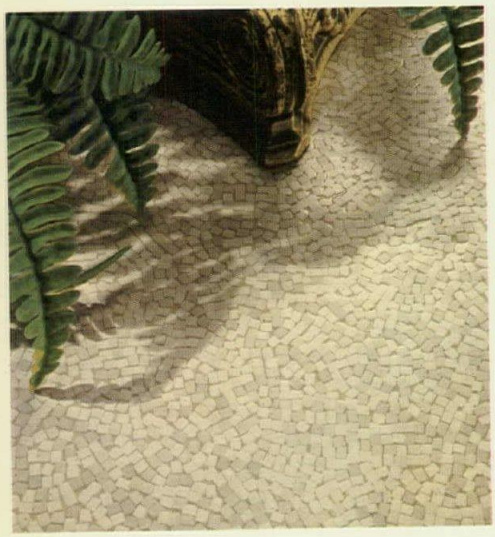
FIVE BUILDINGS BY ALDEN B. DOW

BUILDING TYPES STUDY: HOSPITALS—DESIGN FOR A FAST-CHANGING TECHNOLOGY

FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

EPTEMBER 1967 9 A McGRAW-HILL PUBLICATION TWO DOLLARS PER COPY




SERVICES

Armstrong offers the widest variety of resilient floors. The best is the one that suits your design.

Haydon Burns Library, Jacksonville, Florida. **Architect:** Hardwick & Lee, Jacksonville. **General Contractor:** The Auchter Company, Jacksonville. **Flooring Contractor:** Phillips Floor Service, Jacksonville Beach. **Interiors:** Hardwick & Lee.

At the Haydon Burns Library the best floor is Tessera Vinyl Corlon

The architects for this $2.5 million Jacksonville library had two primary reasons for choosing Tessera Vinyl Corlon—the practicality of vinyl combined with a striking, modern design that complements contemporary interiors.

First, consider practicality. By selecting Tessera, the architects minimized maintenance on 45,000 sq. ft. of floor subjected to heavy traffic. Tessera's subtly textured vinyl surface helps to hide scuffs, scratches, and unsightly heel marks. A sheet vinyl flooring, almost seamless, Tessera cleans up quickly, easily, and retains its good looks longer. (Already in service for two years, the library's floors show little of the effects of punishing day-to-day traffic.)

Next, consider design. Tessera Corlon's random, cube-like design matches the form and mood of the library. And by combining Armstrong Vinyl Corlon Decorator Strips with Tessera, the architects added a distinctive, expansive look to their bold interiors.

Would Tessera Vinyl Corlon be the right floor for your next project? Possibly. It all depends upon your needs. Your Armstrong Architect-Builder-Contractor Representative will be glad to work with you to determine what would be best. He has the world's largest line of resilient flooring behind him, so you can be sure of an objective recommendation. Call him. Or write Armstrong, 309 Rock Street, Lancaster, Pennsylvania 17604.

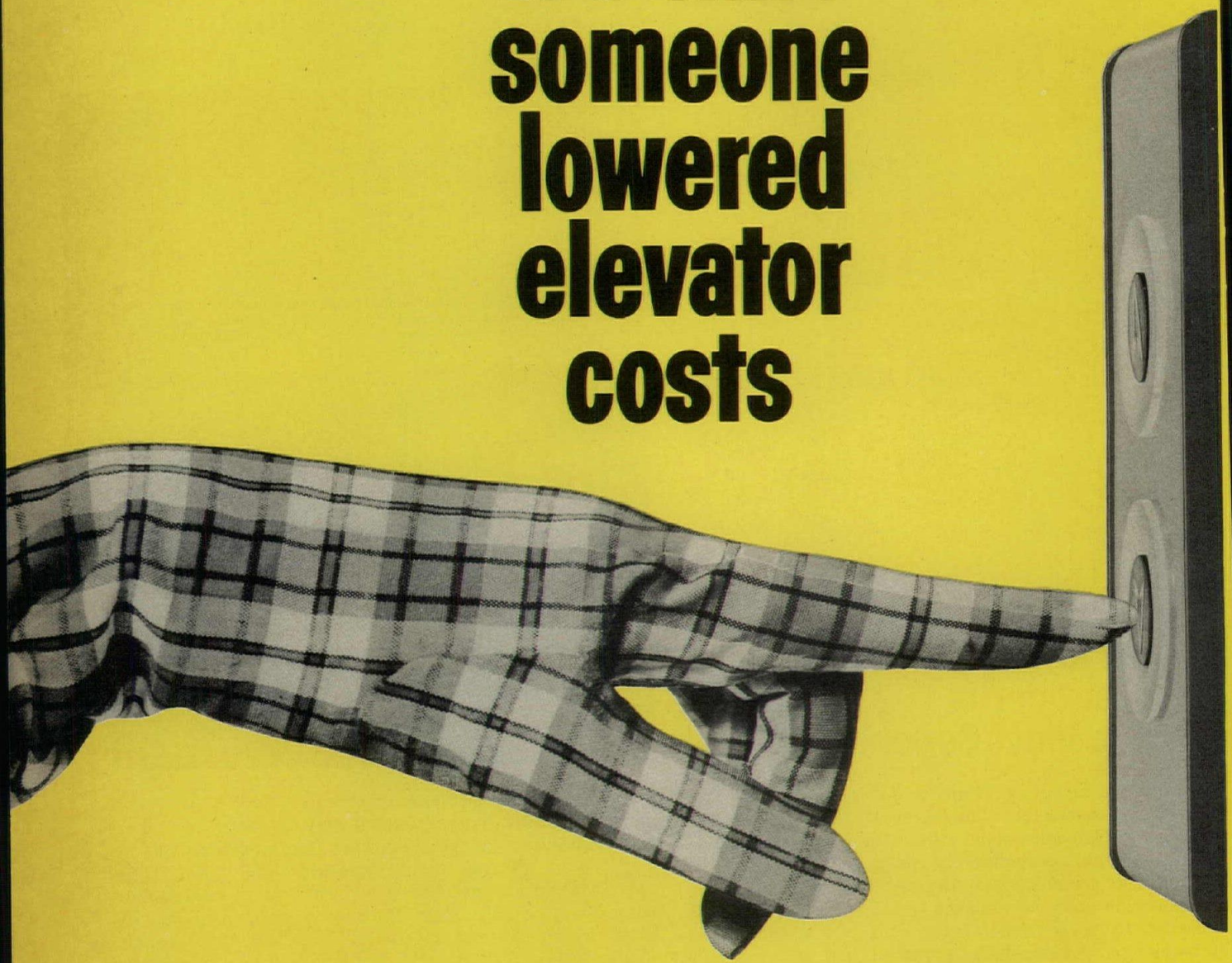
SPECDATA, TESSERA VINYL CORLON ☐ Colored vinyl chips inlaid in translucent vinyl all the way to the backing. ☐ Moisture-resistant Hydrocord backing. ☐ Sheet material 6 feet wide up to 90 feet long. ☐ Overall gauge .090". ☐ Excellent durability, ease of maintenance, resistance to heel damage; superior grease, stain, and chemical resistance. ☐ Can be installed above, on, or below grade or directly over existing resilient floors using the Armstrong Perimiflor Installation System.

VINYL FLOORS BY Armstrong

Hydrocord®, Perimiflor, Tessera®, and Corlon® are trademarks of Armstrong Cork Co.

For more data, circle 2 on inquiry card

It's time someone lowered elevator costs



Dover has

with elevators pre-engineered f

Dover's pre-engineered elevators are designed for efficient service in a wide range of buildings — small offices, plant offices, clinics, motels, apartments, nursing homes and other buildings from two to five floors.

Busy architects welcome the pre-engineered concept. It provides an elevator system which has all the style and decor of custom design, but with immediate availability of specifications, details and cost. Delivery is equally fast; Dover pre-engineered elevators can be on the job site within two weeks from order when required to meet your schedule.

Unitized Ride Control Center—All Dover pre-engineered elevators have the exclusive Oildraulic® power unit and controller which provide the smoothest ride in the hydraulic elevator field. The complete unit is built by Dover to meet the consistency and dependability requirements of elevator service. It is impossible to duplicate these superior operating characteristics with stock hydraulic valves and other "off the shelf" components.

Dover "memory" control which stores all calls until answered is standard on pre-engineered elevators. Group control is available for multiple elevator installations.

Full Color Folders show typical cab designs and give complete description of Dover pre-engineered elevators. Send coupon today. If you're interested in high-speed, high-rise elevators just say so and we'll include data on those, too.

Please send color literature on Dover Continental and Fleetwood pre-engineered elevators to:

Name_____

Company_____

Address_____

_____

Mail to: Dover Corporation, Elevator Division, Dept. E-5, P. O. Box 2177, Memphis, Tenn. — 38102

usy buildings (and busy architects)

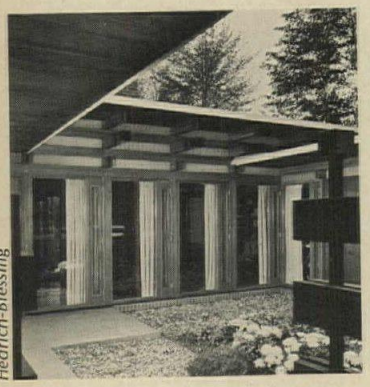
DOVER

DOVER CORPORATION · ELEVATOR DIVISION

For more data, circle 3 on inquiry card

Cover: The Architects Collaborative Inc. Office Building
Cambridge, Massachusetts
Architects: The Architects Collaborative Inc.
Photographer: ©Ezra Stoller (ESTO)

FEATURES



Hedrich-Blessing

BUILDING TYPES STUDY 375

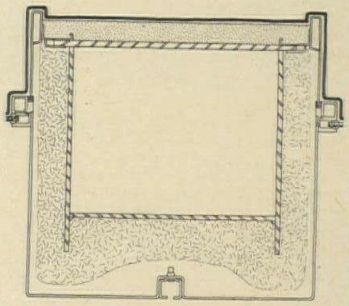
Marvin Rand

ARCHITECTURAL RECORD, September 1967, Vol. 142, No. 3. Published monthly, except May, when s monthly, by McGraw-Hill, Inc., 330 West 42nd Street, New York, New York 10036. CORPORATE OFFIC Donald C. McGraw, Chairman of the Board; Shelton Fisher, President; John J. Cooke, Vice President and S tary; John L. McGraw, Treasurer. SUBSCRIPTION RATE: for individuals in the field served $6.00 per year in U.S. possessions and Canada; single copies $2.00; further details on page 6. THIS ISSUE is published in nat and separate editions. Additional pages of separate edition numbered or allowed for as follows: Western Se 32-1, through 32-8. PUBLICATION OFFICE: 1500 Eckington Place, N.E., Washington, D.C. 20002. Second- postage paid at Washington, D.C. POSTMASTER: Please send form 3579 to Fulfillment Manager, ARCHI TURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520.

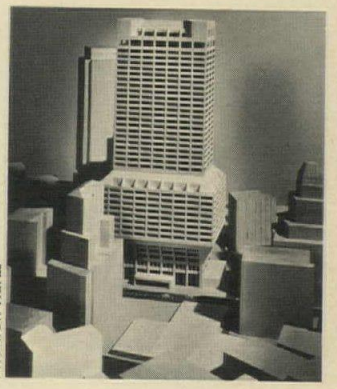
ARCHITECTURAL RECORD

CONTENTS: SEPTEMBER 1967

ARCHITECTURAL ENGINEERING



THE RECORD REPORTS



Phokion Karas

COMING IN THE RECORD

SCHOOLS FOR TODAY'S CITIES

Next month's Building Types Study on schools will explore some of th many problems of the city school today and will present some of th emerging architectural solutions to the replacement or remodeling of ove crowded, obsolescent existing facilities, with attention not only to ne educational but new community needs as well.

CURRENT WORK OF ULRICH FRANZEN

Franzen's projects include a wide variety of building types—a college do mitory, a suburban church, an office building for a religious organizatio and an administration facility for the National Parks Service at Harpe Ferry. All four structures are not only well adapted to their surroundin environments—they have indeed been shaped by them.

McGraw-Hill

ABC ABP MPA

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT, ARCHITECTURE and WEST ERN ARCHITECT AND ENGINEER), September 1967, Vol. 142, No. 3. Title ® reg. in U.S. Pate Office © copyright 1967 by McGraw-Hill, Inc. All rights reserved including the right to reproduc the contents of this publication either in whole or in part. Quotations on bulk reprints of articl available on request. Indexed in Reader's Guide to Periodical Literature, Art Index, Applie Science & Technology Index, Engineering Index, and the Architectural Index. Architectural Reco is a McGraw-Hill publication, published monthly, except May, when semi-monthly, by McGraw Hill Publications, a division of McGraw-Hill, Inc., 330 West 42nd Street, New York, New Yo 10036. James H. McGraw (1860-1948), Founder.

EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 330 West 42nd Street, Ne York, New York 10036. Western Editorial Office: 255 California Street, San Francisco, Californ 94111. PUBLICATION OFFICE: 1500 Eckington Place, N.E., Washington, D.C. 20002; second-cla postage paid at Washington, D.C.

OFFICERS OF McGRAW-HILL PUBLICATIONS: Joseph H. Allen, president; Bayard E. Sawyer, execu tive vice president; Robert F. Marshall, senior vice president—operations; vice presidents: John R Callaham, editorial; John M. Holden, marketing; Huber M. Gemmill, circulation; Angelo R Venezian, production; Jerome D. Luntz, planning and development; Robert M. Wilhelmy controller.

CORPORATION OFFICERS: Donald C. McGraw, chairman of the board; Shelton Fisher, president L. Keith Goodrich, Robert E. Slaughter, executive vice presidents; Donald C. McGraw, Jr., senio vice president; John J. Cooke, vice president and secretary; John L. McGraw, vice president an treasurer.

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

SUBSCRIPTIONS: Available only by paid subscription. Publisher reserves the right to refuse non qualified subscriptions. Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders forwarded to Fulfillmen Manager, Architectural Record, P.O. Box 430, Hightstown, New Jersey 08520. Subscription prices U.S., Possessions and Canada: $6.00 per year; other Western Hemisphere countries, to those who by title are architects and engineers, $15.00 per year. Single copy price, $2.00. Beyond Western Hemisphere, to those who by title are architects and engineers, $15.00 per year for 12 monthly issues not including Mid-May issue. Subscription from all others outside U.S., U.S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, $24 per year.

SUBSCRIBERS: Address change of address notice, correspondence regarding subscription service or subscription orders to Fulfillment Manager, Architectural Record, P.O. Box 430, Hightstown, New Jersey 08520. Change of address notices should be sent promptly; provide old as well as new address; include zip code or postal zone number if any. If possible, attach address label from recent issue. Please allow one month for change of address to become effective.

UNCONDITIONAL GUARANTEE: The publisher, upon written request, agrees to refund the part of the subscription price applying to the remaining unfilled portion of the subscription if service is unsatisfactory.

OTHER McGRAW-HILL SERVICES TO THE BUILDING AND CONSTRUCTION INDUSTRY: Chicago Construction News—College and University Business—Construction Methods and Equipment—Daily Construction Reports (Los Angeles)—The Daily Journal (Denver)—Daily Pacific Builder (San Francisco)—Dodge Construction Statistics—Dodge Mailing Service—Dodge Reports—Dow Building Cost Calculator—Engineering News-Record—Home Planners' Digest—Hospital Purchasing File—House & Home—The Modern Hospital—Modern Nursing Home Administrator—The Nation's Schools—Real Estate Record & Builder's Guide—Sweet's Catalog Services—Sweet's Canadian Construction Catalogue Services.

HE TROUBLE IS THE GHETTO?
)R LET'S TAKE ANOTHER LOOK

ou were to check the word "ghetto" the dictionary—don't bother—you uld find that the original meaning lied a forcible restriction of some up, essentially racial, to a certain rict. When we in America talk about ttos we should remember that we have freedom here, and therefore a etto" is not a forced but a natural elopment.

Now keep cool just a minute. I am a nasty old conservative who is ng to argue that ghettos are desire. I am just going to raise a point ut them that affects urban planning l housing policies; and perhaps I ll indulge in some cynicism.

Let me assume the mantle of an "inectual," so we don't get too emonal. I read recently a definition of intellectual as one who speaks horitatively on matters in which he s no competence. An older definition s that an intellectual is a glib and iculate wishful thinker. I shall admit lt as to the first definition, but not e second.

In other words, I don't have any pertise on ghettos, in sociological minology; I just have a long history living in cities and their suburbs. A tory, I might add, that has seen so ny wishful ideas go down the drain. please forgive that cynicism, and 's take a look at ghettos.

It's no wonder ghettos get blamed many current ills. They do concente disadvantaged groups—some racial, me not—and so seem to perpetuate all manner of troubles of those groups. They concentrate disillusionment; they concentrate deteriorating family problems; also fury and anger.

What I am getting around to asserting is that the ghetto as a concept is not the underlying reason for current troubles. And, therefore, that the solution is not as simple as just breaking up the ghettos. Concentrations of various groups—national, racial, economic—are a perfectly natural development, and if they were broken up they would develop again.

I live in a ghetto, in a New York suburb. And I can complain about it, and frequently do. Many years ago, when my children were small, we tried to pick out a suburb where the children would be brought up in as nearly "normal" a community as possible. We meant going to school with children of rich and poor, of different trade backgrounds, of different racial backgrounds. We wanted them to have a broad understanding. But our suburb is now just as classified as any ghetto. It is a bedroom town of bright young executives, with large families. The PTA age group controls everything in town. And it's too expensive for most of the people who work in the town—clerks, mechanics, school teachers, etc.—they have to live elsewhere and drive in to their jobs. And it's too expensive and too stratified for retirees; when our friends retire they all move away.

Ghettos formed naturally in the great immigration rush of 50 to 60 years ago. In New York the Germans gathered around 86th Street, the Greeks around Ninth Avenue, the Chinese in you know where. They went where they could speak a common language, where their customs and needs would be understood, where they could get help and companionship. Many of these concentrations have since broken up, as immigrants became citizens and as their children found new opportunities. But you will still find a natural tendency to gravitate toward those older centers.

So I am questioning the generally accepted principle that in urban rehousing, various groups should be housed together. Income groups, racial groups, language groups. I haven't heard anybody shouting "Vivre les Sinos Libre!" Everybody seems to agree that everybody should all live together in the same development or housing groups. And thus would we force an intermingling and a growing understanding.

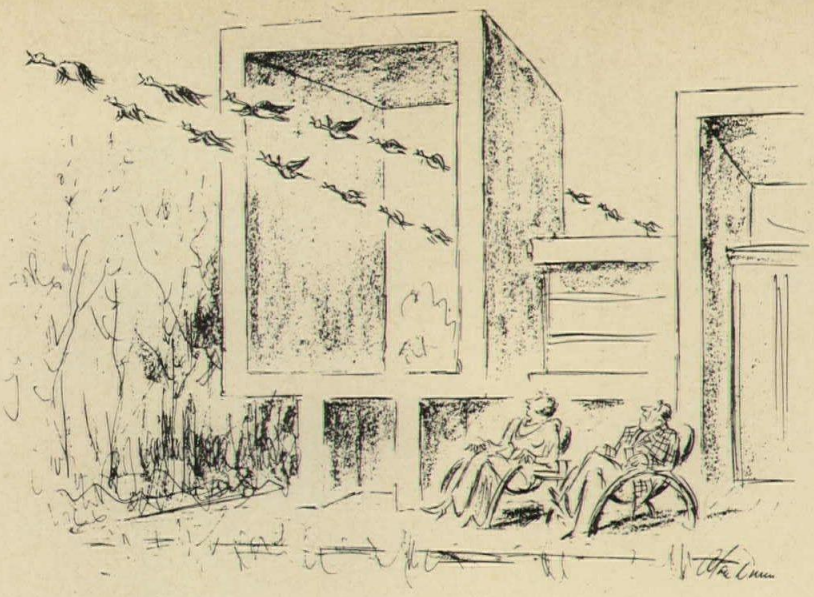
Well, maybe we would; I should hope it would happen that way. But I remain outside the intellectual group distinguished by wishful thinking. I shall stay with those eggheads who speak knowingly about something they don't really have competence in.

I shall just raise the question as to whether or not it will work. I should be afraid that disadvantaged groups would merely feel more disadvantaged; that different income level groups would feel their varied statuses more keenly. I have to believe—forget the egghead pose—that those desirable understandings and friendships and sympathies are not arranged by fiat, but by mutual effort.

Naturally the declassification is a political necessity. But I shall have to be convinced that it will be a social success.

—Emerson Goble

Drawn for the RECORD by Alan



Suburban museums needed for 250,000 visitors

Overcrowding of museums is a current nuisance, according to the Regional Plan Association (New York region). And on a typical Sunday in the year 2000 there will probably be a half-a-million Sunday visitors to museums in the metropolitan area, something more than double the present Sunday attendance. (I trust they all go to church before starting out for the museums.)

What the Association suggests is that we build suburban museums, which might take care of roughly half of those Sunday viewers. For, as it points out, suburbs are growing outward, and distances to the shows are growing. It is evident now, the release goes on, that an undue proportion of museum visitors come from the city, indicating that suburbanites are missing out.

And suburban museums might stimulate local art, with local shows, permanent local exhibits, and what not.

Well, we have heard of the population explosion, the proliferation of this and that, increases in everything. Just think of the art explosion that would be necessary to keep those new museums stocked. And, worse yet, think of the art explosion that might follow local classes in the suburbs. And now excuse me and I'll get back to my water colors.

Don't look now, but "funk" art is hot

From the University of California we get a brochure type of report on art at its northern campuses. It starts:

"The current word in Bay Area art circles is 'funk.' A year ago it was kinetic sculpture, or the 'movement' movement. Both are valid esthetic statements that additionally promise to inspire new modes of visual expression."

And:

"T. S. Eliot might have had funk in mind when he wrote, 'Oh, do not ask, "What is it?"/Let us go and make a visit.' As should be the case, funk is better responded to than written about. Reactions tend to be highly individual. One critic sees the unifying force of all funk as anthropocentricity: interpreting natural processes or phenomena in terms of man or the human mind. Dr. Selz describes the new sculpture as 'earthy, gutty, sensual. More likely to be ugly than handsome; eccentric to the point of idiosyncrasy. . . . Like many contemporary novels, films and plays, funk art looks at things which traditionally were not meant to be looked at.' "

Sounds like just the thing for those suburban art museums. The Sunday painters can paint things that are "not supposed to be looked at," then have a local show. They could join the writers who write about things that are not supposed to be written about.

If you can't join 'em, lick 'em, or something

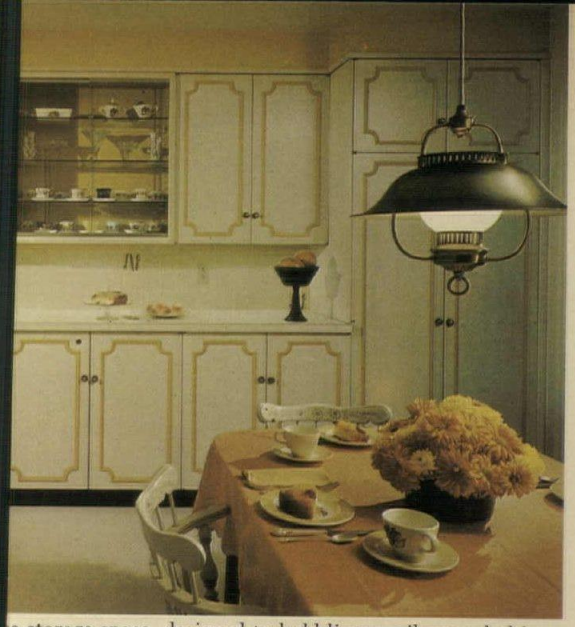
One architect, Douglas Buck, fed to the teeth with bad architecture and red tape around local community buildings, decided to do something about it, like running for president of the New Castle (Del.) County Council. He ran, and he won.

From the bulletin of the Delaware Chapter of the A.I.A. we have this comment:

"Mr. Buck's concern for architecture was a major factor in his deciding to enter the political arena. For years he had complained bitterly about the litical dominance and red tape which resulted in bad architecture and unpr edented ugliness throughout our grea community. The evidence screams at from the edges of our strip-zoned ar ies of transportation and from virtua every sector of our urban developme The efforts of architects and concern citizens did not appear to be enough meet the crisis, and for Mr. Buck it peared that he would finally have 'put up or shut up.' The opportunity do something seemed to present its within the framework of the reorganiz county government and Doug decid to run for office. Last November he v elected.

"In the five months since the tablishment of the new government s nificant changes have been made. litical channels have become less num ous and more clearly defined in ter of individual authority and responsib ity. Steps are being taken to combi and co-ordinate planning on the loc county, and state levels. Substantial strictions are being proposed for t safety and sightliness of highwa throughout the county. Limited acce to major roads, control of outdoor a vertising, and limitations on intensity illuminated signs are all beyond t dreaming stage. Another item on Buck agenda is finding a solution to preser ing open land. The power to tax pote tial land value and the right of emine domain as lever arms are being e amined carefully. Although taste ca not be dictated, Doug Buck believ that government can become mu more effective with the assistance of t architect, the artist, the educator, a the entire intellectual community."

—E.



e storage space, designed to hold linens, silver and china, s a fine furniture look in this serving area.

dignity—rich walnut doors harmonize with richly tex- binets in Horizon Blue.

"St. Charles"®

CUSTOM KITCHENS

...for individualists who like having things their own way!

Creativity has no limitations when you work with a St. Charles dealer-designer. He believes in giving people their own way—in *everything!* Concept, colors, materials, dimensions, textures—everything, without you or your client having to make annoying concessions. He can also free you of numerous details and expedite your concept to completion—from the unique custom features you specify to the preferences (and even whims) of your client. Only custom-building can offer you such complete personalized service and concern. That's why you can be confident of fulfilling the *unusual* in kitchen designs when you call on St. Charles.

StC

CUSTOM KITCHENS

St. Charles Manufacturing Company, St. Charles, Illinois

30 YEARS OF LEADERSHIP IN CREATING CUSTOM KITCHENS

Write Dept. 100 for complete information.

Convenient nurses' station in constant care area.

"St. Charles"®

HOSPITAL CASEWORK

. . . custom-blends efficiency with lasting beauty

To create an air of spaciousness and beauty, yet utilize eve of space efficiently in your new hospital construction or rem project, call on the experience and talent of St. Charle technical staff and versatile productive resources can solv space and storage problem. St. Charles casework is *custom-d* to fulfill *your* hospital's specific requirements for conve economy and easy maintenance—and equally important, ordinate with your decorative theme. The excellence of craftsmanship and quality of materials assure the ultir lifelong satisfaction when you call on St. Charles.

Hospital pharmacy with custom storage space includes working island unit.

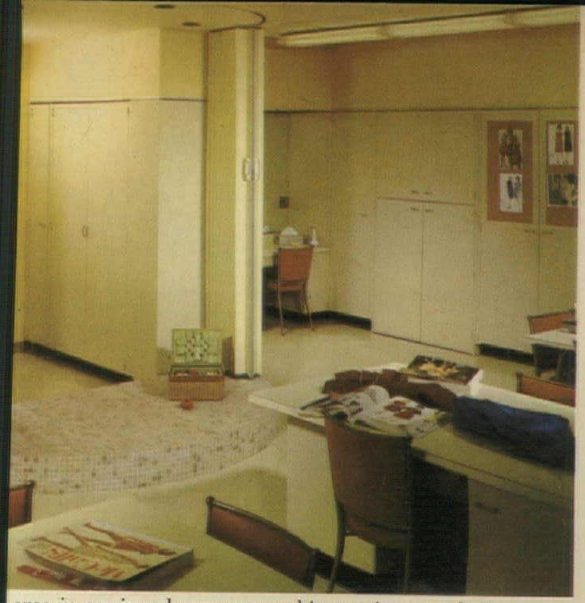
StC

HOSPITAL CASEWORK DIVISION

St. Charles Manufacturing Company, St. Charles, Illinois

30 YEARS OF LEADERSHIP IN CREATING CUSTOM CASEWORK

Write Dept. 200 for our "St. Charles Hospital Casework" Catalog.



area in sewing classroom combines privacy and storage.

n display and storage units in an arts
afts classroom.

"St. Charles"®

COLORFUL CUSTOM CLASSROOMS *work wonders!*

Students and teachers are stimulated by classrooms that are handsome, colorful, practical and neatly organized . . . which describes every custom-classroom designed by St. Charles. Here is superb casework. Here is matchless efficiency. Here is an inspired choice of colors, materials and textures. Consider your food and sewing laboratories, arts and crafts classrooms, and all other special rooms requiring casework . . . and consider calling St. Charles.

StC

CUSTOM SCHOOL STORAGE FURNITURE

St. Charles Manufacturing Company, St. Charles, Illinois

30 YEARS OF LEADERSHIP IN CREATING CUSTOM CASEWORK

Write Dept 300 for our School Storage Furniture Catalog.

Compact preparation area in food vending company.

"St. Charles"®

CUSTOM CASEWORK

. . . solves complex storage problems . . . beautifully.

No matter what the nature of the building you are designi
how unique or complicated your client's storage pr
St. Charles can suggest a solution. For over 30 years, we ha
constructing custom storage units not only for kitchens,
and hospitals, but also for every conceivable need in v
every type of building—churches, firehouses, museums,
houses, airports, municipal and office buildings. Even
rooms. Unlike manufacturers of standard units, St. Charl
tom-designs its casework to accommodate each client's
requirements. Result—tailor-made storage facilities of
beauty and durability. So for storage solutions call on St. C

A fully-equipped commercial test kitchen for the professional home economist.

CUSTOM CASEWORK

St. Charles Manufacturing Company, St. Charles, Illinois

30 YEARS OF LEADERSHIP IN CREATING CUSTOM CASEWORK

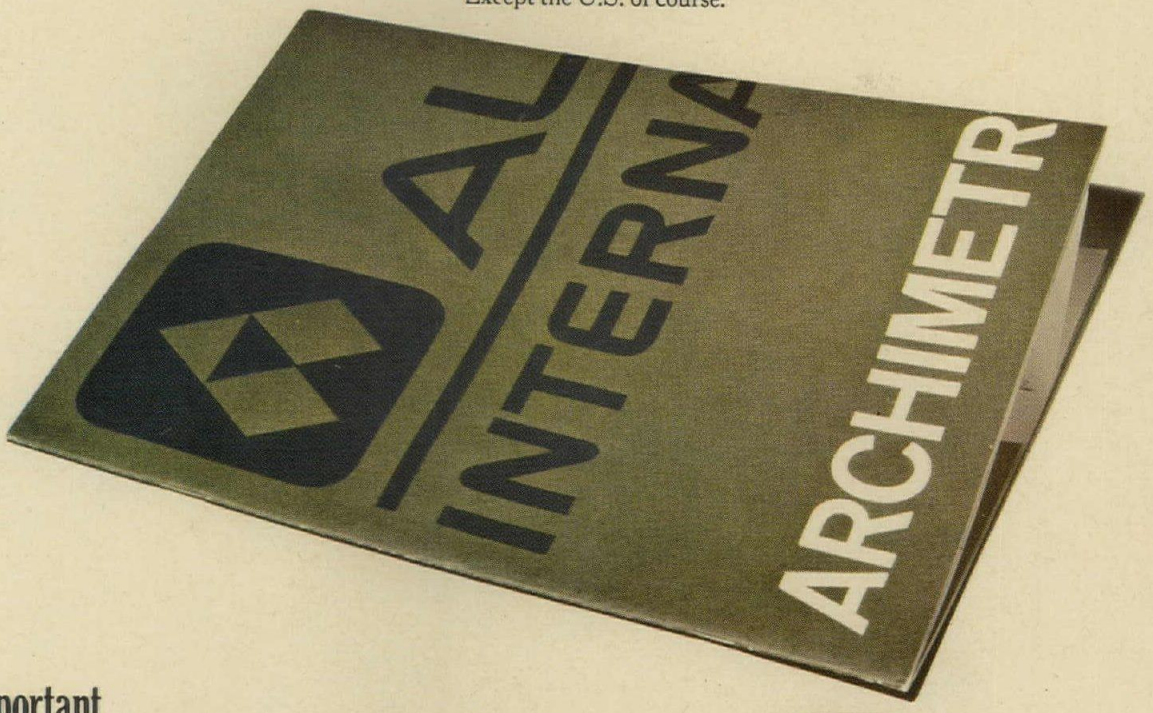
Write Dept. 400 for complete information.

Would all Americans kindly leave the page?

(Except for those designing jobs for locations outside the U.S.)

We want to talk about the Archimetric System, a new series of architectural products already proved in use in the US; and optional in Alcoa Duranodic 300® finish

Alcoa International has wrapped up the best features of aluminum building components in one neat, universal package. Curtain-wall, windows, doors, accessories . . . the lot. And all in Alcoa Duranodic 300, if specified. A complete range of aluminum architectural products capable of building anything from a modest shop to a luxury hotel. Because we are an international marketing organization we can supply your needs everywhere outside the U.S. 'Available everywhere' means that the nagging, time-wasting business of specification is simplified right down to one straightforward process . . . leaving you free to get on with the real business of being an architect. You can rely on Alcoa International to make sure that the local licensee is really trustworthy before he is given full responsibility for fabrication, assembly and installation of Archimetric products. He stands ready to inform, estimate, schedule, and deliver on any project. Any size. Anywhere. Except the U.S. of course.



Important

This booklet may contain the answer to one of your current problems. Better get it right away. The address is:
Alcoa International, S.A., Avenue d' Ouchy 61, Lausanne, Switzerland.
(A subsidiary of Aluminum Company of America.)

ALCOA INTERNATIONAL

® REGISTERED TRADE MARK OF ALUMINUM COMPANY OF AMERICA

For more data, circle 6 on inquiry card

EXTERIOR DECORATOR

The things behind a door could very well be fashionable, elegant and breathtaking. So Yale felt that what goes on the door should be the same. And Yale did something about it. With the simple elegance of a perfectly rounded knob. Now the oohs and aahs start at the door.

Yale Copenhagen mortise lock in dark bronze finish.

YALE® LOOKS AS GOOD AS IT LOCKS

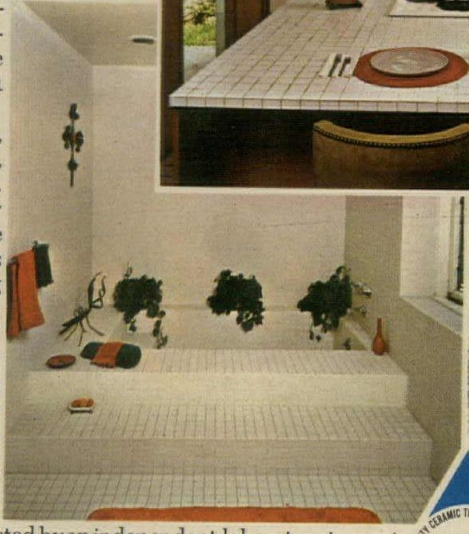
THE FINEST NAME IN LOCKS AND HARDWARE

For more data, circle 7 on inquiry card

Yale is a division of

EATON YALE & TOWNE INC

George Nemeny uses ceramic tile for beauty and freshness to up-date Stanford White design.



George Nemeny (F.A.I.A.) tore down walls, installed skylights, window walls and white ceramic tile to update this Kings Point, N.Y., house designed by Stanford White at the turn of the century. He flooded the dark interior with light and centered on highlighting a magnificent view of Long Island Sound while retaining the spirit of the Classic Revival original.

Glazed ceramic tile for kitchen countertops and splash areas provides a sanitary, scratch-stain-burn-resistant and easy-to-clean surface for preparing food. The center island topped with tile offers an attractive cooking and snack spot with work and storage areas combined.

Unglazed ceramic tile gives a safe, non-slip, easy-to-clean surface for bathroom floors, walls and the step-up tub in the master bath. Floors in the kitchen, dining room, powder room and solarium are also ceramic tile. The builder for this rejuvenation was Laimons Birkmanis and Cramer Bros. of Cold Spring Harbor installed the tile.

For a long-lasting, carefree material that offers you unlimited design ideas for interior and exterior use in either new or remodeling projects, specify ceramic tile made in the U.S.A. The triangular mark at right appears on every carton of wall tile, ceramic mosaic tile and quarry tile when you select and install Certified Quality Tile. This seal is your assurance that tile is regularly sampled and tested by an independent laboratory to meet the most rigid government specifications (SPR R61-61 and SS-T-308b). For more data about Certified Quality Tile and tile installation see Sweets Architectural File or write: Tile Council of America Inc., 800 Second Avenue, New York, N.Y. 10017.

MEMBER COMPANIES: American Olean Tile Co., Inc. • Cambridge Tile Manufacturing Co. • Continental Ceramic Corporation • Florida Tile Industries, Inc. • Gulf States Ceramic Tile Co. • Hoffman Tile Mfg. Co., Inc. • Huntington Tile, Inc. • Keystone Ridgeway Company, Inc. • Lone Star Ceramics Co. Ludowici-Celadon Company • Marshall Tiles, Inc. • Mid-State Tile Company • Monarch Tile Manufacturing, Inc. • Pomona Tile Manufacturing Co. • Sparta Ceramic Company • Summitville Tiles, Inc. • Texeramics Inc. • United States Ceramic Tile Co. • Wenczel Tile Company • Western States Ceramic Corp.

For more data, circle 8 on inquiry card


MAXI-MERC

New from Benjamin:

Industry's most complete line of mercury vapor lighting!

Meet the new Maxi-MERC 400, twin-400 and 1000 Watt mercury-vapor units from Benjamin. These new units join the popular 175 Watt Mini-MERC to form industry's most complete family of mercury vapor lighting.

This new series has the same features that made Mini-MERC a best seller:

Fast, easy installation.

Low-cost lighting—almost 50% less per footcandle than incandescent.

Low maintenance costs—one mercury lamp will outlast 20 incandescents.

High performance—double the light output of incandescents.

Like more information? Write and we'll send you our new catalog and specifications. We'd like you to meet the family. And to help you get acquainted—here's our offer:

BUY 5 - GET ONE FREE

For every five Benjamin mercury-vapor units (any one type) you buy, we'll give you one FREE. For example: If you buy 20 twins—we'll ship you 24 twins. This offer is good only through September 30, 1967, so call your Benjamin distributor soon. He has all the details.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

(This coupon must be attached to order)

THOMAS INDUSTRIES INC.

207 E. Broadway,
Louisville, Ky. 40202
Dept. AR

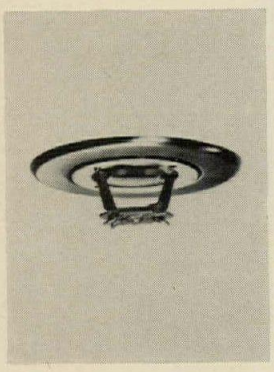
Benjamin Products

For more data, circle 9 on inquiry card


PHOTO: Courtesy Firemen's Mutual Insurance Co., Providence, R.I.

Sprinklers? "Automatic" Sprinklers? Where? Huh? Where?

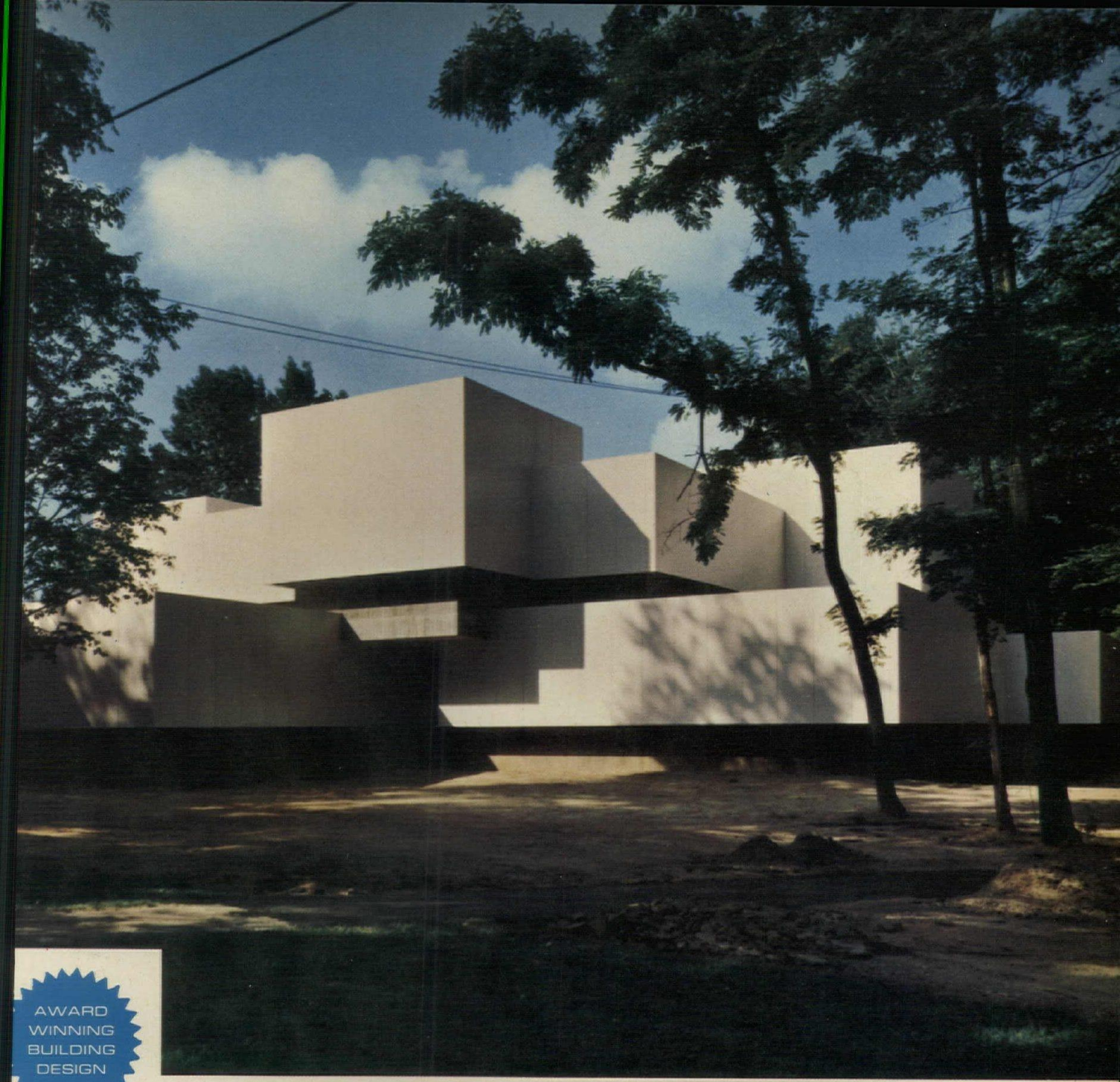
No uglies hanging from the ceiling. Nothing to destroy the aesthetics. Nothing to interfere with lighting. Or fixtures. Or anything. These "Automatic" 400 Ceiling Sprinklers blend unobtrusively with any ceiling decor, and drop instantly into fire-fighting position when needed. You can design freely. Use materials freely. Use space freely. That's one reason Firemen's Mutual Insurance Co. of Providence have them in their office building. But there is another reason. You don't have to tell Firemen's Mutual that there's no such thing as a fireproof building. They know. They are one of the world's leading fire insurance companies. They pay out millions of dollars a year for fire losses. But payment doesn't alter the fact that 50% of businesses suffering a major fire loss never reopen. And another 20% close within 3 years. Those are the facts. So protect your client. Build in protection without sacrificing beauty. Design "Automatic" 400's into your next school, hospital, shopping center, hotel, office building, church or auditorium. For factories, warehouses, buildings that don't have to be beautiful, specify our standard sprinkler heads. We'll help you. Send for Bulletin No. 1.13. Mr. E. A. Stroupe, Jr., Director of Marketing, "Automatic" Sprinkler Corporation of America, Dept. AR-97, P.O. Box 6929, Cleveland, Ohio 44101.



"Automatic" Sprinkler
CORPORATION OF AMERICA
CLEVELAND, OHIO 44101

Meet the growing family of "Automatic" Sprinkler Corporation's divisions: American LaFrance • "Automatic" Process Piping • "Automatic" Sprinkler • "Automatic" Vandalarm • Badger Fire Extinguisher • Baifield Industries • "Blaze Guard" • Davis Emergency Equipment • Fee & Mason • General Fittings • Hydraxtor • Kersey • Powhatan Brass & Iron • Safway Steel Products • Scott Industries • Smith-Essick • William Stanley

For more data, circle 10 on inquiry card



AWARD WINNING BUILDING DESIGN

1967 R. S. Reynolds Memorial Award—James F. Lincoln Library, Lake Erie College, Painesville, Ohio; Architect: Victor Christ-Janer and Associates, New Canaan, Conn.; Designers and Builders: The Austin Company, Cleveland, Ohio

lew Smith FoamWall* Panels give you design freedom

cluding flat-surfaced metal walls. Unique nstruction makes this possible. FoamWall consists of an erior and an interior metal panel permanently bonded a foamed-in-place rigid urethane filler. Each panel is a mplete, solid unit, factory-fabricated, ready-to-erect. Imagine the possibilities! Rigid, flat FoamWall panels, to 36″ wide, permit truly flat exterior metal building lls unbroken by the usual strengthening configurations.

tent applied for

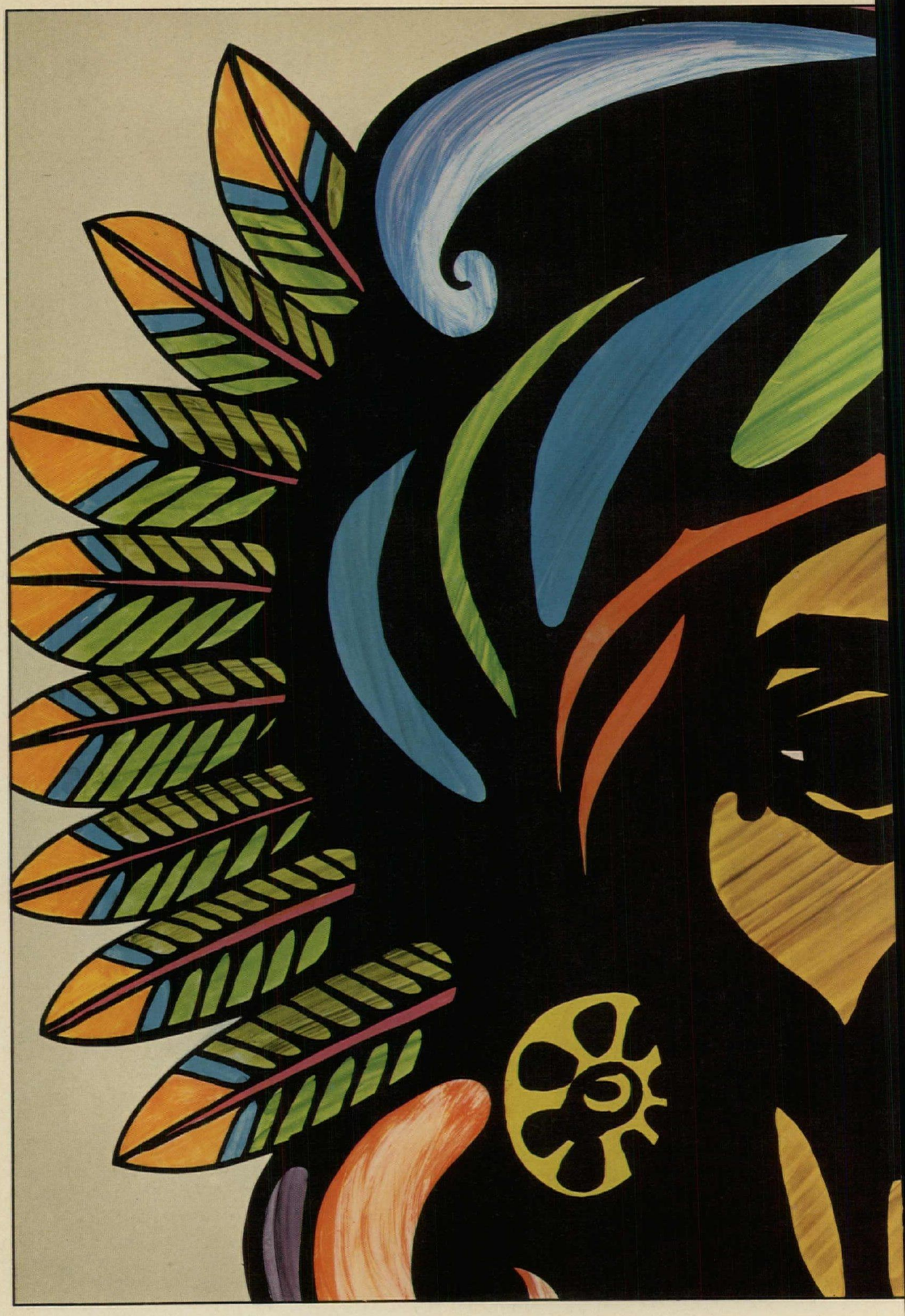
And since FoamWall is really a wall of insulation, it can be used for an interior wall at the same time. That's how it was used in this beautiful James F. Lincoln Library.

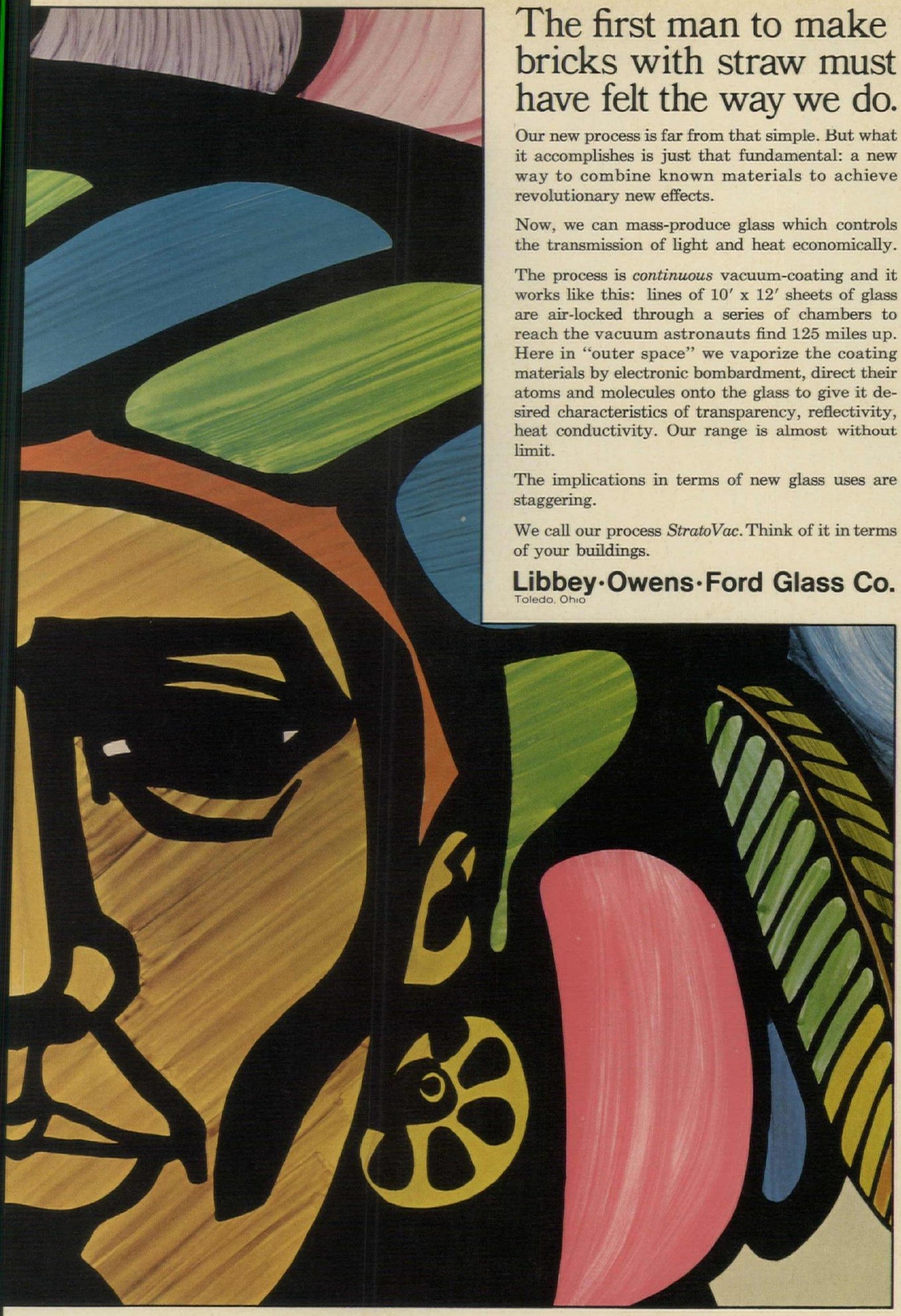
Consider Smith FoamWall for your next building project. For additional information look in Sweet's Architectural File 20b/Sm. To see a sample and complete details call or write your nearest Smith office now.

SMITH

ELWIN G. SMITH & COMPANY, INC. Pittsburgh, Pa. 15202 / Atlanta
Boston • Chicago • Cleveland • Cincinnati • Detroit • Philadelphia • Toledo • New York

For more data, circle 11 on inquiry card





The first man to make bricks with straw must have felt the way we do.

Our new process is far from that simple. But what it accomplishes is just that fundamental: a new way to combine known materials to achieve revolutionary new effects.

Now, we can mass-produce glass which controls the transmission of light and heat economically.

The process is *continuous* vacuum-coating and it works like this: lines of 10′ x 12′ sheets of glass are air-locked through a series of chambers to reach the vacuum astronauts find 125 miles up. Here in "outer space" we vaporize the coating materials by electronic bombardment, direct their atoms and molecules onto the glass to give it desired characteristics of transparency, reflectivity, heat conductivity. Our range is almost without limit.

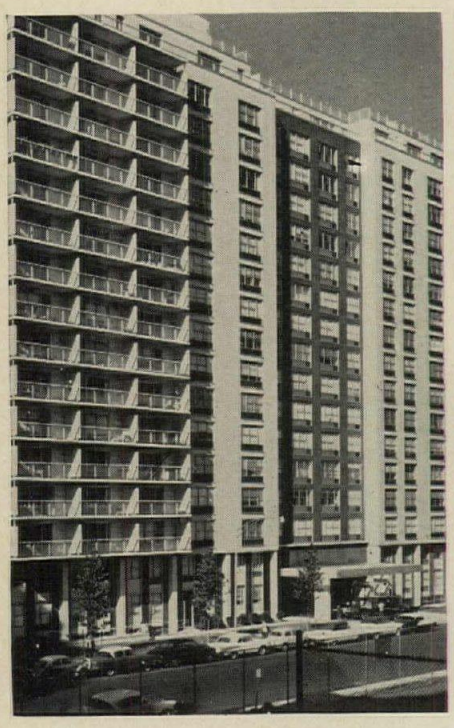
The implications in terms of new glass uses are staggering.

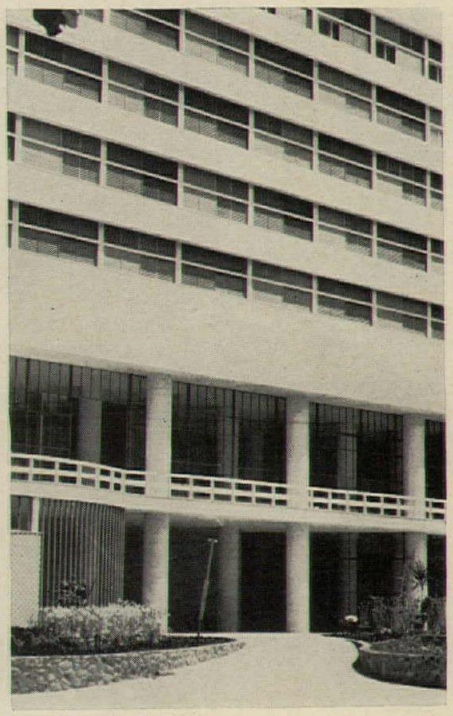
We call our process *StratoVac.* Think of it in terms of your buildings.

Libbey·Owens·Ford Glass Co.
Toledo, Ohio

For more data, circle 12 on inquiry card

HARDWICK CARPETS
can take it–and then some





Your contract carpet will have to take hundreds of thousands of steps each year. For years and years. ■ Not to mention spills, stains, mud, grease and grime. ■ Hardwick DURALOK is specifically designed to stand up under this kind of assault. Its tough, 3-ply 100% Acrilan® acrylic pile springs back from repeated attack, and fends off soiling with equal vigor. ■ Its high, tightly packed pile forms a solid phalanx against wear and tear. When you need contract carpet with built-in defense against time and traffic, you need Hardwick DURALOK. ■ It's built to take it.

Specify
HARDWICK DURALOK
100% Acrilan® acrylic Pile Carpet... they're built tough...to take it!

ACRILAN® acrylic fiber by Monsanto

Write today for brochure showing the latest Hardwick patterns in full color.

HARDWICK & MAGEE COMPANY... the compact mill
Lehigh Ave. at 7th St., Phila., Pa. 19133 ▪ Chicago ▪ Dallas ▪ Denver ▪ Detroit ▪ Louisville ▪ New York ▪ San Francisco ▪ Los Angeles

For more data, circle 13 on inquiry card

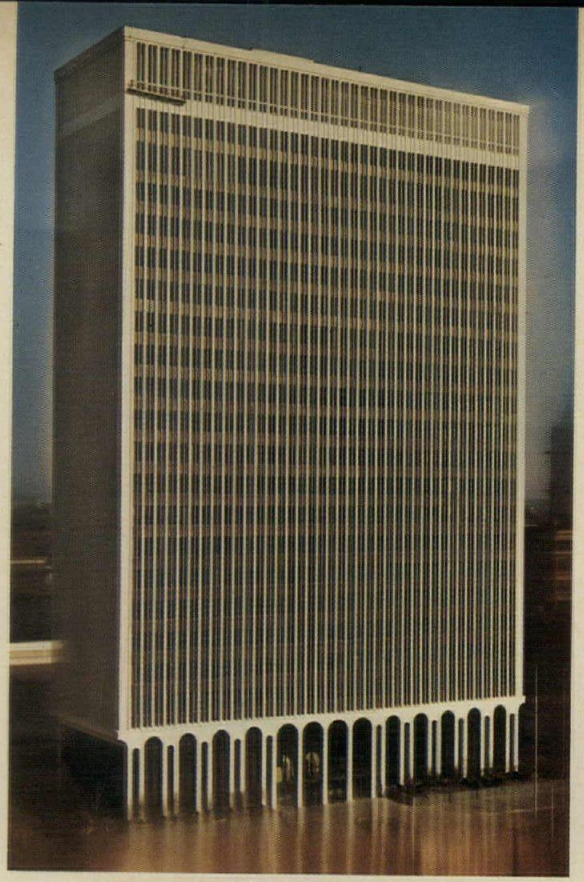
For more data, circle 14 on inquiry car

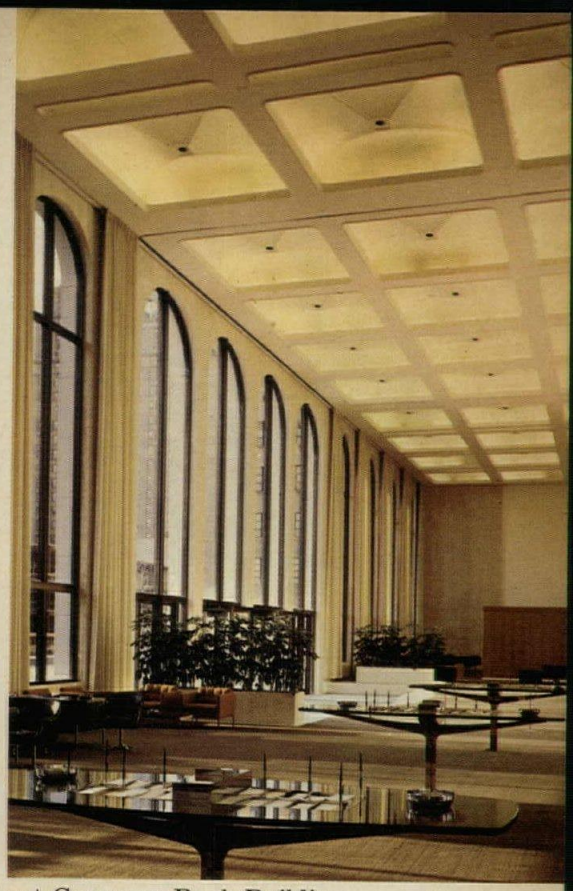
The unifier.

Nickel stainless steel brings together surroundings, materials and colors. Complements everything. Harmonizes. Highlights. Reflects. Enhances good design. Economically. Colorfully. And it's virtually maintenance-free. Let stainless steel help unify your next design. Our architectural fact sheet tells more. Write: The International Nickel Company, Inc., 67 Wall St., New York, N. Y. 10005.

INTERNATIONAL NICKEL

by Center Building, Los Angeles, California. Architect: Claud Beelman. Associate Architect: Kent Attridge. Fabricator: Construction Metal Work Co., Los Angeles.





Manufacturers and Traders Trust Company Bank Building,
One M & T Plaza, Buffalo, N. Y.
Architect: Minuro Yamasaki, Detroit, Michigan
General Contractor: John W. Cowper Company, Buffalo, N. Y.
Subcontractor: Buffalo Acoustical Corporation.

Can there be empathy between ceiling tile and unique architectural design?

This new bank building presents visual delights to the viewer through the delicate beauty of the facade. But step inside. The continuity of design manifests itself in every aspect of spatial control including the acoustical ceilings.

Gold Bond® Travacoustic in the fine-fissured "Abbey" style identifies itself with today's architectural design. The exclusive Travacoustic® production process was easily adapted to meet the architect's requirements for custom sizes. The effect is a blend of function and subtle texture in concert with the architectural theme.

The freedom to create through the medium of building products depends on product flexibility. So meet Travacoustic Abbey, the empathic ceiling tile.

Write today for the Gold Bond Changing Spectrum of Ceiling Systems, Travacoustic Abbey issue. National Gypsum Company, Department AR-97C, Buffalo, New York 14225.

Gold Bond®
ACOUSTICAL PRODUCTS

For more data, circle 15 on inquiry card

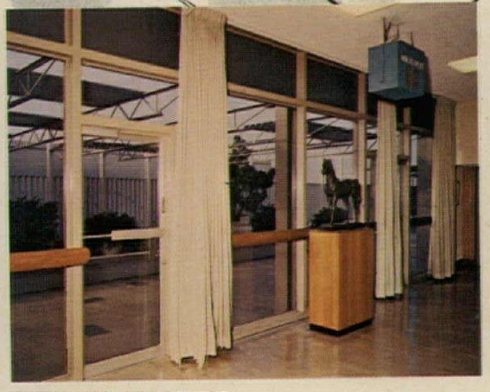
NORTON SERIES 7000 CLOSERS

NORTON SERIES CC-900 CLOSERS

Again, in Commercial Buildings

NORTON SERIES 6100 CONTROLS

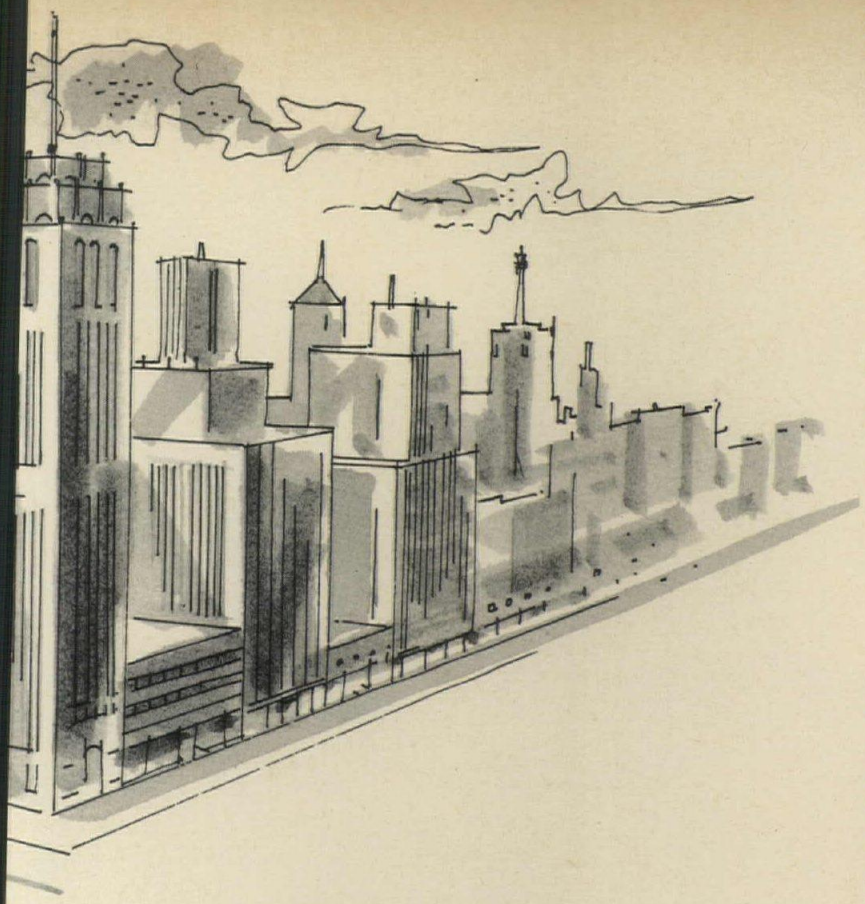
NORTON SERIES 1600 CLOSERS

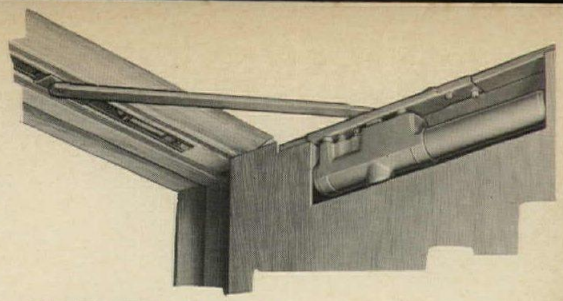


NORTON SERIES 750 CLOSERS

NORTON REGULAR SURFACE CLOSERS

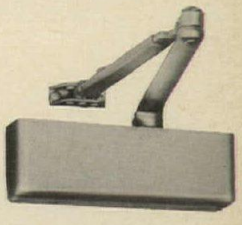
PRINTED IN U.S.A.





NORTON SERIES CC-900 CLOSERS

For the beauty of complete invisibility, Series CC-900 closers mortise completely into the top rail of the door. The arms are visible only when the door is open. Units can be installed in the most esthetic indoor locations, wherever complete concealment of closer is desired.

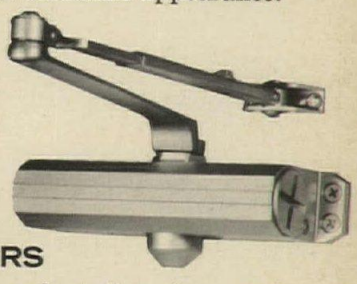


NORTON SERIES 7000 CLOSERS

For matching or contrasting with room decor. Series 7000 closers are available with covers of 67 woodgrains to perfectly match room and door woods. Covers also available in clear aluminum, bright brass, or dull bronze to match other hardware for a contrast to wooden doors.

NORTON SERIES 6100 CONTROLS

For complete door control in a single hardware installation. Series 6100 controller is a combined door closer and door holder. All five door control functions: cushions the opening of the door, stops the door, holds the door open, closes the door, and regulates door closing and latch speeds. Simplifies hardware installation for less cluttered appearance.



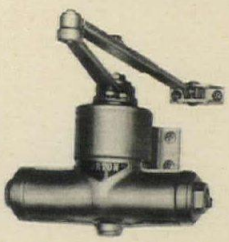
NORTON SERIES 1600 CLOSERS

For versatility and styling for wood and metal doors. Series 1600 closers can be installed anywhere. Features three types of mounting: Invisible mounting, no screws visible; Back mounting, screws visible on back of door only; Regular mounting. Natural slim lines of Series 1600 ideal for styling of narrow aluminum doors.

.. where appearance is so important NORTON® CLOSERS CONTROL DOORS—NOT DESIGN

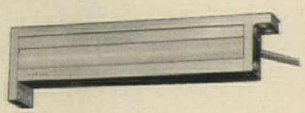
ossibly, no other type of building demands styling with as uch taste as commercial structures. And, where beauty is so mportant, the styled Norton line lets you select door control o achieve the design and decor you desire.

our choice may range from complete invisibility to the selecon of Norton closers to exactly match woodgrains or hardware nishes. Selection of a Norton closer means years of ependable control for your doors and you can choose om a wide range of door controls engineered to your specific equirements. Apartments, restaurants, offices, stores, and thletic arenas all present special door control requirements. ou can fill these needs without inhibiting your design when ou choose Norton Door Closers and Unitized Door Controls.



NORTON REGULAR SURFACE CLOSERS

For dependability in any location. Regular Surface closers, the workhorse of the door closer industry. Even when appearance is not paramount, these closers can be attractive in appearance and they are built to withstand extremely heavy traffic.



NORTON SERIES 750 CLOSERS

For unobtrusive beauty, Series 750 closers mount into the top head jamb. These closers present an indiscernible projection when the door is open and become almost invisible when the door is closed.

EATON YALE & TOWNE INC.

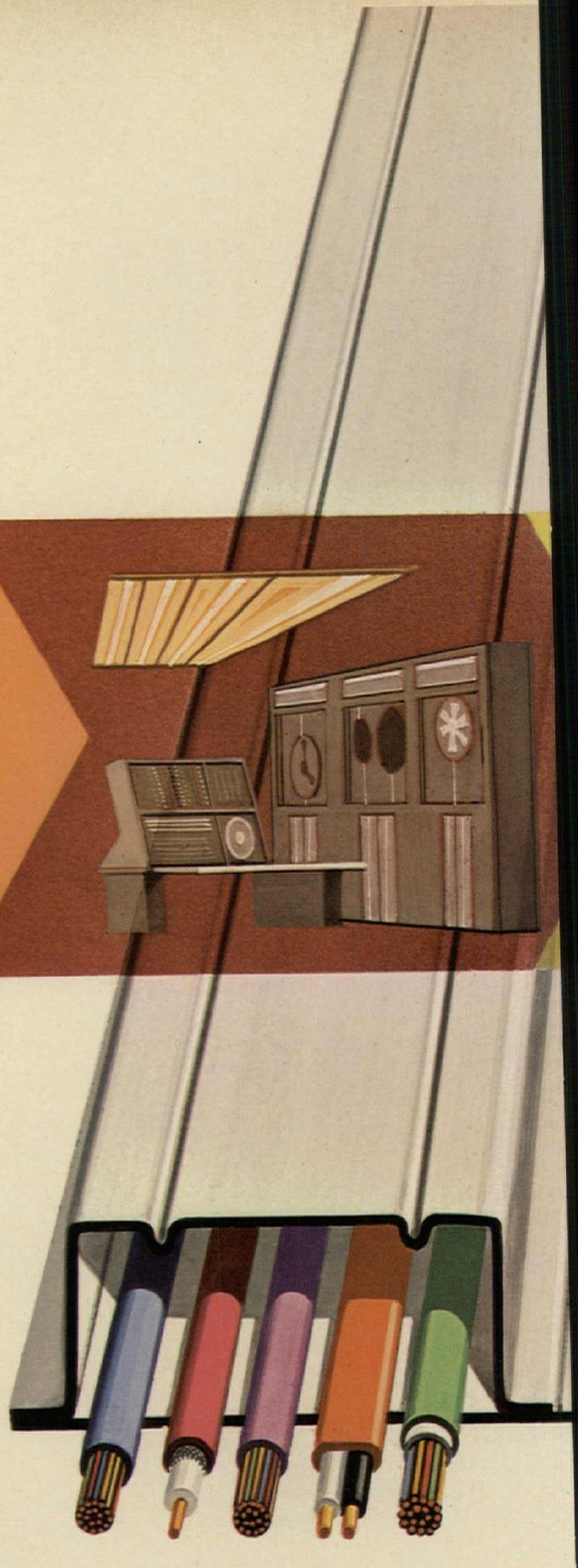
NORTON® DOOR CLOSER DIVISION
372 Meyer Road, Bensenville, Illinois, 60106
77 Carlingview Drive, Etobicoke, Ontario, Canada

For more data, circle 16 on inquiry card

MAHON IS IDEAS
in building products

4453

FROM MAHON... A CELLULAR STEEL FLOOR SYSTEM ...THAT SAVES SPACE, SPEEDS CONSTRUCTION, CUTS COSTS!

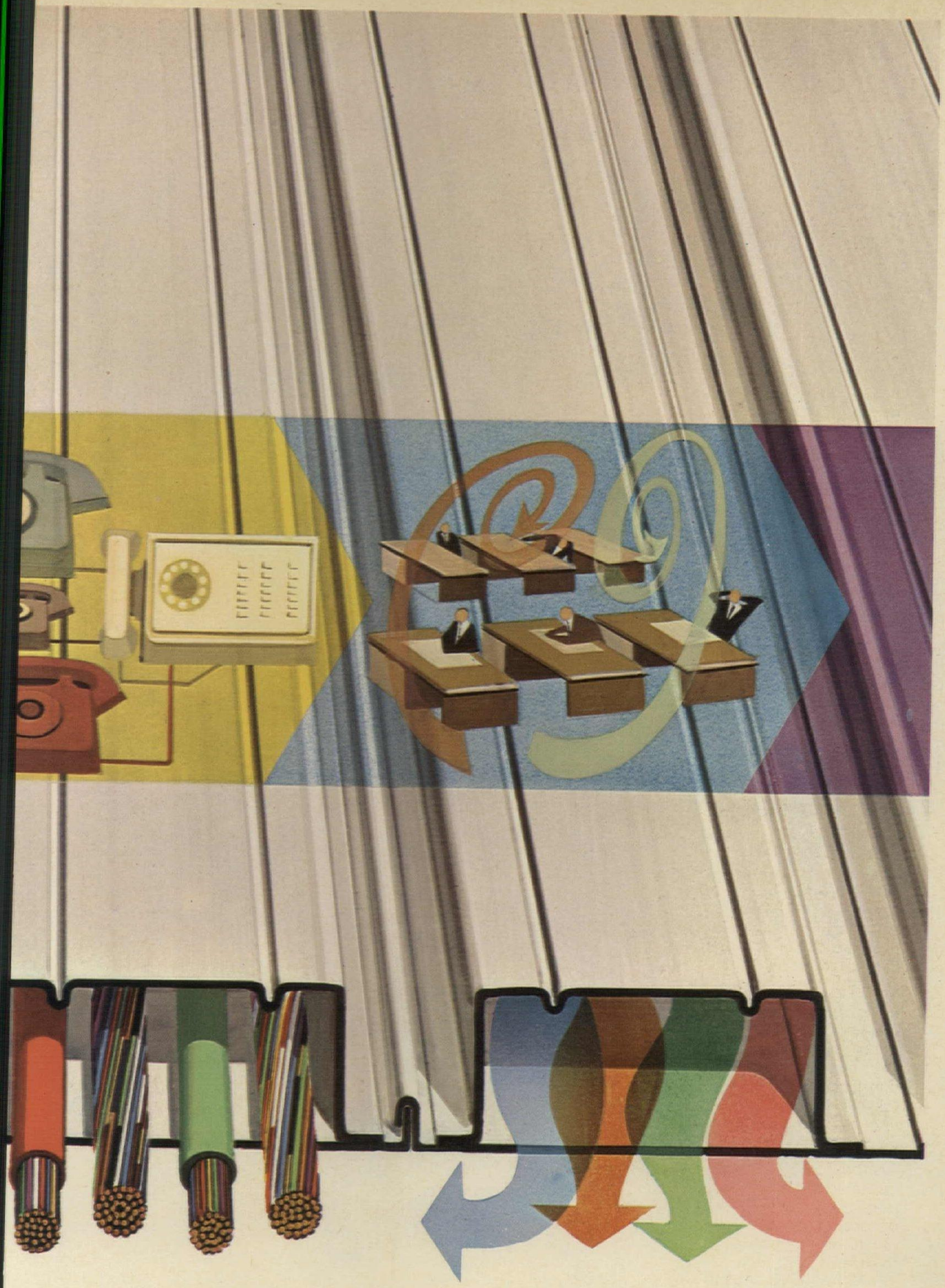


Steel sub-flooring that goes up with the structural steel to save time and the cost of safety platforms. Steel sub-flooring with super-wide cells that act as wire raceways to carry telephone and electrical power lines. Steel sub-flooring with super-wide cells that act as air ducts for ventilation and air conditioning.

It's a floor designed by The R. C. Mahon Company to make your specification job easier—to give your client the most versatile sub-flooring available—to keep his building young and flexible enough to meet the demands of all possible future modernization.

Mahon Steel sub-flooring is supplied in variations and combinations of gages and depths. It can be matched or mixed on any particular project to meet all practical design loads consistent with normal and long-span framing conditions. For complete information write The R. C. Mahon Company, 6565 E. Eight Mile Road, Detroit, Michigan 48234.

For more data, circle 17 on inquiry card



New angle from G.E.

Semi-recessed fountain or cooler.

Or fountain first and cooler later: refrigeration package is available separately. Choose either 8 or 12 gph cooler model (or the fountain). Logical—and good-looking design from the thoughtful engineers at General Electric.

For more information, see the Yellow Pages. Or write: G. E. Co., Dept. 761-37, 14th and Arnold Streets, Chicago Heights, Illinois 60411.

GENERAL ELECTRIC

Over 4000 units were plantcast at Basalt's Napa plant and trucked to the jobsite. This structure of five stories and roof and the adjacent one story courts building

utilized Basalt precast components for the structural portion of the project.

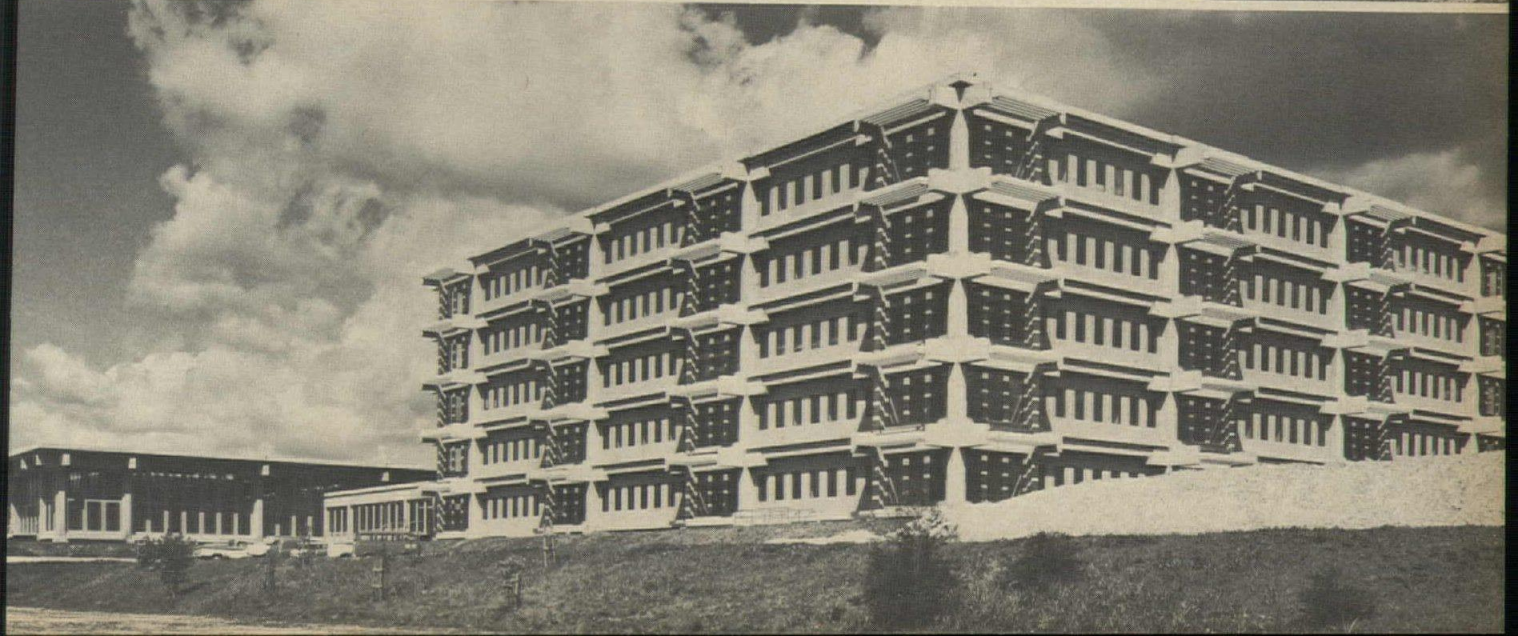
Precast beams and precast segmented post tensioned Vierendeel trusses were supported on cast-in-place towers to frame the flooring and roof of both buildings. These in turn supported precast channel floor and roof slabs. Acid etched precast, prestressed wall panels were used to enclose both buildings. Basalt crews handled the erection. When you plan and specify Basalt plantcast components you are assured of quality control, spec-accurate products, and scheduled-time delivery. Consult with a Basalt engineer today . . . write or call BASALT ROCK COMPANY, INC., Concrete Products Division, Napa, California 94558. Telephone 707/226-7411.

Basalt

QUALITY through Research and Control

Marketed only in Northern and Central California

Santa Cruz Governmental Center, Santa Cruz, California
Architects: Rockwell and Banwell, A.I.A., San Francisco
Structural Engineers: Forell & Associates, San Francisco
General Contractor: Jasper Construction, Santa Cruz



GAS ABSORPTION AIR CONDITIONING

"DOESN'T VIBRATE... WILL COST US LESS"

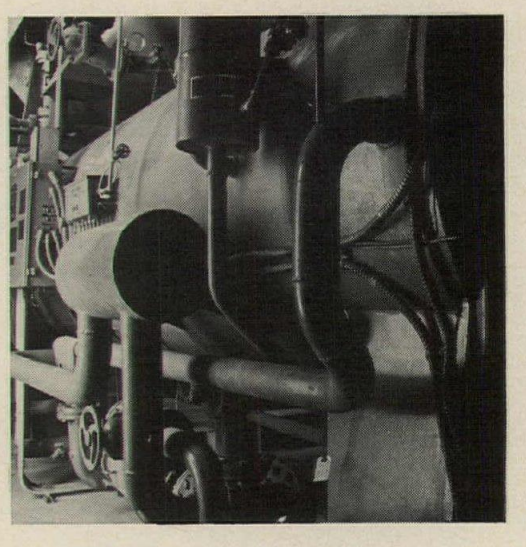
Architects and Engineers: Quinton Engineers Ltd., Los Angeles, California

Gas—the ONLY way to air condition . . . at Western Air Lines' new headquarters in Los Angeles. Here, 600 employees work to keep 'em flying. And they work in gas air conditioned comfort. Why was gas the choice for their $5 million building? "For one thing, our gas absorption unit doesn't vibrate. That allowed us to put it out of the way, up on the roof," says A. B. Favero, Vice President—Maintenance. "Another reason, of course, is economy. All things considered, this system will cost us less in the long run."

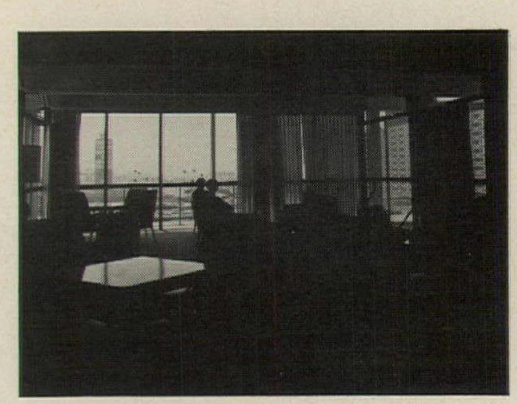
Their air conditioning system uses a York EK 38 gas-fired absorption chiller. Its 364-ton capacity provides ample cooling for all 4 stories of offices plus a hangar nearly the size of 2 football fields.

THE gas COMPANY

. . . says A. B. Favero



If your cooling needs are special, talk to an air conditioning specialist before deciding. Talk to your Gas Company Representative.



Southern California Gas Company • Southern Counties Gas Company

For more data, circle 19 on inquiry card

BLUE DIAMOND

GYPSUM WALLBOARD SYSTEMS

TWO NEW BROCHURES

BLUE DIAMOND SCREW-ON SYSTEMS
ATLAS™ Screw-On Studs and Furring Channels Used in Incombustible Partition and Ceiling Construction... Fire Ratings... Sound Ratings... Erection Procedures

ATLAS SCREW-ON RESILIENT STRIP
New Design Provides Exceptional Reduction of Sound Transmission in Partitions and Ceilings. Fire Ratings . . . Sound Ratings (STC and INR) . . . Erection Details

DIAMONDWALL™

PLUS—Three Other BLUE DIAMOND Gypsum Wallboard Brochures—
SOLID • SEMI-SOLID • DOUBLE SOLID

Five Ready Reference Brochures for Your Files That Clearly Explain the What, How and Why of
BETTER DRYWALL CONSTRUCTION
Ask for Them

FLINTKOTE®
BLUE DIAMOND®

BLUE DIAMOND GYPSUM DIVISION of THE FLINTKOTE COMPANY
LOS ANGELES, CALIFORNIA ☐ SALES OFFICES THROUGHOUT THE WEST

For more data, circle 20 on inquiry card

A low pressure flush valve closet for residential installations . . . revolutionary n design . . . outstanding in function . . . luxurious in appearance. Install this loset anywhere for the look of tomorrow in the bathroom. New in design, nside and out, this new advanced styling closet has a standard 12″ rough-in. The beautifully proportioned siphon vortex elongated bowl and the handsome hina housing for the flush valve combine to give this closet a new dimension n bathroom luxury. It's whisper quiet because all toilet tank noises and efill noises have been completely eliminated.

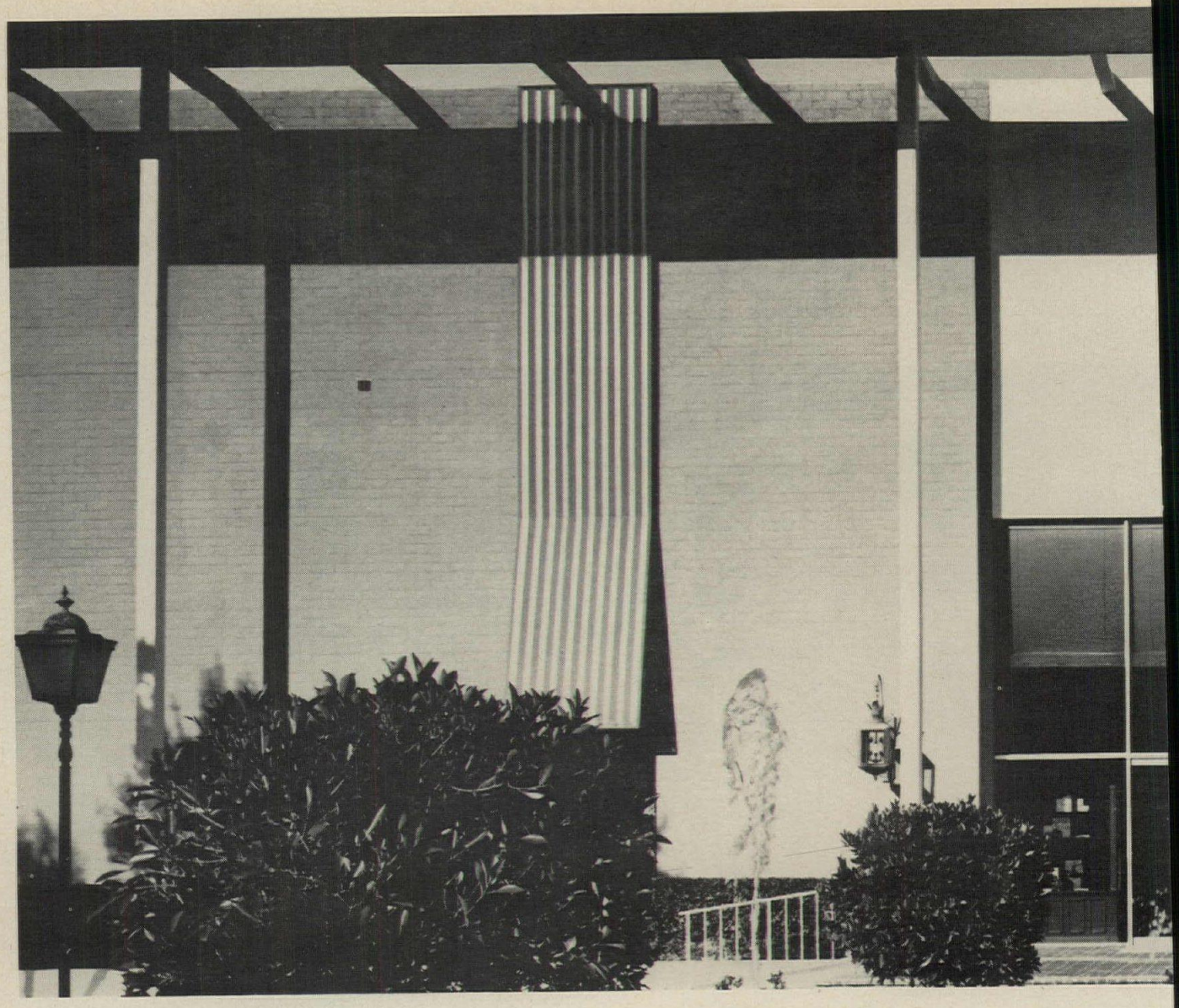
Suddenly Bathrooms are Different...

NO. 595 LA PAZ

NORRIS INDUSTRIES

Plumbingware Sales Office
5215 South Boyle Avenue, Los Angeles, California 90058
Manufacturing Facilities
700 Water Street, City of Industry, California 91744

For more data, circle 22 on inquiry card



Lower total annual cost in All-Electric buildings?

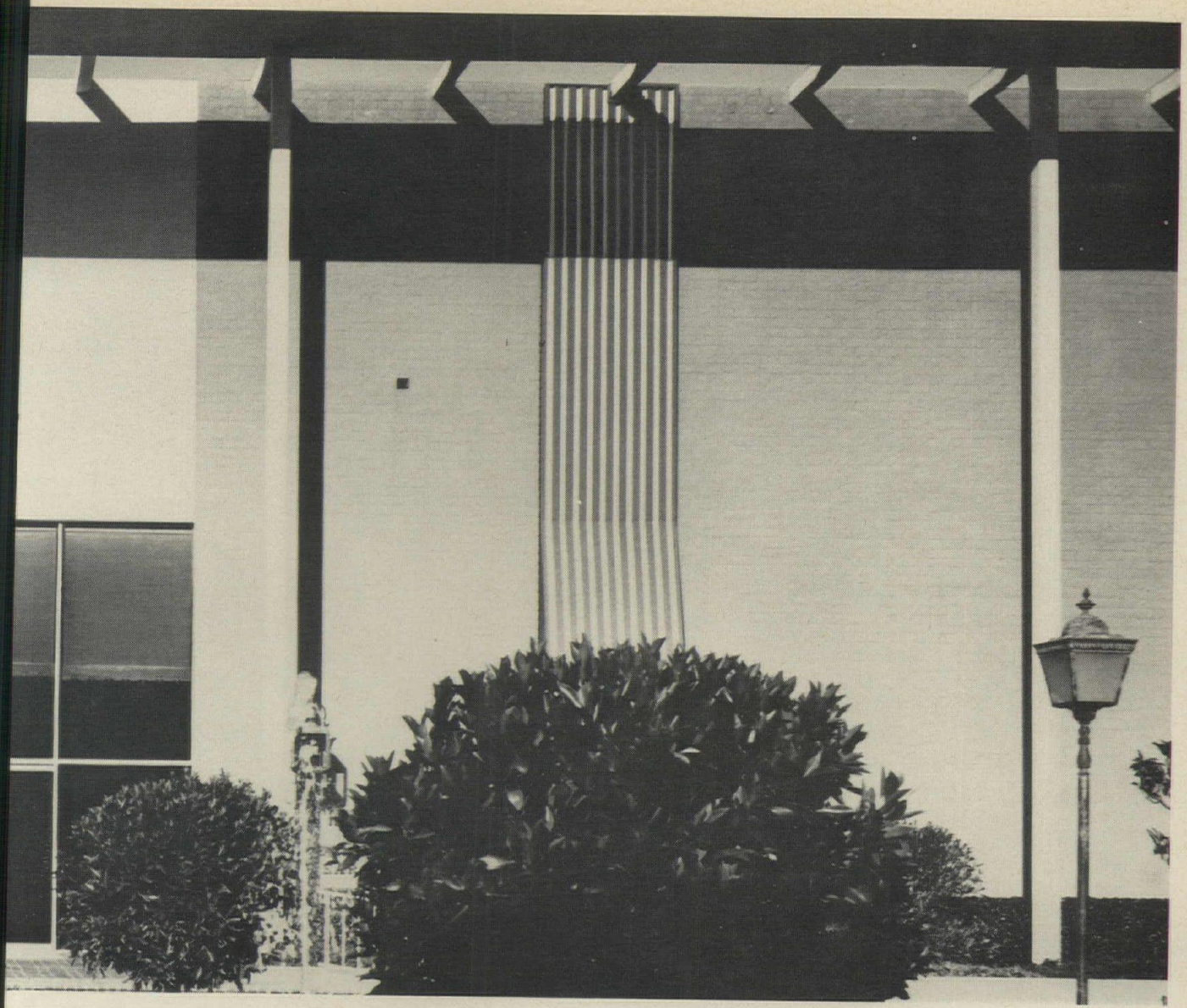
Ask Buffums'...

Buffums' Palos Verdes is the fourth All-Elec department store in the Buffums' chain. another example of the remarkable economy the All-Electric building concept.

By going All-Electric, Buffums' was able make more efficient use of their money in seve ways.

The lower first cost of electric heating and conditioning equipment accounted for big ini savings. Because electric air conditioning is 30 to 50% less, Buffums' greatly reduced costs that one item alone. Electric heating elimina the need for boilers, stacks, vents, flues and space required to house them. Just the savings piping materials and installation was considera Space saving was another factor. In this case was the equivalent of a complete shoe departme

Buffums' lighting was designed in accorda with the nationally recognized standards of Illuminating Engineers Society. It not only lig without glare and highlights Buffums' qua merchandise but, most importantly, is the prin



source of heat for the entire store.

Flameless, quick-recovery, water heating serves ffums' beauty shop and washroom areas.

Another important benefit of the All-Electric cept is the architectural freedom of design. All-ctric systems are flexible, and can be incorpo-ed in a great variety of building designs, rather n forcing the architect to design the building und traditional systems.

The All-Electric Building Award for Buffums' os Verdes testifies that this building has met ognized engineering standards for lighting, ting, and air conditioning.

Buffums', like so many other companies, has nd that lower first cost, lower maintenance pense and competitive operating costs add up ower total annual cost in All-Electric buildings. can give you all the money-ahead facts and ures on All-Electric building, including hun-eds of case histories. Write Marketing Engi-ering, P.O. Box 62, Terminal Annex, Los geles 90051.

BUFFUMS' PALOS VERDES

Architect: Killingsworth, Brady and Associate, A. I. A.

BUILDING PROFILE

GENERAL DESCRIPTION
Two-story building
43,000 square feet department store
Reinforced brick masonry construction

ELECTRIC LOAD
Connected Lighting and Miscellaneous Load—600 KW
Electric Air Conditioning (125 Tons—3 Units)—160 KW
Electric Supplementary Heating—92 KW
Electric Water Heating—40 KW

INSTALLED COSTS
Air Conditioning System—$1.25 sq. ft.
Electrical System—$1.90 sq. ft.

OPERATING COSTS
Total Electrical Operating Cost for a Six Day Schedule—$.38 per sq. ft. per year

SPACE CONDITIONING
Direct expansion, refrigerated, air cooled cooling system. Heat supplied by lights supplemented by electric heating coils as needed.

Southern California Edison SCE

Photo contributed by Daniel J. Ransohoff

Space contributed as a public service by this magazin

You can give her hope.

How? Can you find loving parents for her, give her good health, adjust her to the realities of normal living, remedy any physical or other problems troubling her? Probably not.

But you can do this: give the United Way. Support the regular community agencies which provide help for all, all at once, all year long—for the young and old, the ill and troubled, the poor and neglected, for members of the Armed Forces and their families, and for victims of disaster.

Your voluntary United Way gift is your way of being a good neighbor and friend in your community. It is your way of saying you want to help make your community a better place for all families, including your own, through your United Fund or Community Chest.

Your fair share gift works many wonders/THE UNITED WAY

27 million families benefit by child care, family service, youth guidance, health programs, disaster relief and services for the Armed Forces from 31,000 United Way agencies.

Block noise with Asarco Acoustilead. It's sheet lead 1/64″ thin!

Overhead plenums*—the space over partitions between a hung ceiling and the floor slab above—are acoustical trouble-spots in modern buildings. Partitions bar the passage of noise, but sound waves "leapfrog" over them . . . flow through the plenum . . . and bounce into adjoining rooms.

Sheet lead is an effective, economical barrier to sound. Thin sheet lead, installed as an acoustical curtain from a partition top to the floor slab above, blocks irritating noise effectively. It offers these advantages:

Low cost: Asarco is the only company in the United States to produce sheet lead by the continuous-cast process, enabling us to offer this extra-thin sheet without a premium price. Weighing only one pound per square foot, it can be installed at a substantially lower price than alternate materials.

Superior noise-reduction: Sheet lead has high density . . . good damping capability . . . limpness . . . and air impermeability. Pound for pound, it is a better barrier to sound than any other commercial material.

Easy installation: Asarco sheet lead comes in easy-to-handle rolls, 25 feet x 4 feet x 1/64 inches. It can be cut with scissors or a knife, fits snugly around ducts, wires or other obstacles to eliminate sound leaks. Much faster to install than other acoustical materials, and there is no waste.

FREE BOOKLET. Our booklet on sheet lead documents the effectiveness of lead in reducing noise. It also includes helpful hints on installing sheet lead. For your copy, write to Sound Attenuation Department of Asarco.

Federated Metals Division
ASARCO AMERICAN SMELTING AND REFINING COMPANY
120 BROADWAY, NEW YORK, N.Y. 10005

For more data, circle 23 on inquiry card

ARCHITECT: SIMEONE & WENDLER, NEW HAVEN, CONN.
CONTRACTOR: VEGGO F. LARSEN CO., NEW HAVEN, CONN.

THE ALUMINUM FACADE — BORDEN DECOR PANEL

The versatile lightweight aluminum facade is a popular use for Borden Decor Panel. Shown on the New Haven Branch Post Office above, the handsome facade emphasizes the style of the building and adds practical features of sun screening and great durability.

This application uses Deca-Grid style, type IV modified, Borden Decor Panel with Duranodic finish 312E. The panels span 16 ft. between the brick piers; spacers are tilted 30° off the vertical, and alternately reversed, to partially close the openings in what is known as the Slant-Tab Variation. With the Slant-Tab Variation spacers may be mounted at virtually any angle and the spacers may also be altered in length, depending on angle of mounting chosen.

Deca-Grid and the other basic Borden Decor Panel styles, Deca-Gril, Deca-Ring and Decor-Plank, are very amenable to design specification; they are available in both standard and custom designs. In addition to use as facades and refacing of existing buildings, Borden Decor Panel finds widespread application as dividers, grilles, fencing, stairway railing panels, doors, entryways, and sunshades.

Write for latest full-color catalog on Borden Decor Panel

another fine product line of

BORDEN METAL PRODUCTS CO.

MAIN OFFICE: 822 GREEN LANE, ELIZABETH, NEW JERSEY • Elizabeth 2-6410
PLANTS AT: LEEDS, ALABAMA; UNION, NEW JERSEY; CONROE, TEXAS

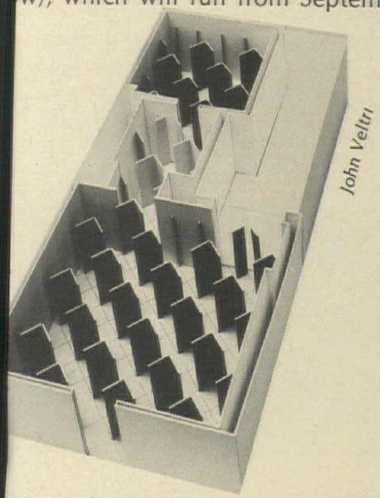
When in New York City, see our exhibit at Architects Samples, 101 Park Avenue

For more data, circle 24 on inquiry card

hitectural League continues experimental activities; seeks broader membership

Architectural League of New York, in its second year under the direc- of architect Ulrich Franzen, presi-, has stepped up its program of ex- mental exhibitions and is instituting ekly lecture series in order to broad- s scope and influence. At the same , the League is undertaking a nation- membership drive to gain further ort and interest in its activities.

Starting off the year is an exhibition *ronment IV: Corridors* by architec- designer John Lobell and sculptor hael Steiner (see model photograph w), which will run from September



o October 6. In *Corridors,* initiated he League and co-sponsored by the gue and the American Federation of Arts (which will circulate the show nationally for a two-year period), the three-room gallery space will be filled with 8-foot-high hollow door columns set within an arbitrary 2-foot 9-inch diagonal grid, thus forming a series of diagonal corridors. Each of the corridors will be activated by an "electric eye" mechanism which will be tripped as a spectator enters each corridor. Therefore, the gallery will be transformed into a musical instrument of architectural scale that plays itself as the spectator walks through the environment. The feasibility of the scheme was developed by systems engineer Edwin Hodder of Hubert Wilke Communication Facilities Consultants.

Other exhibitions will include: a "Tree Show" by landscape architect Robert Zion, which will take place from October 10 to 27, in which photographs of trees in different seasons of the year will be displayed: "Diamonds" by achitect John Hejduk and painter Robert Slutzky, November 2 to 24, in which "the idea relative to the diamond and the diagonal with regards to form, space and color will be presented in architecture through a series of drawings and models and in painting through a series of paintings; Environment V: Vibrations, by artists-in-light Jackie Cassen and Rudi Stern, December 14 to January 13, which promises to be a comprehensive statement of an environment of light, utilizing experimental rear projection techniques, fiber optics, black light, revolving sculpture, and water; and an exhibition with the Regional Plan Association of New York, February 15 to March 8, in which the new regional plan will be exhibited in a series of drawings and models as well as historical precedents such as the regional plan of 1929 and the Grand Central Station complex.

The weekly lecture series, organized by architectural designer Peter Hoppner, will be three concurrent series of talks. The three series are: "Problems of the City," in which representatives of government, business, industry, and neighborhood groups will explore the urban crisis; "Prefabrication and the Future of Housing"; and an "Architect-Artist" series in which practitioners will discuss their own work.

The membership drive, under the direction of architect Martin Growald, is seeking not only national members from the field of architecture and its allied arts (dues $35 for those under age 35 and $75 for those over 35) but also lay members—"associate members" (whose dues are $25). Applications for membership can be obtained by writing Mr. Growald, The Architectural League of New York, 41 East 65th Street, New York, New York 10021.

dley will leave U.C.L.A. work for State of New York

rge A. Dudley will leave his post of n of the newly-established School of hitecture and Urban Planning at the versity of California, Los Angeles, to ome chairman of New York State's Pure Water Authority and chairman ts new State Council on Architecture. five-man Council on Architecture members still to be named) was ated to assist the state in striving for h-quality design in state and other struction activities. Mr. Dudley will tinue for the next few months to de- e a portion of his time to the affairs of the School of Architecture and Urban Planning, pending the selection of his successor.

Bill introduced to authorize FDR Memorial construction

A bill has been introduced in the Senate by Senator Eugene J. McCarthy of Minnesota, chairman of the Franklin Delano Roosevelt Memorial Commission, which would authorize construction of the FDR Memorial in Washington, D.C., designed by Marcel Breuer and Herbert Beckhard, architects. A companion measure has been introduced in the House of Representatives by Representative Frank Thompson, Jr. of New Jersey.

These bills follow the rejection of the Breuer-Beckhard design by the Commission on Fine Arts in Washington last January. "Rather than raising a question of interpreting the power and authority of the Commission on Fine Arts," said Senator McCarthy, "we are bypassing these problems in a clean way by presenting this bill. If Congress rejects this bill, then the design will be rejected. If the bill passes, we will proceed to get appropriations. It is our hope that approval of the legislation . . . will enable the Memorial to be completed by the time of the 25th anniversary of the death of President Roosevelt."

RECORD editor is cited by Public Health Service

Emerson Goble, editor of ARCHITECTURAL RECORD, has received a citation—the first it has ever given—from the Division of Hospital and Medical Facilities of the United States Public Health Service in ceremonies held last month in New York. The citation was presented by Dr. Harald M. Graning, Assistant Surgeon General and director of the Division.

Mr. Goble was cited for his "leadership in interpreting and reporting the objectives of the Hill-Burton program . . . thus contributing immeasurably toward elevating the quality of design from both a functional and an esthetic standpoint; . . . keen personal interest in the promotion and development of Building Types Studies and other articles on hospitals published in ARCHITECTURAL RECORD which have been a major contributing factor to the continuing improvement in hospital design; and . . . efforts in giving us the benefits of [his] knowledge of the architectural field and [his] judgment of quality design which have been of invaluable assistance to those of us who have had the responsibility for developing these architectural guidelines, particularly during the early critical years of the program."

Present at the ceremonies were, from Alston Guttersen, consultant on Mental H Facilities to the Public Health Service; Dr. H M. Graning; Emerson Goble; August Hoe chief, Architectural, Engineering and Equip Branch, Division of Hospital and Medical F ties; and Wilbur Taylor, deputy chief, Arch tural, Engineering and Equipment Branch.

New members named to Commission of Fine Arts

Architect Chloethiel Woodard Smith and John Walker, director of the National Gallery of Art, have been named to four-year terms on the Commission of Fine Arts, Washington, D.C., replacing architects Burnham Kelly and John Carl Warnecke. The Commission reviews all Federal construction projects in the Capital as well as private construction in Georgetown and areas flanking the city's monumental core.

Asked to remain on the Commission for an additional year in order to reestablish staggered four-year terms were architect Gordon Bunshaft, sculptor Theodore Roszak, and "lay member" Aline B. Saarinen. William Walton, chairman, and Hideo Sasaki, landscape architect, have been reappointed for four-year terms.

A.I.P. conference will explore "The Next Fifty Years"

As part of its 50th anniversary celebration, The American Institute of Planners is holding a series of three conferences to explore "The Next Fifty Years/1967-2017." The second in this series of conferences is scheduled to take place in Washington, D.C. from October 1-6, dealing with the subject "The Future Environment of a Democracy." The first conference was held in August 1966, and focused on the subject "The Optimum Environment with Man As The Measure." The third part of the series will consist of six to ten regional conferences to be held in 1968.

The conference series is part of a three-year multi-disciplinary exploration launched by the A.I.P. to "search for concepts and plans of action that it hopes will lead to the creation of a more humane environment in an age of rapid technological and social change."

The Washington conference, which will be attended by some 3,000 professionals and decision-makers concerned with creating the future environment, will be highlighted by the presentation of 28 commissioned papers by a multi-disciplinary group of world authorities.

Urban Coalition formed; holds emergency convocation

An Urban Coalition of national leaders of five groups—business, labor, religion, civil rights and city government—was formed on July 31 and immediately called upon the leaders of all segments of society "to publicly commit themselves to programs enabling the disadvantaged minorities to share in all of the benefits of our society."

The Urban Coalition also called for an "Emergency Convocation" of 1,000 leaders of the five groups to be held August 24 in Washington to mobilize for action programs to deal with urban problems.

Chairmen of the coalition are Andrew Heiskell, chairman of the board of Time, Inc. and also of Urban America Inc., and A. Philip Randolph, president of the Brotherhood of Sleeping Car Porters.

The Coalition came about as a result of a meeting held last January in Washington, D.C. of the mayors of 11 cities. The meeting, called by the late Stephen R. Currier, president of Urban America Inc., was held so that the mayors could discuss their common problems. Out of this meeting came the idea for the Coalition, and the mayors called for Urban America Inc., the United States Conference of Mayors, and the National League of Cities to act as catalysts in its formation. Steering committees were formed to meet with representatives of the five groups, with the hope of forming the Coalition in September. The July 31 meeting at which the Coalition was formed ahead of schedule was ca by Mayors Joseph M. Barr of Pittsbu and John V. Lindsay of New York reaction to the rioting in cities ac the country.

The Convocation was schedule discuss three major programs: Fed emergency work and training progr for the urban poor; major expansio private sector activities to train and vide jobs for the hard-core unemploy and a long-range program for the ph cal and social reconstruction of Am can cities "to break up the vicious c of the ghetto."

Clair W. Ditchy

Obituary

Clair W. Ditchy, F.A.I.A., of Detr president of the American Institute Architects from 1953-1955, died July in Royal Oak, Michigan, at the age of

Mr. Ditchy, who received his arc tectural degree from the University Michigan in 1915, first established own firm in 1921 and had been in priv practice every since. Mr. Ditchy was lo active in A.I.A. affairs, joining the orga zation in 1924. He served as director, s retary, vice president and president the Detroit chapter, director, vice pre dent, and president of the Michig Society of Architects, and as regio director for Michigan from 1938-19 He was elevated to Fellowship in 19 and served on the Jury of Fellows fr 1945-1948 and as national secretary the institute from 1947-1953. In 19 Mr. Ditchy received the Gold Medal the Detroit chapter.

NEW! The only lavatory made especially for wheelchair patients

Why a wheelchair lavatory? We at American-Standard have thought that almost any person able to use a wheelchair should also be able to wash himself in comfort. In fact, he would prefer to do so—and it also frees an attendant. That called for a new kind of lavatory. After consulting with medical and hospital authorities, American-Standard developed the new, exclusive Wheelchair Lavatory.

The chair with seated patient rolls right under this lavatory because the trap is set away back, where knees can't strike. Even though it's a big 20" x 27", the patient can reach the faucets easily—the back ledge is punched for 12" centers to accommodate wrist-handle faucets or 4" centers to take a Push-Pull* single-control faucet. Any water splashed on the front or side ledges drains into the concave bowl. Like many American-Standard hospital fixtures, the new Wheelchair Lavatory is cast as a single piece of easily sanitized vitreous china.

American-Standard products are designed for people. That includes not only the young and fit, but also the elderly and sick. We will do anything to make life better for them and the people who care for them. That's why we designed the Wheelchair Lavatory, the only Perineal† Bath that bathes a seated patient in clean, *running* water, and a new wheelchair-height Cadet* toilet.

More of these specialized products for hospitals and nursing homes are on the way. Our catalog of hospital fixtures will continue to grow as we continue to identify and answer the problems of people. For more information see your American-Standard representative. Or write American-Standard, 40 West 40th Street, New York, N.Y. 10018.

AMERICAN STANDARD
PLUMBING & HEATING DIVISION

*TRADEMARK AR&SS CORP.
†PATENT PENDING

For more data, circle 25 on inquiry card

Modern buildings require complex communications services—telephone data, teletypewriter, video. If they're planned early —in the blueprint stage— you won't wind up making expensive alterations and adding unsightly wiring later on. Everyone listed here has talent, training and experience in working with people who build. They know communications. They know construction. Before you build, consult with them. They're on our payroll to work with you.

ALABAMA
J. H. Brightwell
205-328-2524

ARIZONA
PHOENIX
F. S. Henrich
602-258-3643

TUCSON
H. Behrmann
602-791-2421

ARKANSAS
C. M. Stout
501-376-9249

CALIFORNIA
LOS ANGELES, METROPOLITAN
A. F. DuFault
213-621-1291

LOS ANGELES, SUBURBAN
Tel. Plan Service
213-621-8899 Ext. 405

SACRAMENTO
Tel. Plan Service
916-452-8363

SAN DIEGO
O. B. Chaffin
714-295-0061

SAN FRANCISCO
Tel. Plan Service
415-399-3981

SAN JOSE
Tel. Plan Service
408-293-3410

SAN LEANDRO
Tel. Plan Service
415-451-9000 Local 2301

COLORADO
J. G. Morley
303-266-4553

CONNECTICUT
W. T. Blake
203-771-3547

DELAWARE
W. A. Wilson
215-466-2618

DISTRICT OF COLUMBIA
GOVERNMENT SERVICE
M. K. Ross, Jr.
202-392-5551

WASHINGTON
D. Chase
202-392-2255

FLORIDA
A. N. Brockman
904-353-2252

GEORGIA
G. E. Dial
404-529-8286

IDAHO
BOISE
E. E. Coffin
208-385-2236

POCATELLO
F. C. Miller
208-232-0226

TWIN FALLS
H. H. Cheney
208-733-0243

ILLINOIS
W. U. Wylie
312-727-1885

INDIANA
C. Zollinger
317-545-7510

IOWA
CEDAR RAPIDS
R. H. Stockton
319-369-9337

DAVENPORT
J. W. Lohrman
319-328-1200

DES MOINES
D. J. Boatright
515-281-6727

KANSAS
K. R. Mitchell
913-FL-7-2565

KENTUCKY
V. G. Quinn
502-582-8242

LOUISVILLE
M. J. Eder
502-451-3100

LOUISIANA
BATON ROUGE
Commercial, 504-921-2420
Residential, 504-342-9011

NEW ORLEANS
Commercial, 504-529-9564
Residential, 504-834-3842

SHREVEPORT
Commercial, 318-425-5224
Residential, 318-425-2311

MAINE
J. E. Gearin
603-669-9656

MARYLAND
P. W. Peters
301-393-3639

SUBURBAN WASHINGTON
W. B. Fenzel
202-392-3425

MASSACHUSETTS
E. B. Moran
617-879-9265

MICHIGAN
R. R. Reimer
313-357-4906

MINNESOTA
MINNEAPOLIS
R. J. Peterson
612-334-5803

ST. PAUL
R. A. Kulhanek
612-221-5425

MISSISSIPPI
R. D. Yarbrough
601-948-1637

MISSOURI
KANSAS CITY
Architect and Builder Service
816-BA-1-9900

ST. LOUIS
Architect and Builder Service
314-CH-7-2103

MONTANA
F. J. Hill
406-443-3202

NEBRASKA
W. Culver
402-344-3465

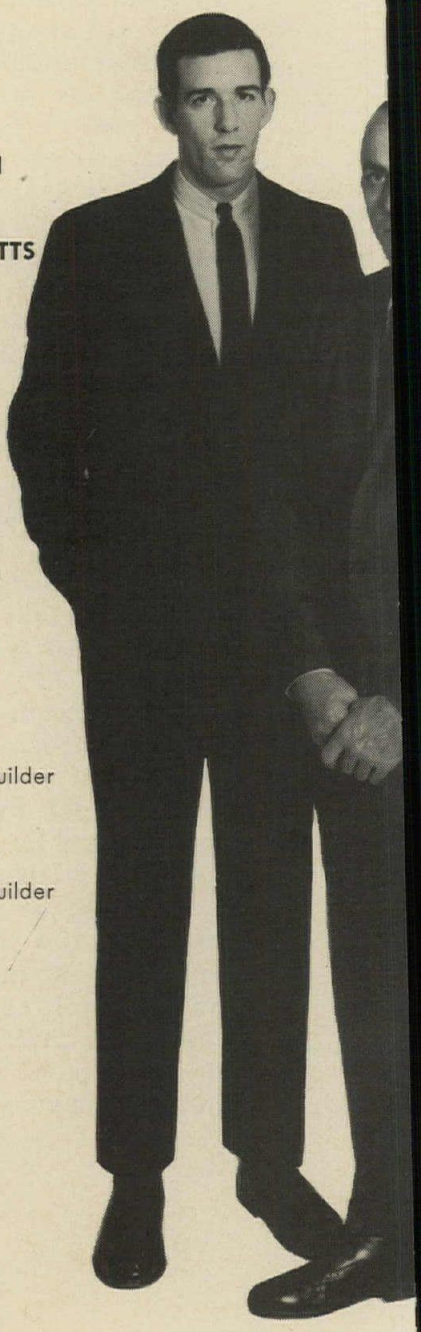
NEVADA
R. H. Weston
702-329-6496

NEW HAMPSHIRE
J. E. Gearin
603-669-9656

NEW JERSEY
J. Gotsch
201-649-2131

NEW MEXICO
R. Houston
505-765-6654

NEW YORK
BUFFALO
K. J. LaTurner
716-857-7716



Add them to your team...

EW YORK
J. Mikulka
2-394-1056

ORTH CAROLINA
G. Lee
4-372-2420

ORTH DAKOTA
R. Parks
1-235-3510

HIO
NCINNATI
Wirtle
3-397-2116

CLEVELAND—EAST
F. K. Fulton
216-622-2340

CLEVELAND—WEST
R. J. Barber
216-622-7894

COLUMBUS
W. C. Carpenter
614-227-8200

DAYTON
W. A. Kette
513-449-6325

STEUBENVILLE
J. A. Ternasky
614-283-8218

TOLEDO
J. F. Gilbert
419-247-7555

ZANESVILLE
W. F. Loucks
614-452-9166

OKLAHOMA
E. Rueb
405-CE-6-7490

OREGON
A. O. Hatlelid
503-233-4373

PENNSYLVANIA
EASTERN AREA
W. A. Wilson
215-466-2618

HARRISBURG
E. F. Gallagher
717-238-3897

PHILADELPHIA
G. S. Holland
215-466-3325

PITTSBURGH
J. H. Dobbins
412-633-3666

RHODE ISLAND
T. C. Carmichael
401-525-2230

SOUTH CAROLINA
J. E. Bouknight
803-254-8082

SOUTH DAKOTA
V. L. Roe
605-338-0908

TENNESSEE
CHATTANOOGA
R. J. Bradley
615-267-3229

KNOXVILLE
K. Coopwood
615-577-2588

MEMPHIS
G. Pryon
901-272-9203

NASHVILLE
G. A. Collier
615-256-9955

TEXAS
AUSTIN
R. Beck
512-475-6640

DALLAS
R. E. Thomas
214-747-5311 Ext. 2772

EL PASO
R. C. Andrews
915-543-4445

FORT WORTH
E. E. Flippo
817-ED-6-6260

HOUSTON
R. W. Hightower
713-CA-9-7698

SAN ANTONIO
G. Jones
512-CA-2-3506

UTAH
O. B. Gaisford
301-524-6487

VERMONT
J. E. Gearin
603-669-9656

VIRGINIA
M. C. Fauber
703-772-3581

SUBURBAN
WASHINGTON
E. C. Lord
202-392-6475

WASHINGTON
H. V. Stimmel
206-345-4736

WEST VIRGINIA
A. Ratcliffe
304-344-7219

WISCONSIN
MADISON
B. N. Hansen
608-256-4943

MILWAUKEE
G. H. Maikowski
414-393-6539

WYOMING
J. L. Tucker
307-634-2265

CANADA
MONTREAL
R. A. Plumpton
514-870-8411

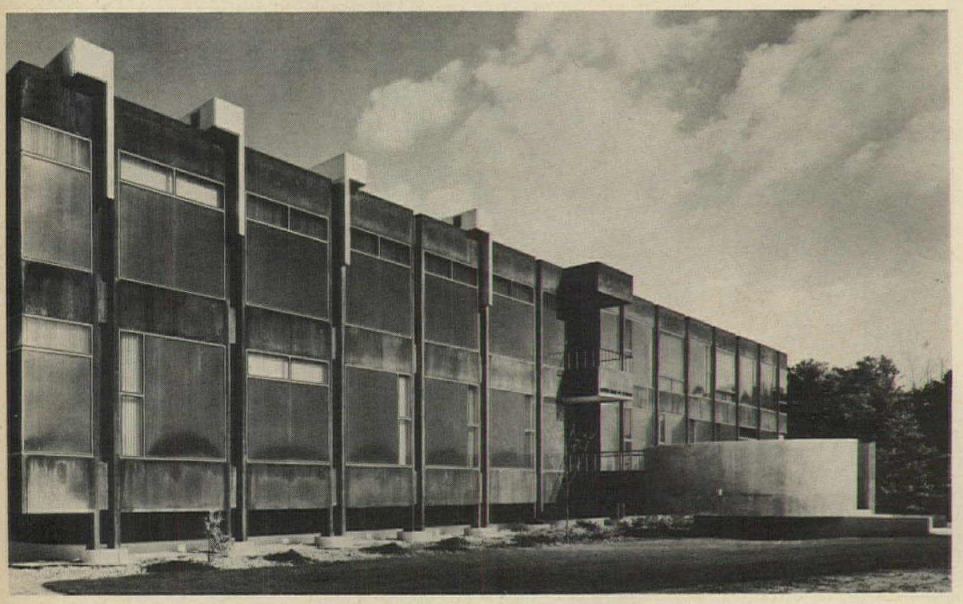
TORONTO
A. E. Ainsworth
416-929-2237

For a free pocket-size directory, listing our Architect and Builders Consultation Services, write AT&T, 195 Broadway, N.Y. 10007, or call 212-393-4537, collect.

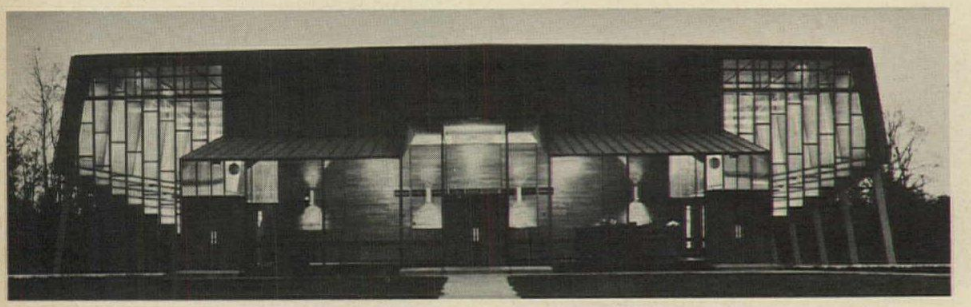
BELL SYSTEM AT&T and Associated Companies

not your payroll

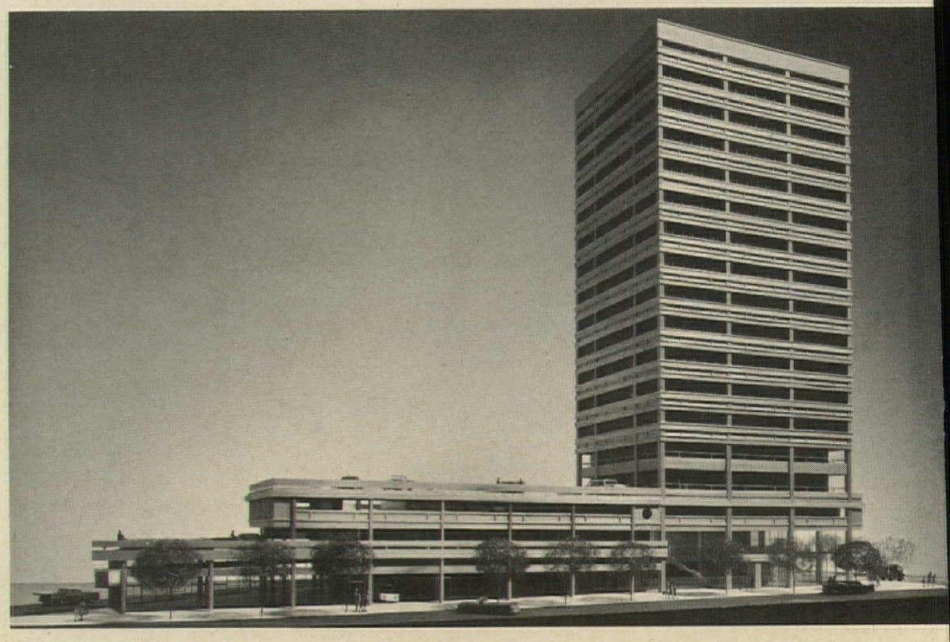
For more data, circle 26 on inquiry card



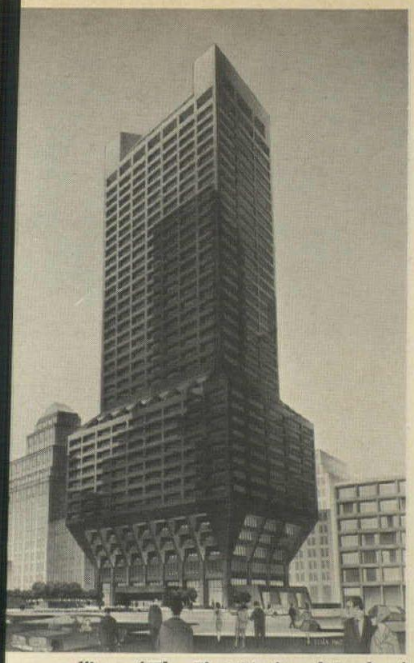
The Loutit Hall of Science, Grand Valley S College, Allendale, Michigan, designed Meathe, Kessler and Associates, Inc., is one 12 winners selected in the eighth ann competition for "beautiful steel-framed bu ings" sponsored by the American Institute Steel Construction. Serving on the awa jury were President Robert L. Durham a Vice President Robert F. Hastings of American Institute of Architects and archit David N. Yerkes; engineer Henry J. Deg kolb, and Walter Sharp, director, Tenness Fine Arts Center, Nashville. In addition to 12 awards, the A.I.S.C. Board voted a Spe Award For Excellence to Eero Saarinen's Louis Gateway Arch as "an outstandi achievement in technology and esthetic The jury found the Loutit Hall of Scie "harsh, crisp, and exacting", an effective pression of its function.



The Washington & Lee High School Gy nasium, Montross, Virginia, designed Stevenson Flemer, Eason Cross, Harry Adre Associates, Architects, is another winner the A.I.S.C. competition. Commenting on t project, the jury said: "The main body of t building is very finely designed. The exteri reveals its purpose and is a wonderful e pression of what happens in the buildin The result is an extraordinary honest design

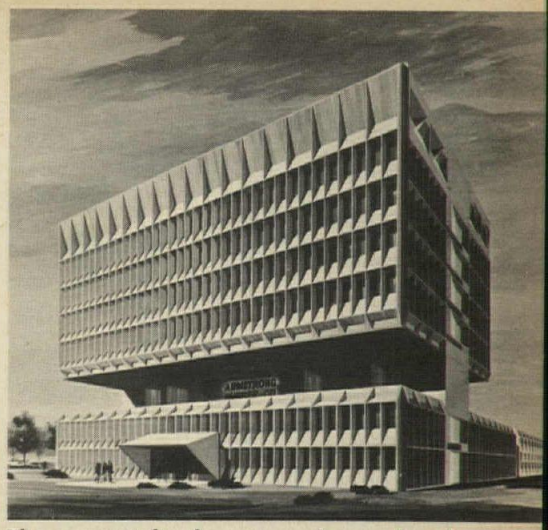


The nearly completed Sumitomo Bank building in the Little Tokyo section of Los Angeles, designed by Kajima International, Inc., and Victor Gruen Associates, is a key element in the redevelopment of the Little Tokyo area. The $3-million project, which will contain 184,417 square feet, is an 18-story building with a 15-story tower located over and incorporated with a three-story base containing office space, parking, and street-level shops. The general contractor is the William Simpson Construction Company.



home office of The First National Bank of on in Boston, designed by Campbell, ch and Nulty, will be a 37-story office ling, with the bank occupying the first 13 s. The enlarged eight-story section, pro- ng outward 30 feet on all sides, will pro- 50,000-square-foot areas needed func- lly for support operations of the bank. building, to be faced with natural stone, contain over 1.4 million square feet.

The Westinghouse Building in Gateway Center, Pittsburgh, designed by Harrison and Abramovitz and owned and operated by The Equitable Life Assurance Society of the U.S., will be a 23-story office building of steel-frame construction with cellular steel floor decks. The building, which will contain 500,000 square feet, will have an all-electric system, with the heat from the lighting system utilized for needs within the building.

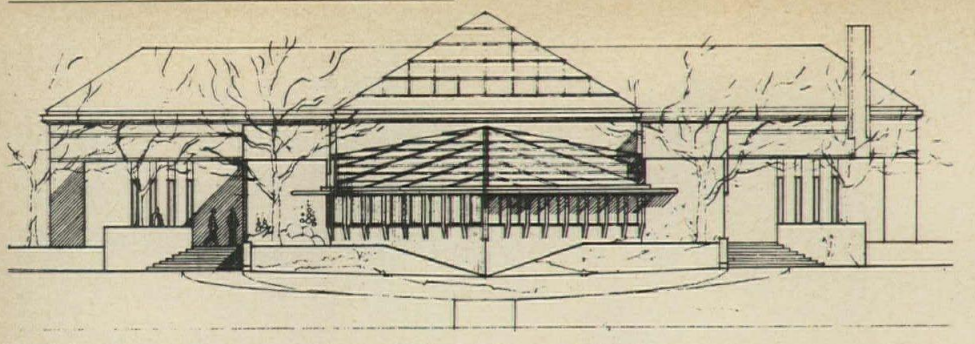


The corporate headquarters and research and development laboratories for the Armstrong Rubber Company, New Haven, designed by Marcel Breuer in conjunction with Robert F. Gatje, will house the research and development laboratories in a two-story base with a four-story office tower above. The office floors will be hung by roof trusses from 14 compression columns which rise the height of the building. The $6.5-million building will contain approximately 100,000 square feet in the base and 70,000 square feet of office space. The steel-framed structure will be sheathed in precast and poured-in-place concrete, and will be located on a 20-acre site.

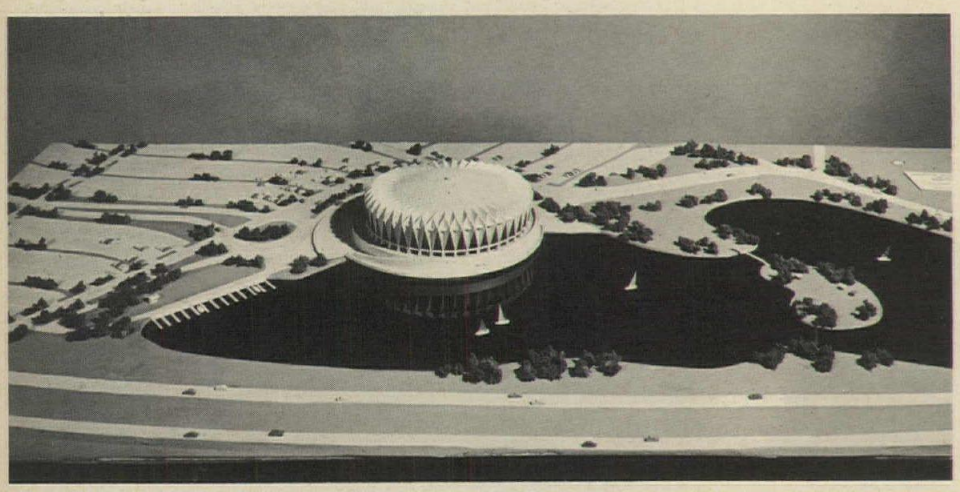
Jeffrey Foxx, photos

e Jewish Community Council housing for elderly, New Haven, designed by Charles ore, will be a 22-story tower containing units. The building, which will have three lls of glass and steel and one of masonry, l have 180 efficiency units and 36 one- droom units for married couples. The non- ofit sponsored moderate-income project, ll also contain a dining room-meeting hall, unges, sauna bath, solarium and roof ter- e.

The Ford Foundation headquarters building, New York City, designed by Kevin Roche, John Dinkeloo and Associates, is nearing completion. The 10-story-high glass walls, which are hung from two upper floors, are now in place, enclosing a 100-foot-square skylit court. The 12-story granite-faced structure is in the shape of a "C" with right angle corners surrounding the garden court, which will also serve as an extension of an adjacent park. The general contractor is the Turner Construction Company.

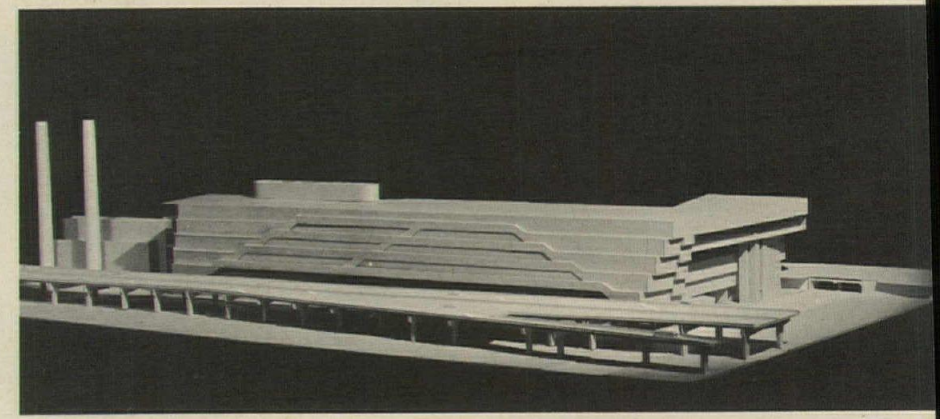


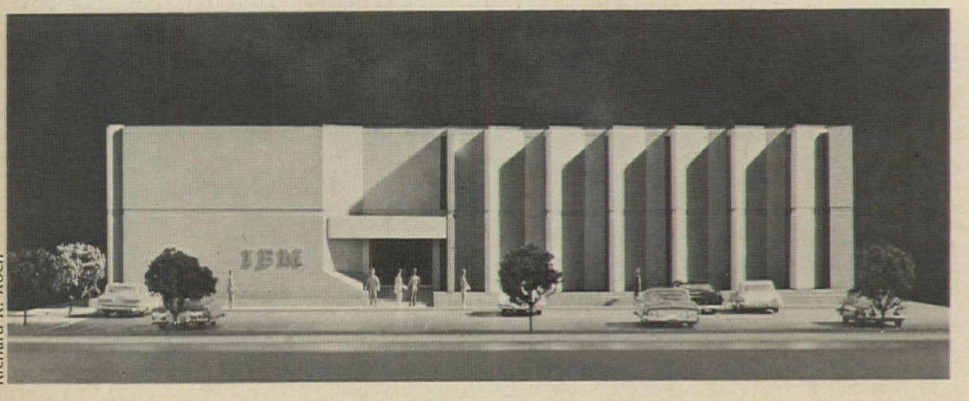
A hummingbird house for the Philadelphia Zoological Garden, designed by Kneedler Mirick Zantzinger Pearson Ilvonen Batcheler, architects. It will have an interior described by the architects as "like a tropical rain forest with a waterfall, pond, palm trees, flowering trees and shrubs." The central space will be an area about 50 feet square and 26 feet high topped by a pyramidal glass roof. Smaller wings with 15-foot-high ceilings will flank the main space. Observation platforms 18 feet square, located in the wings, will be connected by a bridge through the central s with rough grade on the floor. The space be climate-controlled and interior walls be made of a special glass resembling boo to discourage the 150 birds from ing fatal crashes.



The Hampton Roads Coliseum and Colis Park, Hampton, Virginia, designed by A Odell, Jr. & Associates, will be a circ structure approximately 320 feet in diam set within a 75-acre site that will pro parking for 3,500 cars and a 14-acre l scaped park. The column-free structure be roofed by a steel cable structure suppo by a series of precast concrete panels w form the exterior of the structure. The C seum is designed to accommodate t shows, conventions and a variety of athl and other events, providing 78,000 sq feet of exhibition space and seating for 6, to 9,500, depending upon the type of use. cost of the project is $5.1 million with la scaping to cost an additional $1.4 million.

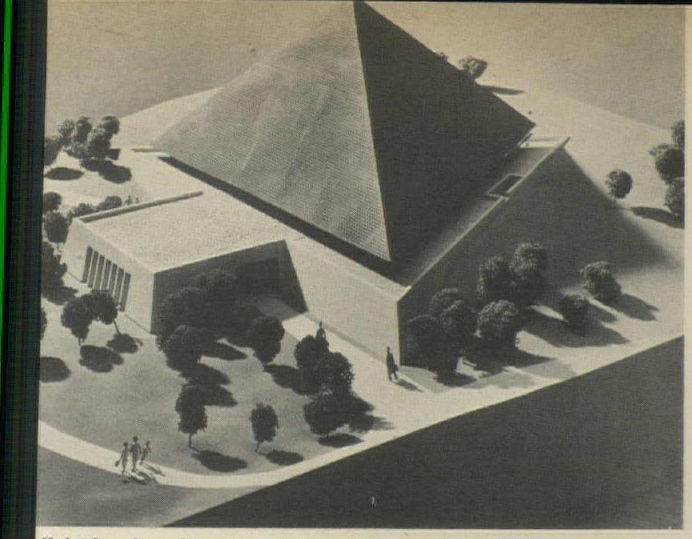
The Postal Terminal Building, Toronto, designed by Gordon S. Adamson and Associates, is a six-story facility over 1,000 feet long, 380 feet wide and over 150 feet high. The $47-million building will be used for mail handling purposes only and will have a gross area of 1,773,159 square feet. Mail trucks and railroad cars will be accommodated within the structure. The building has a steel frame and has exterior walls of precast concrete and poured-in-place concrete (for the exposed structural stair framing). The 25-foot-high ceiling levels serve the functional requirements of mail handling.



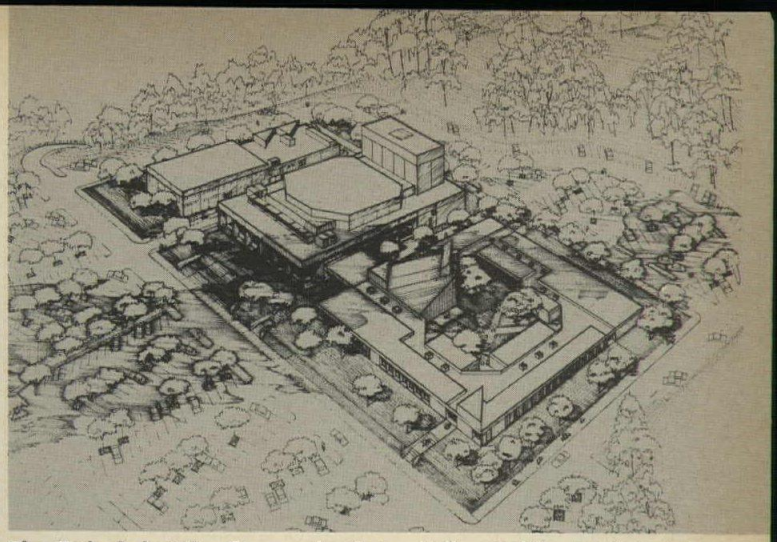


Richard K. Koch

An IBM office building in Albuquerque, Ne Mexico, designed by Leroy B. Miller, is two-story sales and service facility which w contain 34,000 square feet. Three consider tions affected the design: severe summer c matic conditions; exposed site; and we facing main facade. "Natural light and t view on the west elevation," says the arch tect, "is attained by bending the main buil ing wall outward at 45-degree angles to cr ate north-facing glass protected from dire sunlight." The steel-frame structure will faced with exterior brick walls.

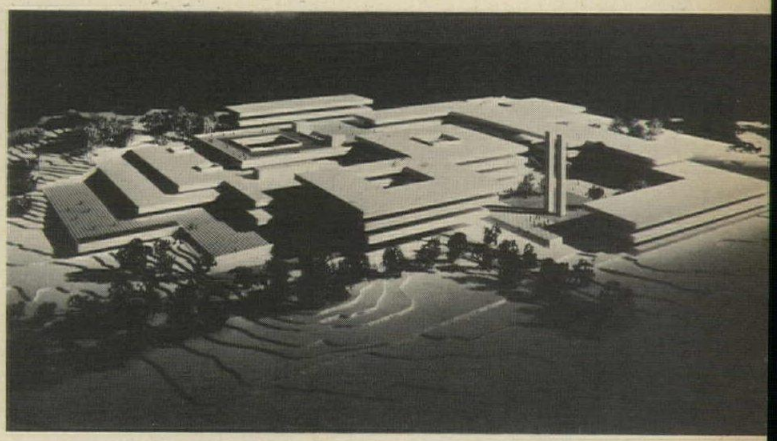


ıll-faiths chapel at Rockford College, Rockford, Illinois, designed Harry Anderson of the Perkins and Will Partnership, has a pyra- al wood-shingle roof structure raised three feet above a triangular structure of sandblasted concrete wall which encloses the chapel . The top of the wall structure is designed as a pool for light to through in indirectly lighting the interior. The chapel area is nly flexible with a movable pulpit, and will seat up to 275, depend- upon its use.

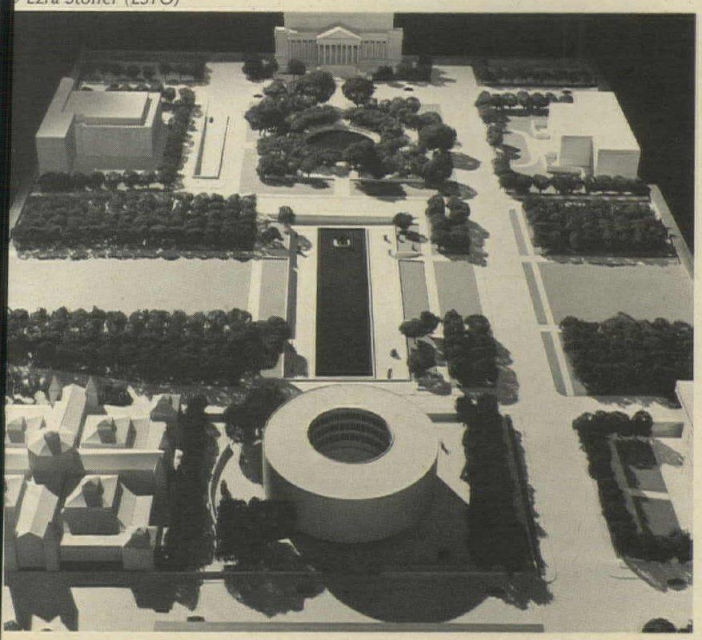


The Cathedral at the Crossroads, Castro Valley, California, designed by Welton Becket and Associates, is a three-building, interconnected complex which will cost $2.75 million. The Cathedral itself, which dominates the complex, is a fully-equipped 1,600-seat theater for dramatic presentations of the church program. Other elements in the complex are classrooms located around a landscaped court, with one corner devoted to a 300-seat chapel, and a gymnasium dormitory (for servicemen on weekend leaves).

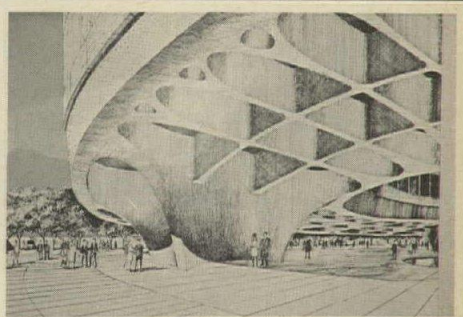
master plan for Bergen Community College, Paramus, New Jersey, pared by Frank Grad & Sons, Architects & Engineers, calls for a gle concrete and masonry structure designed on three levels. The ject will include interconnected areas, relating academic disci- es to one another and to the library, the nucleus of the plan. Out- r terraces and patios connect separate elements of the building as l as interior corridors. The first phase of construction, scheduled completion by 1970, will cost $17 million, contain 400,000 square t, and provide facilities for 2,000 full-time and 4,000 part-time stu- nts. Included in the first phase are library, administration and fine buildings, student union, science and humanities and physical ucation buildings. A second phase will expand the facilities to),000 square feet, providing facilities for 5,000 full-time and 10,000 t-time students.



© Ezra Stoller (ESTO)

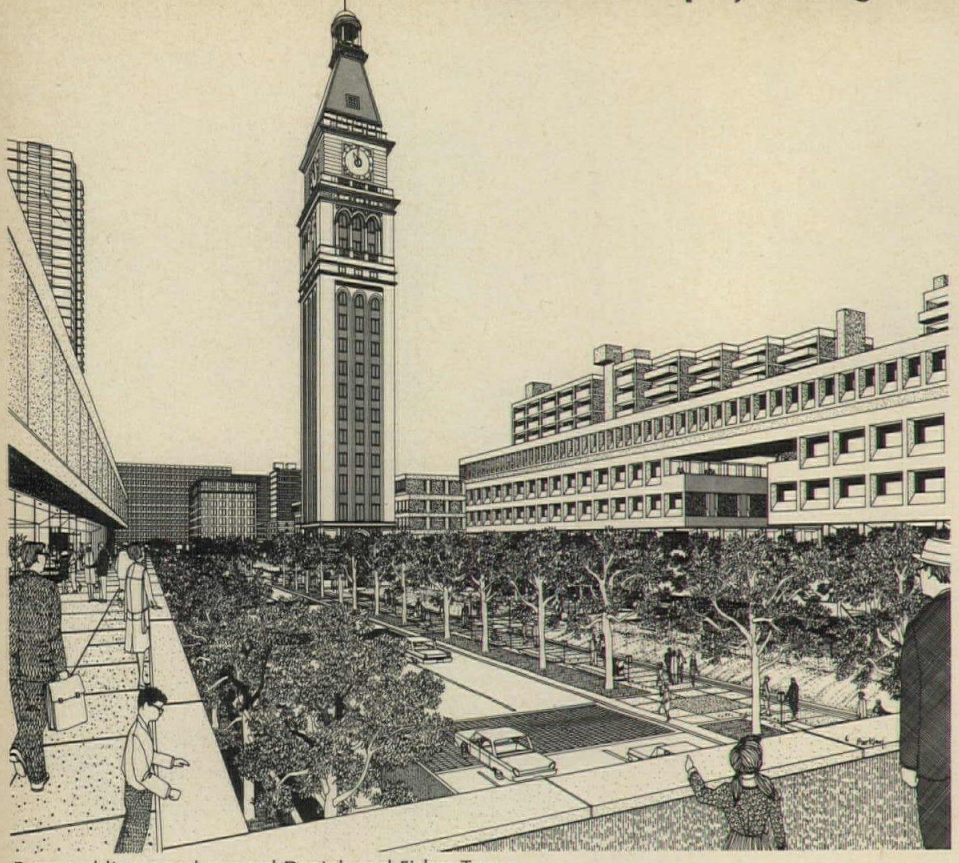


Rendering shows coffered underside of museum.



The Hirshhorn Museum and Sculpture Garden, on the Mall in Washington, D.C., designed by Gordon Bunshaft of Skidmore, Owings & Merrill, will consist of a cylindrical structure integrated with a sculpture garden—sunken seven feet to preserve the vista from the Capital to the Washington Monument and the Lincoln Memorial—organized around a reflecting pool 80 feet wide and almost 500 feet long. The cylindrical museum will be supported 15 feet above plaza level on four piers and will have five levels: the sculpture garden level, which includes a restaurant and 16,000 square feet of exhibition space; plaza level with main lobby; and three levels of exhibition space. The structure surrounds a glazed circular court, which is located off center to vary the exhibition spaces that surround it. Light from the court will illuminate circulation spaces, with exhibition spaces to be artificially lit. The north side of the building will be penetrated by a large window and balcony. The marble-clad building and its garden will cost $15 million.

Denver renewal project designed to enlarge and strengthen core a

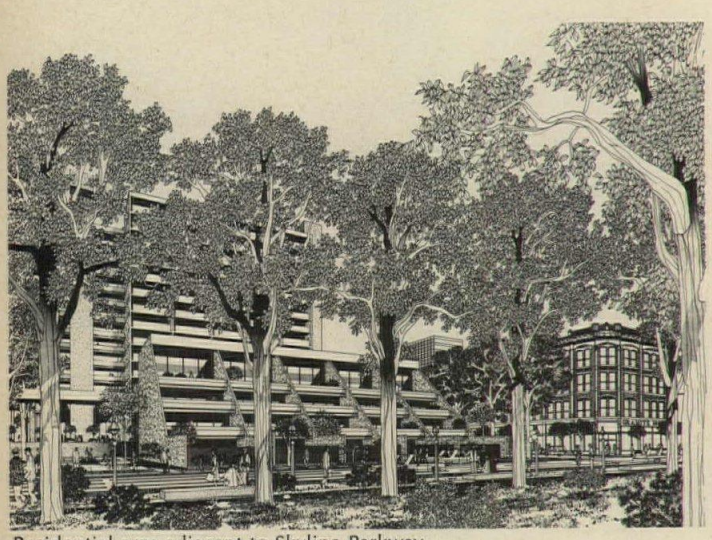


Proposed linear park around Daniels and Fisher Tower.

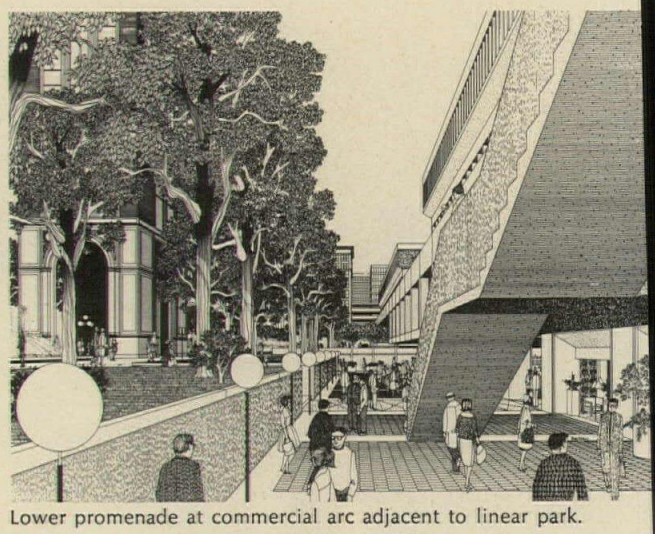
The first stage of development of Skyline Urban Renewal Project prop a medium-density solution for a 37-b area which was originally the core of city, but which has now been deserte retail activity. The plans, prepared the Denver Urban Renewal Authorit Baume, Polivnick & Hatami, Archite design consultants, and Sasaki, Daw DeMay Associates, Inc., special cons ants, are not intended as detailed de solutions, but represent the conce goals, principles and standards to be ried on during the execution of project.

There are six general design ob tives: elimination of surface parking use of underground parking and park structures and landscape screening essential surface parking areas; a cir lation system that separates vehicu from pedestrian activities; provision civic open spaces and small intim spaces "to generate activities and to se as a setting for major cultural and co mercial buildings"; establishment of orderly and esthetically pleasing stre scape . . . through elimination of un ordinated business and municipal sig relocation of utility equipment, visi wires and lines"; control of building d sity and height "to improve and cont the visual impact of the cityscape"; a rehabilitation objectives which are to based upon economic and structu analysis of the buildings.

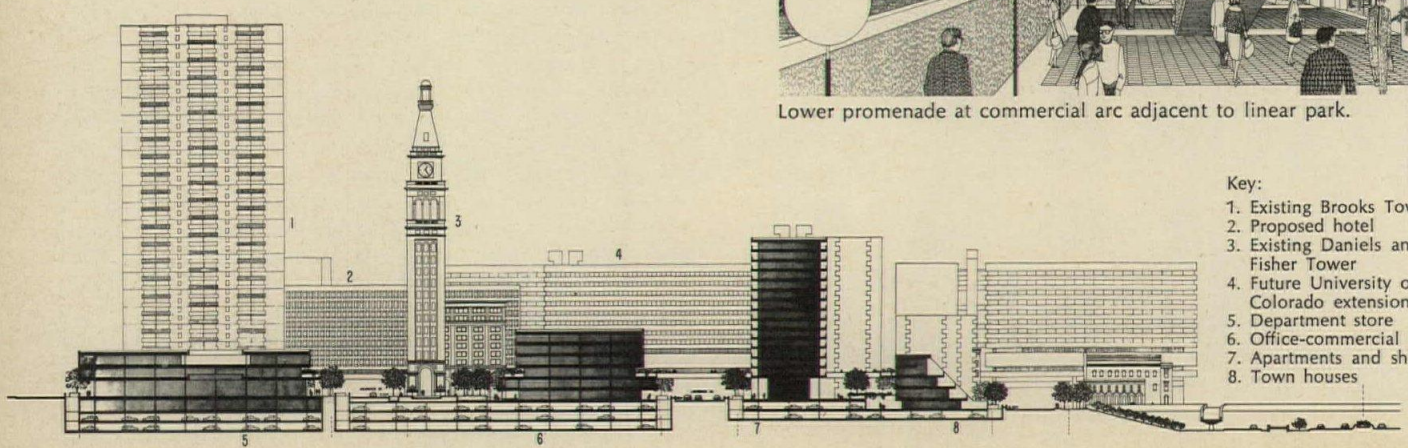
more Buildings in the News on page



Residential area adjacent to Skyline Parkway.

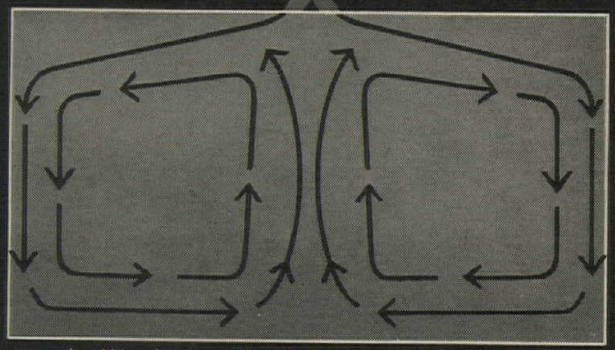


Lower promenade at commercial arc adjacent to linear park.



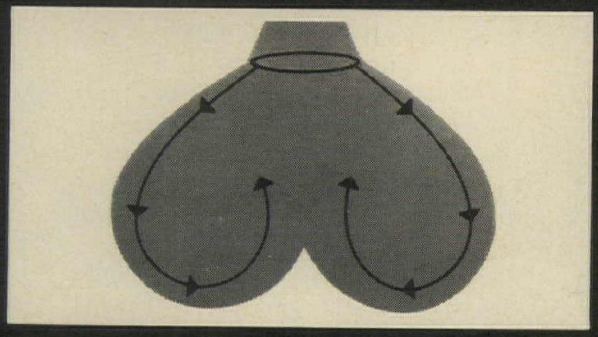
Key:
1. Existing Brooks Tow
2. Proposed hotel
3. Existing Daniels and Fisher Tower
4. Future University of Colorado extension
5. Department store
6. Office-commercial
7. Apartments and shop
8. Town houses

OUR MOVE



We move air evenly. We do it with a brand new linear bar (see our diagram). The bar economically and efficiently and quietly moves air throughout the entire space. We call it the OCF Dimensionaire Ceiling System. It's a total ceiling system. Air, light and sound. There's nothing like it.

THEIR MOVE



This drawing shows how a diffuser moves air unevenly. The air shoots out, much like through the nozzle of a garden hose. Sit under one of the blasts, and you'll know what we mean. Air can stagnate in one area of the room, and drafts build up in the other.

YOUR MOVE

We have a movie you should see. And a brochure. They tell everything about the OCF Dimensionaire Ceiling System. Mail the coupon now, before it slips your mind.

USE DE

Dividend Engineering—to stretch your building dollar while improving building performance.

Name _____

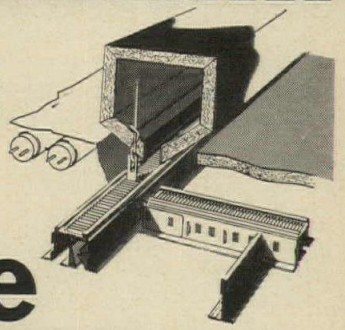
Title _____

Address _____

City _____ State _____

☐ Have your sales engineer call for an appointment to show the film.

☐ Mail the brochure.



OCF Dimensionaire Ceiling System

OWENS-CORNING FIBERGLAS

Owens-Corning Fiberglas Corp., Dept. DCS, P.O. Box 901, Toledo, Ohio 43601

AR-9

For more data, circle 27 on inquiry card

What price conviction?

The words "concept," "bold design," "interrelationship of spaces," "parameters," and "functional aspects" keep going round and round, and the stuff that comes out the other end is gargantua in great big ugly concrete hunks, some as pyramids regular, and amazingly, some as pyramids inverted.

It has been a long time since the words "beautiful" and "handsome" can be truthfully applied to very much of the stuff being built these days. Veneers of red plush and gold leaf are scarcely enough.

Somehow, I hope my friend Emerson Goble can find a way to invite professional architects to be professional and responsive to their community obligations rather than seek publicity because they do queer things at a very high price.

Ruminating and plagiarizing on what I read, these thoughts come to me. From the scientist shooting for the moon to the lowliest graduate trying for his master's degree, professional people as a group bear the imaginative burden of progress for all of mankind. It has ever been so.

If professional people truly aspire to discharge that noble duty, can we realize such a vision while we permit the world leadership, international position and moral power of the United States to suffer major erosion abroad and in our own eyes?

As professionals do we have the courage and fortitude to oppose the massive political power that drains our substance nationally to a central government, only to return benignly a mere fraction of it as a Federal grant, while dictating in legal mumbo jumbo exactly how the majority of the project, our own money, shall be spent?

Is it politically incomprehensible that anyone should endanger his public career simply out of conviction? In addition to this question the Washington Post says, "Merely to admit this possibility would challenge and endanger the tranquil consciences of the hundreds who are busy every day enforcing a policy they do not believe in." These are the people that pridefully now call themselves bureaucrats. I ask you who is there to stand in dissent of all this, if not the professional man?

Columnist E. P. Morgan says, "Life has changed more radically in the generation since World War II than at any other time since American civilization began. We have more liberty, luxury, leisure, licentiousness—crime, reckless driving, (but also) in the very pollution of the air, the ultimate lethal nuclear cloud which lurks above us."

He continues, "It is amazing how sanctimonious Congress can get over symbols without coming to grips with basic problems which threaten to tear our society apart at the seams."

Interstate roads rip our cities apart and scarify the country-side. Urban renewal bulldozes large areas of our cities into formless filing cabinets for people. And our professional people abet these crimes shamefully for the sake of a fee. These are the happenings that should concern us under the graceless Federal regulations that bind us, consciousless in their legalities. I contend the same laws under different verbiage and different regulations could have been written to permit form and grace for our people had the professional man in government and out, been alert to his professional responsibilities.

Quoting the Washington Post again, and proudly, "It is the blessing of our own system that we not only permit, but urge, each man to follow the inner call of his conscience to the most spacious limits of our legal and constitutional freedoms."

With such freedoms what do we professional people propose to do now, today, to generate the climate in our communities that will demand of our public agencies and private enterprise the firmness, commodity and delight essential to a civilized environment? It is to these far horizons and this brighter day that all professional men, in my view, should be dedicated and rededicated fearlessly.

Everybody is so busy making money, or suing somebody, I wonder if anybody is listening, and if he is, how he is facing up to his professional conscience.

C. E. Silling, F.A.I.A.
C. E. Silling & Associates
Charleston, West Virginia

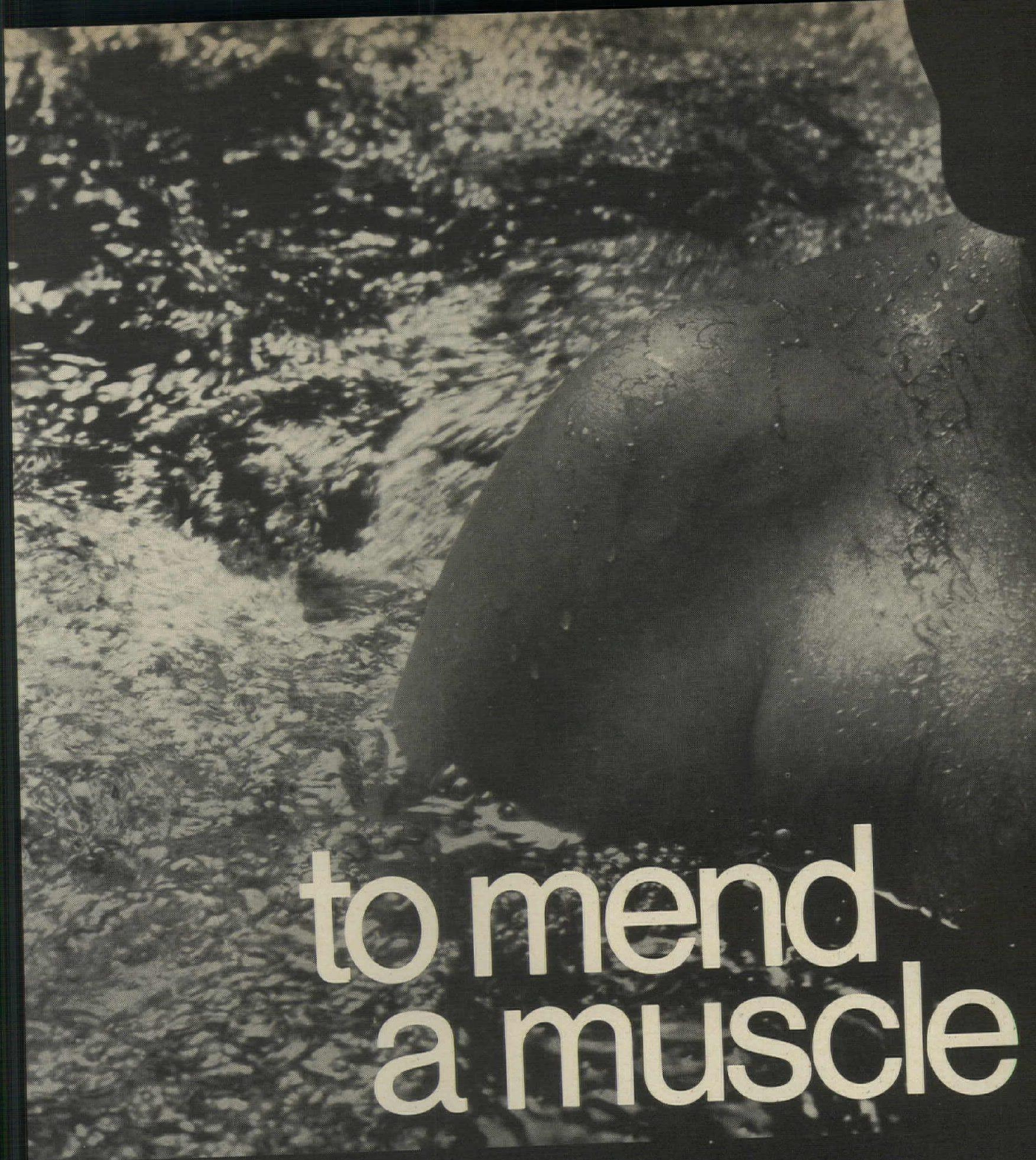
Computer-aided design conference

In reference to your article repor
the events at the second conference
computer-aided design held at M
(April, p. 219), I see in it more evide
of the growing dilemma of our time:
enormous gulf between layman and
pert in any field of technology: to
the separation between architect-layr
(with respect to computers) and
"computer-aided design expert"
whose ranks I do not include myse
The evidence is not so much in what
article talks about as in the article its
which seems quite content to substit
ambiguous philosophy, "gallows
mor", and high-speed verbal sideswip
for serious and considered presentat
of the issues raised in earnest at the c
ference. Thus, the article stands in limi
it is neither a presentation meaningful
the architect-layman, nor is it a record
discussion useful to those other "exper
who may not have attended. Thus it d
little to solve the dilemma to which I
fer. My authority for making these sta
ments: I had the privilege to chair
subcommittee working on problems
design evaluation.

To correct the records, I would l
to present in summary form some of t
issues which were raised. The article
fortunate enough to have identified t
key issue—that of "computerized" c
sign versus "computer-aided" design
but fails to follow up either on this su
ject or upon its relation to other discu
sions and issues.

This particular issue is the key iss
in the battle of computers and/or
architecture, for involved in the resol
tion of this issue is the definition of wh
the architect and what architecture sh
be in the future. I think it is fair to sa
while it may seem brash, that in t
future it will be as impossible to opera
a professional practice without a co
puter as it is impossible today to opera
without a telephone or T-square. But d
cisions as to *how to use* the comput
are both possible and necessary (contra
to determinist views on the impact
technology). The article presents two
these choices—the "optimization route
or the "interaction" route, as represent

more letters on page

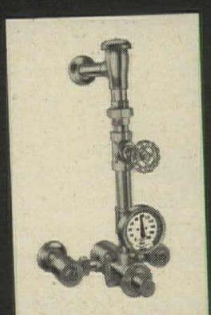


to mend a muscle

and mind any water temperature, *Powers keeps you in control.*

This common-looking plumbing assembly shown at right is actually an uncommonly efficient "mechanical nurse" employed in hydrotherapy. It's Powers Hydroguard® 430, a thermostatic mixer of hot and cold water to the critical delivery temperatures required for the full body immersion bath. Despite any fluctuation in pressure or temperature of the water supply, Hydroguard safeguards the patient with a constant water temperature. Whatever you require, a Hydroguard 430, knee-touch valves for scrub-up sinks or a Fotopanel® thermostatic temperature control for processing X-ray film...

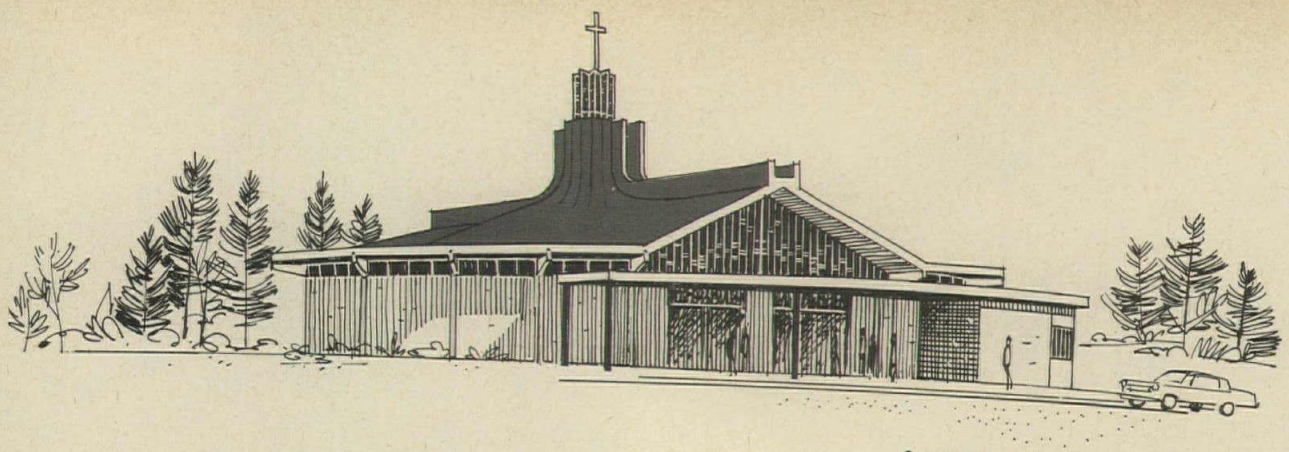
Powers capability keeps you in control.



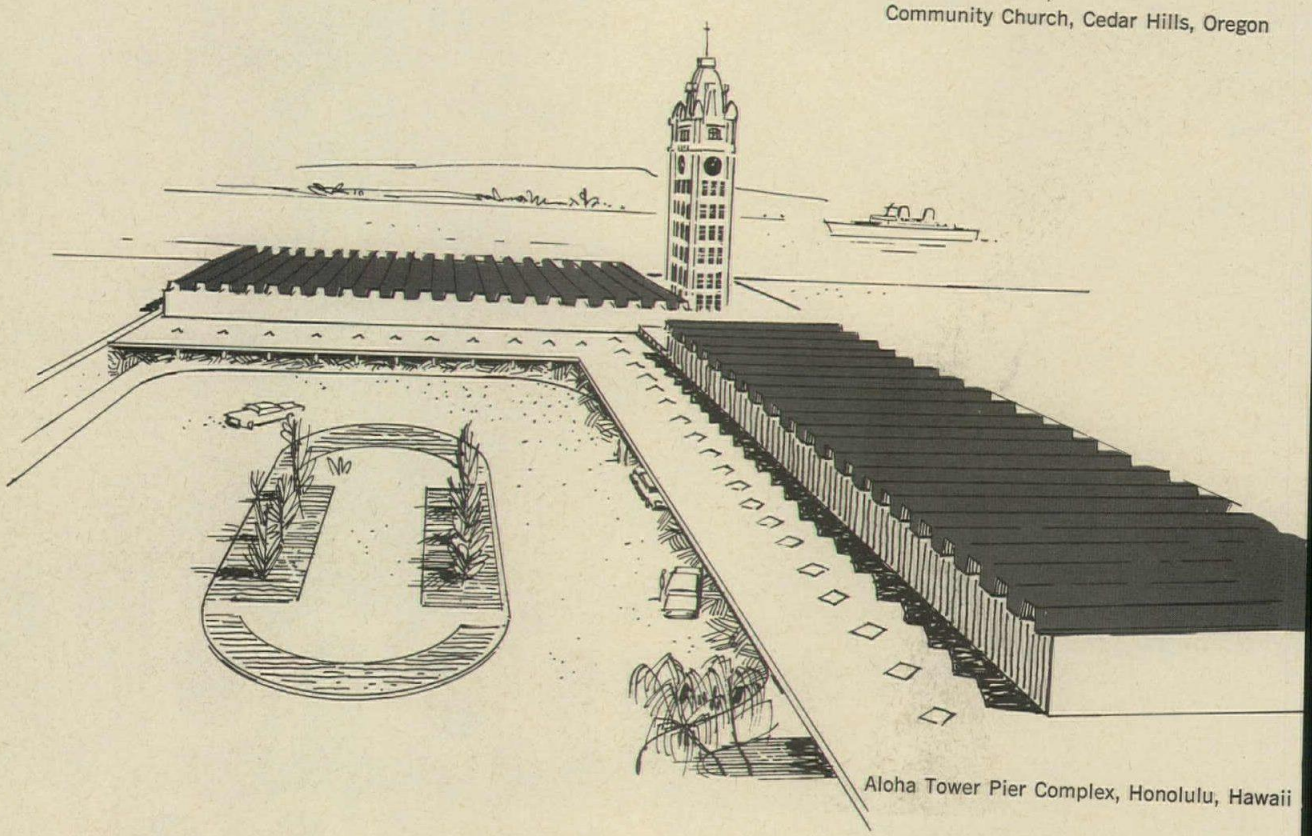
POWERS

The Powers Regulator Company

Skokie, Illinois



Community Church, Cedar Hills, Oregon



Aloha Tower Pier Complex, Honolulu, Hawaii

Solve two major design problems with flexible fluid roofing

Problem 1: Cover multifaceted roofs without design compromise. Example: vari-pitched roof of church shown here.

Answer: Specify fluid roofing of Du Pont Neoprene and HYPALON® synthetic rubber.

Problem 2: Cover long span, pre-cast concrete, subject to considerable contraction-expansion. Example: folded plate roof of pier complex shown here.

Answer: Specify fluid roofing of Du Pont Neoprene and HYPALON.

Fluid roofing is easily applied to these shapes . . . and to almost any curved hard surface. It cures quickly to form a tough, continuous weathertight membrane. HYPALON offers colorful surfaces that resist ozone, sunlight, heat, cold, industrial fumes and abrasion. Both Neoprene and HYPALON are flame resistant. This system gives years of watertight performance.

Du Pont makes both Neoprene and HYPALON, not roofing. Write for a list of fluid roof coating suppliers and literature on fluid roofing.

Du Pont Company, Room 4786
Wilmington, Delaware 19898

Du Pont
Neoprene
HYPALON

DU PONT
REG. U. S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

ore data, circle 28 on inquiry card

Ve'd like to thank the Tulsa Airport for giving us a great story on Four Seasons® carpeting.

e problem: 700 sq. yds. of sightly concrete.
e solution: 700 sq. yds. of yal Red Four Seasons.
e results: An enhanced ssenger service image, and olorful and practical new ting for the building itself. ot to mention comfort and n-slip safety for passengers.

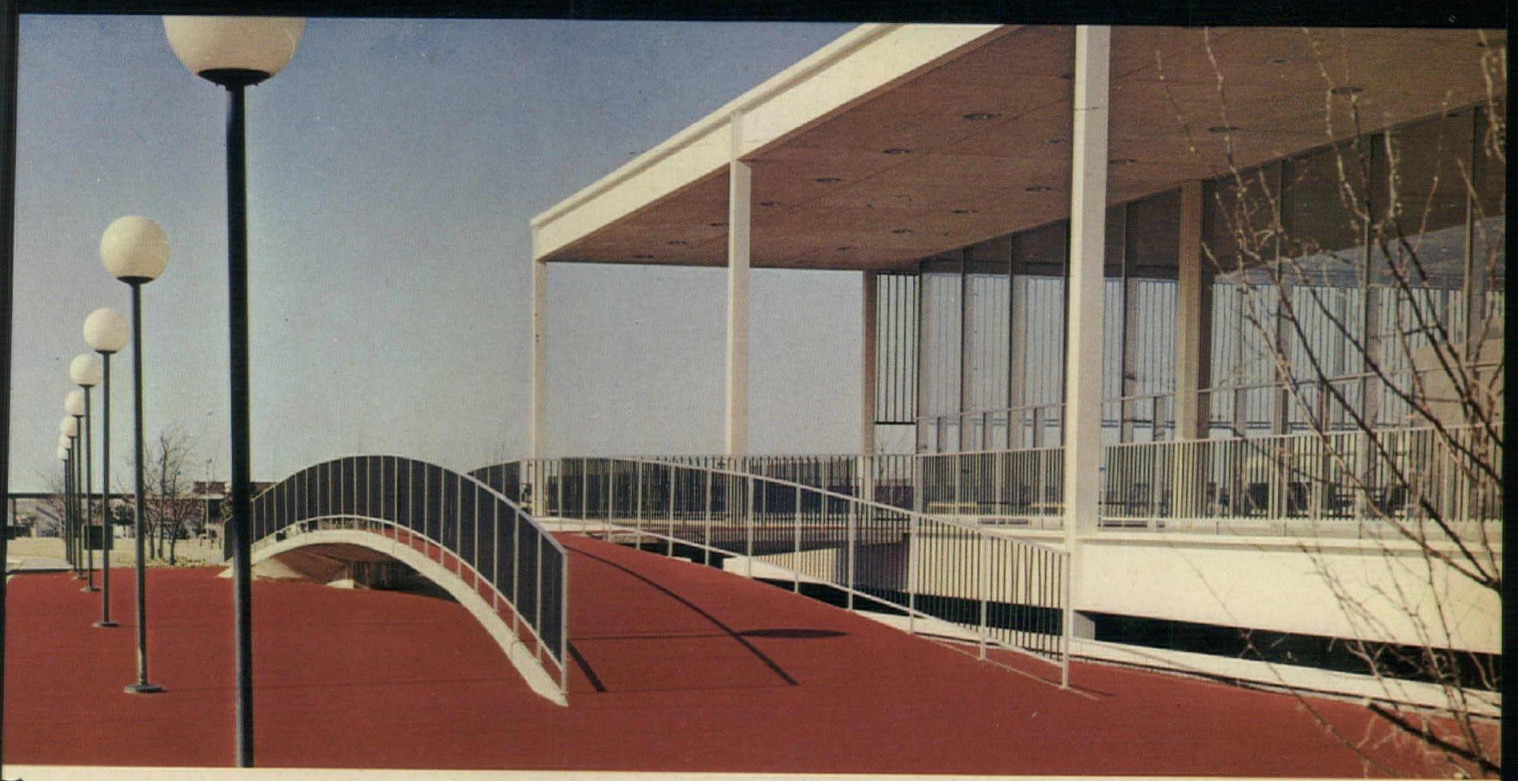
The airport management selected Four Seasons by General Felt Industries for the outdoor installation because of its proven ability to withstand wear and tear, and for the ease and economy of installation and upkeep.

Since it's made with a face of 100% Marvess® olefin, a Phillips 66 fiber, Four Seasons indoor-outdoor carpeting resists rot, mildew, stretching, shrinking and fading. And it resists stains. Dirt washes or hoses right off.

And if you're wondering how it looks, you might remember Four Seasons made with Marvess is so rich and colorful, it's used indoors. It's ideal for adding comfort and warmth to areas you thought of, but never dared carpet before. Think about Four Seasons. It could lay the groundwork for some great ideas.

MARVESS OLEFIN
A PHILLIPS 66 FIBER

FOUR SEASONS® INDOOR-OUTDOOR CARPETING
A PRODUCT OF GENERAL FELT INDUSTRIES INC.
GENERAL FELT PRODUCTS DIV., 2301 SO. PAULINA ST., CHICAGO, ILLINOIS 60608
CROWN PRODUCTS CORP. DIV., 295 FIFTH AVENUE, NEW YORK, NEW YORK 10016



PHILLIPS FIBERS CORPORATION, GREENVILLE, SOUTH CAROLINA, A SUBSIDIARY OF PHILLIPS PETROLEUM COMPANY. MARKETING OPERATIONS OFFICES: 1120 AVENUE OF AMERICAS, NEW YORK, N.Y. 10036. PHONE: (212) 697-5050; DANIEL BLDG., GREENVILLE, S.C. 29601. PHONE: (803) 242-5366. PHILLIPS 66 FAMILY OF FIBERS: MARVESS® OLEFIN, QUINTESS™ POLYESTER, PHILLIPS 66 NYLON.
*REG. T. M. PHILLIPS PETROLEUM COMPANY

For more data, circle 30 on inquiry card

ARCHITECT-MISSIONARY SERVES "THE LIVES AND WORK OF MEN" IN THAILAND

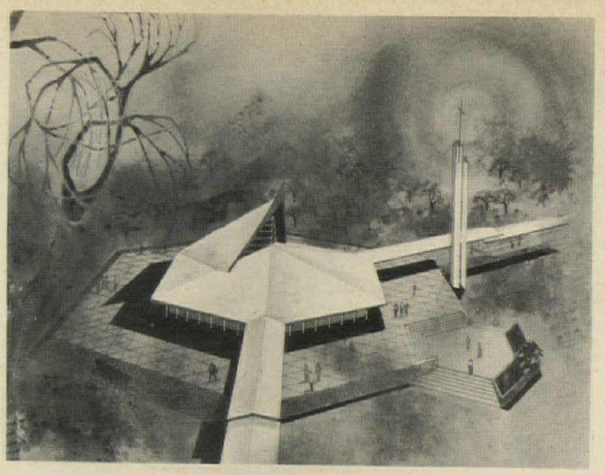
Taylor M. Potter, an architectural graduate of Pennsylvania State University in 1950, who received a Bachelor of Divinity Degree from San Francisco (Presbyterian) Theological Seminary in 1954, feels that ". . . [the church] must concern itself with all kinds of buildings as they involve the lives and work of men—not simply the church building. The church must concern itself more creatively in a public way with all that involves the welfare of mankind." To this end, the Presbyterian Church sent Mr. Potter as an architect-missionary to Thailand from 1956-61 and 1962-66 where he became involved with the architectural problems of the Church of Christ in Thailand.

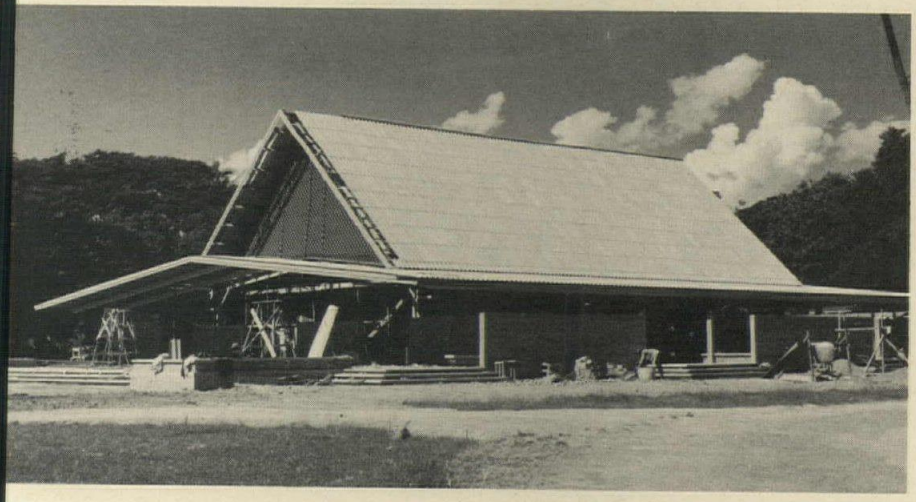
In Thailand, Mr. Potter established an architectural office which designed such diverse projects as schools, hospitals, recreational facilities, and residences, as well as churches, five of his projects being shown on these pages. Assisting Mr. Potter in his work for various periods of time have been A Tholin, consulting engineer, who wo for the Chicago Department of Pu Works; Ed Sue, Hong Kong archi T. Merrill Prentice, New York archi and civil engineer Elihu Geer, profe at the University of Detroit. At the p ent time Mr. Potter is a visiting fello Princeton University and Princeton T ological Seminary exploring the sub "Christian Worship and its Expres Through Architecture."

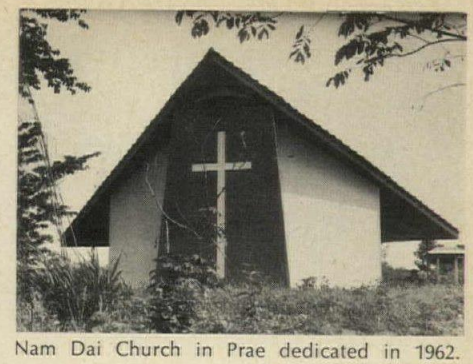
Chapel-auditorium, Thailand
gical Seminary, Chiengmai,
ed February, 1966. The main
a canopy made of four hy-
c-paraboloid, field-laminated
d membranes, which serves
utdoor amphitheater seating

City Church, Chiengmai, on
construction was started in
ry, 1966.

Chapel-auditorium, Dara
my, Chiengmai, which was
ted on December 14, 1965.







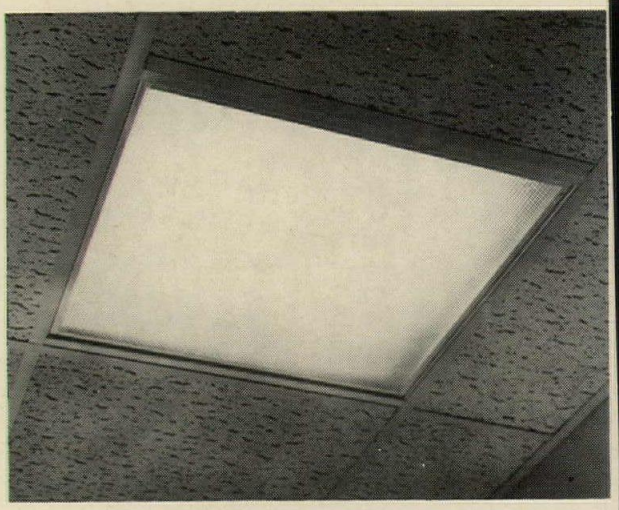
Nam Dai Church in Prae dedicated in 1962.

Bahn Laow Church in Lampang, which was dedicated in October, 1962.

ASK FOR LIGHTING PANELS AND YOU ARE BUYING.

ASK FOR GLASS LIGHTING PANELS AND YOU ARE INVESTING.

You buy time when you buy glass.
Extra years of clearness.
Extra years of cleanliness.
Extra years of attractiveness, because glass won't warp, yellow or sag.
Build a small hedge against inflation. Invest in glass lighting panels.
Glass lasts.

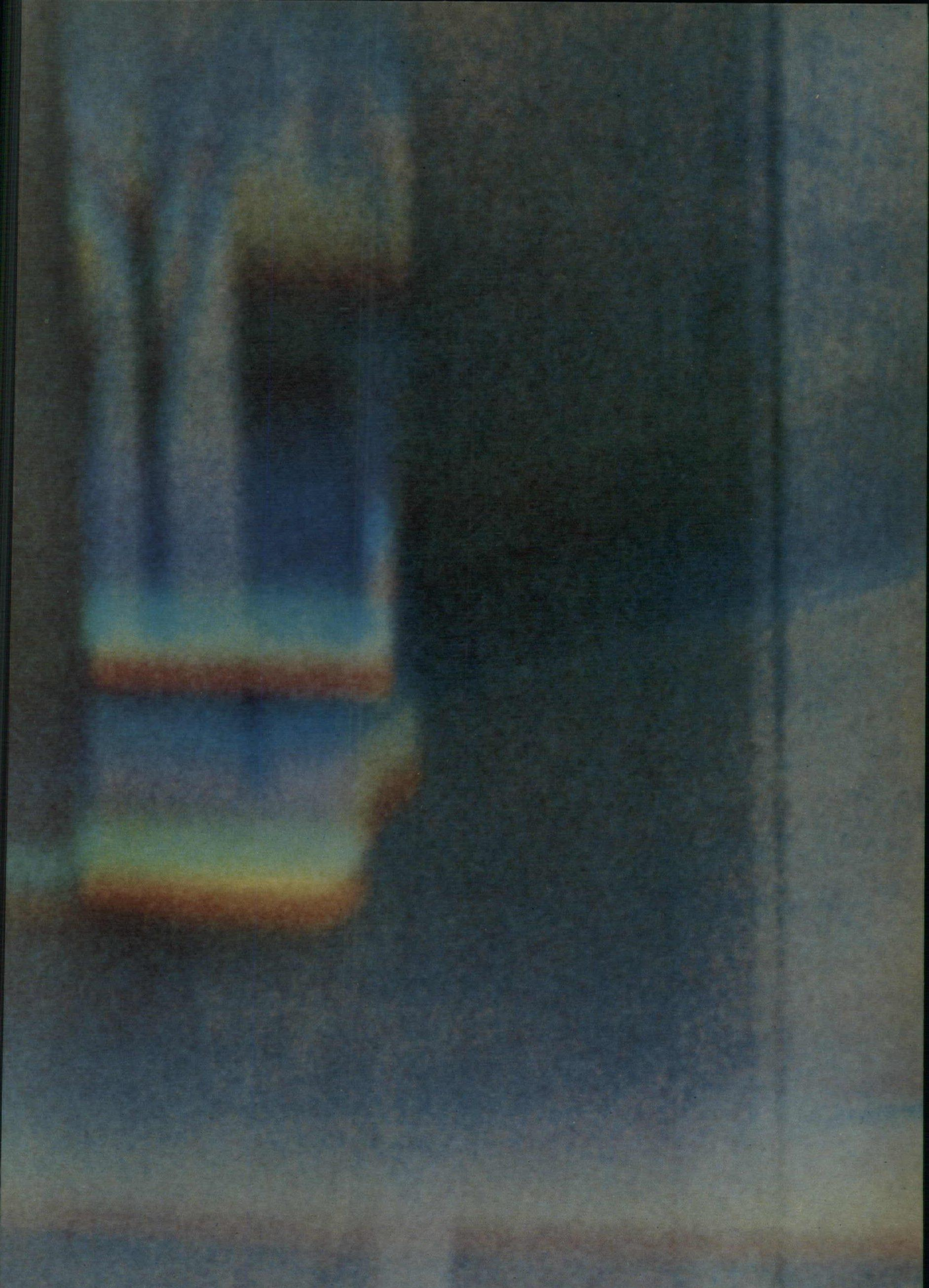


All the reasons why are to be found in a bulletin we've prepared for you. Write for a copy. Building Products Dept. 8509, Corning Glass Works, Corning, N. Y. 14830.

CORNING
BUILDING PRODUCTS

For more data, circle 32 on inquiry card

For more data, circle 33 on inquiry c



KALCOLOR was the first system to create architectural aluminum in a range of lightfast colors by using special alloys and a unique anodizing process. New advances continue to make KALCOLOR the most reliable system you can specify. Details? Ask our local sales office or 2137 Kaiser Center, Oakland, California 94604.

KAISER ALUMINUM

continued from page 46

tive of computerized and computer-aided design.

To explain how these choices may effect change in the profession of architecture, let us examine how the designer would approach the two systems developed around such alternatives. Approaching the computerized design system, he would say: "This is my exact problem; here are the procedures I would use to solve it; in the course of solving it, I expect to encounter these decisions; and when I do, this is how I would make those decisions; and finally, here is how I know when I have gotten the best solution." All of this must be stated in highly structured, probably mathematical ways, with no ambiguity of logic or definition, and with virtual problem completeness. Now, clearly, such an approach to design would require that the architect have far different skills, would require far greater understanding and possible redefinition of the design process, and finally would also require "oversimplification" of design problems—in exactly the same sense that working drawings, perspective ren ings, and other elements of pre process are "oversimplifications", nonetheless useful for certain decisi

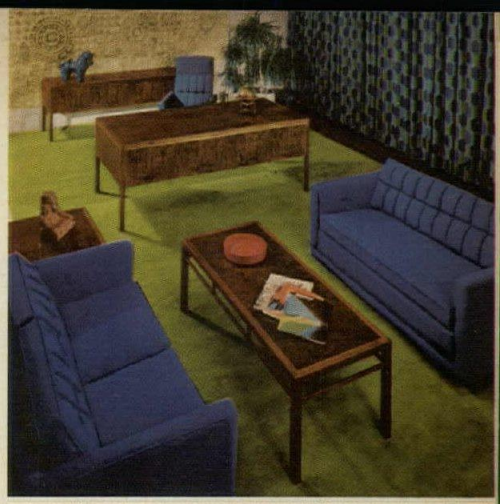
On the other hand, when the signer approaches a computer-aided tem, he says: "Here is a solution I h thought up and it is none of your b ness how I thought it up or what d sions I made along the way; that is job. You take it and tell me if it stand up and how much it might cost whether it passes the code and if th will be stack-ups at the elevator a o'clock." In short, such systems cen around providing certain informati handling capability, limited proble solving capability, and other featur but they principally service acts of eva ation, sharpening feedback on the c sequences of design decisions. Th the development of computer-aided proaches is heavily dependent up problems in design evaluation, a po which was emphasized in the report my group to the general session of t conference. Moreover, when we talk computer-based design evaluation tec niques, we may sensibly talk of co *puterization* of certain aspects of t design process, and may well find gre use for techniques of optimization. points here are two: *first*, the choic which exist in the development computer-aided design systems are co plex; *second*, the layman is likely to wa to oversimplify these. As evidence this, I propose that the "two alternative presented in the article are oversimpli cations and are fabricated alternatives.

Returning to the main point, how ever, it is clear that computer-aide systems can more readily accommodat existing professional skills. If approache to such systems are simplified, throug the developments of computer-graphic techniques and by the introduction "user-oriented" languages, which permi access to the computer without muc training, then it is quite conceivable tha the computer can enter the world o architecture and design with little re quirement that the skills of the architec be changed. Now, are these not seriou alternatives to be presented to and con sidered by the layman-architect?

As a third point, I would like to stat that the above discussions also are in tended to illustrate a point which th article misses completely: that all sub jects considered at the conference— evaluation, decision, theory, graphics, etc.—are complexly interrelated, and are but aspects of dealing with the larger problem, i.e. how to augment and im-

more letters on page 64

AIA members, please note. We also make,



hospital furniture, bookcases, lockers, partitions, dormitory furniture, tire racks, library shelving and

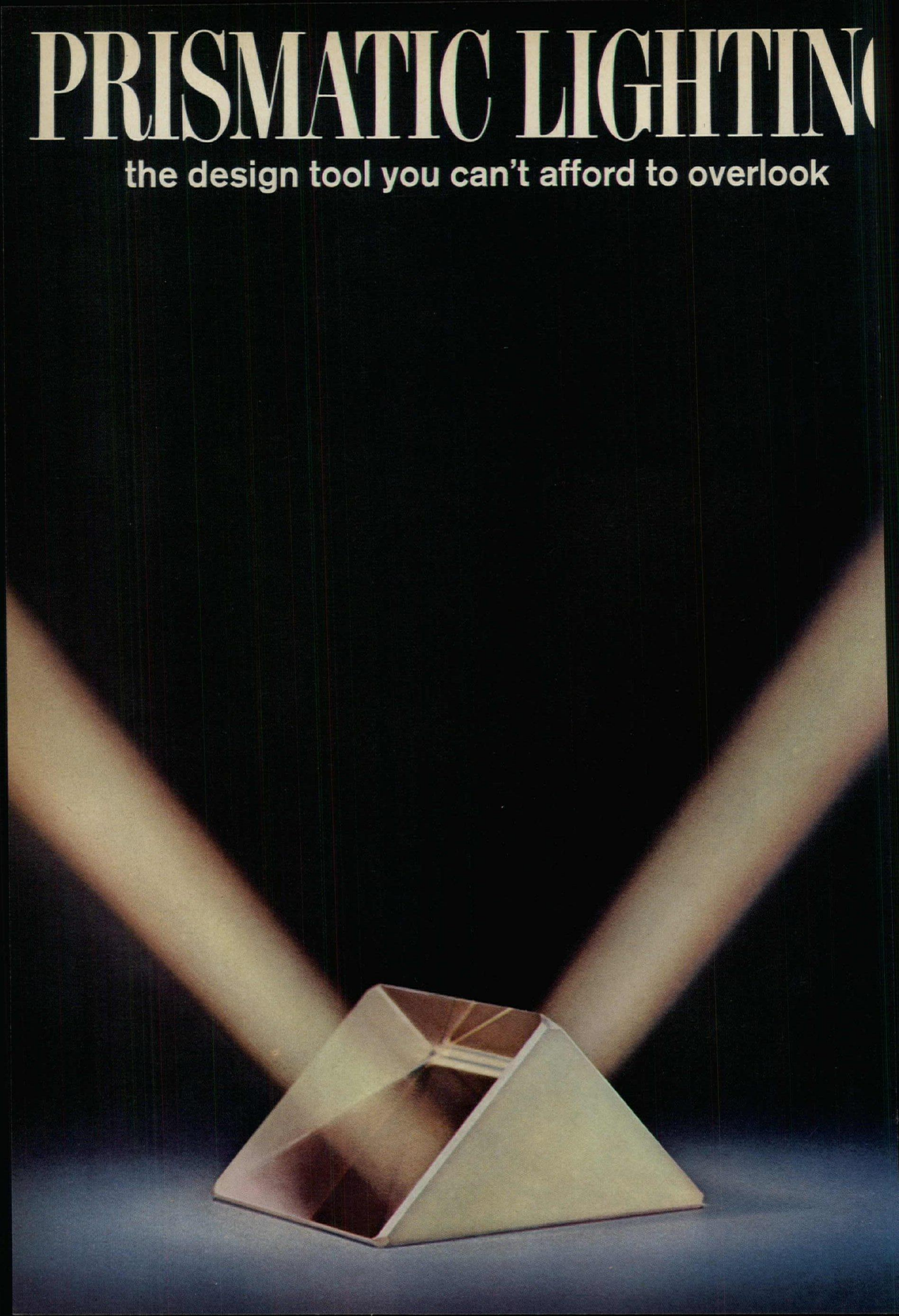
smiles.

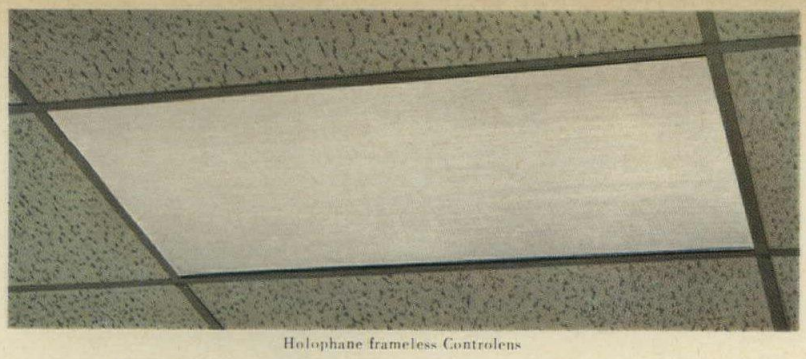
The smiles come with every Royalmetal installation. Our local Royalmetal Dealer can show you the rest of the line. Or write Royalmetal Corporation, One Park Avenue, New York, N.Y. 10016.

ROYALMETAL®

PRISMATIC LIGHTIN

the design tool you can't afford to overlook





Holophane frameless Controlens

lighting you specify must be rolled—it must deliver the quality of light in the *right* unts in the *right* places. Here some facts you should know ut one of the most advanced s for proper light control developed: the Holophane matic CONTROLENS®.

Shaping light for design

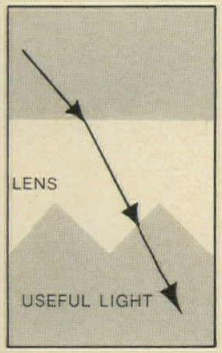
Holophane Controlens, unlike a using panel, louver or frosted globe, signed to deliver shaped and con- ed illumination—illumination that enhances color, texture and spa- relationships.

w the Controlens controls light

surface of a Controlens is made of thousands of tiny prisms. Each hese prisms is carefully engineered ontrol the direction of light. Work- together, they reduce direct and ected glare, obscure bright lamp ge, and assure even and efficient ribution.

How the Controlens reduces direct glare

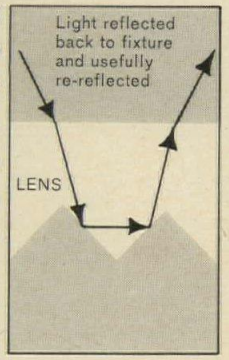
ect glare—caused by improperly gled light rays striking the eye directly from a luminaire—is uncomfortable and distracting. The Controlens redirects these rays downward into the zone of vision where glare is at a minimum. It transforms harsh, unpleasant light into comfortable, useable illumination.



How the Controlens reduces reflected glare, keeps lens brightness low and uniform

Reflected glare masks color, texture and detail. It is caused by light striking the eye after bouncing off a reflective surface, and is intensified by brightness, hot spots and streaks on the enclosure.

The Controlens reduces reflected glare by directing some light back into the luminaire for another pass at the lens. This causes the Controlens to become uniformly suffused with light. The result is low and uniform lens brightness and a significant reduction in reflected glare.



How the Controlens assures even distribution

Uniform distribution of light is an important factor in good design. The Controlens, unlike ordinary enclosures, directs considerable light *away* from the luminaire, assuring uniform distribution over the entire lighted area.

How the Controlens increases efficiency

You design an environment for people and the things people do. The Controlens puts light *where it is needed*—no light is wasted. The Controlens, in fact, delivers 25% to 40% more *useful* light than an ordinary diffuser, and 10% to 20% more than a typical louver.

How to specify the Controlens

The Holophane Controlens comes in a broad range of sizes, shapes and styles—in both plastic and glass—to satisfy all your requirements for fluorescent and incandescent lighting. Holophane manufactures the Controlens for more than *50* leading fixture manufacturers. You can specify a Controlens for practically any make or model of luminaire.

Write for Holophane's illustrated, 64-page Controlens catalog. It contains specifications and full data on the widest and most versatile line of prismatic lenses available. The booklet is free to designers, and there is no obligation.

HOLOPHANE

Holophane Company, Inc. H-9
1120 Avenue of the Americas
New York, N.Y. 10036

Please send me the 1967 Controlens Booklet.

Name_____

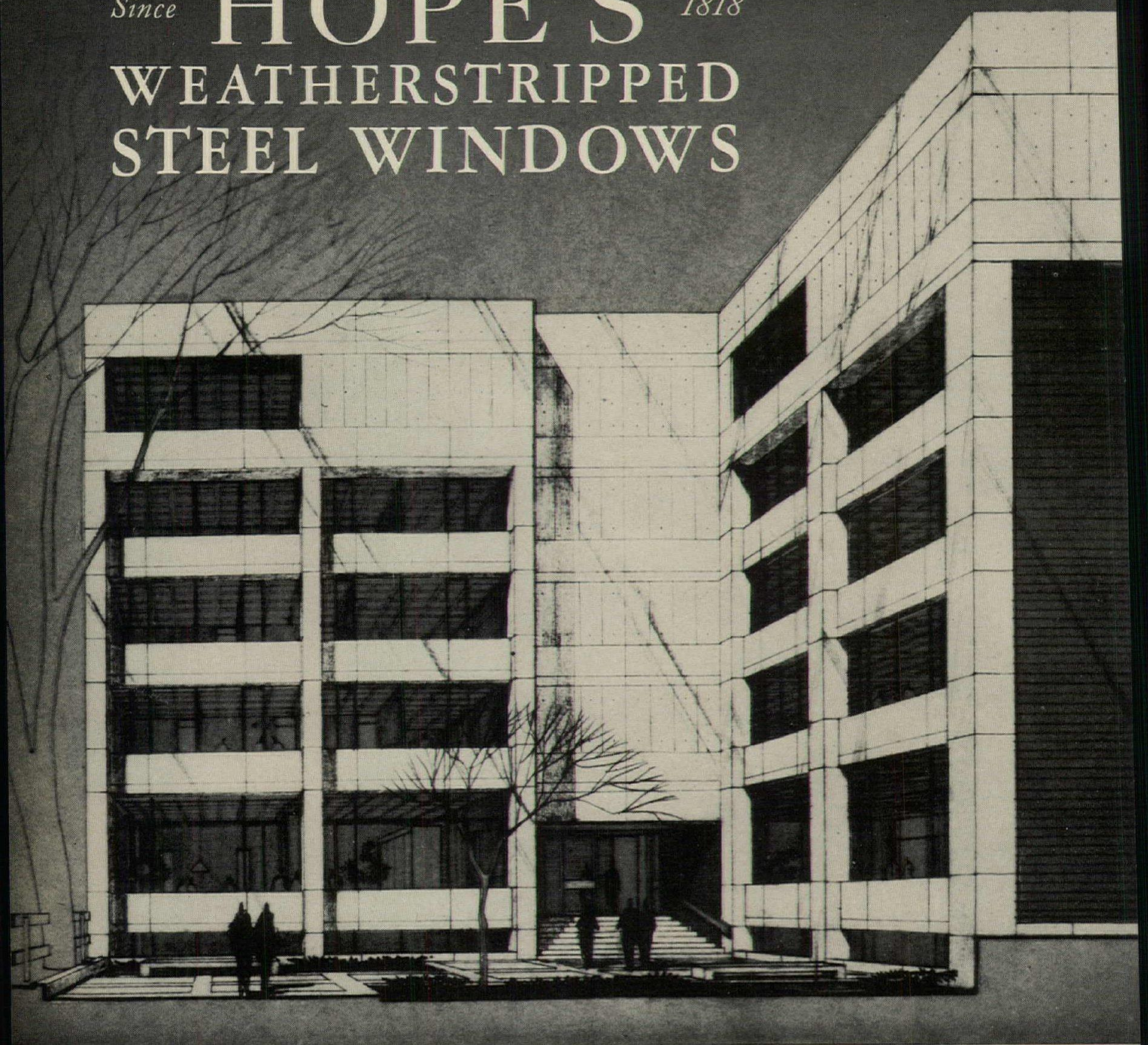
Firm_____

Street_____

City_____ State_____ Zip_____

Since HOPE'S *1818*

WEATHERSTRIPPED STEEL WINDOWS



THE ARCHITECTS COLLABORATIVE OFFICE BUILDING • CAMBRIDGE, MASSACHUSETT

Architects: The Architects Collaborative, Inc.
Mechanical Engineers: Reardon & Turner, Bosto

Structural Engineers: Souza & True, Cambridge
Electrical Engineers: Norman Associates, Canto

General Contractor: George A. Fuller Company, Inc.

Architects designing structures for their own use have complete freedom of choice. The makers of Hope's Windo were honored therefore to have Hope's Weatherstripped Steel Windows selected as one of the components in Th Architects Collaborative office building.

Our catalogs are filed in Sweet's Architectural File and our sales offices and representatives are located in principal cities.

MEMBER STEEL WINDOW INSTITUTE

HOPE'S WINDOWS, INC. *Jamestown, N.Y*

HOPE'S WINDOWS ARE MADE IN AMERICA BY AMERICAN WORKME

SEAMLESS FLOORING By Sonneborn

ong Lasting · Manufacturer Installed · Economical
ssured Quality · Minimum Maintenance · Non-Slip

Sonneborn · DeSoto
Sonneborn Building Products, Inc. Subsidiary of De Soto, Inc.
1700 South Mt. Prospect Road, Des Plaines, Illinois 60018 • Telephone 312 296-6611

low maintenance

beautiful

Why your clients will be impressed when you specify

SEAMLESS FLOORING by SONNEBORN

A. Easy to maintain—Less maintenance than any other type of flooring you can specify . . . lower maintenance costs.

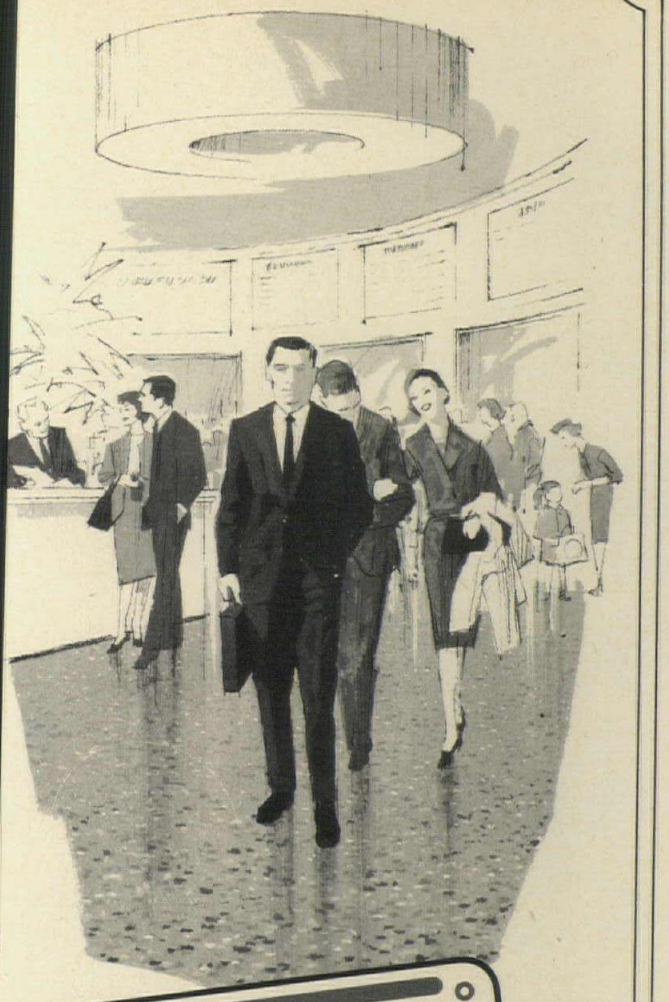
Because it's seamless, Sonneborn flooring gives your client unbroken, easy-to-keep-up beauty. No seams to trap dirt.

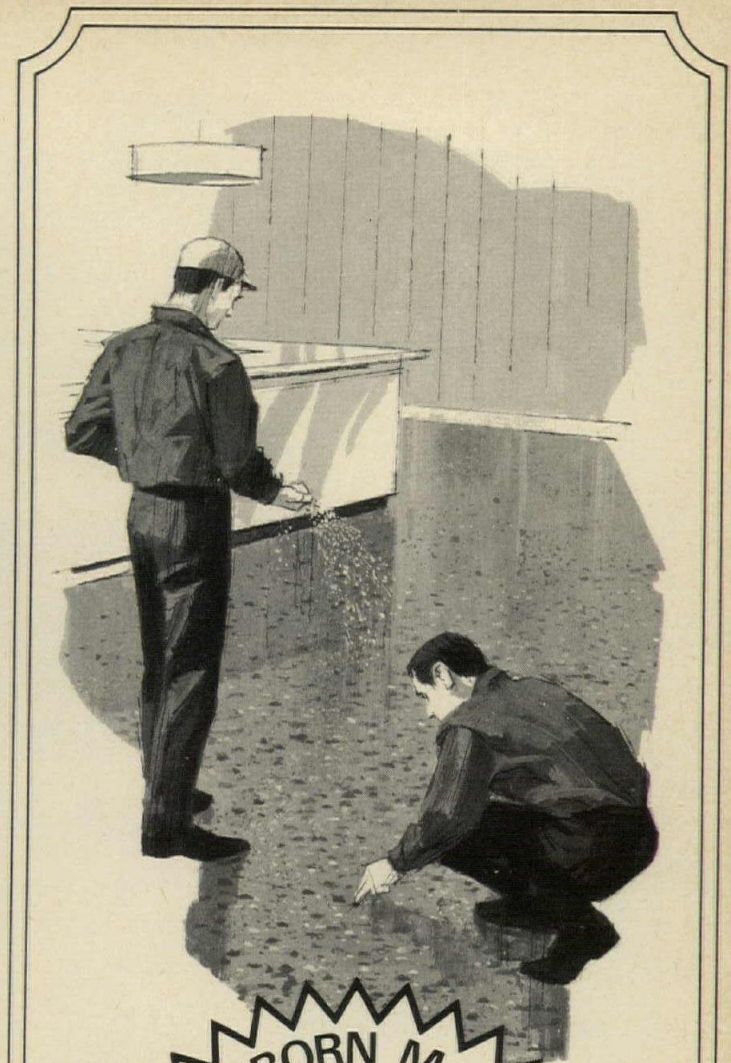
There's no problem keeping Sonneborn Seamless Flooring shining clean. Sweeping or clear water rinsing will restore the floor after even the heaviest daily traffic, with occasional cleaning or brightening.

B. Easy to use—Sonneborn Seamless Flooring has such overall versatility that you can design with effective beauty any decor.

With a range of 22 basic colors that can be mixed in proportion and accented with colored or metallic highlig you can design a floor that's compatible with any decor.

C. Easy to live with—The finished floor takes heavy traffi stride—even stiletto heels—no bothersome permanent dentations as with other resilient flooring. If floors are a dentally gouged or damaged, repairs are easily made.





PRACTICAL

SONNEBORN MAKES IT · IT · SONNEBORN INSTALLS IT
YOUR ASSURANCE OF QUALITY

mless Flooring's elasticity gives cushion-comfort under-. Acoustical effect muffles and reduces noise. The inherent ience plus pleasing texture promotes firm footing and slip stance. Its thermal insulating quality is another aid to comfort.

Manufactured and installed by Sonneborn—From raw erials to manufacture to final installation, Sonneborn con- the entire Seamless Flooring operation. We take full re- nsibility for the installed job. All Seamless Flooring work nder complete supervision of our full-time staff of spe- y trained Sonneborn Technicians. This is your single rce of undivided responsibility.

o make it completely clear on our responsibility, you have writing as to where we stand concerning the final flooring installation. It's all spelled out with no problems of "who's responsible for what." Sonneborn takes responsibility for the complete job—*installed.*

E. Easy to get—Sonneborn Seamless Flooring can be applied at a cost competitive with any other fine flooring . . . your clients' best long term value.

For a free illustrated brochure in full color on Sonneborn Seamless Flooring plus more information on our "single point of responsibility" contract, write today.

Sonneborn · DeSoto

Sonneborn Building Products, Inc. Subsidiary of DeSoto, Inc.
1700 S. Mt. Prospect Rd., Des Plaines, Ill. 60018. Phone (312) 296-6611

continued from page 56

prove design capability. This observation brings me to my final point, and my main point. As these issues are complex and interrelated, they will escape discussion by the layman, and often defy discussions by the experts. Nonetheless, the computer experts are far deeper into understanding the mysteries of the design process than it is comfortable for architects to admit. They sense and/or understand the complex issues in design, and for the most part this understanding is accompanied by sensitivity toward the purpose of design and the creative aspects thereof. As a result, they are not afraid to raise issues, to cast systematic doubt upon themselves, or to have open, frank, and often vehement discussions. I think there is an implicit understanding that in what they do, they are shaping the future of the profession, and they take this responsibility seriously. But such events often, upon outward appearances, give the impression that no one knows what is going on; that "murky waters" are explored at the expense of "well-defined and easily managed problems"; that "cultural anthropology" is s tuted for "decision theory that make of computers"; and that the peopl "for all the world like a group of a tects arguing modular standards."

That is not to say that some c sion does not exist, nor that the ahead is clear, but that, of course, the point of inquiry in the confer The article is content to glibly poi the difficulties and shortcomings of an inquiry, while dealing shortsigh and with occasional misinformation cerning the issues involved. That tolerate as the possible consequen the layman-expert issue. However, the *serious inquiry* of a layman (how unfortunate the fact that the inquiry stated as a conclusion) is dismissed a perfunctory "alas", then I am mov anger.

That man, after all, *is* the issue is the point of concern and inquiry: he is, what he does, how he does it, he can be helped or perhaps ever placed, as some would have it. H more important than "whether the capacity of a machine is used." He serves attention; he deserves explana over and over and over and over a until he is willing to try the machine which point he will begin to underst and can help to resolve the issues have raised. He cannot be bul frightened, or alassed into this. But need him.

I do not know how to solve layman-expert issue, but my good architect-type intuition (non-comp type) tells me that I would gladly t 60 minutes of conversation with that for a thousand articles of this kind.

Gary K. Stoneb
Kensington, Md

Anyone who has the temerity to try ing as an intermediary between archit and computer experts must stand re to be clonked on the head by both ties; and I would gladly alienate wh conventions of architects and compu technologists, if by doing so I could them to talk meaningfully to each ot

The difficulty is that we are dea with two different kinds of expert, e of whom assumes the other is a laym

The architect, secure in the kno edge that his is the most complex sophisticated of the design disciplin considers the computer a gadget, s able for processing the payroll and do a little cost estimating now and th The possibility that the computer mi be of real use in the design process it strikes him as highly unlikely.

The computer technologist, sec

more letters on page

Trenton Channel Power Plant, The Detroit Edison Company, Detroit, Michigan

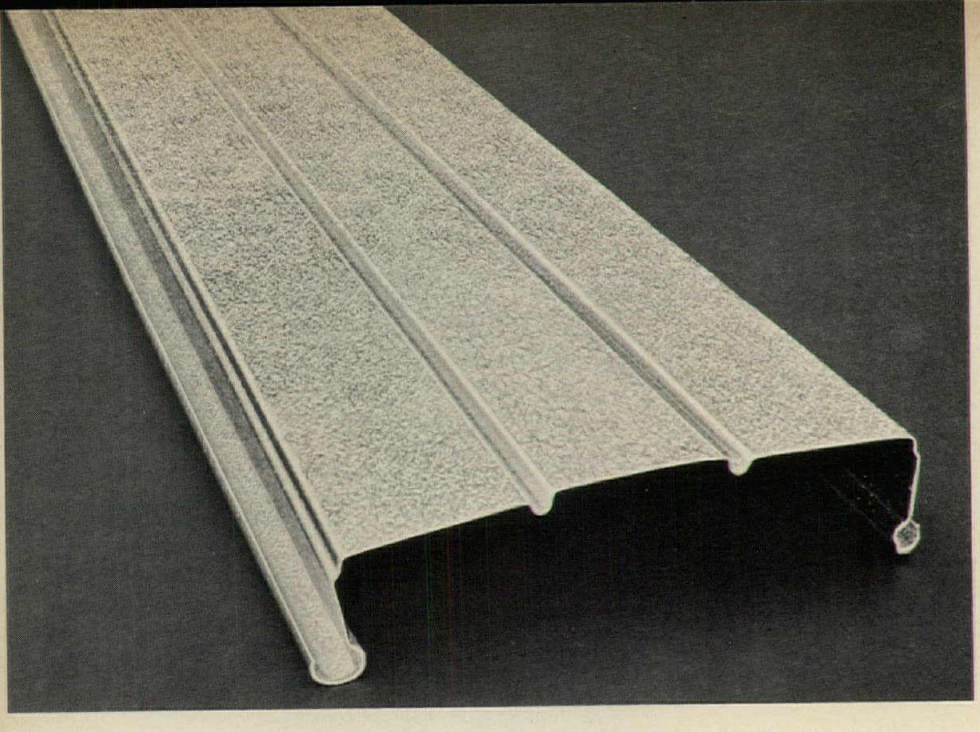
FLUROPON® By De Soto

The Long-Life Architectural Metal Finish...provides beauty with all the unique advantages of fluorocarbon coatings.

FLUROPON—a colorful new design tool from

De Soto Chemical Coatings, Inc.
1700 S. Mt. Prospect Road, Des Plaines, Illinois 60018

For more data, circle 41 on inquiry card



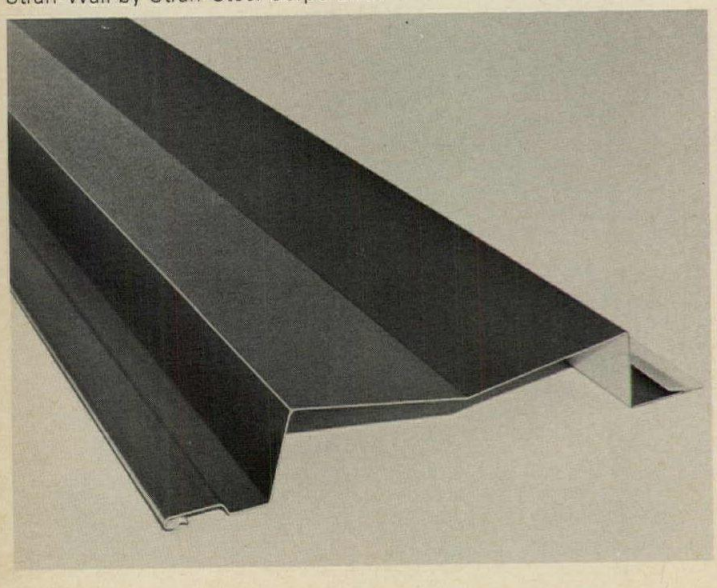
Zip-Rib by Kaiser Aluminum & Chemical Sales, Inc.

Now it's FLUROPON-

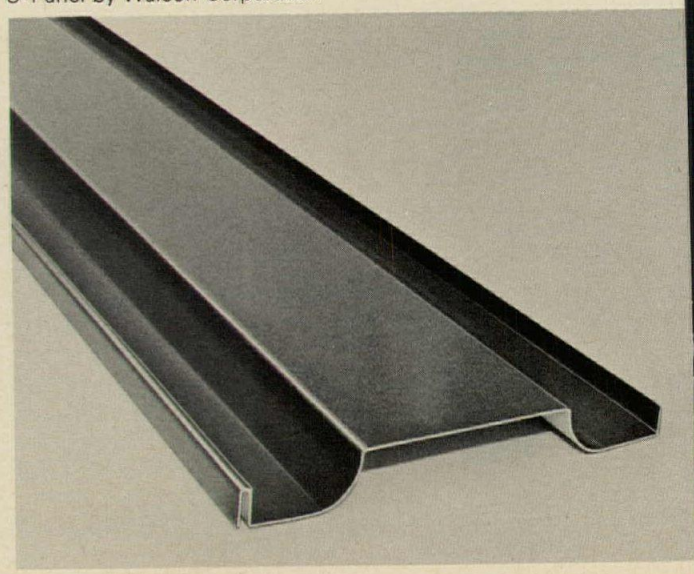
SPECIFICATION: All exposed exterior metal (aluminum and/or HDG steel)—including panels, spandrels, columns, supports, mullions, leaders, facias, copings, louvers, battens, screens, flashing, jambs, sills, fenestration and hardware as applicable and as detailed—shall be chemically cleaned, pre-treated (primed in the case of HDG steel) and coated with Fluropon as manufactured by DeSoto Chemical Coatings, Inc. Fluropon must be applied by an experienced processor in accordance with Fluropon fusion process instructions printed by the manufacturer. Colors as selected by the architect.(Longform specification available on request).

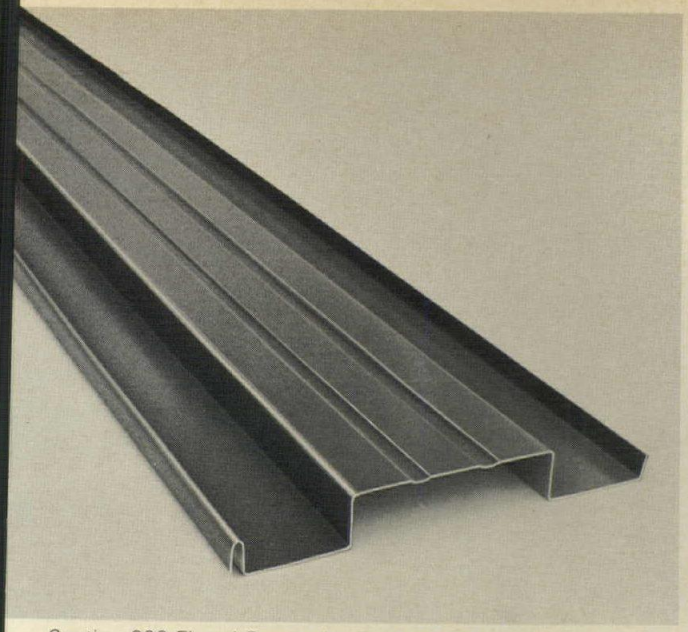
FLUROPON is the newly developed fluorocarbon polymeric coating which fuses to metal to form a highly protective and decorative finish with unequalled durability. The exceptional characteristics of Fluropon assure lasting appeal and long range economies. Available in 24 standard colors. Fluropon coated aluminum or hot dipped galvanized steel panels, louvers and window wall components are commercially available from processors listed on opposite page. Consult them or write direct for any technical information.

Stran-Wall by Stran-Steel Corporation

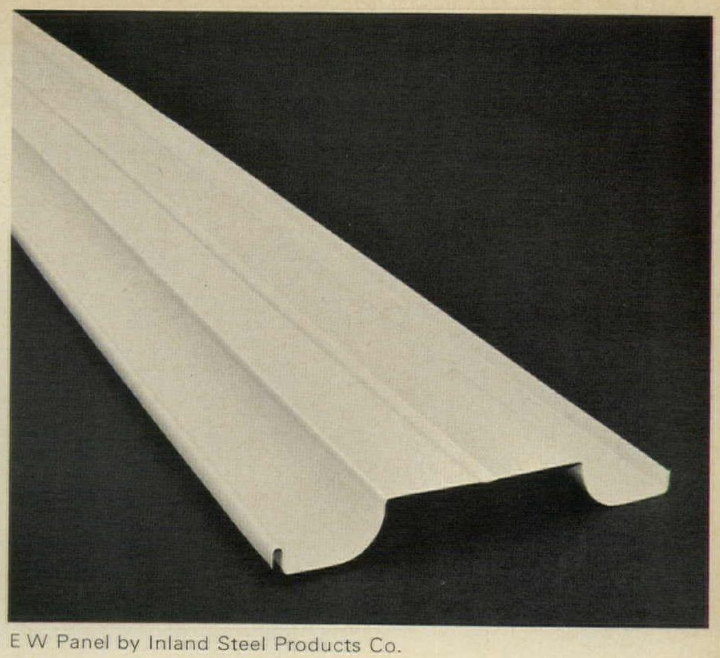


S-Panel by Walcon Corporation





Section 300 Fluted Pattern by The R. C. Mahon Co.



E W Panel by Inland Steel Products Co.

—by a distinguished list of Processors

BUILDINGS & BUILDING PANELS

Aluminum Company of America
Alply Products Division
1501 Alcoa Building
Pittsburgh, Pennsylvania 15219

Aluminum Company of Canada, Limited
P. O. Box 6090, Montreal 3, Quebec, Canada

The Binkley Company
Building Products Division
P. O. Box 70, Warrenton, Missouri

Inland Steel Products Co.
P. O. Box 393, Milwaukee, Wisconsin 53201

Kaiser Aluminum & Chemical Sales, Inc.
300 Lakeside Drive, Oakland, California

The R. C. Mahon Co.
Building Products Division
6565 East Eight Mile Road, Warren, Michigan 48091

Pasco Steel
1301 Lexington Avenue, Pomona, California 91766

Plasteel Products Corporation
McAdams Avenue, Washington, Pennsylvania

Rheem Dudley Buildings
A Division of Rheem Manufacturing Co.
14001 South Garfield Avenue, Paramount, California

H. H. Robertson Company
Architectural Products Division
Pittsburgh, Pennsylvania

Elwin G. Smith & Company, Inc.
100 Walls Street, Pittsburgh, Pennsylvania 15202

Soulé Steel Company
1750 Army Street, San Francisco, California 94119

Stran-Steel Corporation
P. O. Box 14205, Houston, Texas 77021

Walcon Corporation
4375 2nd Street, Ecorse 29, Detroit, Michigan

George D. Widman, Inc.
17823 Evelyn Avenue, Gardena, California 90247

WINDOWS, LOUVERS AND ACCESSORIES

The William Bayley Company
1200 Warder Street, Springfield, Ohio

Blomberg Building Materials
1453 Blair Avenue, Sacramento, California

Construction Specialties
55 Winans Avenue, Cranford, New Jersey
725 Twin Oaks Valley Road, San Marcos, California
895 Thermal Road, Port Credit, Toronto, Canada

O. O. McKinley Company, Inc.
P. O. Box 55265, Indianapolis, Indiana 46205

Metal Trim, Inc.
Box 632, Jackson, Mississippi

Porce-Len Incorporated
31 Haig Street, Hamden, Connecticut 06514

CONTACT YOUR FLUROPON REPRESENTATIVE AT DESOTO CHEMICAL COATINGS, INC., OFFICES:

8600 River Road, Pennsauken, New Jersey 08110
Area Code: 609-665-6700

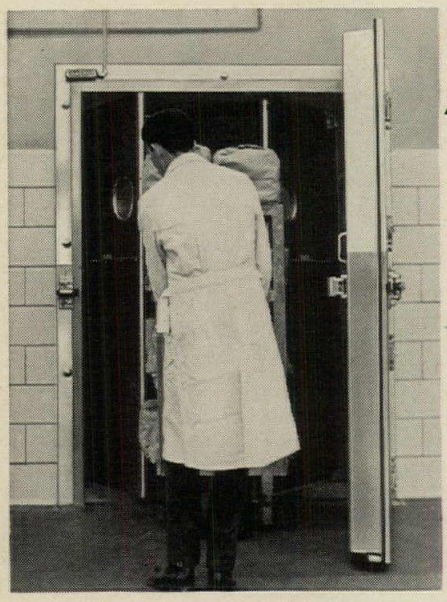
1034 S. Kostner Avenue, Chicago, Illinois 60624
Area Code: 312-632-3700

Fourth & Cedar Streets, Berkeley, California 94710
Area Code: 415-526-1525

DeSoto Chemical Coatings, Inc.
1700 S. Mt. Prospect Road, Des Plaines, Illinois 60018

For more data, circle 41 on inquiry card

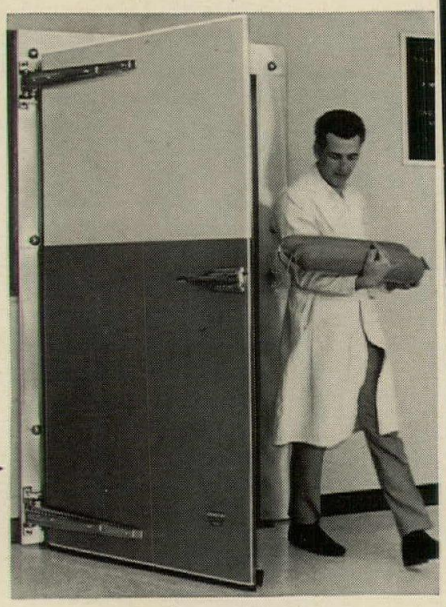
New food products plant selects JAMOTUF plastic doors for heavy duty service



▲ JAMOTUF® freezer door installed in extra wide doorway for passage of hand trucks. Door is equipped with Frostop® heater cables to prevent icing of gasket contact areas. 16 gauge stainless steel "kick plate" protects door against impact and abuse.

◀ Jamison Auto-Close doors used with JAMOTUF freezer door form vestibule unit which minimizes loss of cold air from freezer room.

JAMOTUF cooler door is lightweight ▶ for easy operation. Rugged construction withstands rough usage. Stainless steel "kick plate" affords added protection, easier cleaning and improved appearance.



Jamison JAMOTUF plastic doors are tough, heavy duty doors designed for service in high production operations, such as food production and distribution. JAMOTUF is a lightweight door but made to resist abuse and hard service.

Call your nearby Jamison office for help with selection or specifications, or write for latest catalog data to Jamison Door Company, Box 70, Hagerstown, Md. 21740.

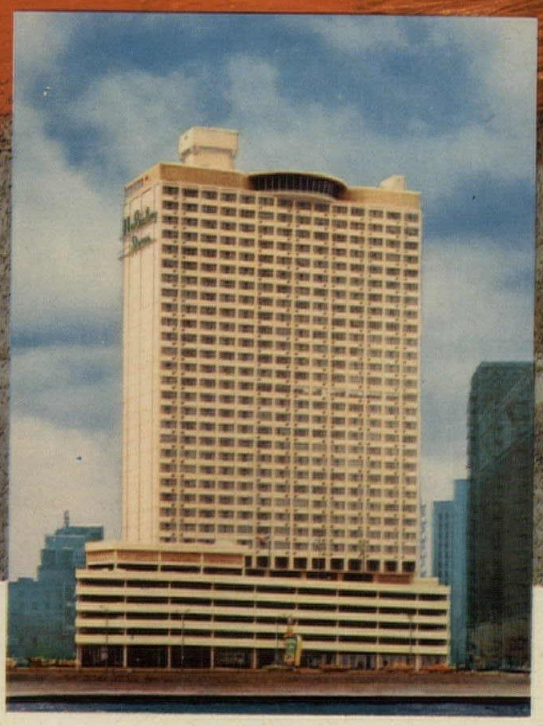
COLD STORAGE DOORS BY

JAMISON

JAMISON DOOR COMPANY • HAGERSTOWN, MD.

For more data, circle 42 on inquiry card

With the first stroke COLORCOAT adds beauty, color, protection



Holiday Inn, 644 North Lake Shore Drive, Chicago, Illinois • Holiday Inns of America, Owners • William Bond & Associates, Architects • Arthur Painting Co., Painting Contractor.

COLORCOAT® By Sonneborn

Hydrocide Colorcoat and Super Colorcoat protect and waterproof masonry...give it a decorative flair...keep it looking that way for years.

Sonneborn
Building Products, Inc.
subsidiary of **De Soto** Chemical Coatings, Inc.
1700 S. Mt. Prospect Road • Des Plaines, Illinois 60018

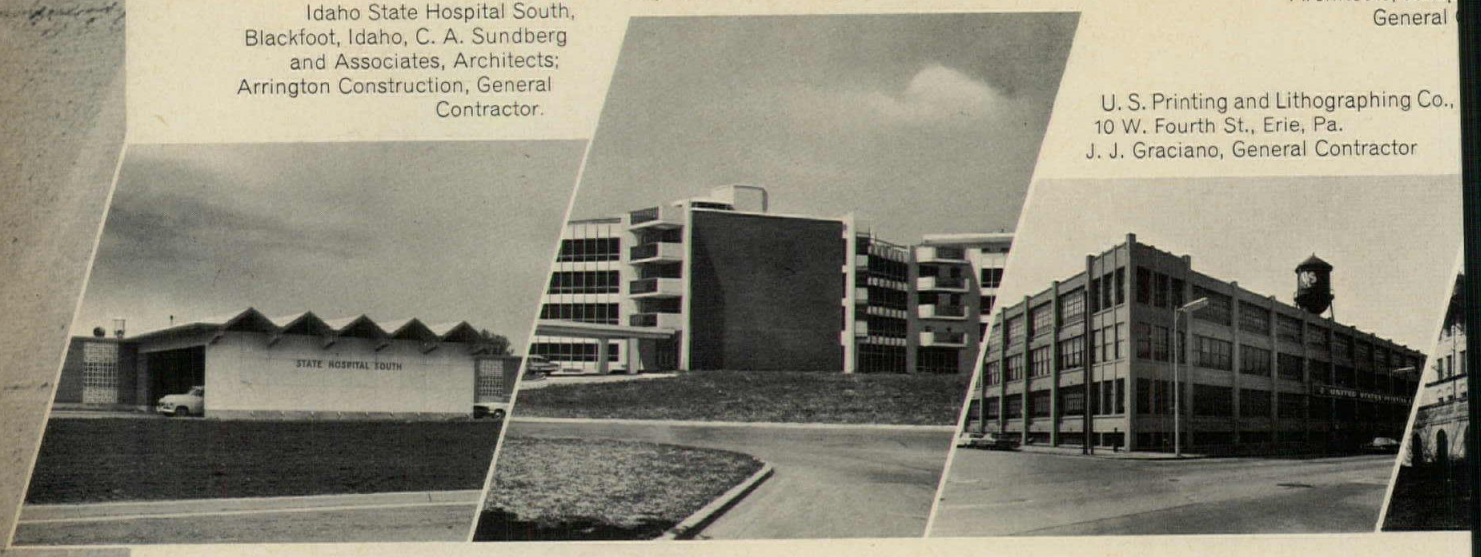
For more data, circle 43 on inquiry card

Idaho State Hospital South, Blackfoot, Idaho, C. A. Sundberg and Associates, Architects; Arrington Construction, General Contractor.

Westminster Manor Apartments, 1400 Jackson Blvd., Austin, Texas. Eugene Wukash, Architect; George A. Fuller Co., General Contractor; Clay Newton, Painting Contractor.

Montclair State Tea
Chapin Hall Buildi
New Jersey, Guilbe
Architects; Josep
General

U. S. Printing and Lithographing Co., 10 W. Fourth St., Erie, Pa. J. J. Graciano, General Contractor



colorcoat,

gives you these benefits!

The building owner or architect who specifies and uses Hydrocide Colorcoat o Super Colorcoat has a lot going for him. Take a look below, and you'll find som of the reasons why Colorcoat has been used for more than 17 years.

Rugged and Water Resistant—Colorcoat shields masonry from even th toughest weather. No flaking or peeling. Mildew and fungus resistant. Bridge hairline cracks, fills pores—cuts costly early repairs. Gives maximum abov grade water-proofing—yet masonry is permitted to breathe. Vapor transmissio rate: 3.5 grams per 100 square inches per 24 hours.

Economical—One coat covers most masonry surfaces. New color stabilizing agent absorbs Ultra Violet rays—keeps "sun-fading" to a minimum. You ge long lasting color retention.

Ease of Handling—Apply with brush, roller or spray. Dries fast. Easy clean-up Comes in handy 5 gallon pails.

Versatile—Use Colorcoat on concrete, stucco, block or brick. Fine for renovating older masonry. Imparts the look of new, precast, colored masonry units. You choice of 27 decorator colors (including white).

For more detailed information call or write Sonneborn.

For more data, circle 43 on inquiry card

colorcoat and super colorcoat

brought long-lasting beauty to these buildings!

Wherever you travel, there are always one or two buildings that catch the eye. Buildings that maintain a look of ageless, permanent beauty—year after year. Most likely many of the ones you've admired are listed here. These are but a few of the thousands of buildings that have been beautified and protected with Colorcoat or Super Colorcoat. The one coat beauty of Colorcoat stays beautiful.

CALIFORNIA
General Tire & Rubber Co.
CONNECTICUT
General Dynamics Corp.
DELAWARE
DuPont
FLORIDA
Ringling Brothers Barnum & Bailey
State of Florida Buildings
GEORGIA
American Telephone & Telegraph
MARYLAND
General Electric
MASSACHUSETTS
Harvard University
Monsanto Chemical Co.
MICHIGAN
General Motors Co.
Ford Motor Co.
Fisher Body Corp.
U.S. Army Reserve
MISSOURI
Lindell Terrace Apartments
St. Louis Sports Stadium
NEW JERSEY
Best & Company
Montclaire State Teachers College
NEW YORK
National Biscuit Co.
Grumman Aircraft
I.B.M.
Scott Paper Co.
J. F. Kennedy Airport
CBS-TV Center
Niagara-Mohawk Power Corp.
Western Electric
Mohawk Airlines
American Machine & Foundry
Bayer Aspirin
Sun Oil Co.
N. CAROLINA
Southern Bell Telephone
Burlington Mills
OHIO
Standard Oil of Ohio
General Mills
Goodyear Tire & Rubber Co.
National Distillers
PENNSYLVANIA
American Tobacco Co.
Westinghouse Electric
American Cyanamid
S. CAROLINA
Chemstrand
U.S. Rubber Co.
TENNESSEE
Kraft Foods
Holiday Inns
TEXAS
U.S. Post Offices
VIRGINIA
Brown & Williamson Tobacco Co.
Chesapeake & Ohio Railroad
WASHINGTON, D.C.
U.S. Post Office

GUARANTEE CERTIFICATE

HYDROCIDE COLORCOAT AND HYDROCIDE SUPER COLORCOAT

Date . . . . . No. . . . . Date of Application . . . . . .

Owner . . . . . .

Owner's Address . . . . . .

Building . . . . . .Gallons Used . . . . . .

. . . . . .Description of Areas Treated . . . . . .

This is to certify that the guarantee set forth below was issued on the date written above.

SONNEBORN BUILDING PRODUCTS, INC.

By . . . . . .

Sonneborn Building Products, Inc. ("Sonneborn") hereby guarantees that, subject to the provisions hereof, Hydrocide Colorcoat and Hydrocide Super Colorcoat ("Coatings") will prevent seepage and leakage in any area of sound above-grade masonry or concrete to which such Coatings have been applied in a good and workmanlike manner and in accordance with Sonneborn's written instructions. If, during the five-year period next following the Date of Application, any such seepage or leakage occurs, in any area to which the Coatings have been so applied, Sonneborn will, at its expense, re-coat such affected areas so that they are free from seepage or leakage, but only if Sonneborn is notified in writing of such seepage or leakage within thirty days after it occurs and is afforded opportunities to inspect any such areas at such times as Sonneborn may reasonably request.

This guarantee does not apply, and Sonneborn makes no guarantee or warranty and disclaims all liability, where any seepage or leakage results from structural cracks or defects, or from faulty construction, design, or materials (other than the Coatings), misuse of the structure, settlement or expansion of the structure, accident, fire or other casualty, or other external physical damage.

Except as provided herein, SONNEBORN MAKES NO GUARANTEE OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS OR MERCHANTABILITY, WITH RESPECT TO THE COATINGS and Sonneborn shall have no other liability with respect thereto, including, without limitation, any liability for indirect, consequential or resultant damages, whether due to breach of warranty or negligence.

This guarantee supersedes any other warranties, guarantees or representations, written or oral, heretofore made with respect to the Coatings.

SONNEBORN BUILDING PRODUCTS, INC.

By S. U. Greenberg
S. U. Greenberg - President

LITHO IN U.S.A.

© GUAR 643-3/3

colorcoat and super colorcoat five year guarantee

Sonneborn
Building Products, Inc.
subsidiary of **De Soto** Chemical Coatings, Inc.

continued from page 64

in his knowledge of higher mathematics, considers it a pity that architects don't grasp design problems at the conceptual level. He doesn't think architects should take part in the development of computer design techniques until all the basic assumptions are established.

The consequences of this expert-expert confrontation are likely to be very serious, until and unless each side is ready to acknowledge that it is able to learn from the other.

The architect is likely to delay learning about computer technology until the time when the universal acceptance of which Mr. Stonebraker speaks causes a painful dislocation of the entire profession and invalidates the education of a generation of architectural students.

The technologist, on the other hand, will be tempted to try his hand at design problems that are beyond his training and experience. Systems engineers are already designing new towns, and computer techniques are producing housing unit plans. Such is the mystique surrounding today's technology that some of these projects are likely to be built before anyone evaluates their limitations.

At the risk of becoming non grata *at all future technological conferences, I would assert that you cannot have a complete discussion of computer-aided building design without hearing from experienced practitioners of conventional building design. Such practitioners don't need to have it pointed out that the subjects dealt with at such a conference are "complexly interrelated," and are but aspects of the larger problem: "how to augment and improve design capability." That, surely, goes without saying, particularly in a periodical written for design professionals.*

At the same time, it seems rather silly for the architect to insist upon having everything explained—and I quote Mr. Stonebraker—"over and over and over and over again until he is willing to try the machine." The architect ought to be willing to do a little research and reading on his own.

A two-page report on a single conference can hardly serve as an introduction to the entire subject of computer-aided building design; but I was careful to include a reference to Design Quarterly 66/67, which is a useful introduction; and some of my earlier articles in the RECORD have contained bibliographical references that would help the reader to begin his own research.

Jonathan Barnett
New York City Planning Department

more letters on page 78

Blend one with your next idea

Only Haws has precast stone drinking fountains—in five colors to match your ideas. Ask your Haws representative to show you a color sample kit and specifications today, or write: Haws Drinking Faucet Company, 1441 Fourth Street, Berkeley, California 94710

Model 90-C at right, 50-C below, available in all five colors. Ask about Haws remote chillers for hidden cold-water source.

Laurel Green

HAWS®

DRINKING FOUNTAINS

drinking fountains and faucets, emergency decontamination units and water coolers

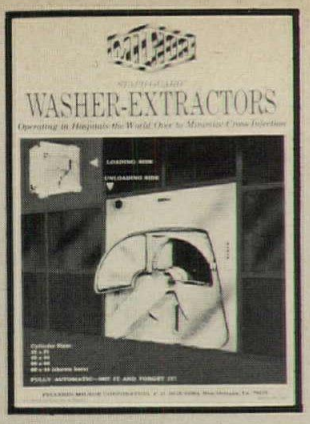
Smoke Onyx

Silvertone Gray

Terra Cotta Beige

Antique White

For more data, circle 46 on inquiry card



Planning a hospital?

Send for New MILNOR booklet on safe hospital laundry systems

Latest information on system for avoiding cross-infection in hospital laundries. Prepared by America's leading manufacturer of commercial washer-extractors. Outlines essential features of double-door pass-through design, shows STAPH-GUARD® laundry system, lists specifications. For your free copy, write **PELLERIN MILNOR CORPORATION, P. O. BOX 19264, NEW ORLEANS, LA. 70119.**

ENGINEERING EXCELLENCE IN LAUNDRY EQUIPMENT

MILNOR®

For more data, circle 38 on inquiry card

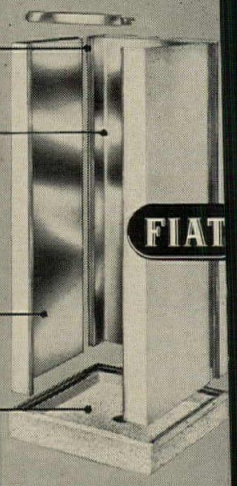
ALL-NEW COMMANDER SHOWER DESIGNED FOR DORMITORY, CLUB, INDUSTRY AND INSTITUTION

DOUBLE BARRIER SEAMS of anodized aluminum are permanently leakproof, smooth inside and out. Preassembled and pre-caulked.

COVE CORNER INTERIOR is sanitary, easy to clean. Four corners have 1" radii . . . no grime gathering corner joints.

***Wonderwall* SANDWICH PANEL** bonds 1" of polystyrene between rustproofed metal to form sound-deadened wall that withstands heavy use.

DEEP TERRAZZO FLOOR is leakproof, sanitary and foot-gripping. High shoulders keep wall joints well above water line.



Three factory fabricate panels, plus headrail, cor plete the cabinet. Cu installed cost. Combine with Dressing Enclosure singly or in battery.

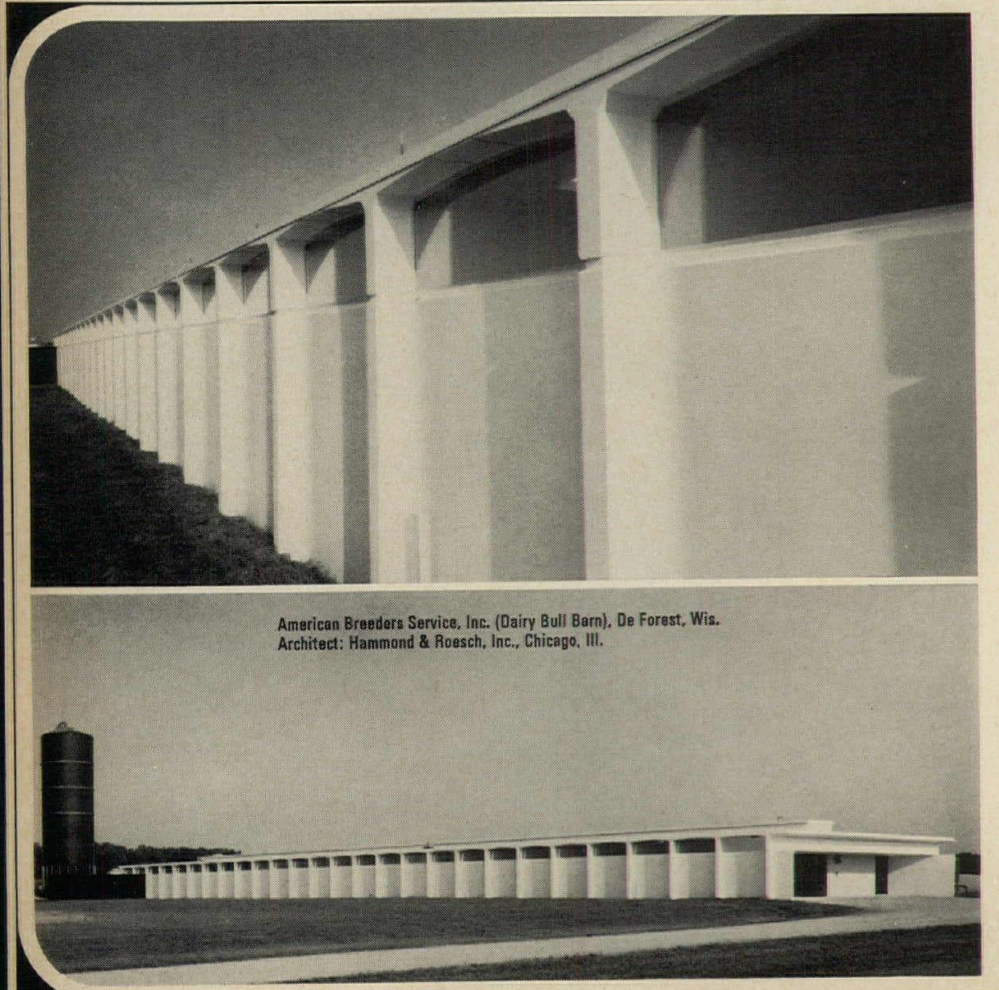
See Sweet's 26c Fi or write for literature.

FIAT PRODUCTS DEPARTMEN

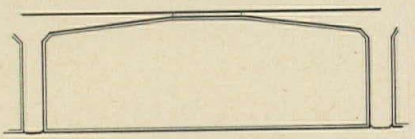
CYANAMID

MICHAEL COURT, PLAINVIEW, L. I., NEW YORK 11803

For more data, circle 179 on inquiry card



American Breeders Service, Inc. (Dairy Bull Barn), De Forest, Wis.
Architect: Hammond & Roesch, Inc., Chicago, Ill.



Octagonal Therm-O-Proof insulating glass units allow design flexibility in Dairy Bull Barn.

Fifty octagonal Therm-O-Proof units were custom fab cated to fit the unusual 8-sided openings formed by pr cast concrete T-beams.

Therm-O-Proof units were used in this Dairy Bull Ba to reduce inside condensation on windows caused high relative humidity, and to permit the controlle temperatures necessary for proper handling of th animals.

This is another way Therm-O-Proof insulating glass made more ways to fit more ideas—over 200 configura tions and combinations are available.

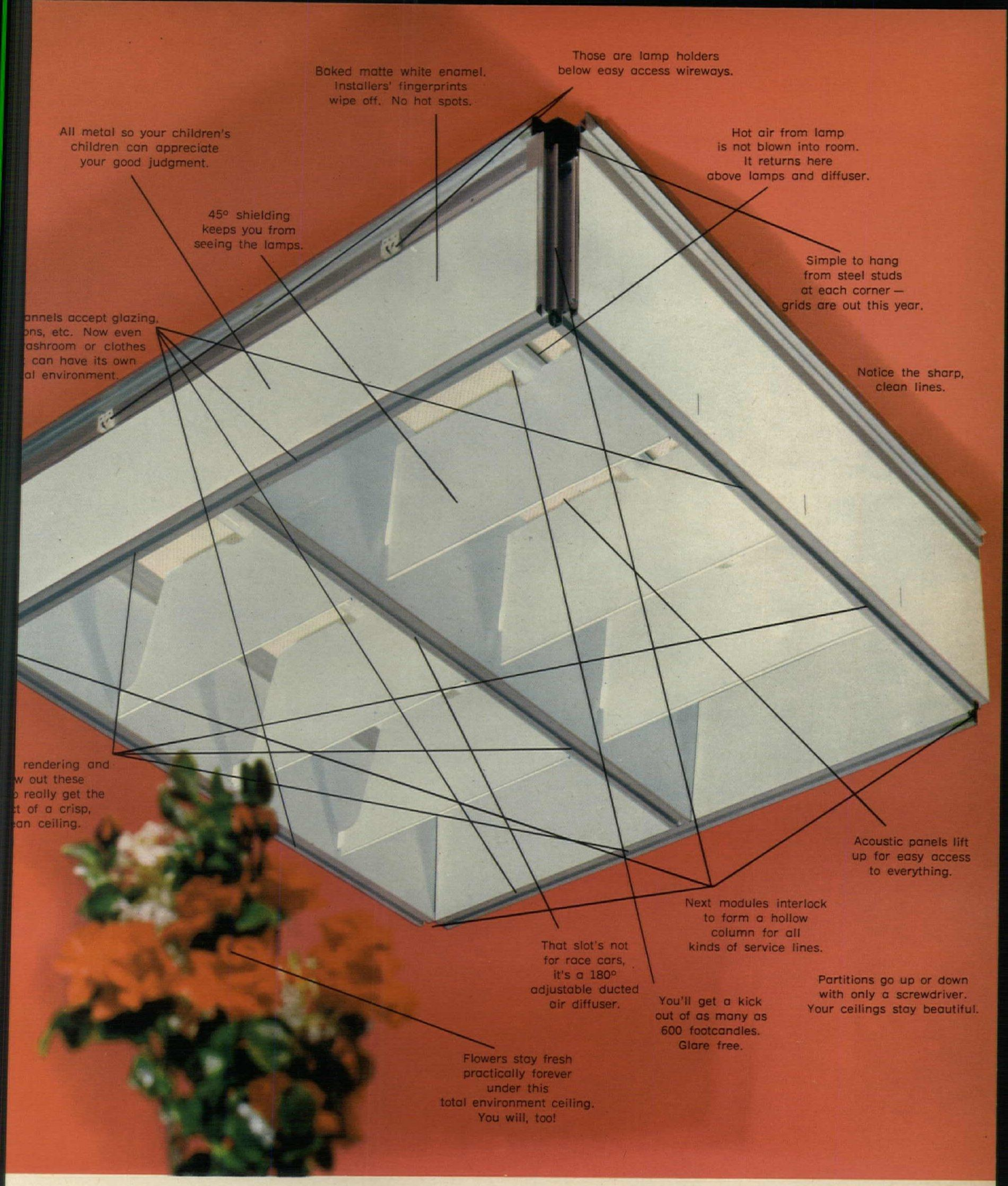
Therm-O-Proof INSULATING GLASS

10 YEAR WARRANTY

4a
See Sweets Th
Thermoproof Glass Company
Subsidiary of Shatterproof Glass Cor
4815 Cabot Avenue
Detroit, Michigan 48210

For more data, circle 47 on inquiry card

For more data, circle 48 on inqu



This is Quartette: a total environment ceiling that does everything. Provides natural light up to 600 footcandles. Soaks up sound. Quietly distributes, circulates and returns air. And supports all partitions. In sizes to fit your ceiling. It takes a comprehensive portfolio to describe all its years-ahead capabilities, so send for yours. It's a beauty.

Luminous Ceilings Inc.

3701 North Ravenswood Avenue, Chicago, Illinois 60613, Telephone 312-935-8900

Innovators of Leaf Lite. Squiggle. Quartette. The TEC series of Total Environment Ceilings.

For more data, circle 50 on inquiry card

continued from page 72

Redirecting leadership's thinking

Walter Wagner's recent speech at the Koppers Company, Inc. Awards Dinner in Atlanta forced me to re-read the July '66 issue of RECORD. I appreciate your views regarding architects and their social and political community. I have been a member of the City Commission for several years in the small town of Decatur (about 23,000 pop.) and have struggled with the lack of concept of the architect that my fellow commissioners and citizens are afflicted with (or better said 'without'). It will, in my opinion, require great participation on the part of architects throughout the nation to properly redirect public leadership's thinking so that it frames itself in good urban planning techniques, approaches and considerations.

Contact to date with city planners leaves me with the opinion that they have (within the view I have seen) become obsessed with the use of statistics, traffic counts and opinions of politic and monied persons to the exclusion of humanistic considerations, pedestrian values and other views that seem to be only espoused by architects these days, and by them only too faintly.

Such limited experience as mine cannot, however, be a measure of the trends existing nation-wide. Perhaps averaged in, it gives some reasonable touch to the flavor of larger views to which you are privileged. The sometimes dismal feeling that there is no hope, is greatly averted by such well-presented publications as your effort and talent make available to those like me who have no over-all view other than that you so ably provide.

William Breen, Architect
Decatur, Georgia

Convincing savings

We have read your June article entitled "Engineers achieve surprising savings by post-tensioning apartment flat plate slabs" with great interest. The article is very well written and enumerates the advantages of post-tensioning better and more accurately than any other article we have seen to date.

We are involved in the field of post-tensioning in Canada, and have done a number of flat plate apartments with very similar cost results. We have found that in some cases our claims to savings create only abject disbelief with our clients—so much so that in some cases they actually refuse to accept our substantiated figures and suggest they are merely salesman's propaganda.

R. G. Raymant
Titan Prestressing Corporation Ltd.
Calgary, Alberta, Canada

ongress moves slowly on the Federal fee structure

design professions are finding con- smen are hesitant to knock out the trary 6 per cent limit on A/E fees with- replacing the ceiling with something . The General Accounting Office last l suggested to Congress that the 6 cent fee limit bears no relationship he actual work involved on a given ect and should be eliminated, and design professions agreed.

O still urges
tations on professional fees

O feels that competitive negotiations, lving price during the latter stages electing the A/E firm, should become standard operating procedure. Sena- William Proxmire (D.-Wisc.), intro- ing a bill for GAO, selected that hod in his discussion about what his —which merely deletes all mention he 6 per cent fee—would accomplish.

sign professions believe
tract officers should negotiate

e American Institute of Architects, in njunction with the engineering profes- nal societies, is leading the drive to have no statutory limit placed on the design fees. The committee on Federal procurement of A/E services feels that federal contract officers, in negotiating fees, will insure the public against unreasonable fees.

Three policy questions:
ceilings? procedures? inclusions?

The whole fee question, thrown open to political debate by GAO's report, actually involves three major policy questions:

Should there be some kind of a ceiling on fees? GAO feels, as do the design societies, that a fee limit based on a percentage of the total project cost is not related to the designer's effort and therefore is unreasonable. So far, however, no one has come up with a suitable alternative.

What procedure should be followed in hiring A/E services? The current "professional negotiation" process, without any mention of price, draws GAO's ire. This is what the design professions hope to retain. GAO prefers a two-step competitively negotiated procedure, whereby price becomes one factor after the A/E firms are screened down to the final five or six.

What should be included as part of an A/E contract? This is an old issue the design professions have been battling off and on for years. GAO feels all monies paid to an A/E firm—travel, surveying expenses, everything—should be included. The Veterans Administration has recently put this interpretation into its contracting procedures.

McClellan responds
to professionals' pleas

A.I.A. and the engineering societies have urged Senator John McClellan (D.-Ark.), chairman of the Senate government operations committee that will eventually hold hearings on the bills, to introduce a bill on the subject. He has promised to introduce a bill on the problem for the A/E societies.

However, the senator's staff had some questions about the A/E's proposal and has been seeking GAO's advice about how to handle it. As a result, the A/E societies aren't quite sure if they'll support the revised McClellan bill.

aar asks planners for shorter-range plans

D Assistant Secretary Charles Haar is etly trying to persuade planners, ough administration of the 701 plan- g grant program, to come up with e- and two-year objectives as well as e- and ten-year plans.

The vehicle by which this change in phasis will take place hasn't been olved by Haar and his planning lieu- ants. However, the planners' embrace "PPBS"—Planning, Programing, Budg- ng Systems—is expected to be the keystone of the new focus on shorter-range planning.

An academic lawyer knowledgable about land policies, Haar took over the direction of the basic planning function within the Federal Government and began to focus on how to make it effective. For instance, he relates a story of talking with a young planner who was concerned about making sure short-range planning was implemented. "I asked him, finally, 'What do you mean by short-range planning?' And it turned out to be five years." Five years is "a long time in the lives of elected officials,"

ARCHITECTURAL BUSINESS THIS MONTH

Haar noted wryly. "What can a decision-maker do, and what helps him? This is what should be regarded as the main contribution of the planning process."

Haar pleads for relevance and economy of effort

Haar acknowledges that HUD's role is essentially passive in the local planning process. "We're not a reviewing court . . . We may even disagree with the product."

However, he expressed disdain for many planning documents: "The document isn't the key, although it can help. It's certainly not the illustrations and cover, though to judge from where the money goes out of a particular budget, this may be a goal that some have set. They are the handsomest brochures ever put in the library archives."

And he also worries about the ner's constant excuse that more nee be known. "Our problems have rea a point where we can't really afford poning them, talking in terms of for more data, for more information not talking about rushing forth wi clarification. But I mean the attem know down to the last jittle and tot what the particular situation is."

U.S. hospitals to spend $20 billion on facilities by 1977

The nation's hospitals plan to spend $20 billion on new facilities over the next decade—and expect the Federal government to pick up 40 per cent of the tab. That's 70 per cent more than they spent in the previous decade—and at least twice the Federal support Uncle Sam plans.

These are key projections from a survey of more than 500 hospitals conducted by Walter Kidde Constructors, Inc., New York.

The survey also indicated that automation, computers and closed circuit TV figure heavily in hospital planning. A shortage of trained nurses will continue as the number one staffing problem, followed by lack of trained technicians and doctors.

More than 2000 hospitals were polled and 552 responded with facts on their plans, attitudes and major problems. The response represents about 17 per cent of all non-Federal hospitals with 50 beds or more.

Spending to climb 69%

Respondents indicated that in the next decade, they plan to spend 54 per cent more for separate new facilities than in the past 10 years. Expenditures to expand existing facilities will rise 69 per cent. Modernization will run 137 per cent ahead.

Planned expenditures totalled $2.8 billion for the 458 hospitals which provided financing data. This compares with $1.67 billion spent by them in the last ten years.

"At this rate, expenditures in the next 10 years should total $20 billio the 3,300 U.S. hospitals having 50 or more," Charles E. DeAngelis, K vice president, says.

Government funding clearly to the list of expected sources for sup Based on a profile of respondents typical hospital expects to receiv per cent of its capital needs from Fe appropriations, 23 per cent from mercial financing, 22 per cent from ities and 15 per cent from oper income.

"Hospitals are counting on gov ment support to the tune of abou billion a year, yet present appropria amount to less than $500 million a y Mr. DeAngelis says. "Filling this gap make the difference between success failure of our hospital system."

Briefs

More money for the rent supplement low-income housing program is expected now that Senator Everett Dirksen (D.-Ill.) has switched his position in support of it; house Republicans had led the fight to hold back the program.

Action on the "situs picketing" bill is being urged by House Speaker John McCormack. The bill would permit secondary boycotts at construction sites, A.I.A. points out in opposition; the Speaker's maneuver was thought to mean that labor has decided for a showdown vote even though the measure be defeated.

Use of "air rights" over new highways is supported by A.I.A. as one means of providing more in-town space for housing—if health problems can be licked. While the bill pertains only to construction in Washington, D.C., it is regarded as a landmark for eventual national policy.

A bill enacting government-wide policy against "bid-shopping" is again urged by subcontractors. They point to the lack of problems under GSA's recently revised procedures that the legislation would apply to all agencies. A.I.A. opposed the bill as unnecessarily complicating the construction process; congressmen are cool to the idea anyway.

A/E fears about tightened requirements on self-inspection by contractors are relieved by new Corps of Engineers regulations. The Corp's earlier regulations led contractors to feel that a separate A/E firm should be hired to do the inspection services on most jobs. Now the Corps says not so, except for highly complicated projects, and even then the contractor can do the inspections "in house" if he has a qualified staff. GAO has slapped the Corps' wrists for not monitoring A/E designs and calculations more closely, so now district offices have been told to double-check specifications.

Problem-solving for U.S. cities is the announced purpose of the new Doxiadis System Development Center to be based in Washington, D.C. The Center is an effort of Doxiadis Associates International, Athens, Greece, headed by architect-planner Constantinos Doxiadis, and the System Development Corporation. The S.D.C. is a United States firm dealing with research and development.

The A.I.A. Committee on the Health vironment, under a contract with the tional Institute of Mental Health, sponsor a workshop on programing community mental health center, O ber 2-3, 1967, in Washington. Attenda will be limited to the first 150 applica and a $35.00 registration fee will charged. Registration forms are availa from A.I.A., 1735 N.Y. Ave. N.W., W ington, D.C.

California's "frivolous-suits" law may liability claims. A bill recently signed law permits any licensed architect, e neer, landscape architect, land surve or building designer named in a suit damages to request a court order req ing the plaintiff to provide a written dertaking of $500.00 for each defend named, not to exceed $3,000.00. If defendant can support by affidavit contention that the complaint is "f olous," the suit is dismissed.

The 1967 Dodge Construction Pric and Scheduling Manual, 170 pages of timating information tabulated by trad is now available at $9.95 from 330 W 42nd Street, New York, N.Y. 10036.

MMENT AND CONTRACT TABULATION

e A. Christie, Chief Economist
Dodge Company,
ision of McGraw-Hill

partment building on upswing again

rtment building is on the way back. r a succession of three serious set-s, the path is finally clearing for ex-sion of apartment building.

The early sixties saw the biggest m in multi-family starts since the dle twenties, as annual volume shot rom 232,000 units in 1960 to 539,000 s by 1963—an average gain of 100,- apartment units a year. Then came ries of events that resulted in a re-al of the pattern.

The first problem was largely of its n making. Much of the boom of the y sixties had been concentrated in Southwest where the combination of credit and over-optimism about tinued high in-migration led to over-ding. As migration slowed during 4 and 1965, vacancies shot up and construction in the West had to be erely curtailed.

The national trend of apartment con-ction then became a cross-current of rp declines in the West and continued derate expansion throughout the rest the country. As a result, the boom ped out late in '63, and total volume pped off during the two years that owed.

By the end of 1965, the decline had leveled off and it looked as though apartment building was ready to pick up again. But, then, in rapid succession, came the extreme credit pinch of 1966, and the suspension of accelerated depreciation. Credit scarcity put the entire housing market—apartments and one-family homes alike—into a tailspin; the loss of the fast write-off bore down selectively on apartments. Together, these events brought a second round of multi-family building cutbacks.

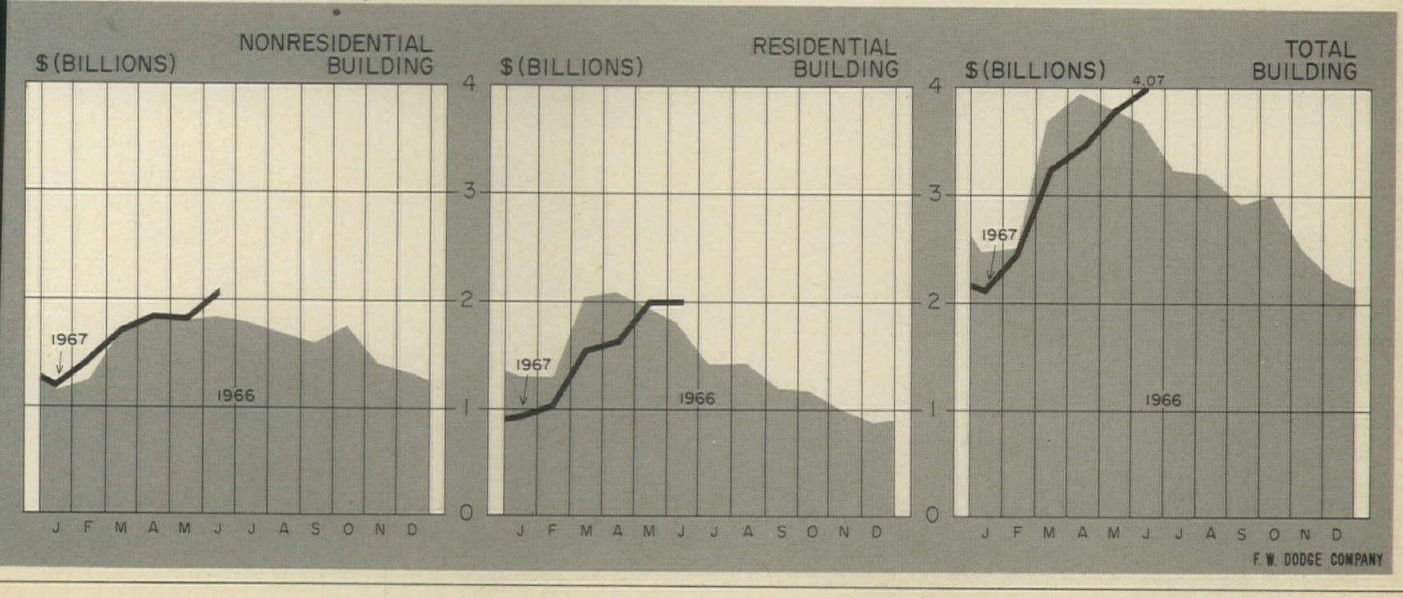
The 1966 decline in apartment building was nation-wide rather than regional, as before. And it was a whole lot more severe than the earlier reversal. From the fourth quarter of 1963 (when multi-family building hit its peak at an annual rate of more than 600,000 units) through the first quarter of 1966, volume had drifted down by some 150,000 units—an average loss of 17,000 units per quarter. By contrast, in the brief period between the opening quarter of 1966 and the first quarter of 1967 (the period that spans the credit crisis), the rate of apartments building fell an additional 175,000 units, or at a rate of almost 45,000 units per quarter.

In the first three months of the current year the decline was halted, but not until the rate of apartment building had been driven down to *less than half* that of 1963's best quarter. Recovery during April, May, and June was very strong as the rate of apartment building jumped by nearly half.

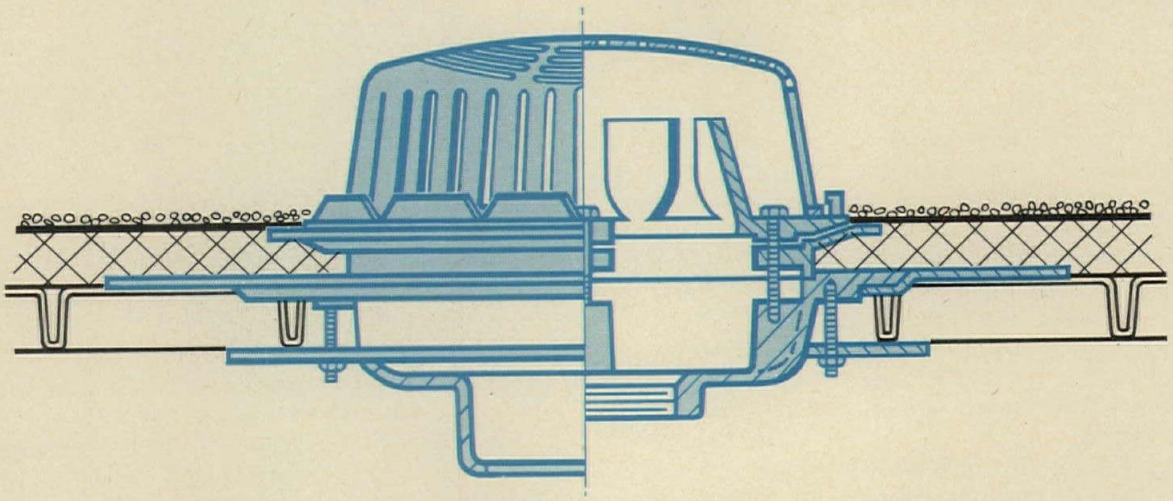
There's been an unusual flavor to this recent pickup. Mortgage credit began to ease as early as last November, and the one-family home building market responded with an immediate gain. Apartments continued to decline, though, and the difference between the two residential markets narrowed down to the accelerated depreciation angle. Once it became clear that the quick write-off would be restored—and only then—multi-family building joined in with a sharp increase of its own.

With this final restraint lifted, further expansion of apartment building is only a matter of the availability of funds to finance it. The *need* for such housing is all too apparent as the rental vacancy rate, after a long period of stability, began declining early last year and now stands at the lowest point it has been in the past eight years.

uilding activity: monthly contract tabulations



In 1961 Zurn Introduced "Control-Flo®" drainage



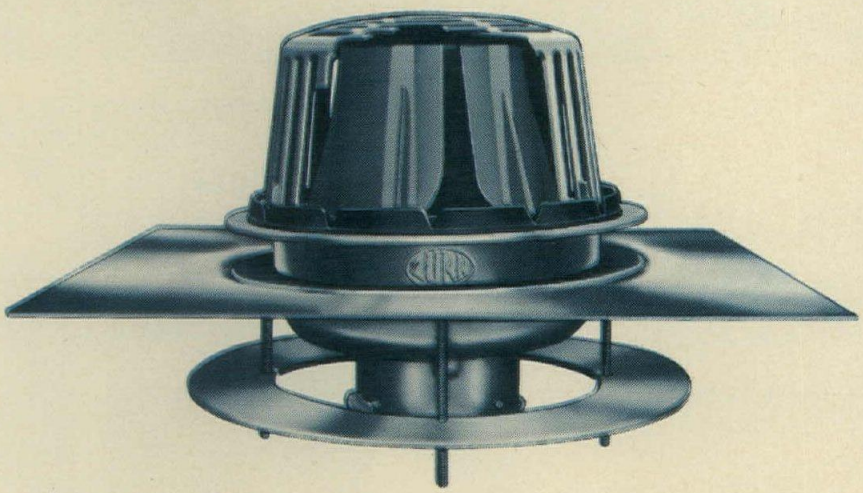
for

DEAD-LEVEL ROOFS

...and cut roof drainage costs in half!

"Control-Flo" does the work of several conventional type drains because it "stores" the water on the roof during peak periods of rainfall, then slowly meters the flow off at a predetermined rate. As a result, fewer leaders, smaller diameter piping and much smaller-sized storm sewers are needed.

Today Zurn Announces "Control-Flo®" drainage



for SLOPED ROOFS

. . . and effects similar savings in sloped roof drainage

All the advantages of the original "Control-Flo" are inherent in this new drain—but a unique proportional weir has been designed to accommodate the flow characteristics of sloped roofs (pitch: ⅛" per foot). This is no ordinary drain. But a highly-engineered drainage control designed to meter the flow scientifically and safely, off large sloped areas. Specify "Control-Flo" today . . . buy it tomorrow—from the company who pioneered and proved "Control-Flo", the only roof drainage system that mathematically relates its design to rainfall data for your specific region.

Is one of these sloping roofs on your boards now?

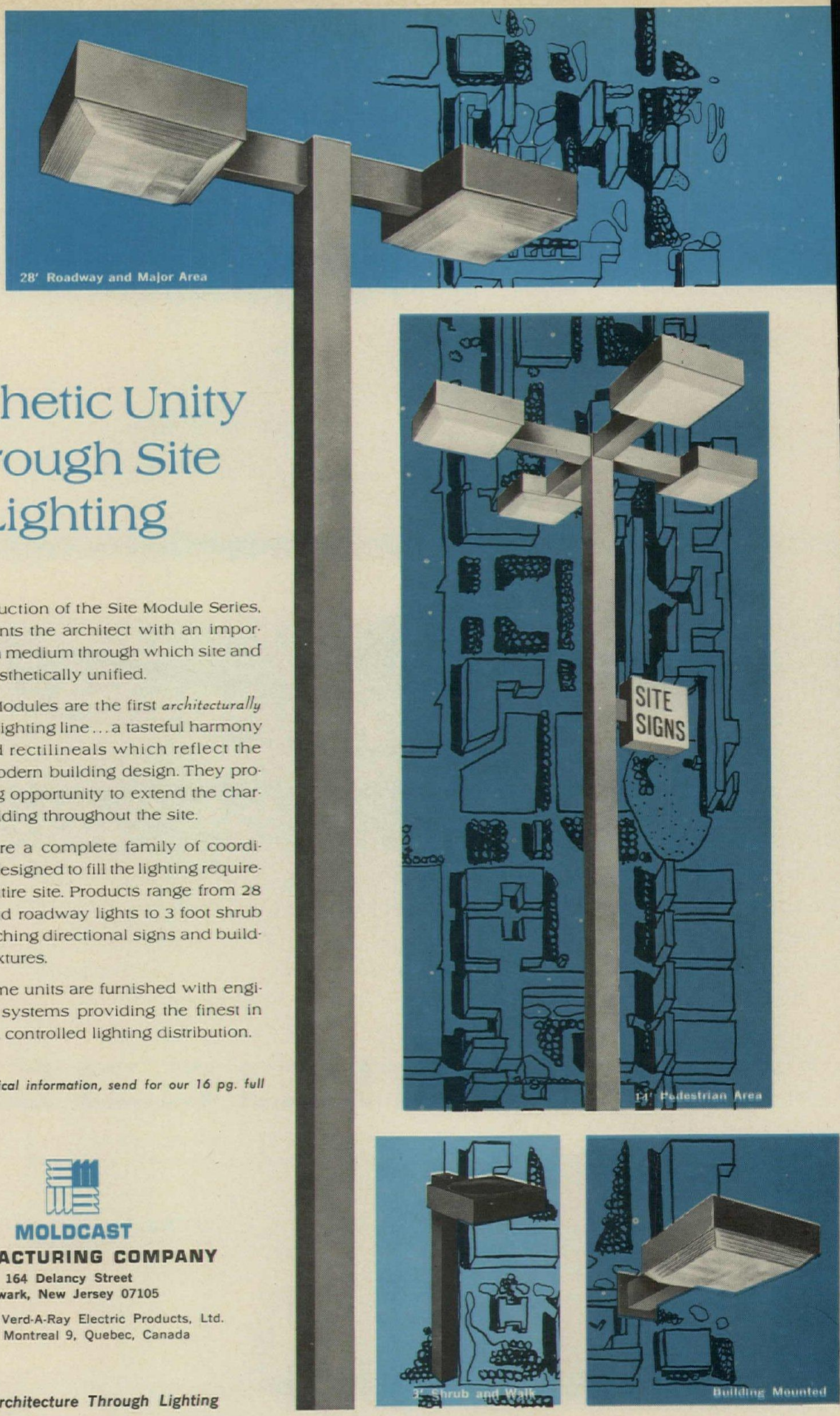
Send for Zurn "Control-Flo" Drainage Manual (Form 60-5 REV.) immediately and begin saving with the most advanced roof drainage system available.

A Step Ahead of Tomorrow

ZURN

ZURN INDUSTRIES, INC.
HYDROMECHANICS DIV. ERIE, PA. U.S.A.

For more data, circle 54 on inquiry card



Aesthetic Unity Through Site Lighting

With the introduction of the Site Module Series, Moldcast presents the architect with an important new design medium through which site and structure are aesthetically unified.

Moldcast Site Modules are the first *architecturally* conceived site lighting line... a tasteful harmony of squares and rectilineals which reflect the geometry of modern building design. They provide an exciting opportunity to extend the character of the building throughout the site.

Site Modules are a complete family of coordinated fixtures, designed to fill the lighting requirements of an entire site. Products range from 28 foot tall area and roadway lights to 3 foot shrub lights with matching directional signs and building mounted fixtures.

These handsome units are furnished with engineered optical systems providing the finest in highly efficient, controlled lighting distribution.

For complete technical information, send for our 16 pg. full color catalog.

MOLDCAST
MANUFACTURING COMPANY
164 Delancy Street
Newark, New Jersey 07105

In Canada: Verd-A-Ray Electric Products, Ltd.
Montreal 9, Quebec, Canada

Serving Architecture Through Lighting

For more data, circle 55 on inquiry card

NDS AND ANALYSIS

nce C. Jaquith, Economist
-Berger-Mansueto Inc.
uction Consultants

ost studies point up risks of index misuse

nt studies of construction costs for ational buildings in New York and ware have underscored the complex nal and local factors bearing upon estimates. No cost index, however fully compiled, can be accurately ected to account for those factors in nating up-coming jobs. The index, d as it must be on historical aver-, cannot possibly pinpoint the cost particular current or future job. This pecially true in large-scale, statewide grams in which the individual jobs nselves can strongly affect local mar-conditions.

Furthermore, as was clearly demon-ted in a review of Delaware school struction costs, the language of such chmark terms as "square-foot" or r-pupil" costs is by no means univer-n denoting what goes into the figures n used as indices.

ewide university programs rload some local markets

number of states, efforts to expand state university systems have led to initiation of large and comprehensive lding programs within a comparative-rief span of time. Because the various npus sites are well distributed geo-phically within each state, they are in-enced by a wide range of economic nditions. Often, the locales for campus velopment are in small towns in the al areas.

This combination of factors—exten-e construction over a short period of ne; and a variety of sites, many of ich are small and even isolated towns creates a number of problems which en the most refined index cannot ac-unt for in a projection of cost escala-n. For one reason, the most commonly ed indices are based on data gathered m large urban centers. Further, they l to take into account those factors ich most significantly contribute to ort-range fluctuations in building cost: e availability of labor and materials at e time of construction; the strain which e level of construction activity places such availability; the number of con-tractors likely to bid on projects of various sizes; and the attitude of contractors at the time of the bidding as determined by their expectations of future work, labor problems, competitors' bids, etc.

All these factors are likely to influence the cost of campus projects and yet all are beyond the practical scope of an index. The short-run fluctuations that are the result of these conditions should be, nonetheless, of prime interest to architects and owners.

The index describes—it does not predict

It permits comparison of past costs only. Of course, there is never any guarantee that past cost patterns will be repeated. In the case of a small town selected as a campus site, there is every reason to believe that past trends will not be repeated since construction activity in such an area is usually multiplied many times over by the introduction of campus projects into the local construction market.

Three New York sites pose three estimating problems

In three typical college construction market studies recently completed in the State of New York, each campus site was located outside a metropolitan region. In each area, the level of construction activity prior to the start of campus building was quite low. The pattern of cost escalation that existed before these major programs were initiated differed markedly from the pattern of cost escalation that followed.

Had an index been prepared for any of these towns on the basis of building costs in the years prior to campus construction, it would have failed as a predictive device. Existing construction cost data for these towns were far too limited to be of any real value; the number and kinds of buildings constructed in each locale provided a small and irrelevant sample. And even if the data had been adequate, an index based on previous construction would have been insensitive to those short-run local market factors which influence cost escalation.

One project boosted cost increase rate 5 per cent

In one study, the yearly level of construction activity in the town prior to the initiation of campus construction was $500,000. Cost escalation on various projects was about 4 per cent per year. In the past four years, however, $25 million of construction has been completed on the campus, and costs have risen by almost 9 per cent per year.

No index based, as it would have to be, on past cost figures, could have predicted such a pattern. Further research into the structure of the construction market and into potential market conditions led to a projection of an even steeper escalation of costs. Again, even an index revised to fit the most recent trends could not have accounted for anticipated problems almost certain to lead to a further rise in cost.

Another raised the market to a higher, steady level

In other market circumstances, cost increases may eventually level off as the local construction market adapts to meet new conditions. This was the case in a second study. Research revealed strong grounds for expecting that both construction volume and capacity would reach a new, higher level of activity and remain there. As a consequence of campus construction, laborers had entered the area and decided to remain; new demand for housing, shopping, and services had been created by the establishment of a college community and the town was soon to embark upon a program of urban renewal. So although some abnormally high short-run cost increases were expected, the situation with respect to both availability of labor and contractor interest had improved. As a result, cost increases seemed likely to level off as the structure of the market stabilized at the higher level.

A third community took the new campus in stride

Here, it was clear that although the town was experiencing large-scale campus

construction, local capacity would neither expand nor be strained because of the town's proximity to a large urban center. Since the increased demand would be absorbed by the capacity of the metropolitan area, an index could have proved helpful. But, in fact, a study of those market conditions revealed critical factors which were almost certain to alter any linear pattern of cost escalation.

As a part of a large urban development, some $350 million in construction was about to be sent out for bid. The strain on the city's construction capacity would be felt for miles around; especially shortages of labor, which would almost certainly lead to premium wages and travel allowances. In order for projects at the campus site to compete for labor it was clear that contractors would not only have to pay travel time but would probably also have to outbid the premium wages that the workers in the urban center were being paid.

A cost index, blindly applied, would have obscured differences

Initially, the problems in each of these studies seemed quite similar—small towns with little construction activity being sharply affected by large-scale campus construction. The economics of each situation, however, proved to be quite different. And in each area a cost index would have been of little use to the architect in predicting the rapid cost increases that developed.

Delaware school study underscores definition problems

Doubts concerning the accuracy of various reported costs and building cost indices led to a study of school construction costs in the State of Delaware. Various published data had been gathered from time to time and comparisons were made between costs in that state to prevailing school costs in other states. These were usually presented in the form of regional or state averages on either a per-square-foot or per-pupil basis. The study indicated how misleading some of these figures could be.

It is not that reported costs for school construction are any less accurate than reported costs for other types of construction. But because school costs directly affect tax rates, they are much more in the public eye. As a result comparative cost figures are often used to back up points raised in support or in criticism of state school construction programs. Also, schoolboards and architects may be unjustly accused of excessive programming of a project on the basis of comparison with figures that are not really comparable. But the fact is that even the most general conclusions are subject to doubt when supported by this ill-defined type of data.

Methods of reporting costs vary from state to state

Inaccuracies stem from the methods of measuring and reporting "costs." These methods are not standardized and they vary significantly from state to state.

In reporting the "cost" of a school, one state might include such items as the cost of site acquisition, site work costs (such as recreation fields), the cost of movable equipment, furnishings or supplies, or design fees. Yet a neighboring state might exclude some or all of these considerations. Similarly, the cost of a school might be designated by the contract award figure or by the amount eventually paid to the contractor.

Number of pupils—or square feet—depends on who's counting

As a basis for reporting the "number of pupils" in a school, a state might choose among the actual pupil enrollment, the number of pupils designated for funding purposes, or the number of pupils for whom the building was designed.

Similar discrepancies occur in designating the square feet of building area. The number of "square feet" reported might or might not include such items as basements, crawl spaces, partially enclosed spaces, curved walks, large canopies, etc. When the methods of calculating these costs vary substantially, a meaningful reference to state-to-state costs per square foot or per pupil cannot be made.

In each of these studies, the many pitfalls that can occur from the misuse of a cost index became quite evident. An index can serve a useful function for general studies of construction costs. But when close dollars-and-cents accuracy is required for predicting or comparing building costs, an index simply will not do the job right.

First-hand knowledge is more accurate than an index

These and earlier discussions of the limited usefulness of indices may leave the architect feeling that he has no practical alternative. Yet he has: first-hand research and investigation of those factors which affect the cost of a particular project at a particular time and place.

To successfully use this approach, these questions must be answered with reasonable accuracy:

- What will be the volume of other construction in the area?
- What is the capacity of the local construction market?
- What will be the prevailing wage and materials costs on the project?
- How competitive will contractor
when the project goes out for bid

The local market is a key factor

The volume of other construction i
pecially important if it is substan
greater than in previous years.
equally important to know what
and size projects this over-all vol
represents. These other jobs may or
not compete with the project.

The capacity of a construction
ket is the ability of local labor, mate
suppliers and contractors to abso
certain volume of construction. If
capacity is exceeded and, for some
son, is not flexible, inflationary tr
most likely will develop. Premium w
and travel pay may have to be pai
attract labor. A scarcity of skilled tr
may lead to lower productivity and
standard work. Both situations can c
contractors to put higher contingen
in their bids. And bids in general wil
erage higher if contractors can se
work from many different jobs.

After data on labor costs and ava
bility, materials' prices, volume of c
struction, contractor availability, etc.
gathered, the information must be
sessed for relative importance. Ther
really no substitute for this approa
The investment of a few hours in a st
of the local conditions that will af
future costs is minor compared to
potential cost of redesign if the bud
is exceeded.

New York City plans to pay architects more

Mayor Lindsay and Controller Mario
Procaccino have announced that N
York City would pay more in archite
tural and engineering fees to "achie
the very best in the design of its bui
ings." With the exception of housing c
signs, the new fee schedules will ap
to all contracts not yet officially a
proved by the Mayor's office.

Frederick Hayes, the budget direct
said the higher fees might actually me
a saving for the city. He said it wou
now demand faster and more effecti
work and consequently might save c
construction costs.

The present basic fee formula will b
increased 5 per cent across the boar
The adjusted formula will then be i
creased by a further 15 per cent for "th
most complex structures" such as majo
hospitals, comprehensive high schools c
science buildings, and by amounts up t
15 per cent for other buildings.

DEXES AND INDICATORS

am H. Edgerton
ger-Editor, Dow Building Cost Calculator,
W. Dodge service

EMBER 1967 BUILDING COST INDEXES

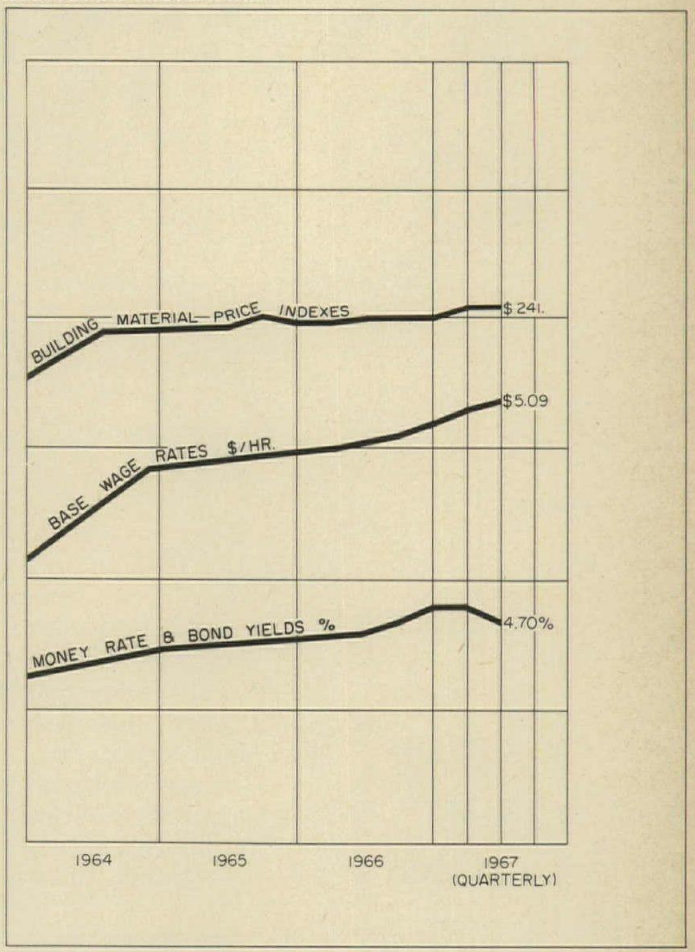
1941 averages for each city = 100.0

Metropolitan rea	Cost differential	Current Dow Index residential	non-res.	% change year ago res. & non-res.
.S. Average	8.5	282.3	300.8	+5.19
tlanta	7.2	319.2	338.5	+4.93
altimore	7.7	281.9	299.9	+4.65
irmingham	7.5	257.8	277.2	+3.29
oston	8.5	253.5	268.3	+4.50
hicago	8.9	315.6	332.0	+6.23
incinnati	8.8	273.7	290.9	+6.02
leveland	9.2	288.5	306.6	+6.37
allas	7.7	263.2	271.0	+4.26
enver	8.3	289.1	307.3	+5.16
etroit	8.9	289.0	303.4	+7.07
ansas City	8.3	252.0	266.8	+4.16
os Angeles	8.3	288.6	315.8	+6.41
iami	8.4	274.9	288.6	+3.26
inneapolis	8.8	284.5	302.5	+5.36
ew Orleans	7.8	254.8	270.0	+5.05
ew York	10.0	297.2	319.7	+6.01
hiladelphia	8.7	282.0	296.0	+5.67
ittsburgh	9.1	260.6	277.1	+3.13
t. Louis	9.1	279.4	296.1	+5.64
an Francisco	8.5	364.1	398.3	+5.96
eattle	8.4	259.4	289.9	+5.85

erences in costs between two cities may be compared by dividing the cost dif-ntial figure of one city by that of a second; if the cost differential of one city 0) divided by that of a second (8.0) equals 125%, then costs in the first city are higher than costs in the second. Also, costs in the second city are 80% of those he first (8.0÷10.00=80%) or they are 20% lower in the second city.

e information presented here indicates trends of building nstruction costs in 21 leading cities and their suburban areas ithin a 25-mile radius). Information is included on past and esent costs, and future costs can be projected by analysis of st trends.

ECONOMIC INDICATORS



STORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1952	1960	1961	1962	1963	1964	1965	1966 (Quarterly) 1st	2nd	3rd	4th	1967 (Quarterly) 1st	2nd	3rd	4th
U.S. Average	213.5	259.2	264.6	266.8	273.4	279.3	284.9	286.3	287.3	290.4	286.6	292.7	293.7	—	—
Atlanta	223.5	289.0	294.7	298.2	305.7	313.7	321.5	322.2	323.3	328.5	329.8	332.4	333.4	—	—
Baltimore	213.3	272.6	269.9	271.8	275.5	280.6	285.7	288.6	289.6	289.4	290.9	290.4	291.5	—	—
Birmingham	208.1	240.2	249.9	250.0	256.3	260.9	265.6	267.1	268.1	269.7	270.7	272.9	274.0	—	—
Boston	199.0	232.8	237.5	239.8	244.1	252.1	257.8	258.5	259.6	260.9	262.0	262.9	263.9	—	—
Chicago	231.2	284.2	289.9	292.0	301.0	306.6	311.7	312.6	313.7	318.9	320.4	320.4	321.3	—	—
Cincinnati	207.7	255.0	257.6	258.8	263.9	269.5	274.0	274.7	275.7	277.2	278.3	278.7	279.6	—	—
Cleveland	220.7	263.1	265.7	268.5	275.8	283.0	292.3	293.0	294.1	299.2	300.7	300.0	301.3	—	—
Dallas	221.9	239.9	244.7	246.9	253.0	256.4	260.8	261.7	262.6	265.8	266.9	267.6	268.5	—	—
Denver	211.8	257.9	270.9	274.9	282.5	287.3	294.0	294.6	295.5	296.6	297.5	297.6	298.5	—	—
Detroit	197.8	259.5	264.7	265.9	272.2	277.7	284.7	285.5	286.5	295.7	296.9	298.0	299.1	—	—
Kansas City	213.3	237.1	237.1	240.1	247.8	250.5	256.4	257.3	258.2	260.0	261.0	260.8	261.9	—	—
Los Angeles	210.3	263.6	274.3	276.3	282.5	288.2	297.1	298.0	298.6	301.6	302.7	303.6	304.7	—	—
Miami	199.4	256.5	259.1	260.3	269.3	274.4	277.5	278.4	279.2	282.9	284.0	283.4	284.2	—	—
Minneapolis	213.5	260.0	267.9	269.0	275.3	282.4	285.0	285.7	286.6	288.3	289.4	292.0	293.1	—	—
New Orleans	207.1	242.3	244.7	245.1	248.3	249.9	256.3	257.1	258.0	258.8	259.8	262.3	263.4	—	—
New York	207.4	265.4	270.8	276.0	282.3	289.4	297.1	297.8	298.7	302.8	304.0	309.4	310.6	—	—
Philadelphia	228.3	262.8	265.4	265.2	271.2	275.2	280.8	281.7	282.6	285.3	286.6	287.1	288.1	—	—
Pittsburgh	204.0	243.5	250.9	251.8	258.2	263.8	267.0	268.9	270.1	270.7	271.7	272.2	273.1	—	—
St. Louis	213.1	251.9	256.9	255.4	263.4	272.1	280.9	282.2	283.2	287.0	288.3	290.3	291.3	—	—
San Francisco	266.4	327.5	337.4	343.3	352.4	365.4	368.6	376.2	377.7	384.7	386.0	388.1	389.2	—	—
Seattle	191.8	237.4	247.0	252.5	260.6	266.6	268.9	271.1	272.1	273.9	275.0	276.5	277.5	—	—

osts in a given city for a certain period may be compared with costs in another eriod 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.

For more data, circle 56 on inquiry card

ONE-PART SEALANTS adding application convenience to total performance and economy of Tested and Approved polysulfides

Ready-to-use structural sealants based on Thiokol's LP® polysulfide polymer have been in the field for about seven years.

Installed in thousands of buildings; checked and rechecked for behavior; subjected to constant improvement in the laboratory...one-part polysulfide systems have achieved levels of quality and performance satisfying Thiokol's Tested and Approved building sealants specifications.

In the cured state, premixed LP® polymer based sealants, covered by Thiokol's Seal of Security, assure advanced physical properties as do approved two-parts.

Here's long, lively leakproofing service, weatherability without equal under severest stress of wind, rain, baking sun and freezing cold.

Tested and Approved polysulfide base sealants, properly applied, adhere to any and all building materials—in any combination—and add a unique strength of their own to the structure. The bond is virtually indestructible, while the compound retains rubbery flex allowing movement compatible with joined materials.

Now—with both one- and two-part systems meeting Thiokol's Tested and Approved sealant specifications—the Seal of Security is the only guide you'll ever need to total weatherproofing performance. For complete data, and names of Tested and Approved Sealant suppliers, wire, phone or write Thiokol.

Thiokol
CHEMICAL CORPORATION
780 N. Clinton Ave., Trenton, N.J. 08607
In Canada: Thiokol Canada Ltd., Wellington Sq. Bldg., 377 Brant Ave., Burlington, Ont.

For more data, circle 57 on inquiry card

For more data, circle 58 on inquiry card

WELLS FARGO BUILDING
SAN FRANCISCO, CALIFORNIA

PRUDENTIAL CENTER
BOSTON, MASSACHUSETTS

How many years should building piping last?

Architects, engineers, contractors and owners want to know, "How many years will piping in a given building last?" In most cases, it depends on the piping materials that are installed.

If you check the performance records of Wrought Iron pipe in buildings across the United States, you will find that in most instances Wrought Iron pipe has been serving the life of the structure.

Wrought Iron pipe was specified for yesterday's buildings and is being specified for today's modern buildings such as the Prudential Center in Boston and the Wells Fargo Building in San Francisco. Note the number of Wrought Iron pipe services.

Don't take a chance on ordinary piping materials. Let tomorrow's specifications be based on yesterday's performance. Learn more about Wrought Iron pipe and its proven corrosion resistance. Write for our free bulletin, "Piping for Permanence".

Prudential Center, Boston, Mass.

Architects: Charles Luckman Assoc., Boston, New York, Los Angeles
Engineers: Syska & Hennessy, New York
Contractors: Perini Corporation, Toronto, Canada
Walsh Construction Co., Inc., New York

More than 600 tons of Wrought Iron pipe specified for:

Plumbing: Soil, waste, vents and storm drainage piping.
Heating: Condensate returns and boiler room auxiliary piping.
Miscellaneous: Compressed air ejector and vents, ice rink piping and snow melting.

Wells Fargo Building, San Francisco, Calif.

Architects & Engineers: John Graham and Company, Seattle
Building Owners and Manager: Dillingham Corp., San Francisco
General Contractor: Haas and Haynie Corp., San Francisco
Mechanical Contractor: Scott Co. of California, San Francisco

Wrought Iron pipe specified for these corrosive services:

Plumbing: Soil, waste and vent lines.
Heating: Condensate return lines.
Cooling: Large condenser cooling water lines.

A. M. BYERS COMPANY

P. O. BOX 269 AMBRIDGE, PA. 15003

rport planning: a growing field for architects

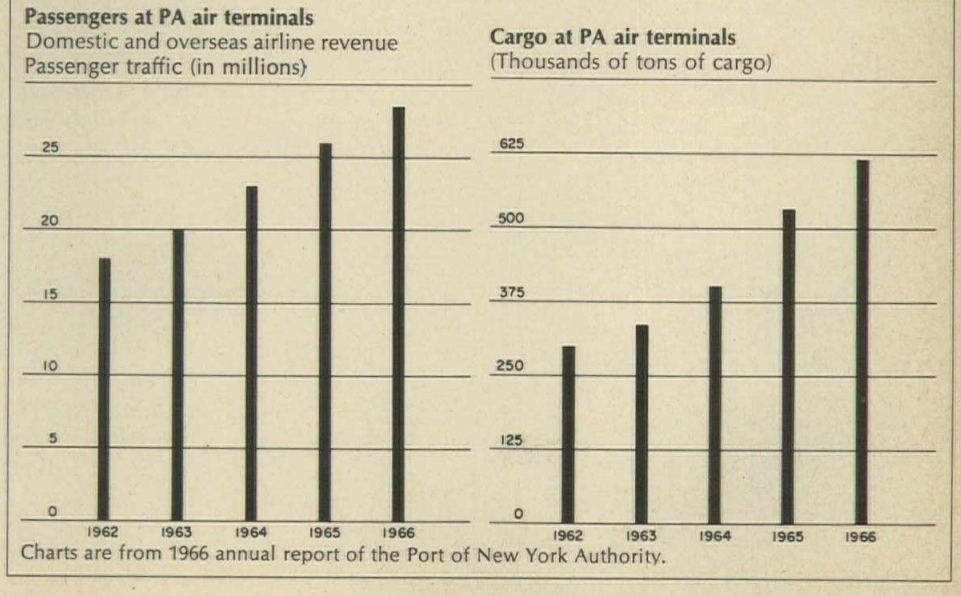
itects' involvement in airport plan- is not new, but is certain to increase cale, frequency and diversity of pro- n as we approach the era of high- ed, high-capacity jet transport. Con- ion at every major airport, as in the ve straight-down view of New York's n F. Kennedy Airport, means that ething must be done. And despite plexities of ownership and regional blems of responsibility, urgent steps being taken at dozens of cities to pare for the new age of long- and rt-haul transport. The reason: the ersonic plane will almost certainly in the air before we have learned to e with it on the ground. As a result these much larger and much faster nes, more people will be disgorged ultaneously, putting an unbearable in on present facilities. If air fares tinue to go down, opening up the sibility of air travel to a whole new tor of the public, the over-all volume traffic will increase dramatically, king large-scale new developments urgent necessity. Indeed, one predic- n doubles the number of passenger es traveled per year within the next ee years. The development of new fa- ties, the upgrading of existing ones, d the relation of long- and short-haul traffic to ground transport, are be- ming problems that cannot be dealt h as individual projects, but must be nsidered on a national, and even a rld scale.

The Federal government is well are of the scale and urgency of the problem and is taking steps to meet the challenge. A study group under the leadership of Alan S. Boyd, secretary of transportation, and Charles S. Murphy, chairman of the Civil Aeronautics Board has been charged with finding a "new approach" to planning a national system for air transport. More recently, President Johnson is reported to be considering asking Congress to set up a $2-billion revolving fund to accelerate airport construction by making loans to municipalities for all types of airport development. The fund would be administered by a quasi-governmental institution, under the direction of Transportation Secretary Boyd.

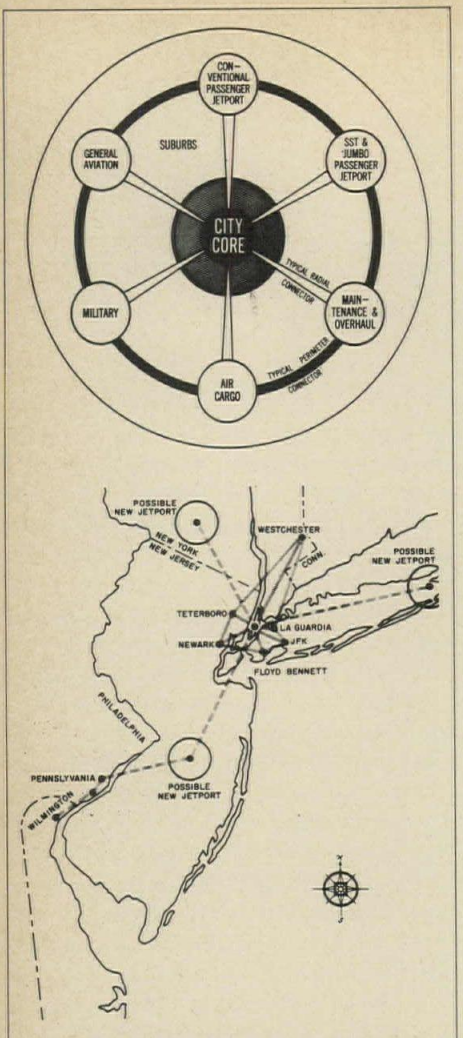
The importance of regional planning is being stressed at all levels

For the first time, in its 1968-72 National Airport Plan, the Federal Aviation Administration has identified potential sites for regional airports and is urging planners to give these higher priority than improvements to local facilities. At a joint meeting of the Airport Operators Council International and the American Society of Civil Engineers aero-space transport division, Clifton A. Moore, first deputy general manager of the Los Angeles Department of Airports, emphasized that the key to solving airport problems lay in integrating airports into regional transportation networks, and he advocated the establishment of regional airports which go beyond political, economic, and geographic areas. The disadvantages of the present system, he said, were clearly exemplified in Southern California, where privately owned city and county airports "are presently planned, organized and operated largely as independent entities without regard to integrated long-term needs". To counteract this trend, the Southern California Aviation Council is trying to get a grant from the Department of Housing and Urban Development to finance a study for a comprehensive regional airport system centered on Los Angeles. More recently (June 28) the Los Angeles Board of Airport Commissioners adopted a resolution authorizing the issuance of $75 million in revenue bonds, first in a series to finance a $500-million master plan development program by the Los Angeles Department of Airports. Funds will be used for expansion projects to handle anticipated traffic increases at Los Angeles International Airport through the year 1975.

San Francisco's Public Utilities Commission, also in June, opened the door to architect-engineer involvement in planning the San Francisco International Airport by approving a $25,000 study of future ground traffic as a first step in



Charts are from 1966 annual report of the Port of New York Authority.



Proposed master plan for specialized regional airport facilities, called the Satell-Air concept and translated for the New York region by its developers, Walter Kidde Constructors, Inc.

development funded by a $98-million bond issue.

The importance of improved and integrated ground transport in any regional airport plan was also stressed by Edward S. Olcott, chief of the Port of New York Authority's central planning division. But he saw difficulties in developing surface transport for air travelers alone, and encouraged the use of existing rights of way for city-to-airport traffic. In this connection, the Port Authority is developing a combination road-and-rail vehicle which may soon be tested in service between Manhattan and Kennedy Airport.

A regional plan for New York has already been proposed

Walter Kidde Constructors, Inc., the well-known architectural-engineering firm, has already come up with an original and far-sighted approach to the New York regional airport plan that is geared to take account of the related problems of ground transportation and to accommodate industrial development and population growth as these occur. Its *Satell-Air* concept conceives of a system of specialized airports ringing the metropolitan area like satellites, and hinges on the conversion of existing general airports into specialized facilities, with each individual airport handling a particular kind of traffic—long-haul, cargo or major maintenance. The system would connect with short-haul airfields right in the city and a rapid-transit ground system would link all the airports to each other as well as to the city core.

In New York, this might mean using Kennedy and La Guardia for medium-range trips, constructing a new jetport for long-haul travel, converting Newark to a cargo base, and reserving Teterboro for private aviation. This combination of specialization and rapid transit would mean that a passenger arriving at Teterboro, for example, could go direct to Kennedy, with his airport ticket doubling as the rapid-transit fare. Once at Kennedy, an underground conveyor would whisk him right to his plane. The Kidde group feels that this scheme has the advantage of assuring that the passenger, rather than the cargo, is the essential planning unit at all passenger airports—a point often lost today.

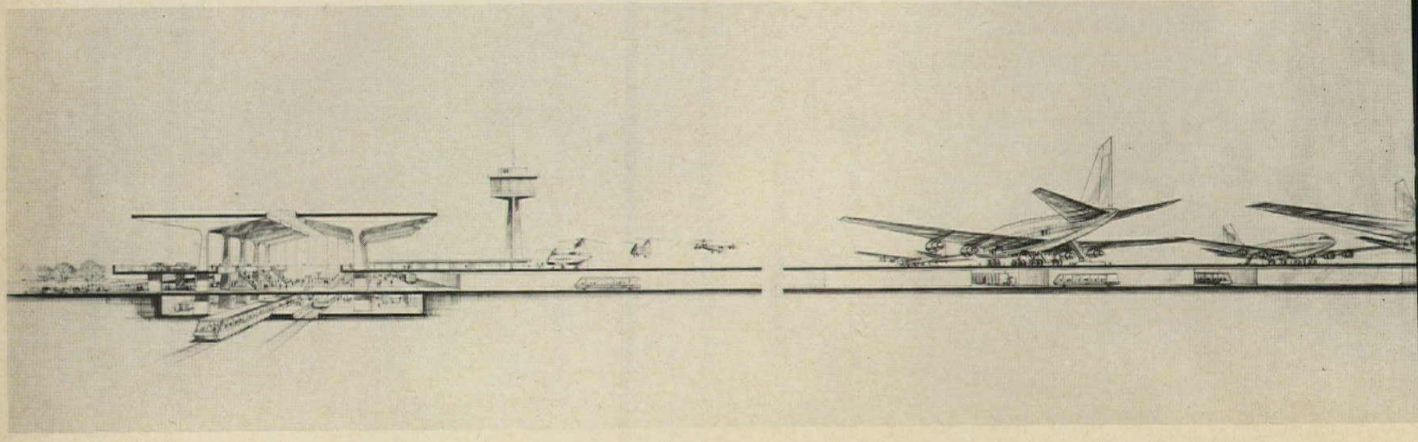
Airports are part of regional plan for Paris

An interesting comparison—and contrast—can be drawn at Paris, where a large new airport is being planned 15 miles northeast of the city. Paris-Nord is part of the over-all development plan for the region and is intended to p out Le Bourget and to operate in junction with an improved and exte Orly Airport. When completed, i 1980's, the new airport will be ca of handling 25-million passenge year. As part of the regional plan, Nord is placed on a superhighway w will dip below ground to cross th port. New road connections and a sible subway link with the city c are part of the plan. The airport wi organized into five multiple loa bays, each one equipped to handl of today's jets or 15 of the new ju sized variety. Two separated pai east-west runways will be able to ha simultaneous landings and takeoffs.

Multi-level ground facilities may help ease congestion

Most projections see new airport f ties in multi-level terms, with an crease in computer-guided cargo dling. Multi-level approach roads, m level parking and multi-level term buildings—in which passengers classified and dealt with and even b the plane from a specific level—are tral to most planning concepts. S planners, like the Walter Kidde gr prefer separation of the plane from terminal to relieve congestion at g and passageways, but others—as i scheme put forward by American lines—prefer to bring the aircraft to the terminal. The American Airl scheme saves space and makes use the multi-level concept, by raising a nate planes on hydraulic stilts allow overlap of wing span, and loading unloading passengers from diffe planes at different levels in the build

The New York firm of Tippetts, bett-McCarthy-Stratton (TAMS) has b involved with plans for a new airpor serve the Dallas-Fort Worth area. T present proposals call for the erect of a two-mile-long, six-level structu spine with roadways, baggage-handl and passenger-transport routes at ferent levels running the entire length the building. Shorter routes intersect



GF combines imagination, beautiful woods, rich fabrics and metals into smart business interiors.

Beautiful veneers of teak or walnut cover the heavy-gauge steel of the Classic desks and consoles. Mirror-chrome frames and drawer pulls accent the contemporary design. Luxuriously cushioned Accent chairs are upholstered in bright, beautiful fabrics and vinyl. They're strictly business, thoroughly practical—but completely comfortable, beautifully modern and colorful.

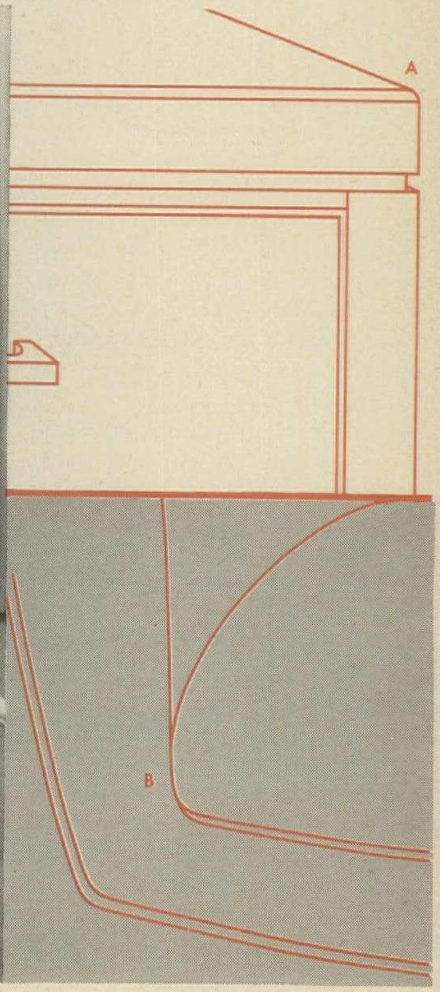
Write for complete catalog information.
The General Fireproofing Company,
Dept. AR-25, Youngstown, Ohio 44501.

GF BUSINESS FURNITURE 65 years 1902/1967

Walnut-veneered GF Classic desk with Accent chairs.

A. Reveal strip makes the desk top seem to float above the frame.

B. Double-deck cushioning—a latex foam rubber pillow on top of the latex foam rubber-cushioned seat.



For more data, circle 59 on inquiry card

spine at right angles and lead out to subterminal buildings or "modules" which serve the individual airlines. The lower levels of the building—devoted to baggage and cargo handling—would be below grade, while a passenger concourse with shops would be on the first floor immediately above the ground-level passenger-arrival facilities. The uppermost layer of the terminal would contain a rapid-transit system for shuttling passengers back and forth between the different modules.

Los Angeles is considering a scheme to place the entire passenger terminal below ground—with only domed skylights showing above—to free the roof surface for the planes themselves. Passengers would use mechanically operated "snorkle" escalators to ascend directly from the boarding area right into the waiting aircraft.

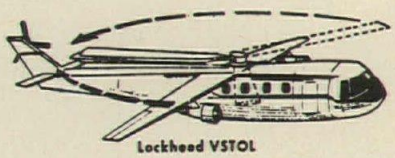
In the Philadelphia area, two architectural firms, Arnold W. Thompson Associates and Paul Stafford Associates are working on plans for a $50-million air freight terminal called Air Cargo City, which would use computer-guided conveyors to handle as much as 200,000 pounds of freight in less than half-an-hour. The cargo terminal is part of a master plan for the development of Philadelphia International Airport, which already includes proposals for a $75-million extension of passenger terminal facilities. Trans World Airlines will be a major tenant of the new facilities.

TWA is also planning an extension to Eero Saarinen's Trans World Flight Center at Kennedy airport. The $19.8-million new facility will be a second flight loading wing, and be designed by Kevin Roche, John Dinkeloo and Associates (successors to the Saarinen firm). It will continue the theme of Saarinen's building but will provide "telescopic jetways" leading from the flight wing to aircraft entrances and parking positions which will be capable of accommodating the new supersonic planes, jumbo jets, and conventional jet aircraft.

Plans for a new $150-million jet airport to serve the Kansas City area already are quite well advanced, and financing has been arranged. The architectural firm of Kivett and Myers have designed a crescent-shaped passenger terminal building, so arranged as to allow cars to be parked within the hollow of the crescent conveniently near to the aircraft boarding gates.

From long-haul to short-haul, by V/STOL craft using in-city terminals?

The question of regional, inter-city and short-distance air transport is of course complicated by the large amount of space needed for the take-off and landing of conventional aircraft, which has led to most airfields being sited inconveniently far from metropolitan centers.



Lockheed VSTOL

The solution to this problem seems to lie with the development of a satisfactory system of vertical or short take-off-and-landing (V/STOL) aircraft and appropriate airports, and the problem is in fact being tackled from both ends. There are already a number of single- and two-engined planes which are capable of coming to a halt within 300 feet of touching down. Now, the US Department of Commerce has announced the publication of a "study on the feasibility of V/STOL concepts for short-haul transport aircraft"—NASA CR-670, price $3.00 from Clearinghouse, Springfield, Va., 22151. The study, carried out by Ling-Temco-Vought, Inc., is based on the development of 18 prototype aircraft around three different propulsion concepts, four different operational capabilities and three passenger load capacities.

Airports for such aircraft might well be developed in the heart of metropolitan areas, particularly where adjacent water would give additional space. Proposals for such an airport on the Hu waterfront near Manhattan's proje World Trade Center have already put forward.

A study by Rutgers University ter for Transportation Studies, unde direction of Mr. Cooper B. Bright Professor Edward G. Nawy, has com with an ingenious suggestion to struct a series of "aquadromes" saucer-shaped/floating concrete airf which could be anchored in the Hu or East Rivers. Planes, after lan would descend by elevator to a l level—where passengers would dep and/or board—and when loaded, w ascend to the surface for take-off.

In all these proposals, problem noise, fumes, and possible danger to rounding buildings would have to studied in great detail before they c become an everyday reality.

Promise of a more stable future

Although the advent of the supers aircraft heralds dramatic changes in scope and organization of air travel in the design of related facilities in next decade or so, there is a sugges that once this change is made, we enter a period of relative stability.

The Hypersonic Transport

Arthur Clarke, scientist, inve and science-fiction writer, in an imag tive address to the 1967 A.I.A. Conv tion in New York, speculated about so of the possible directions for the fut of mankind, and came up with what called "a bag of assorted futures w different price-tags attached!" He s that although it was technically possi to transport human beings in rockets a speed many times faster than that the supersonic jet, he felt that it v unlikely that people would toler routine travel at that speed and in t form—at least in the foreseeable futu Further, he projected that with drama advances in the use of international te phones, communications satellites a remote control operations, people wou be able to control much more of th work from greater distances and t need for commercial travel might substantially reduced. Thus he predict an ultimate leveling off in the spee volume and techniques of long-distan transportation.

With this in mind, architects fac with the problem of designing airpo facilities, may gain some comfort fro the thought that if they are sufficient far-sighted now, they may catch up wi the future!

Our new Louver Lens makes our line complete.

At 2.

Original ideas don't come in bunches. That's why we offer just two unique louvers.

Our newest, the Louver Lens, is all the name implies. A louver and a lens in one. With all the obvious efficiencies of both. And it's also slotted, for unobstructed air flow.

The Sinko Parahex Louvers are striking simplicity itself. And offer unmatched brightness control, by providing unlimited footcandles of illumination without reflected glare.

(Incidentally, we offer an egg crate diffuser known as Thin Cell. It's our one concession to conformity.)

If price is the sole consideration we don't expect much of your business. We're expensive, like most good things. But when you want your lighting to be as unique as your building, specify Sinko.

MSL PLASTICS: *the unique lighting people*
10500 Seymour Avenue, Franklin Park, Illinois 60131

For more data, circle 71 on inquiry card

a new weapon

against illegal entry

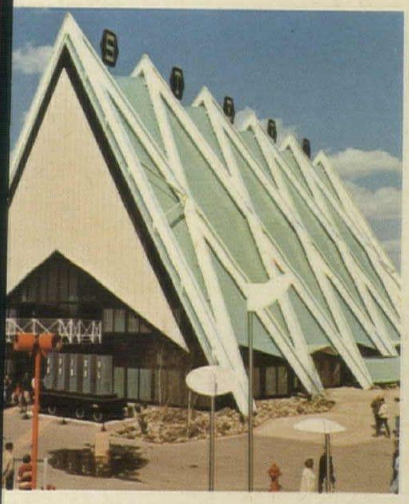
You are looking at a revolutionary key that can't be copied on conventional key-duplicating machines. This gives you a high degree of key control. It operates a new, precision lock cylinder with three rows of interlocking pins that are highly pick-resistant. U. L. Listed for burglary protection.

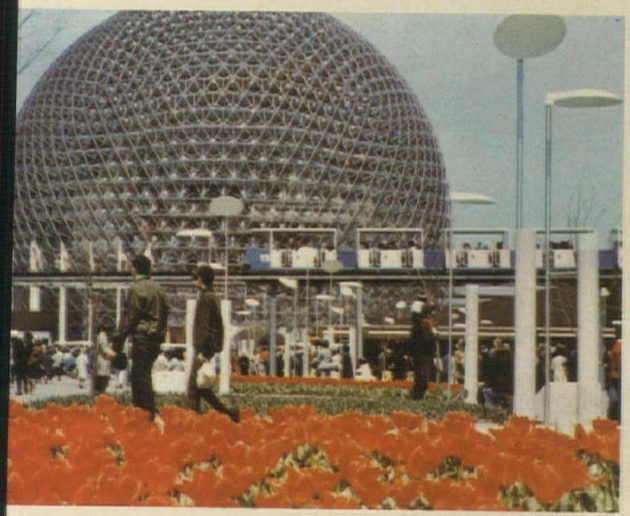
There is never a chance of any key system duplicating any other. All this means maximum *security* against surreptitious entry. For full details, see your Sargent distributor, or write: Sargent & Company, 100 Sargent Drive, New Haven, Conn. 06509 • Peterborough, Ontario • Member Producers' Council

SARGENT® MAXIMUM SECURITY SYSTEM

PART OF A COMPLETE LINE OF ADVANCED ARCHITECTURAL HARDWARE

For more data, circle 72 on inquiry card





Color Harmony at Expo 67

To achieve these effects in over twenty-five Expo 67 buildings, Pratt & Lambert colorful coatings and clear finishes were selected by leading international architects.

Contact your P&L representative, or write the Pratt & Lambert Architectural Service Department nearest you.

PRATT & LAMBERT, INC.

ARCHITECTURAL SERVICE DEPTS.

LONG ISLAND CITY, N. Y. 10001
3301 38th Ave.
BUFFALO, N. Y. 14207
75 Tonawanda St.
CHICAGO, ILL. 60632
4900 South Kilbourn Ave.
ORANGE, CAL. 92668
1405 North Batavia St.
FORT ERIE, ONTARIO, CANADA
254 Courtwright St.

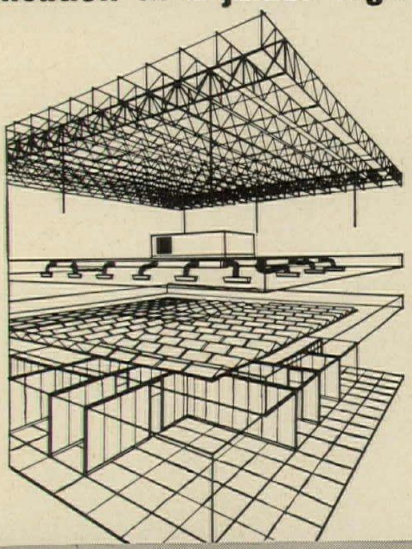
For more data, circle 73 on inquiry card

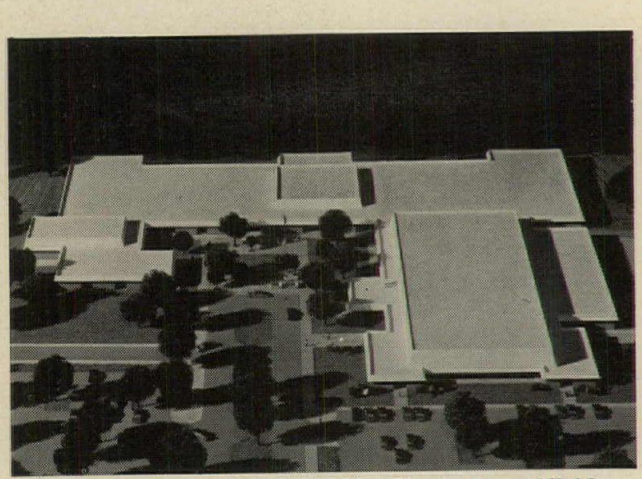
THE SYSTEMS APPROACH: Macomber's VLMC system and its application in a junior high school

Covington Junior High School in Birmingham, Michigan, typifies the success of the Macomber V-LOK® Modular Component System.

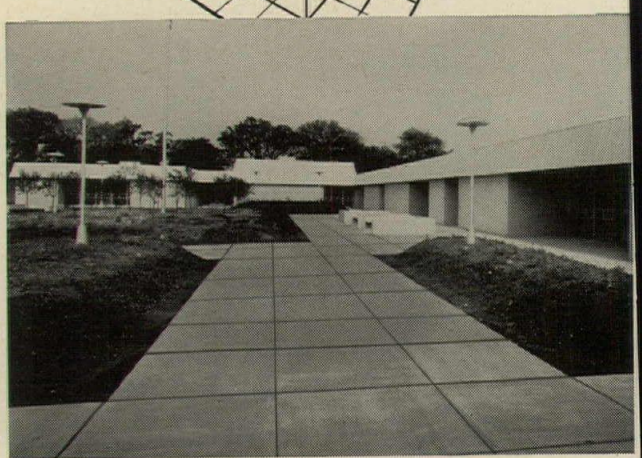
The one-story, 137,000-square-foot building is a perfect expression of the completed design of the school board's assignment to the architect.

Flexibility of the systems approach in construction provides for changing space requirements. The lighting and ceiling panels are interchangeable. Flexible air handling ducts and movable diffusers are integrated into the ceiling. The sliding and demountable wall systems are the final elements necessary for a variable floor plan.





COVINGTON JR. HIGH SCHOOL—Birmingham, Michigan Archt.: Linn Smith, Demiene, Kasprzak, Adams, Inc.; Contr.: James and Savage.



COVINGTON—Recently landscaped and ready for classes, Covington was one of the first schools built with the VLMC system.

Each component, based on the common module, was available from several manufacturers. Compatibility of all components permitted the selection of the most desirable combination of components.

Complete framing systems have been furnished by Macomber for more than 40 years.

Ask your Macomber representative to explain how the VLMC System can give you today's building—and tomorrow's—in one package. Or write direct to *Macomber Incorporated, Canton, Ohio 44701.*

MEMBER AISC

MACOMBER INCORPORATED

CANTON, OHIO 44701

SUBSIDIARY OF SHARON STEEL CORPORATION

For more data, circle 74 on inquiry card

featherock

The Aluminum of the Stone Industry!

A NEW NATURAL LIGHTWEIGHT STONE VENEER

FOUR DISTINCTIVE COLORS

John's Lutheran Church, Tampa, Florida.
es Kennedy, A. I. A.

s any climate — Wet or Dry — Hot or Cold. e-Thaw Tests are available. ★ Goes "in the $1.95 to $3.25 per sq. ft. (depending on loca- job size). ★ Acoustical Value: .50 NRC ★ Ther- uctivity: K 1.01 ★ UBC approved for installation masonry ties when type "s" mortar is used. nally Distributed. ★ Large boulders available caping.

ock lightweight, natural stone veneer is mined in the ra mountains of California.

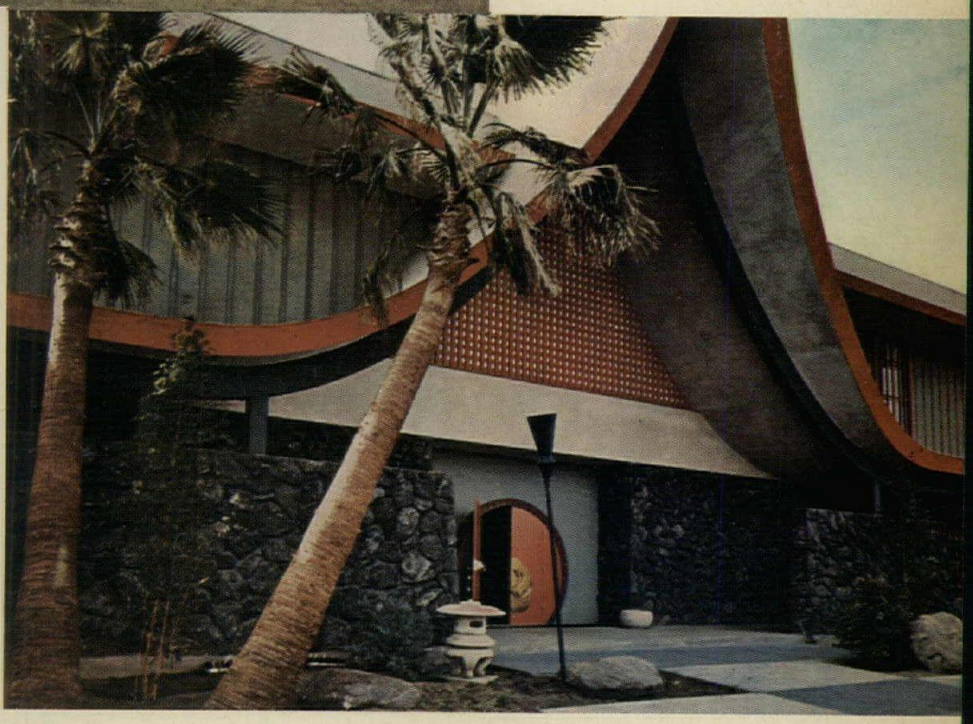
is shipped in two styles:

CK — a rough boulder, sawed smooth on the back side o 5" in depth. This gives a bold, rugged appearance. riftstone Brown, Charcoal, Silver Grey, Sierra Tan.

ACE RANDOM — Boulders are sawed 1¾" thick, are oth front and back, but are in the natural random

harcoal, Silver Grey and Sierra Tan.

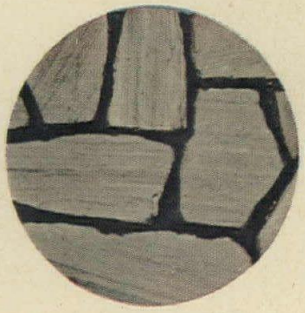
ALSO — A NEW MEDIUM WEIGHT STONE



Erawan Garden Hotel, Palm Desert, California.
W. C. Kruger & Associates, Architects and Engineers.

SIERRA SUNSET

CHARCOAL
(SAWED BACK)



SILVER GREY
(SAWED FACE RANDOM)

SIERRA TAN
(SAWED FACE RANDOM)

featherock® INC.
Dept. PA
6331 Hollywood Boulevard
Los Angeles, California 90028

For more data, circle 75 on inquiry card

PLEASE SEND ME TECHNICAL DATA ON FEATHEROCK AND SIERRA SUNSET

Name: _____

Firm: _____ Position: _____

Address: _____

The reason we're introducing The Lobby Carpets.

Every foot that comes into an office has to go through the lobby. That's why we call our new carpets The Lobby Carpets. They can take even the busiest lobby and show less soil, less dirt, less wear than you'd believe possible. So they're not just for lobbies, but for offices, corridors, public rooms—anywhere a carpet has to take real punishment.

The reason The Lobby Carpets can take it is that they're all made with a pile of 100% Antron® nylon by DuPont. Antron is a kind of super-nylon. It's as tough as regular nylon. But far more soil resistant. Which means it shows far less dirt than any carpet fiber around. And since it doesn't get dirty as fast, it needs cleaning less often. Which makes it more economical.

And because we really believe in The Lobby Carpets, we've introduced a whole line of them. Different pile heights. Different designs. Different colors. But they all have one thing in common. They're all priced right.

The Lobby Carpets by Lees—for places where anything else would be a dirty shame.

Any questions? A Lees contract carpet specialist will be glad to help. Just write Lees Carpets, Section 10B, Bridgeport, Pa. 19405.

LEES CARPETS

NEW!... Quiet Strength—with Flair!

LYON takes the sameness out of steel furniture

■ Fine steel office furniture of the past never had such a hushed sound. Or such sturdiness, such trim lines. It took Lyon—veteran perfectionists in steel equipment—to do it.

We made the desk top the main structural member from which all other parts stem. Used *two* layers of steel, the lower half fully ribbed for extra strength. Back panels are double wall type, with honeycomb filler for complete soundproofing. Pedestals are continuously welded tubular structures which gird the front opening. Fully sound-proofed. And our exclusive "lock-in-top" feature controls *all* drawers, provides for interchangeability of pedestals.

Careful sculpturing looks less massive, adds leg room. Double-walled drawers have vinyl glides and rubber bumpers for added serenity. And to top it all off, there's a choice of 9 lustrous 100% acrylic finishes that will last with the furniture.

For the ultimate in quality at attractive prices, see your Lyon office furniture dealer. Ask him to demonstrate the "unprecedented 7*" Lyon advantages.

*Patents Pending

LYON OFFICE FURNITURE

Showrooms: New York, Chicago, Los Angeles

LYON METAL PRODUCTS, INC.
951 Monroe Avenue, Aurora, Illinois 60507

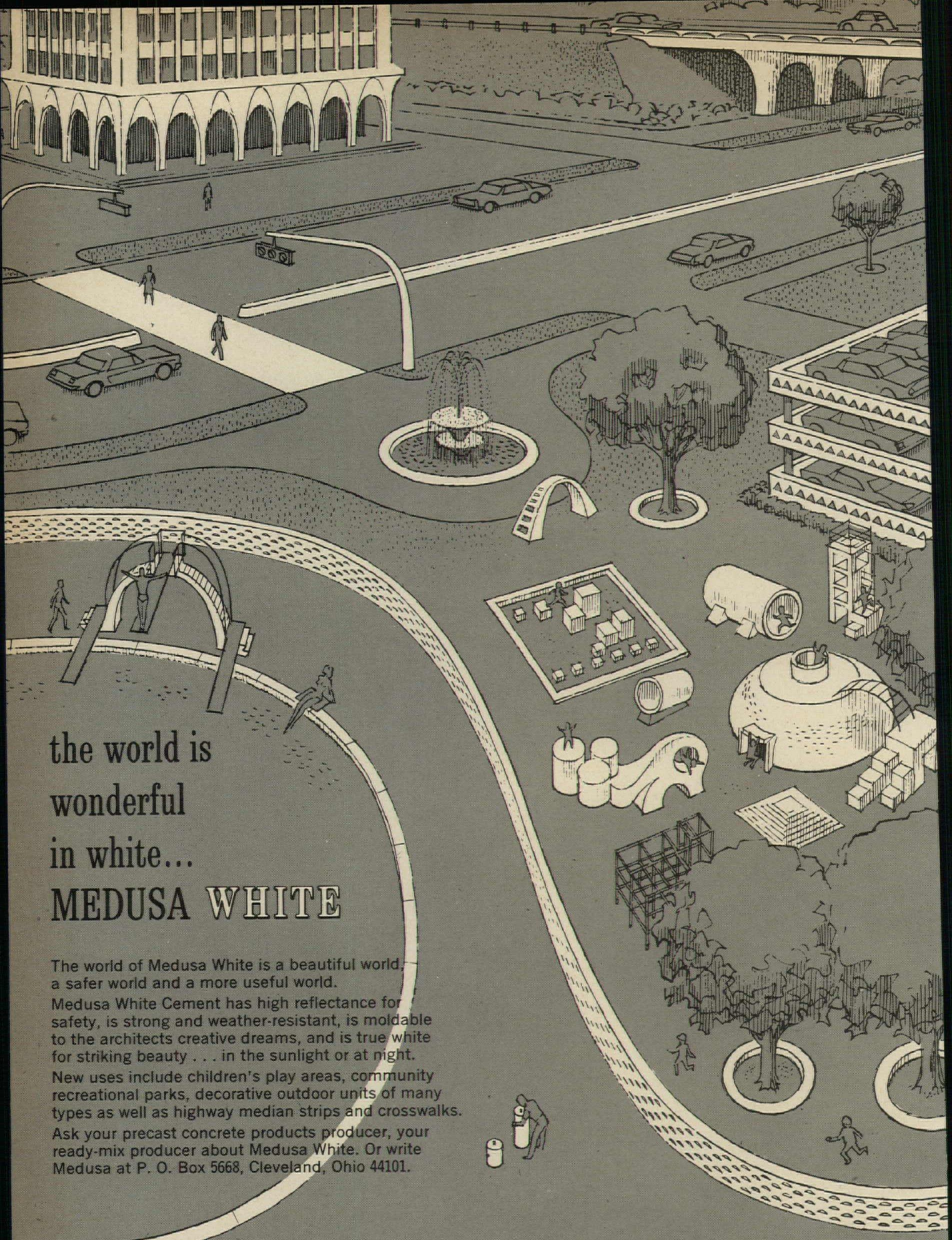
☐ Send my free copy of your full color brochure
☐ I'd like the name of my nearest dealer

Name_____

Address_____

City_____ State_____ Zip_____

For more data, circle 77 on inquiry card



the world is wonderful in white... MEDUSA WHITE

The world of Medusa White is a beautiful world, a safer world and a more useful world.

Medusa White Cement has high reflectance for safety, is strong and weather-resistant, is moldable to the architects creative dreams, and is true white for striking beauty . . . in the sunlight or at night.

New uses include children's play areas, community recreational parks, decorative outdoor units of many types as well as highway median strips and crosswalks.

Ask your precast concrete products producer, your ready-mix producer about Medusa White. Or write Medusa at P. O. Box 5668, Cleveland, Ohio 44101.

MEDUSA PORTLAND CEMENT COMPANY

White & Gray Portland Cements • White, Gray & Custom Color Masonry Cements • ChemComp® Shrinkage-Compensating Cement

For more data, circle 78 on inquiry card

New Permafused® Vinyl-Coated chain link

There's more than meets the eye in this attractive addition to the famous Anchor Fence family. Its forest green protective vinyl coat is both handsome and rugged. It's the only steel core fence fabric with the vinyl coating *fused* on. This exclusive new 5-Step Permafused Process developed by Anchor makes this vinyl coating impervious to weather, rust, peeling, capillary action and temperature changes. Anchor Permafused is maintenance-free.

It's erected with Anchor's good looking and long lasting aluminum or steel framework. The attractiveness and durability of this new Permafused fabric are enhanced by Anchor's exclusive square terminal posts and gate frames. For more details, call your Anchor man . . . or mail coupon.

PERMAFUSED®
VINYL-COATED CHAIN LINK

ANCHOR FENCE, **Dept. C-09**, 6500 Eastern Ave.
Baltimore, Maryland 21224

Please send me your new Anchor Fence catalog.

Name_____ Title_____

Firm_____

Street_____

City_____ State_____ Zip_____

Plants in Baltimore, Houston, Los Angeles. Sold direct from factory branches in principal cities.

For more data, circle 79 on inquiry card

Must reading for every professional individual who now has (or is planning to form) a partnership.

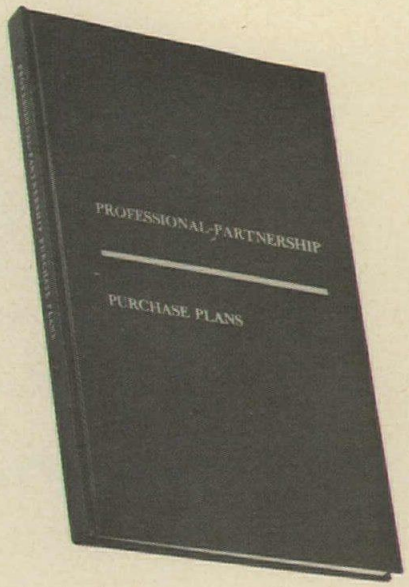
How a partnership buy-out agreement can protect your practice, and your estate.

THIS comprehensive book will bring you up-to-date on the latest developments in the professional partnership field, and the benefits that you can expect from a sound partnership-purchase agreement. It is written by authorities in a direct, easy-to-comprehend style. Every professional individual who now has, or is planning to form a partnership with one or more members of his profession will want to read "Professional-Partnership Purchase Plans"

The book covers how best to protect your own estate and your partnership with an adequately funded buy-out agreement. What tax benefits you should look for. How the goodwill of each partner can be provided for. Through the study of a typical case history, the book will increase your ability to judge and select the proper plan to fit your own situation when you sit down with your attorney to review or set up your partnership-purchase agreement.

Why you should have a purchase plan.

Without a partnership-purchase agreement a large part of the value that you have built up in your practice over the years may disappear at your death. While your partner or partners may wish to compensate your estate for your share of the firm's assets and for the continuing practice your reputation brings in, a precise cash value is difficult to determine. Frequently, this situation leads to costly litigation and delays in settling your estate. Alternatively, as a surviving partner, you are faced with the problem of compensating your deceased associate's estate.



The book was written by Alden Guild, J. D., in collaboration with Deane C. Davis, Chairman of the Board of National Life of Vermont, and David F. Hoxie, Vice President.

With a partnership-purchase agreement, an exact amount of compensation will have been agreed upon in advance of a partner's death. Tax liabilities will be minimized. Settlement can be completed quickly and to the satisfaction of all parties, including the Internal Revenue Service.

If your plan is funded by life insurance, compensation can be made immediately with no sudden need for you or your partners to raise additional cash. Emergency funds are built up. You can always be certain your estate will receive precisely the amount of money you intended it to have. Your National Life underwriter can be of help in giving details of life insurance procedures for funding this agreement.

Here are a few of the subjects covered in this book. They will help you protect your partnership interests, and your estate.

1. Professional partnerships described.
2. Why a business-purchase plan is desirable.
3. Entity-purchase and cross-purchase plans described and analyzed.
4. Advantages and disadvantages of available plans.
5. Detailed discussion of the tax consequences.
6. Valuation of a partner's interest.
7. The problem of goodwill.
8. Use of a trustee.
9. Recent tax rulings.
10. References to pertinent cases.
11. Specimen agreements.

This authoritative 94-page book is available without charge to professional men. They and their attorneys will find it a useful guide to the successful formation and funding of professional-partnership purchase agreements.

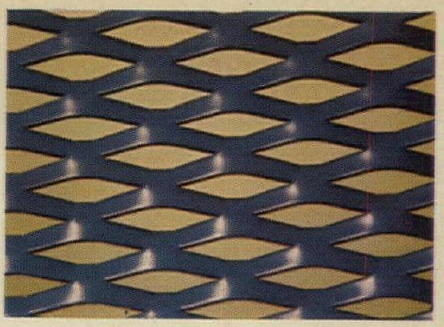
For a complimentary copy, write (on your business letterhead, please) to: *National Life Insurance Company, Architects Service Department, Montpelier, Vermont 05602.*

National Life
Insurance Company
MONTPELIER
VERMONT
Founded in 1850 • A Mutual Company • Owned by its Policyholders

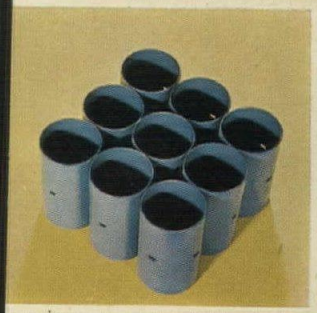
For more data, circle 80 on inquiry card

Unlimited Design Possibilities with Leaded Porcelain Enamel

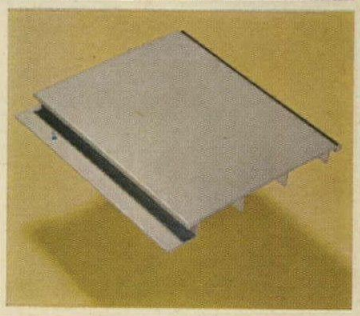
1



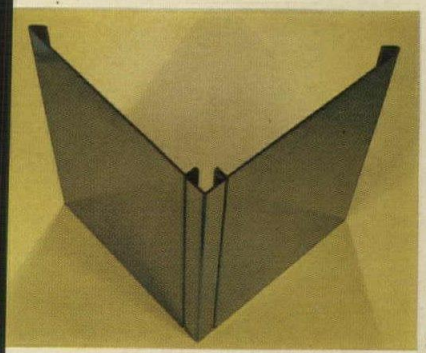
5



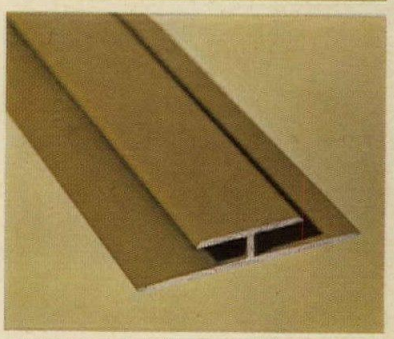
2



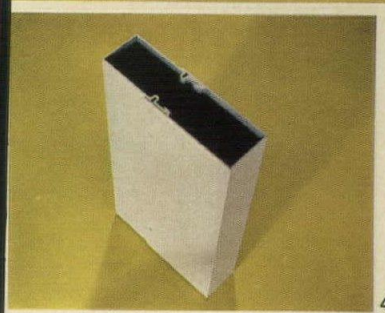
6



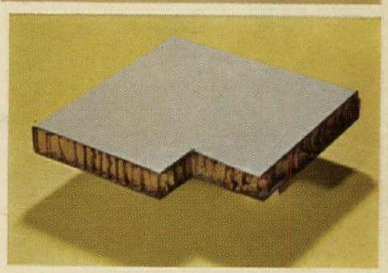
3



7



4



8

1. Structural channel
2. Solar screen
3. Brake-formed corner section
4. Snap-on mullion

5. Expanded metal panel
6. Interlocking ceiling panel
7. Extruded divider molding
8. Insulated curtain wall panel

Products courtesy of:
Porce-Len, Hamden, Conn.

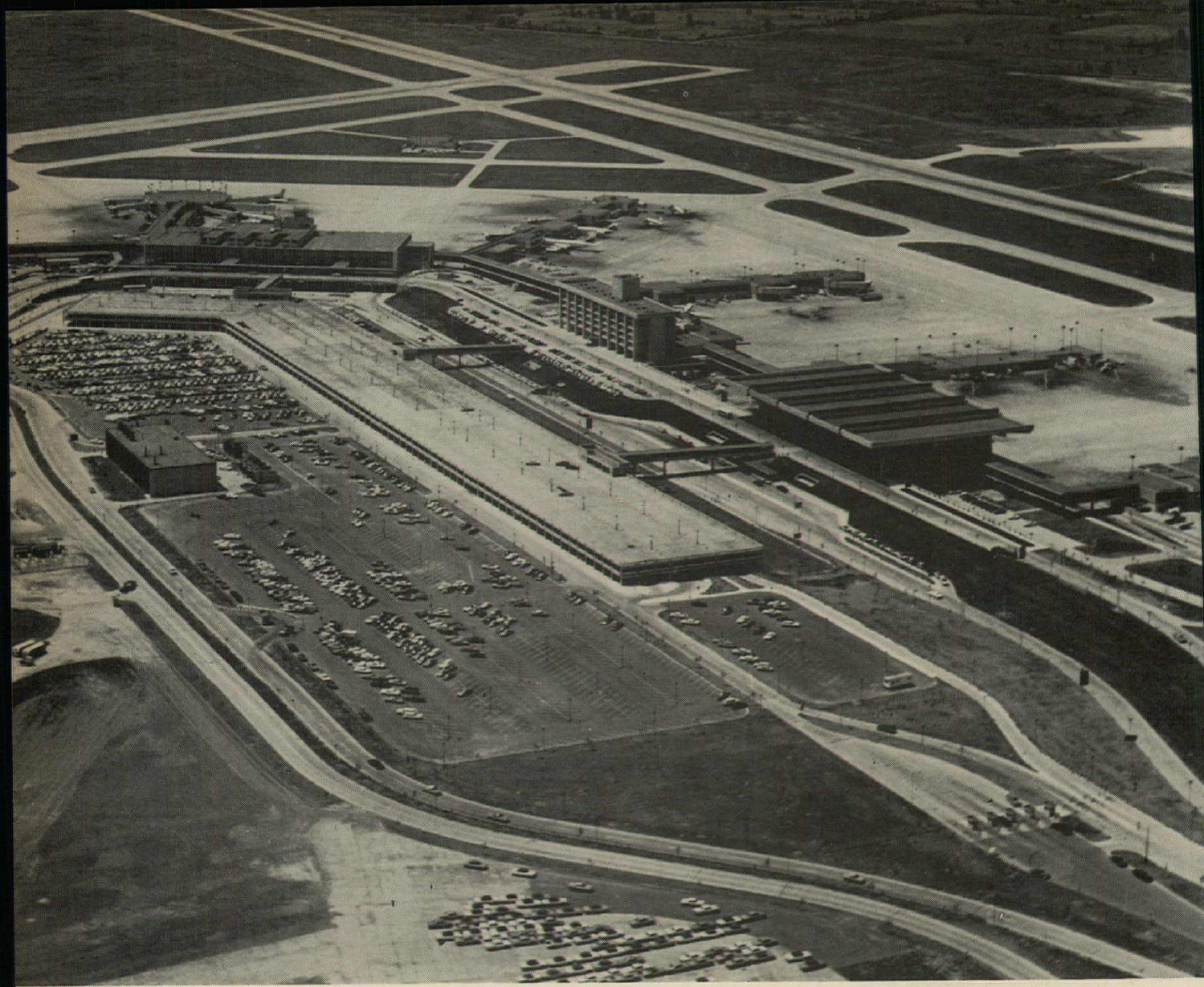
These are just a few of the kinds of decorative forms we mean. They're available in a wide choice of steadfast colors and varied shapes, for maximum design freedom.

But looks aren't everything and a practical facade should be durable and maintenance free too. Leaded porcelain enamel on aluminum is. It's easy to use because it saws, drills and punches without spalling or progressive rust disfiguration.

Let the architectural staff of the Lead Industries Association assist you with your design problems, suggest specifications and suppliers. Write to:
LEAD INDUSTRIES
ASSOCIATION, INC.
Dept. L-9
292 Madison Avenue
New York, New York 10017

LEAD INDUSTRIES ASSOCIATION, INC.
Look Ahead with Lead
48R

For more data, circle 81 on inquiry card



Owner: Wayne County Road Commission, Detroit
Architects: Smith, Hinchman & Grylls Associates, Inc., Detroit
Structural Engineer: T. Y. Lin & Associates, Chicago
General Contractor: A. J. Etkin Construction Co., Oak Park, Mich.
Precast Prestressed Concrete: Precast/Schokbeton, Inc., Kalamazoo, Mich.
Post-tensioning Materials: Conesco Midcontinent, Inc., McCook, Ill.

Detroit answers the jet-age challenge with massive airport expansio

Prestressed concrete used extensively in passenger concourses and parking deck

Stretch-jet . . . Jumbo . . . SST. New words in aviation that mean one thing—more air travel.

Airport officials in Detroit have met this increase with a $50 million expansion at the Detroit Metropolitan Wayne County Airport.

In addition to the remodeling of older facilities, construction of a spacious North Terminal Building, connected to "satellite" and "pier" flight pavilions by wide, uncrowded concourses, and a centrally located hotel, has been completed.

Also aware that convenient automobile parking is essential for comfortable air travel today, a 3-level parking deck in the infield area adjacent to the passenger terminals has been opened to supplement 2000 other parking spaces. The deck can accommodate 2400 cars. Vertical and horizontal expansion can be provided in the future for greater capacity.

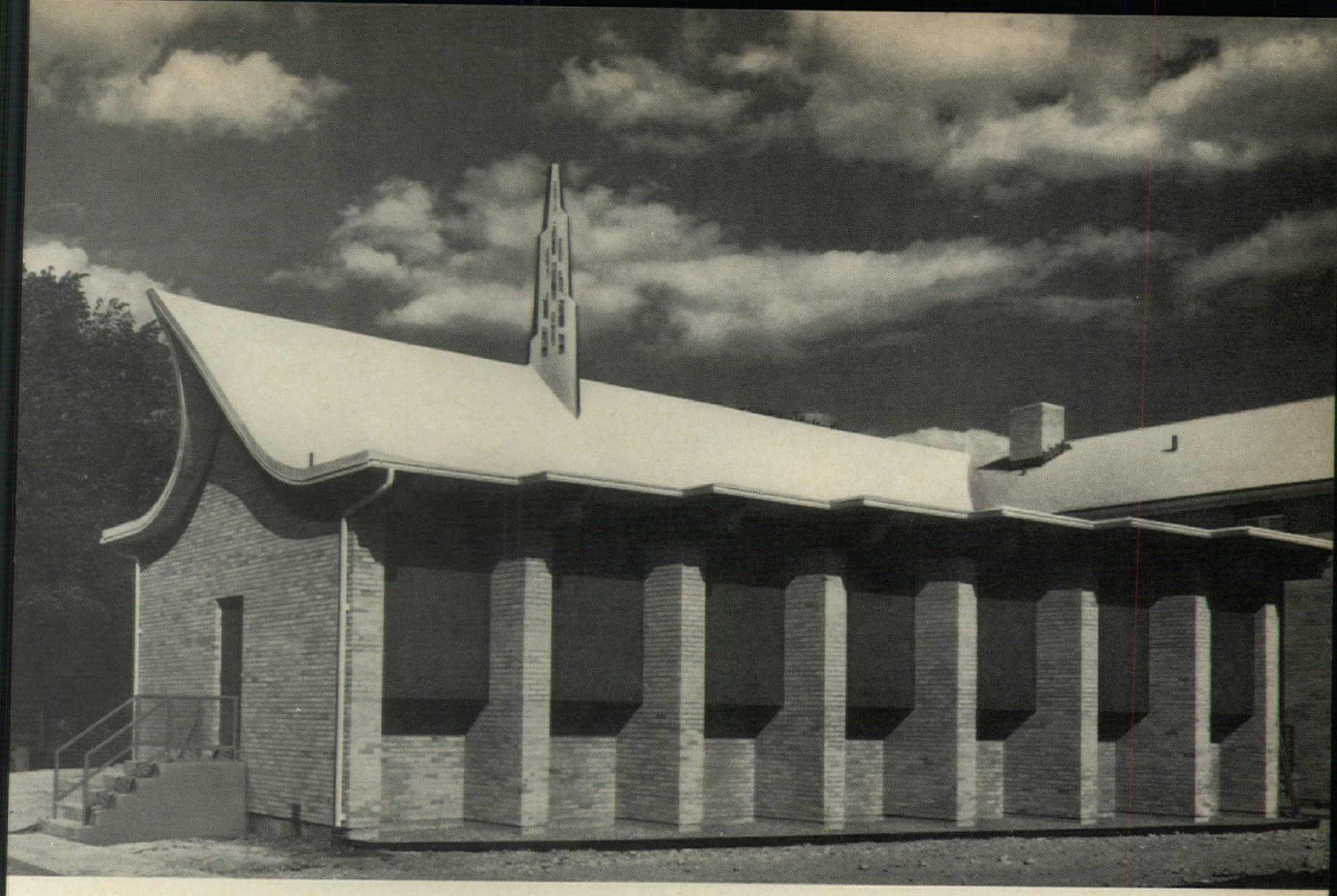
Both pre-tensioned and post-tensioned prestressed concre were used extensively: 670,000 square feet of prestressed co crete material in the upper two levels of the parking deck 66,000 square feet of prestressed concrete decking in the floo and roofs of the concourses. Prestressed concrete's repetitiv installation procedure helped conserve construction time— that's especially important on a project of this size!

More and more prestressed concrete suppliers are relying o service-proved TUFWIRE® and TUFWIRE Strand for prestres ing. Many years of dependable service have established th confidence.

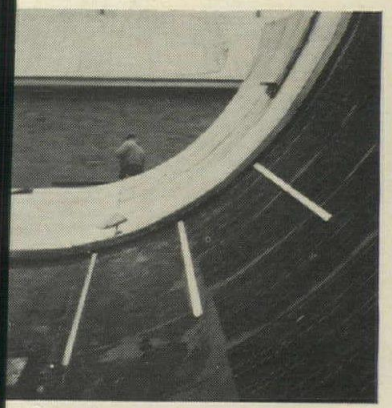
Write us for an illustrated booklet describing interesting pr stressed concrete applications throughout the nation. TUFWIR TUFWIRE Strand, and other dependable Union Wire Rop Products are made by Armco Steel Corporation, Departmen W-1177, 7000 Roberts Street, Kansas City, Missouri 64125.

ARMCO STEEL

ARMCO

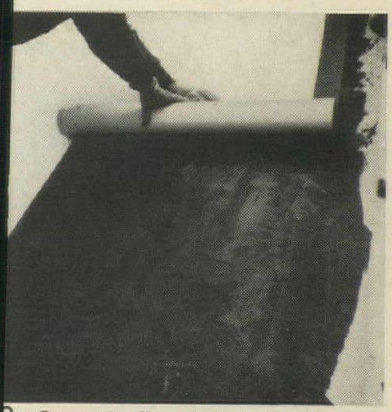


For roofs of unexcelled beauty and durability... specify Ruberoid T/NA 200® roofing (with Du Pont TEDLAR*)

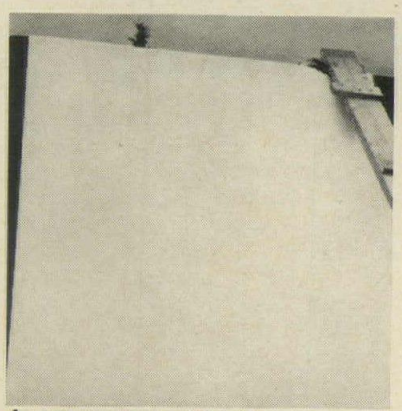


1. On any contour, any slope.

2. Easy, quick to apply.



3. Cements directly to underlayment.



4. Forms a smooth, clean attractive surface.

The bold sweeping curves of this roof for the New Chapel for the Sisters of Mercy of Notre Dame High School in Elmira, New York, illustrate the remarkable effects that can be achieved with Ruberoid T/NA 200.

This gleaming white pre-finished roof membrane is maintenance-free. It will stay weathertight and beautiful for years. It's the ideal roofing material for roofs of unusual contour. Also in pastel grey or green.

The roof was fabricated by Hall Roofing & Sheet Metal Co., Inc., of Elmira and the T/NA 200 membrane applied on the site. Photos at left show construction details.

Haskell & Connor were the architects and Welliver Construction Co., Inc., both of Elmira, were the General Contractors.

For full details write to The Ruberoid Co., a division of General Aniline & Film Corporation, 733 Third Ave., New York, N.Y. 10017. Dept. RA-97

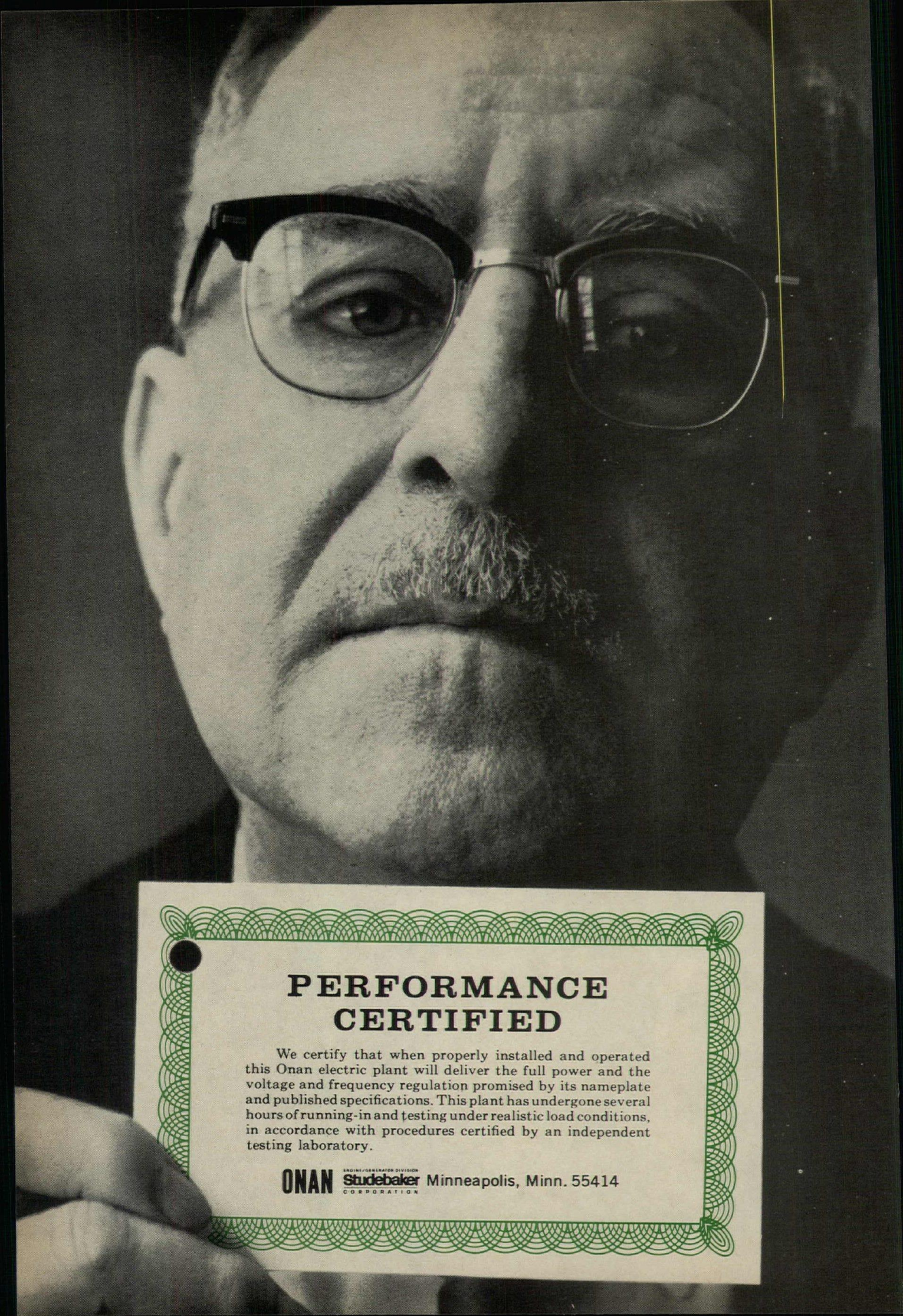
*Dupont's registered trademark

RUBEROID®

T/NA 200

another fine product from

gaf


PERFORMANCE
CERTIFIED
We certify that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.
ONAN
ENGINE/GENERATOR DIVISION
Studebaker
CORPORATION
Minneapolis, Minn. 55414

We call Mr. Onan "Bud"

But we call Mr. Calva "Sir!"

Because he's the one who puts the teeth in Onan's exclusive Performance Certification. But don't get the idea that we take our president for granted. Bud Onan invented the Performance Certification idea for our electric plants.

But Mr. J. B. Calva is an outsider . . . the independent testing authority that makes it meaningful to you. And keeps us on our toes. And keeps the Performance Certified tag (one goes on every Onan plant) something that has to be earned; not just a gimmick.

You can understand why we might be just a little uneasy when he's around.

It isn't as if the world's leading builder of electric plants had to depend on somebody else's judgment. Our test setup and personnel don't have to take a back seat to anybody.

In our block-long testing wing, we can gear for check-out of 9,000 units a month. That's a lot of testing. Because every Onan plant is run-in under full load for 2-8 hours before it's okayed for shipping.

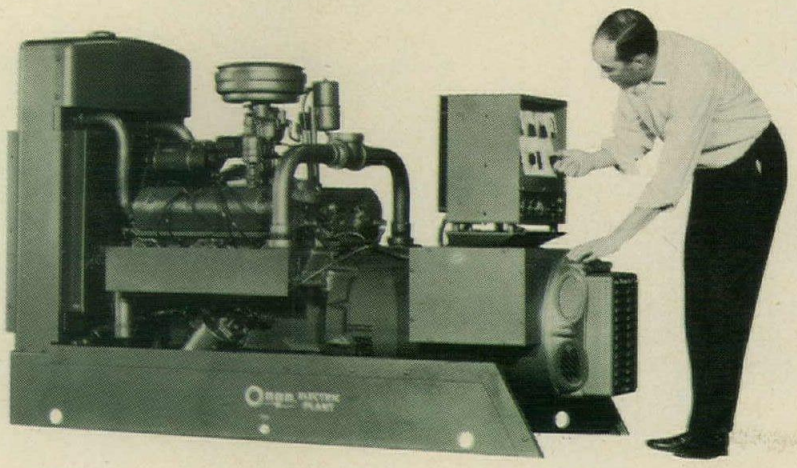
Having stringent quality control procedures and strict component selection standards doesn't hurt either. Because an Onan generator set rarely flunks its "under-load" test.

But it's still nice to have J. B. Calva & Company double-checking us and our testing procedures.

The uneasiness is worth it. Gives us the confidence to say "We certify that when properly installed and operated, every Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications."

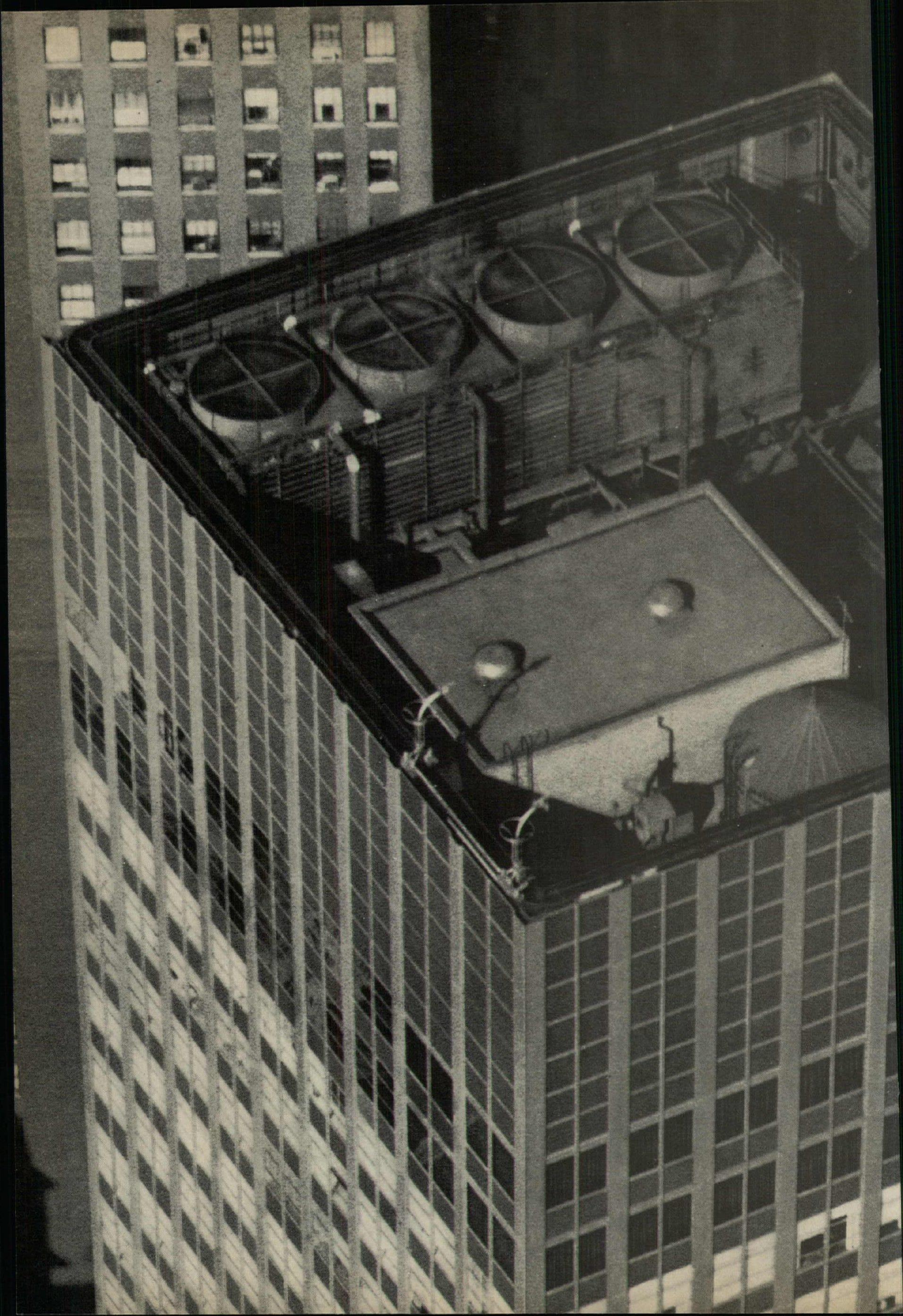
And you . . . *Sir?* You have to settle for nothing less than absolute assurance that you get every watt of power you pay for with Onan.

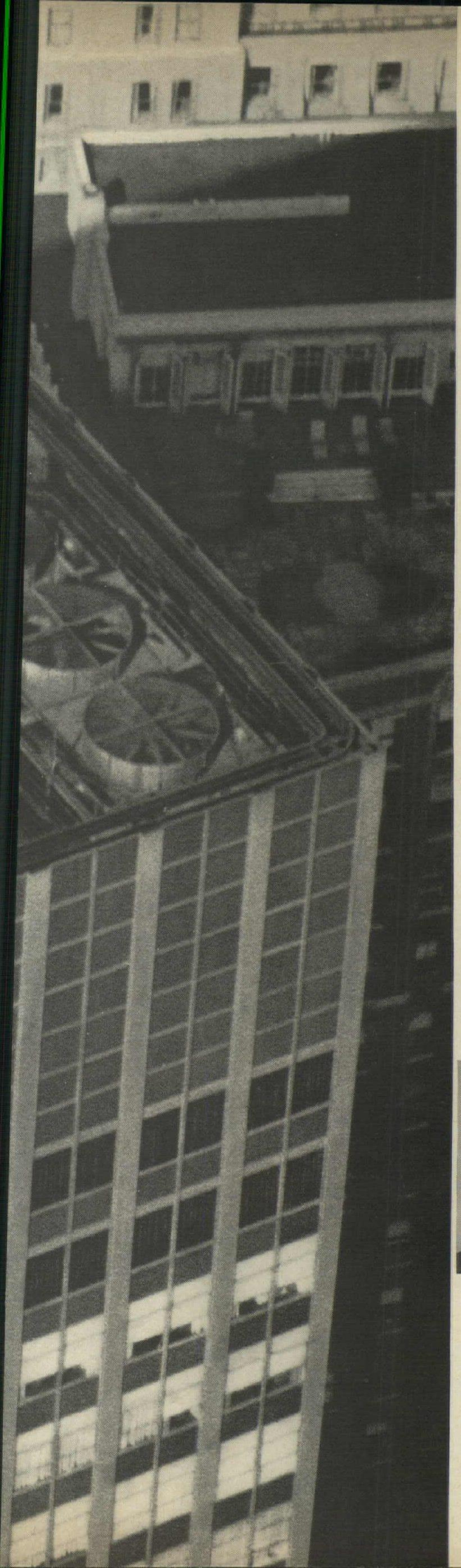
We build our future into every Onan® product



◀ J. B. Calva and Company put the teeth in the Performance Certified tag that goes on every Onan electric plant by periodic unannounced inspection testing and review of product performance tests.

ONAN ENGINE/GENERATOR DIVISION Studebaker CORPORATION
2515 UNIVERSITY AVENUE S.E. • MINNEAPOLIS, MINN. 55414





A four-pipe system isn't always the answer.

There could have been a profitable pool or penthouse on this roof.

And a garage instead of a boiler in the basement.

If only someone had specified a General Electric Zonal System.

GE Zoneline units could heat and cool the outside rooms.

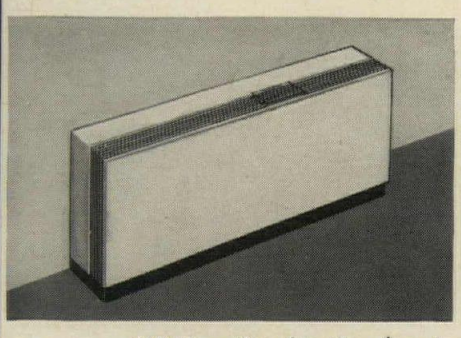
GE unitary units could heat and cool the inside, public rooms.

No rooftop cooling towers. No basement boilers. A significant increase in usable, rentable space.

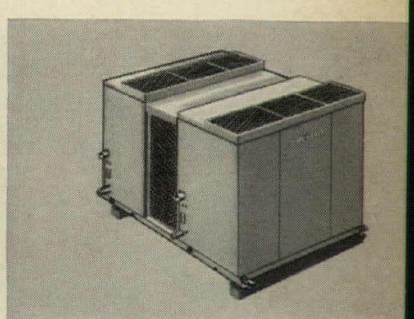
Other advantages over four-pipe systems:

- Big first-cost savings.
- Lower maintenance costs.
- Lower heating/cooling costs in unoccupied rooms.
- A breakdown doesn't affect the entire system.

From motels to high-rise construction, a General Electric Zonal System can save you space and money. For full specs, call your General Electric representative. Or write AP6-208, General Electric Company, Louisville, Kentucky 40225.



GE Zoneline heating/cooling unit. Room-by-room control. Choice of grilles. Fits over doors or under window seats. Through-the-wall or floor-mounted consoles.

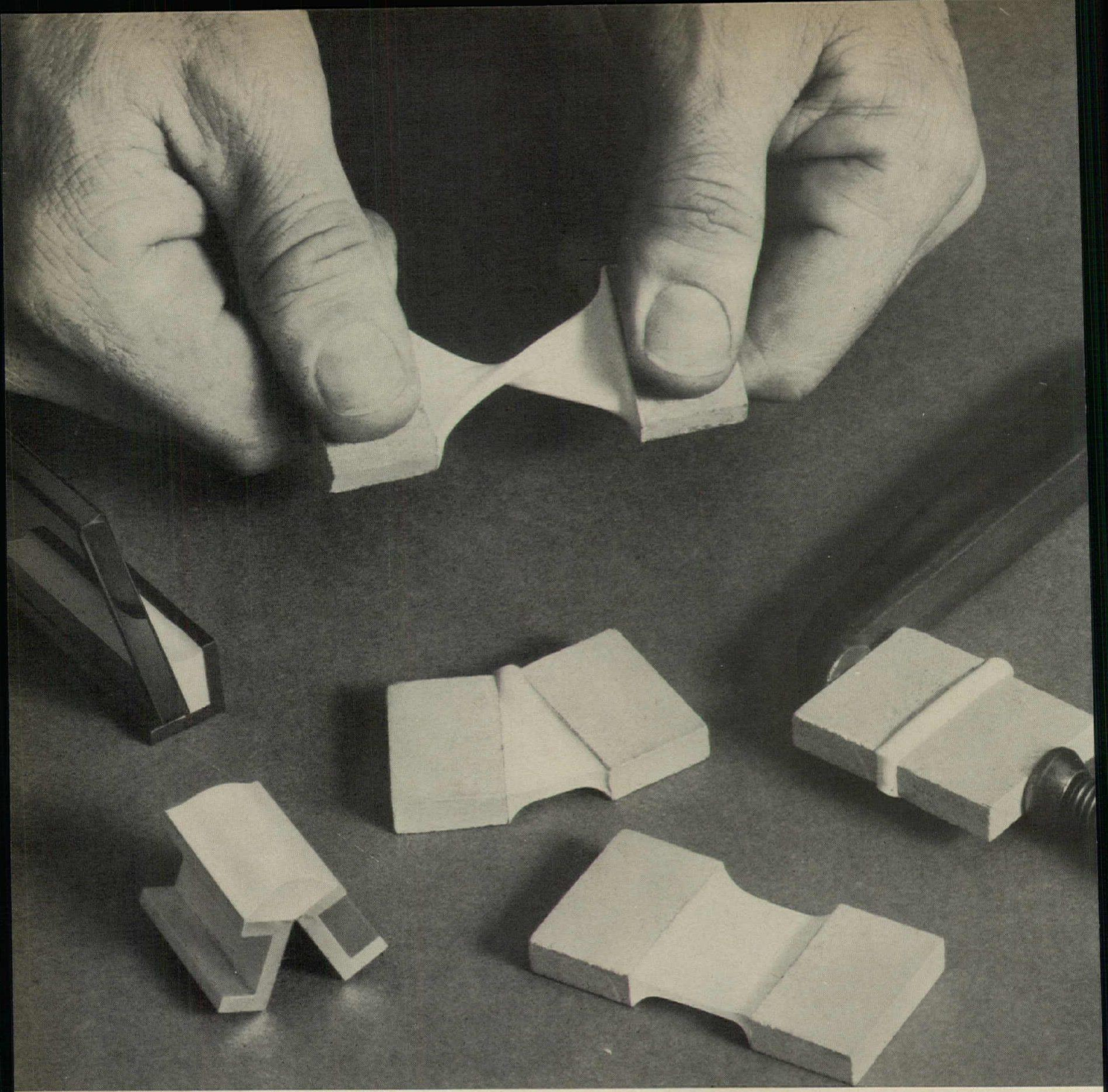


GE Unitary systems—A full line from 2-20 tons, split, self-contained, with various heating means including GE famous Hi-Reliability Weathertron® heat pumps.

Air Conditioning Department, Appliance Park, Louisville, Kentucky

GENERAL ELECTRIC

For more data, circle 96 on inquiry card



MONO stays where the action is

. . . that gives it a long, weathertight life as a construction joint sealant.

Construction joints move. Mono can follow that movement day in, day out for 20 years or more, because the body of the bead stays pliable. This eliminates stress where the Mono meets stone, glass, metal, wood, concrete or plastic.

Since 92% of sealant failures occur because the sealant pulls away from the joint sides, you can see why we build this special quality of stress-relaxation into Mono.

Mono also gives you an extra margin of safety during installation. Even where construction dust or moisture is present, Mono's extreme adhesion seals the joint. No priming required.

While we make many kinds of sealants, we th
Mono will serve you best in 9 out of 10 cases. In t
10th case, your Tremco man will recommend one
the other fourteen Tremco sealants. You can
sure he's right, because he'll be on your job si
checking.

If you'd like to know more about Mono and t
other Tremco sealants, please see Sweet's or wr
us for additional information.

TREMCO
PRODUCTS AND TECHNICAL SERVICES FOR BUILDING MAINTENANCE & CONSTRUCTION

THE TREMCO MANUFACTURING COMPA

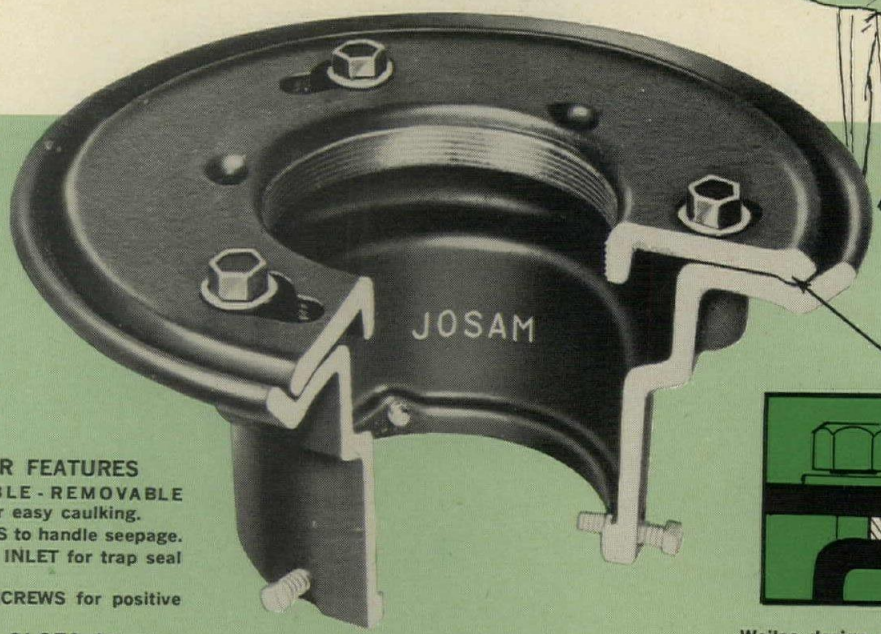
Cleveland, Ohio 44104
Toronto 17, Ontario

A GRIPPING PERFORMANCE

JOSAM

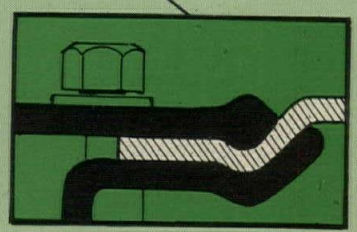
SUPER **300-**

FLOOR DRAIN



OTHER FEATURES

INVERTIBLE-REMOVABLE COLLAR for easy caulking.
WEEPHOLES to handle seepage.
AUXILIARY INLET for trap seal primer.
LEVELOC SCREWS for positive pipe grip.
KEYHOLE SLOTS for easy collar removal.



Wejloc design of collar and body grips waterproofing without puncturing to provide a solid bond with drain.

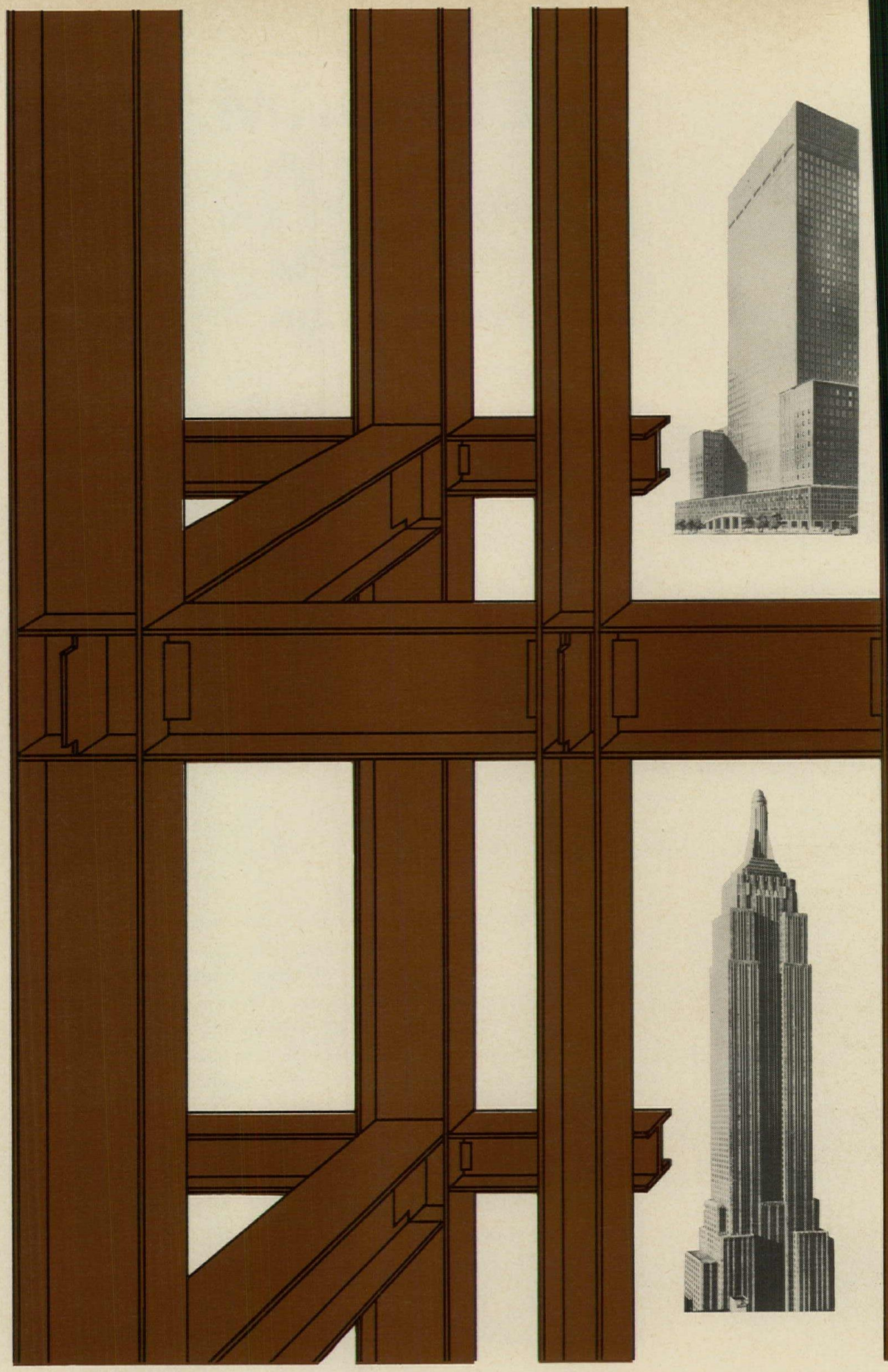
The Josam Super 300— Drain has several important features that provide a superior installation. The Wejloc design on the collar provides a positive *NON-PUNCTURING* bond of waterproofing to drain. The heavy threaded collar provides a choice of Josam adjustable strainers including the Type ASF Super-Flo strainer (more sanitary, stronger, and drains water faster.) The Super 300— drain is designed to meet the requirements of modern construction. Specify them on every job. Write for Manual TJ today.

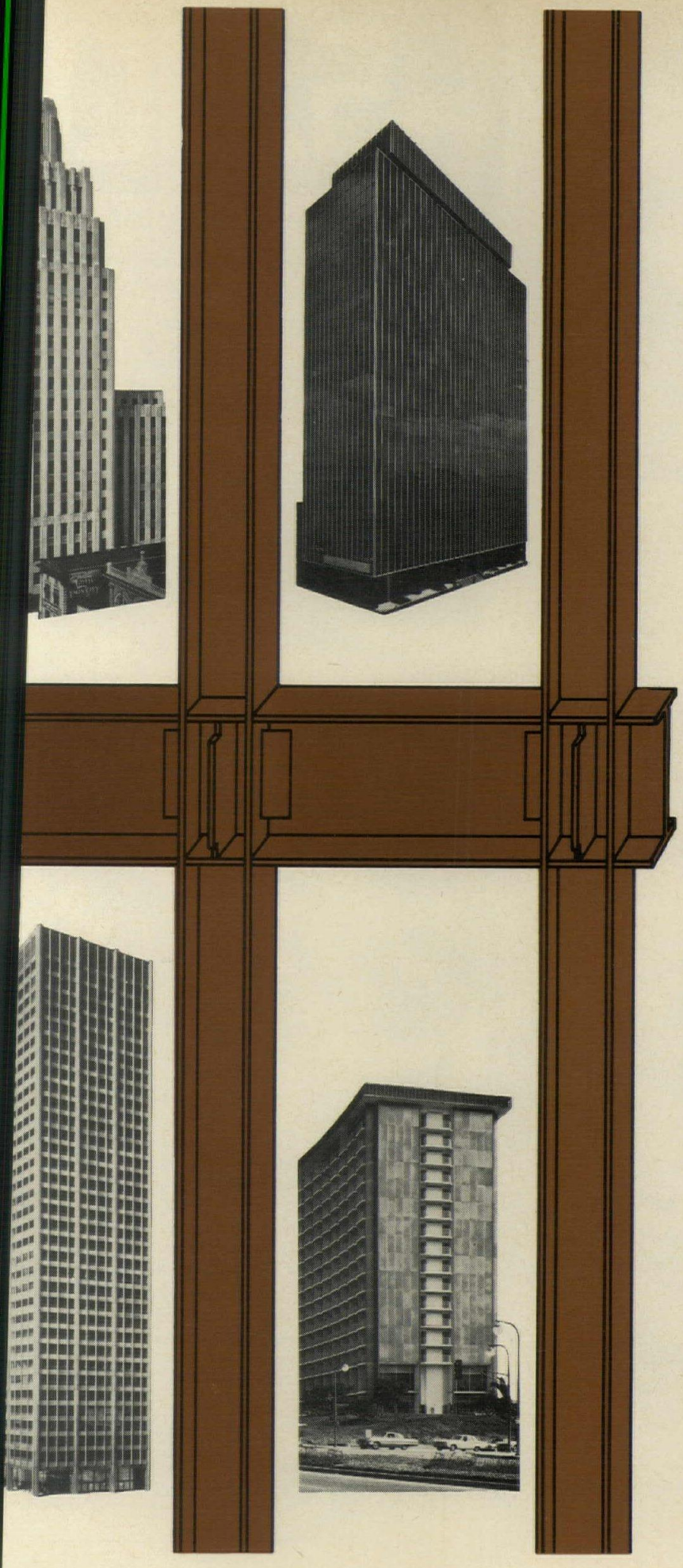
JOSAM

JOSAM MANUFACTURING CO.

Michigan City, Indiana 46360

JOSAM PRODUCTS ARE SOLD THROUGH PLUMBING WHOLESALERS





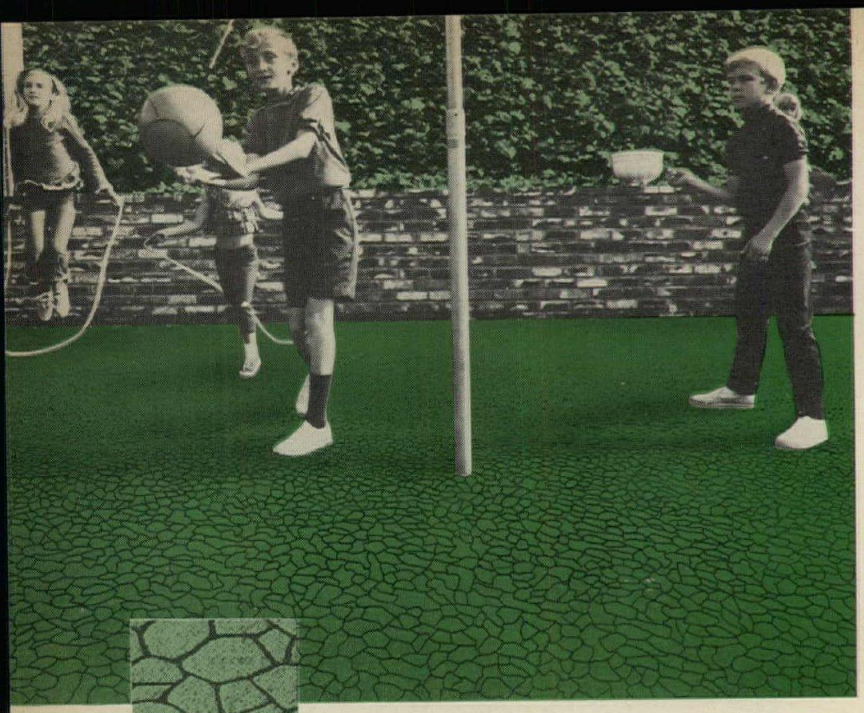
There is one sure way to save money on almost *any* type of building: start with American Bridge

Every one of these buildings has a framework of steel fabricated and erected by American Bridge. No building is too large or too small for American Bridge to tackle. As soon as you get an idea for a building, call us. American Bridge can save you money in the planning stage just as we can in any stage of fabrication and erection. We've been involved in more different types of steel construction than any other fabricator-erector in the country. You name it—office buildings, bridges, stadiums, industrial buildings, tanks, schools—American Bridge has built it.

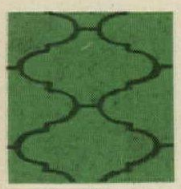
Modern buildings have structural steel frames for some very good reasons. For instance, new high strength structural steels cut costs and weight because they're two tc three times stronger than carbon steels. Steel is weldable and makes bracing and fastening much simpler. With steel you can integrate structural and architectural space for low unit cost and low unit weight per square foot of floor area. You can use a combination of steels at different strength levels to achieve almost any aesthetic effect while you cut costs. There's no special season for steel, either. It goes up fast any time of the year. And when it's time to remodel, steel makes it less expensive and easier. Only steel can be safely altered, extended or reinforced without damaging the integrity of the building's structure.

We're steel specialists—so we can give you the best structural work possible for the least cost. American Bridge starts from scratch on every job—no matter what the size—to find ways to fabricate and erect your structure as efficiently as possible. Talk to American Bridge first about any building or remodeling project. Write American Bridge, Room 4826, 525 William Penn Place, Pittsburgh, Pa. 15230.

USS TRADEMARK **American Bridge**
Division of United States Steel



CarvTone



La Costa

Carpet the action areas wherever they are

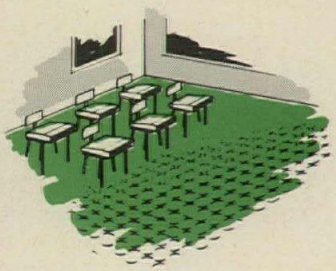
... in and around

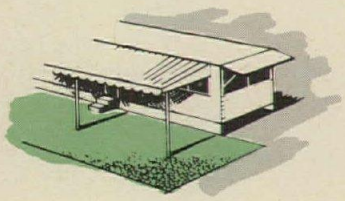
Schools Clubs Mobile Homes
Motels Hotels Shops
Homes Apartments Supermarkets

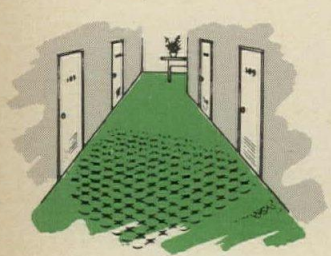
Use Orcco EMBOSSED
Patent Applied For
SUN & SHADE OUTDOOR-INDOOR CARPET
of 100% HERCULON*
olefin fiber pile

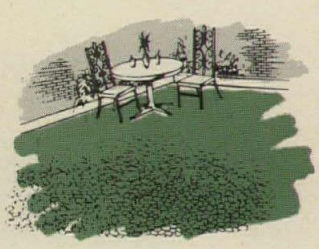
If product or performance defective Good Housekeeping GUARANTEES replacement or refund to consumer

* Hercules registered trademark









Contact Your Orcco Distributor

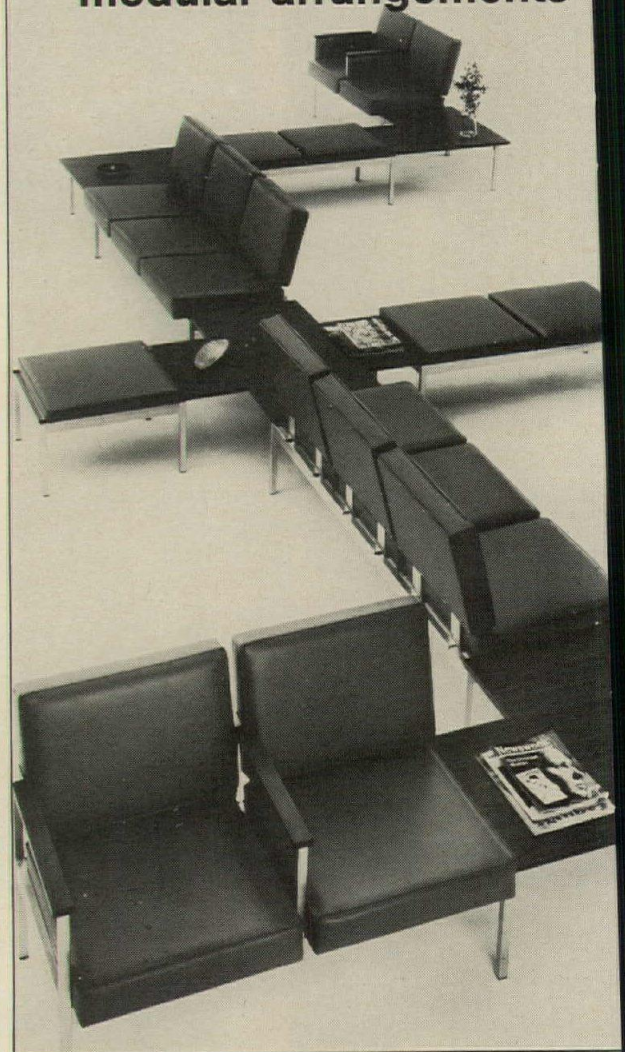
orcco INDUSTRIES, INC.

A Subsidiary of Ludlow

SUN & SHADE DIVISION
4903 Everett Avenue,
Los Angeles, California 90058

45,00

Only a computer could count the Sturgis modular arrangements



Choose from 27 complete seat or seat-and-table units starter units and 21 add-ons. Add drop-in arms and panel serts at will. Then select any of the numerous rich viny fabric upholsteries available. The result is an astronomical n ber of possible arrangements—well, more than 45,000 anyhov

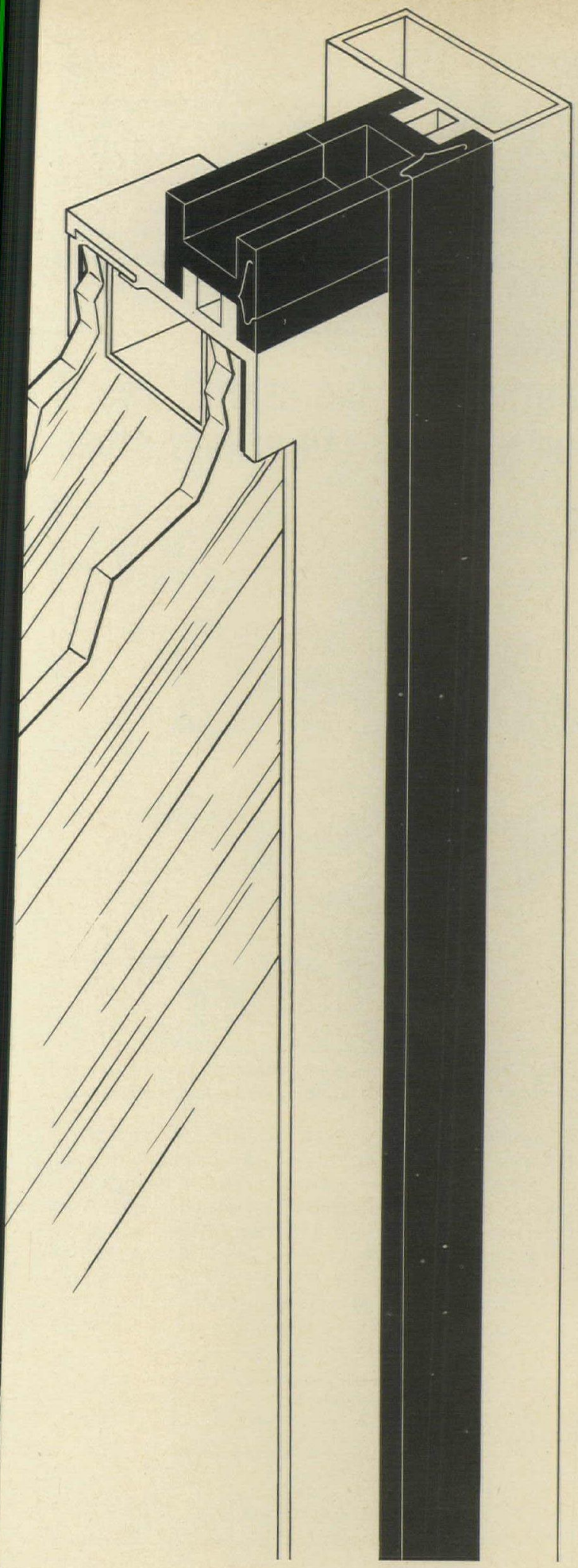
And behind the beauty and flexibility, there's lasting qua Four-inch foam cushions. Spring-supported backs for an e measure of comfort. Sturdy tubular frames with smooth-finis welds. Black, white or wood-grain laminated table tops.

All this at a remarkably moderate price. Write for the Stu Modular 300 catalog today! Dept. AR-105, The Sturgis Compa Sturgis, Michigan 49091.

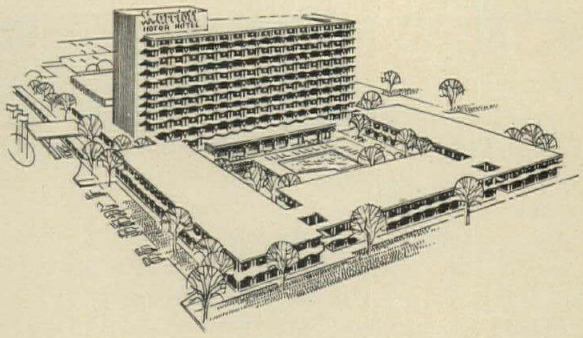
STURGIS
MODULAR 300 LINE

For more data, circle 98 on inquiry card

For more data, circle 97 on inquiry card



How the Chicago Marriott will zip out the jet blare of O'Hare



Noise is a dirty word to sleepers. And motel keepers!

But owners of the new 500-room Chicago Marriott aren't worried about noise. Not in the least bit! Even though they're close to O'Hare International Airport.

They are putting in Uniprodux® windows. Uniprodux door frames.

Soak up vibration—absorb sound

These Uniprodux windows are uniquely designed to soak up vibration, absorb sound, keep heat and cold out.

They are hermetically sealed double-pane glass. Anodized aluminum frames. And Neoprene* zipper gaskets that seal out noise and dirt—and speed up installation (windows zip in fast).

Put the same zip into your next building. Write for complete information about our windows, curtain and panel walls.

*Registered DuPont Trademark

UNIT PRODUCTS CORP.

5130 Stecker Ave.
P. O. Box 203

Dearborn, Michigan
48121

UNIPRODUX

For more data, circle 100 on inquiry card

URETHANE PRODUCT DEVELOPMENT REPORT

Builder and Applicator NEW

MOBAY

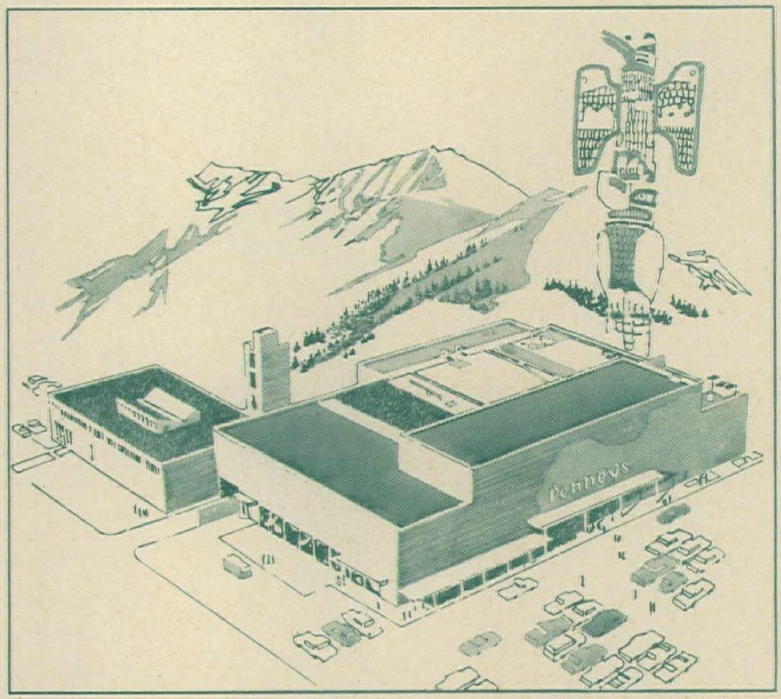
Part of a series of product-use bulletins published by Mobay to keep suppliers and applicators in the bu industry informed on new developments in urethane materials for commercial and residential constru

B/

QUICK SAVINGS IN SHIPPING, CONSTRUCTION AND HEATING COSTS KEYED TO INSULATING METHOD FOR NEW ALASKAN PENNEY STORE

One of the problems still dogging the fast-developing Alaskan frontier is the high cost of shipping essential materials and supplies from the lower states. Insulating materials, for example, are critically essential to the construction of large commercial buildings such as the new J. C. Penney store in Fairbanks. But the cost of shipping lightweight, high-bulk materials long distances can often exceed the value of the materials themselves.

One answer to this problem was found in a unique and highly advantageous feature of rigid urethane foam — the fact that it is a cellular material that may be produced from liquid chemicals anytime, anywhere. Since the liquid chemicals have only 1/30 the volume of the expanded foam, savings in long-haul shipments, which are usually based on cubic volume, can be considerable — $5800 in this example, F.O.B. Seattle.



Insulating huge interior in far north environment posed a unique problem for store designers and led to quick switch in technique.

But shipping cost savings came purely as a bonus feature. The real motivation behind the decision to use rigid urethane foam in the Penney store was the 6-month arctic-style winter during which lows of −40°F are average. The 48,800-sq. ft. building was originally designed to be insulated with locally produced styrene board and the project was already underway when the architects were introduced to the idea of creating a seamless, joint-free, monolithic insulated environment with urethane foam. They were so impressed with the benefits to be gained that wall sections and detailing were revised to take advantage of the urethane method.

Every square inch of the exterior wall surface of the huge windowless structure is insulated with urethane foam, either sprayed on or poured in place. Foam was poured to fill a 2½-inch space behind previously installed pedestrian-height concrete panels. Other sections of the concrete walls were sealed with urethane sprayed over wire mesh, then covered with several types of facings in a series of horizontal bands. Urethane foam was also applied as a frost barrier on the footings to a depth of 2 ft. below grade. Despite temperature ranging down to −40°F, installation of the urethane was fast and did not interfere with interior finishing operations going on at the same time.

Architect:	Alaska Architectural & Engineering Co. Fairbanks, Alaska
Foam supplier:	Cook Paint & Varnish Co. 1412 Knox Street Kansas City, Mo. 64141
Foam applicator:	Vertecs Corp. 12601 132nd Avenue Kirkland, Wash. 98033

MOBAY CHEMICAL COMPANY, CODE AR-11, PITTSBURGH, PA. 15205

Bruce Davidson © 1967 Magnum Photos

The world around us:

toward an architecture of joy and human sensibility

We live today in a cool, cool age when there is almost a national phobia about the expression of private feelings, especially on the subject of that obsolete quality called "beauty." Not so long ago men felt free to admit they loved the meander of a river, a field of devil's paintbrush, or a woman's crazy loveliness. Today such a display of emotion makes us squirm. Do we dare to express delight at the sight of a soft summer sky? Can we still cry out at the anguish of our fellow man? Or does the cold shell of logic reduce us to apathy?

I believe that all knowledge begins with self-awareness, so unless the doorway to the senses is open and lighted, can we sing out, or write, or draw? Can we design a happy environment for others? So perhaps the central question of the age should be "Can we be free without LSD?"

I believe we can. In order to explain my position, I want to address two central questions: does it really matter—all this ugliness and confusion? Does it affect anyone except "us", the so-called ingroup? What is causing the problem, and is it our responsibility to stop it?

By Benjamin Thompson

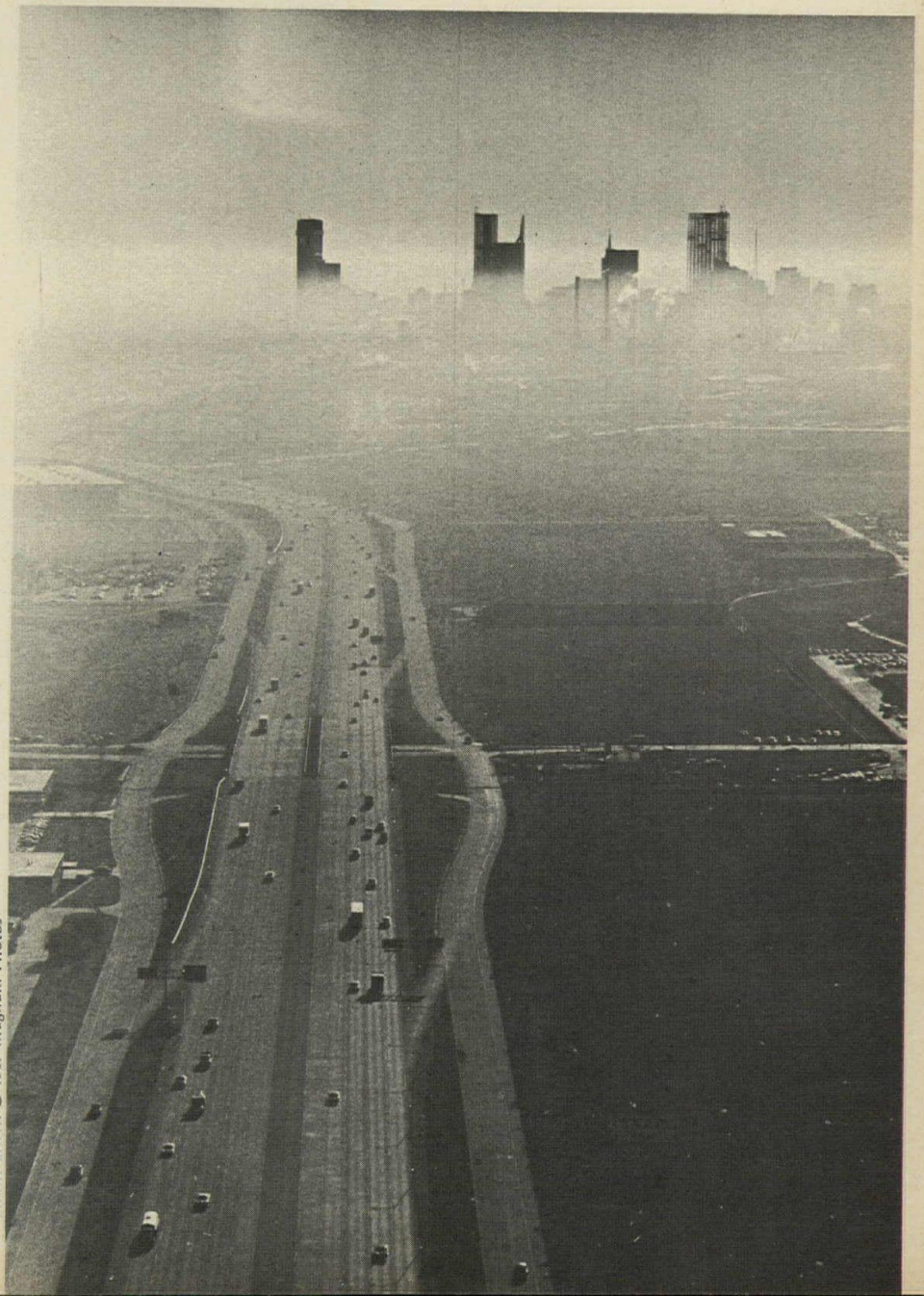
Bruce Davidson © 1967 Magnum Photos

First of all ugliness does matter immensely because every sensory experience has a deep effect. This is not just a theory. Scientists have recently proved what artists have known all along. Man is an adjustable creature and one way he adjusts is to insensitize himself. When physical or emotional conditions are severe in the various blitzes of life, his very survival hangs on his ability to shut down part of his circuitry so that the destructive messages won't tear his system apart. In doing this, however, he shuts off his potential; he is only half alive. So today people no longer see the ugliness which surrounds them, but at the same time they miss the birth of the spring grass.

Before we can write, or sing, or draw or plan an environment for others, I believe we have to accept the senses as partners of the intellect. We have to turn off the verbotens and inhibitions that spoil life and our landscape, and encourage people (especially young people) to respond with all eight cylinders. We have, since Freud, seen a breakthrough in psychology. We are now seeing

kthroughs in biology, physics and education.
ew knowledge points to the fact that man is a
complex organism, standing right at the center of things.
hifting focus is from outer to inner awareness.
s been expressed in painting for more than half
tury—it is very slowly moving into architecture,
h brings me to the question of human scale.
Human scale by my definition refers to what happens to
of us as we view things from our own level. In the
rmarket or beneath the skyscraper, we relate first
I tend to think best) to what happens at ground and eye
; the feel and contour of the earth under our feet,
trees, grass, windows, signs and other faces—
e things within immediate visual reach. We extend
ward and upward visually and try to relate to things that
beyond our physical imaginations. Human scale is not a
d measure, nor an eternal proportion or tidy modular.

move on the ground in speeding cars, we rise in elevators and airplanes, we see with changing speed and perspective . . .



Elliott Erwitt © 1967 Magnum Photos

But even in the space age, the basic need for consideration of human scale, or scales, has not changed. The living, breathing pattern of city streets has to be scaled to the perceptions of man, in terms of space, shapes, textures, colors and materials.

Mobility, instant communication, advanced technology, equal rights, increased leisure, the population explosion and of course, the urban crisis—as words they are almost cliches, but the problems they pose are hardly resolved. The implications on the architectural scene are enormous. The designers must deal with vast numbers of figures, complex systems and multitudes of materials old and new. Resolution will only come with a whole new attitude about the meaning of building.

An architect works on a new community on paper. But that is only the beginning. He then deals directly with mud, bricks and steel, with old buildings and new, with wind and sun—and let's not forget the most vital ingredient—people. The architect's designs are tempered by other people's joy and fears, sense of isolation and belonging, by chaos and splendor, compromise and determination. He must project himself and his own understanding into the environment he creates.

The young architect leaves the drafting room with his slide rule greased and golden mean all shined up to confront a world he never knew—of bricklayers and goldbrickers, and relentless human contradictions. It is a world of people who neither act or react the way he expects. They store coal in the bathtubs, they walk and even sit on the grass. They have fears and foibles and furthermore, they don't care about the abstract values of proportion and line that juries and critics swear by.

To build a great city or even a little square, we must *understand* before we begin to design, for the values in our work, whatever they are, reflect the values in our own lives. The architect should encourage the sun which pours in his buildings, morning and afternoon. He should respect the trees and the changing seasons. He should not be tempted to suppress the varied, untidy human life that clo our streets, remembering that one of the glories of life is its rich chaos.

These values inevitably turn up in our designs. I believe that the architect must be an artist—a person of perception, openness and wholeness of insight. But he cannot expect to work as a pure "fine artist" using the world as a fresh canvas for his personal fantasies. Architecture is both a personal statement and a human service involving collaboration with others. Both sides are important to everybody. They are not mutuall exclusive, but should flow from each other and it isn't easy.

But we are living in the age of the mammoth institution, the multiversity and the giant corporation. The population explodes at our door. Yet how big is big? If something good is big, is it better if it's bigger?

Cecil B. DeMille believed so, P. T. Barnum believed so—and Cadillac still does! Who is to argue against these giants except perhaps a lonely Giacometti whose sculpture reflects the scaleless aloneness of people swallowed by the vacuumed city. Who can take the reins to halt the new imperialism of overscale unless it is the very men who are creating overscale in the first place? Individual man loses his sense of humanity in an overextended society such as ours, so the architect must now give first priority to the individual, see each person as more than a statistic in the population explosion, and give man the central place in his plans.

As we sit working alone on the ninetieth floor the telephone's wiry tentacles invade our privacy to keep us in total touch. The challenge of such superscale communication, mobility and construction bears down on us. We are plugged into a giant system and there is no place to go. Can we call up the human nature within ourselves? How can we rediscover our deeper creative and emotional links to the vital natural world which an artist like Klee knew? Again it is not going backward, it is moving forward to the nearest task, the next

challenge—the acceptance of our own primitive
urces. Recent brain research has reinforced the
tive ideas of many leading educators on the
ortance of the senses in learning. Every small child
vs he must use his eyes, mouth, fingers and nose
arn. This is the method of learning by doing,
t simply means using the brain, muscles, nervous
sensory apparatus as the single integrated system
h it is. The senses are the source of everything
rain knows, and the source of its growth.
eption, conceptual thought and imagination all die when
ose *touch* with the sights, sounds and smells around us.
At this point, I am not advocating a movement back to
re. I suggest something much harder and more
lenging: forward to nature, to an understanding of our
inner natures and to the reality of the nature within
ple whom we as architects design for.

ple disconnected from nature lose contact with their inner resources and are in danger of losing their essential humanity . . .

k Uzzle © 1967 Magnum Photos

This article originally appeared in the Spring 1967 issue of Connection, *pu by students at the Graduate School of Design, Carpenter Center for the Arts and Fogg Museum of Art of Harvard University*

The natural environment outside us is simply a means of achieving that inner identification, that self-awareness, from which all knowledge springs. So, the first step is just seeing—learning to use the eyes for something besides distilled abstract verbal information. But even that is not enough, because vision, as a sense, cannot be isolated. It is taught, unfortunately, too much in isolation. "Visual specialists" can be as incomplete and harmful as "intellectual-verbal specialists." The imperative next step is learning to see not only selectively and sensitively, but compassionately and completely.

Klee called all this the Thinking Eye, but I like to think he meant the feeling eye, that could see within the framework of an emotional value system. If we can really accept the interconnection of the senses and put the idea into practice, then it is possible that education can become whole again. Maybe then we could look forward to a freer and a more joyous world created by people who know how to see with the understanding of the heart. That's a bright future for architects.

Finally then, what is the central issue for designers and architects? Does ugliness breed insensitivity and insensitivity breed more ugliness? Is deterioration beyond our immediate control? Shouldn't we examine what we are doing for people and to people in the descending spiral of sensibility? Because in spite of the objectivity of computers, methodology and new technology, people, that original marvelous invention, are still the crux of the matter. Man is the reason buildings are planned and built in the first place. If we contribute anything to a better environment, then seeing people as masses of statistics and pretty circulation diagrams will not be sufficient. What will be sufficient is almost too much to imagine at this point. I have no master plan—only a few road signs.

In practice we must stop designing for ourselves and the critics and instead begin to identify with the joys and terrors of the man who will spend his life in what we build. That means we must design for people. But if we stop to analyze people, we'll never make it. The process of understanding and empathy must be as instinctive as understandi ourselves. For we know by now we cannot inhabit ivory towers. We must speak from the very middle of things.

And we must take newly appraised responsibility for th education of the new age who are coming along, in a spirit true to their exciting new world and not to our own aging one. This will require revolutionary methods devoid of fixed curricula, standard methodology and academic-profes sional prejudices. Education must anticipate what is comin the yet unknown. Much can be learned from the anthropolo of civilization which displays to us the essentials of our own present. Such study is vital for architects, who must transcend the security of their precious present beliefs, to predict and design for the future. The professionals must actively help in bringing education to the mainstream. In such a changing world, they themselves have much to lea

I believe we must involve our clients and co-workers in new ways of work which attack the problem of scale. Most drawings and programs are difficult to understand on paper, as space-occupying actualities. We must intimately visualiz the life lived within the three-dimensional walls.

I have used such devices as progressive working models brought to a larger and larger size so that clients, architects and consultants can understand and visualize the buildings in development. Reality can be found in new working processes, otherwise we will design paper plans for paper dolls, not people. The client and the designer should continually share in the development of projects.

Most of all we must accept the connectedness of our senses, not vision alone because we can become visual idiots too. Vision as total feeling identity is what I mean. We must acknowledge the value of sky and trees a mud underfoot. And if we, as architects and designers, wish to accept the role of creative men, we must dare to fe as artists and be unafraid to cry at the splendor of a mountain sunset. We must be willing to stand alone for what we believe. What I suggest will not be easy. We cannot change overnight, but we could begin by designing with love instead of disdain.

CHALLENGING COLLABORATION FOR TAC:

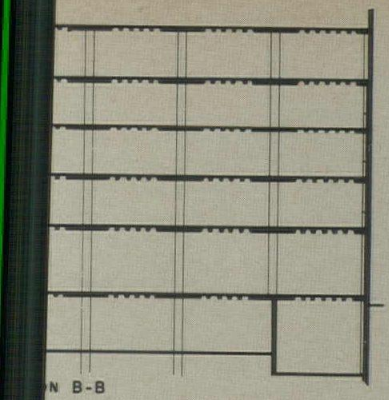
In the design, financing and construction of its new office building in Harvard Square, The Architects Collaborative became its own client—budget-minded, yet exacting; demanding an organization of space tailored to its own particular style of working, yet flexible enough to accommodate unforeseen changes. TAC's architects have proved equal to the conflicting goals they imposed upon themselves. Their new structure, adaptable and low cost, is handsome and enduring as well.

© Ezra Stoller photos

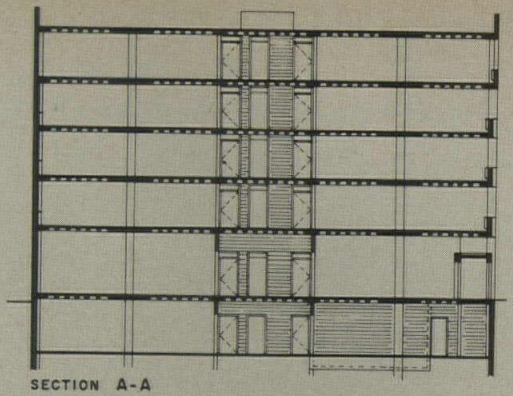
Until The Architects Collaborative m
into its own new building, its h
quarters were located in a small, old
charming frame house rented from
cliffe. Work had long since expanded
six additional drafting and office sp
occupying a number of nondescript
bridge buildings located at some dist
from each other. Each of these of
functioned as a studio under the d
tion of one or two principals. When
cliffe, embarking on a new building
gram, terminated TAC's lease, the
began in earnest to examine a prob
which had now become urgent: how
to gather its sizable, widely dispe
staff under one roof for greater efficie
without changing TAC's image into
of "bigness".

The Architects Collaborative is
largest architectural office in New
land, and one of the biggest in the Un
States. The work produced by its sta
approximately 150 is both national
international in its reach, while at
same time the firm is responsible
some of the best contemporary build
in the region. Despite its rapid growt
the twenty-one years since it was fou
ed, TAC has avoided organizing its p
tice into any system which could ev
tually resemble the over-speciali
pecking orders of some larger organ
tions. No principal concentrates on
one phase of the firm's activities. In ad
tion to his over-all responsibilities a
TAC partner, he is fully responsible fo
given number of jobs. For each of th
commissions he forms a team of asso
ates and draftsmen which works toget
in a space of its own. The principal fu
tions in this respect like the head o
small architectural office, and his team
sembles a small office staff with its sha
responsibility and control of detail. L
their counterparts in smaller organi
tions, TAC architects combine a disd
for the usual appurtenances of status w
a preference for informality. Dr. Grop
is addressed as "Grope" by all, and
years Alex Cvijanovic's Gordon Set
kept his master company at work.

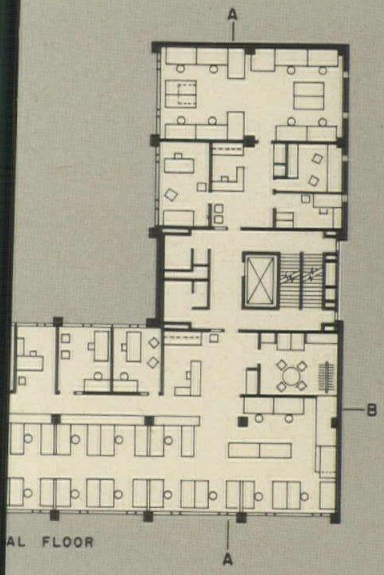
continued on page



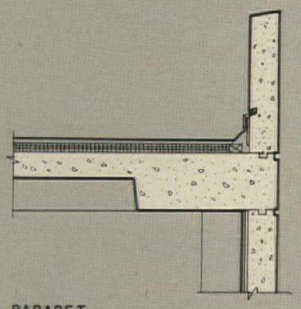
N B-B



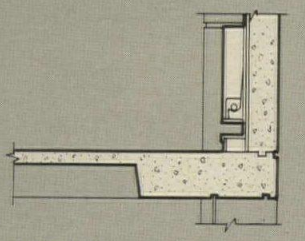
SECTION A-A



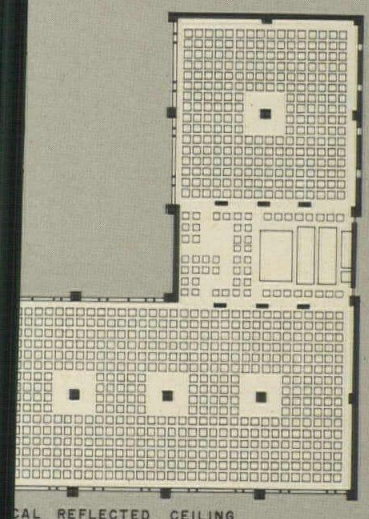
AL FLOOR



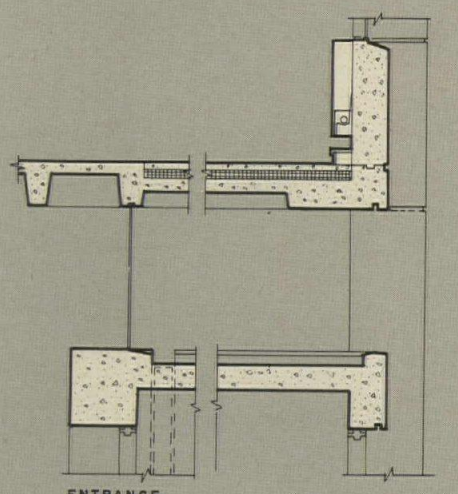
PARAPET



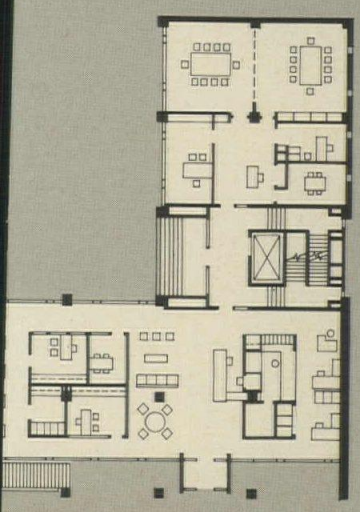
HEAD & SILL



CAL REFLECTED CEILING

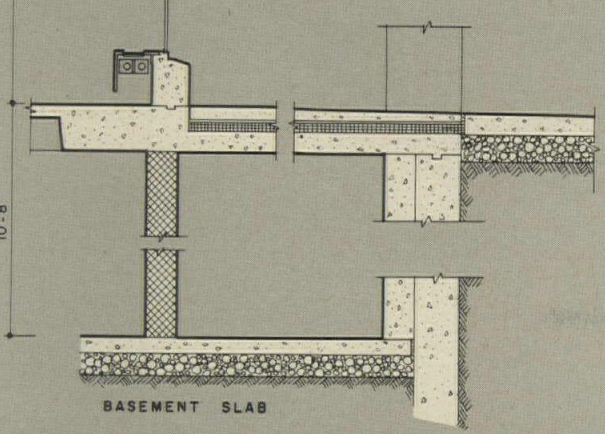


ENTRANCE



ST FLOOR

10



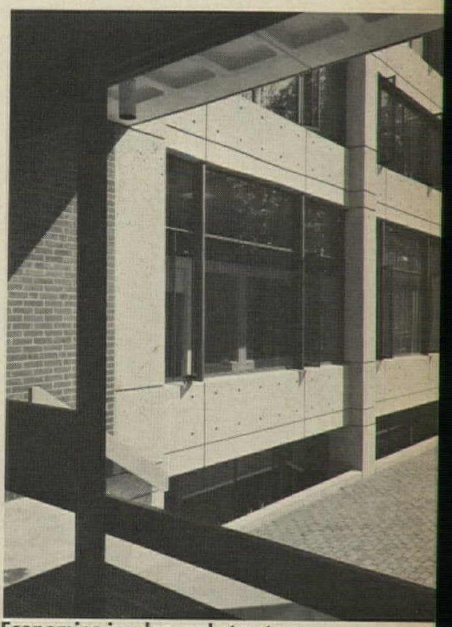
BASEMENT SLAB

8'-4½"

9'-4"

12'-8"

10'-8"



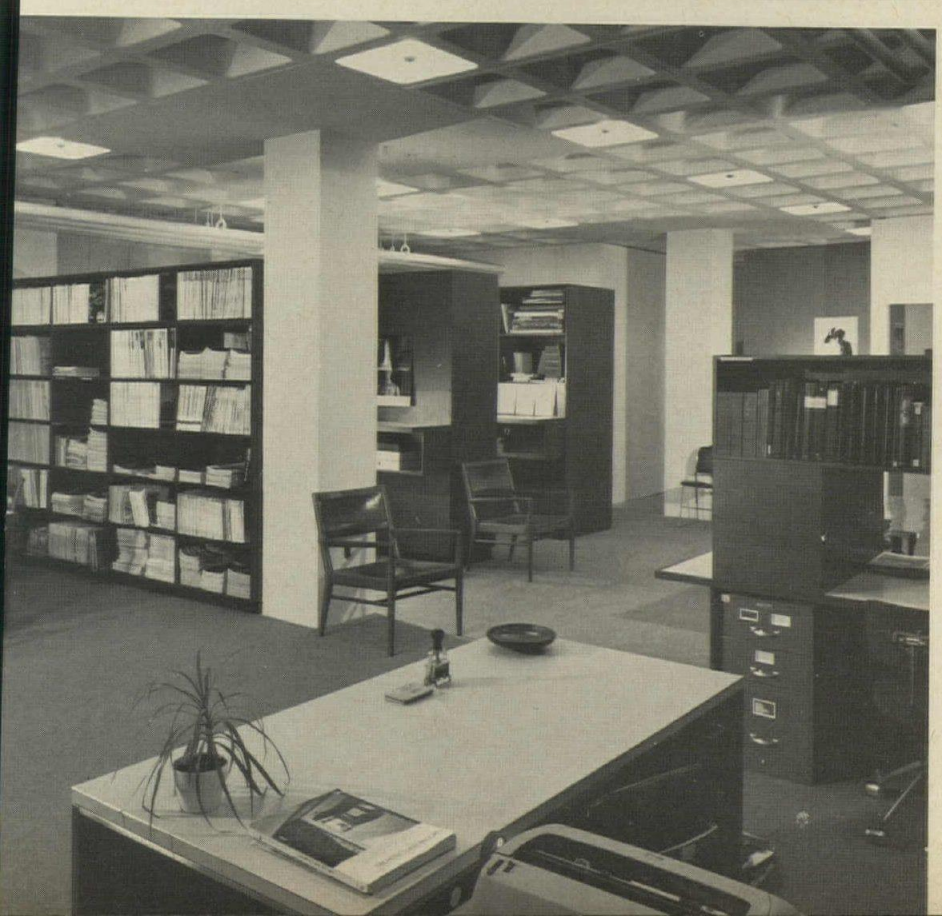
Economies in plan and structure reflect TAC's self-imposed budget of $20 per square foot, not including air conditioning. The building is five stories high instead of the four which zoning regulations normally permit. TAC gained an extra floor by allocating a portion of their site to an entrance court.

The major entrance, linked to the central core, faces this entrance court which opens onto Brattle Street, Cambridge's principal avenue. The secondary entrance, shown in the photograph opposite, provides access from a side street. A scissors stair scheme within the central core was devised as the most compact and efficient way to provide the two separate means of egress called for by the building code. Bays are 18 feet square, forming eight and four bay spaces which are appropriately sized for an operation like TAC's. Since the staff has always been divided into small flexible groups sharing a common space under the leadership of a principal, large drafting areas have never been desired. Concrete shapes have been kept as uncomplicated as possible, as shown in the wall section at left.

Enrichment of the concrete su has been achieved by simple r Holes left by the wooden lu the formwork combine with c raked joints to form a hand well-scaled pattern as shown photograph at left. The sandb surface reveals an attractive a gate of dark gravel which con well with the bronze colored glass of the windows. Sidewalk the courtyard are also of brick

The main floor reception ar shown in the top and middle p at the right. Wooden partitio the top photo conceal the mai blueprint room located near th trance for maximum conveni The treasurer and his administ staff occupy the office space sh in the middle photo. Permaner terior walls are of 8 inch by 8 pumice block, or red brick.

A library and information cer located in the basement, is adm istered by a full time librar Gathered in one spot and rea accessible are books, magazi photographs, slides, and a work drawing file.



continued from page 160

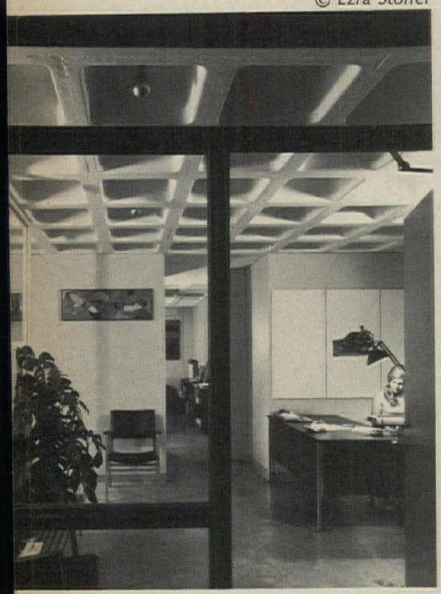
The new five-story building in the heart of Cambridge has been carefully designed to accommodate this informal, studio-centered organization. On each floor, two spaces of 2,592 square feet and 1,296 square feet respectively are connected by a central core. The smaller of the two spaces serves one principal and the larger permits two or three to function with their teams. Each space has its own reception room opening from the central core, offices for the principals, cubicles for clerical personnel, drafting space, and a conference room.

This solution which works so well was not easily arrived at. TAC's architects studied many alternatives to the one they finally chose. The purchase and remodeling of a large book bindery was contemplated. This would have provided maximum floor space and expansibility at a minimum cost. The firm considered moving into one of the old warehouses on Boston's wharf. Several principals who wished to build rather than remodel stressed the economies of building outside of Cambridge in a semi-rural area near a major highway. There, zoning regulations would have permitted a long, low, two-story building which would have been cheaper to construct.

While these alternatives were being studied, Walter Gropius continued to insist upon the importance of building upon land they owned near Harvard Square. Offsetting the higher initial cost of this alternative were several important points. TAC had enjoyed a Harvard Square location for many years, forming close ties with Harvard University, its libraries and its life. In addition, the Square is well served by public transportation, restaurants and shops, and is very much in the center of things. Gropius won his partners over to his point of view and TAC's new building has been constructed in a lively urban environment.

TAC's architects say that their handsome, low cost, well detailed and well constructed headquarters attracts clients. "We hope it proves right away that we know what we're doing," says Grope.

—Mildred F. Schmertz



© Ezra Stoller

A typical principal's studio includes, in addition to the reception room shown above, secretarial spaces, drafting areas which provide both drafting and research space for each person, a conference room and the principal's office.

THE ARCHITECTS COLLABORATIVE INC. OFFICE BUILDING, Cambridge, Massachusetts. Architects: *The Architects Collaborative Inc.;* structural engineers: *Souza & True;* mechanical engineers: *Reardon & Turner;* electrical engineers: *Vernon Norman;* general contractor: *George A. Fuller Co.*

David Hirsch

FIVE BUILDINGS BY ALDEN B. DOW

A nature study center, a Presbyterian church, a small-city YWCA building, and two suburban houses by Michigan architect Dow are presented in these 12 pages. The architect also offers, below, some intriguing thoughts about science and art.

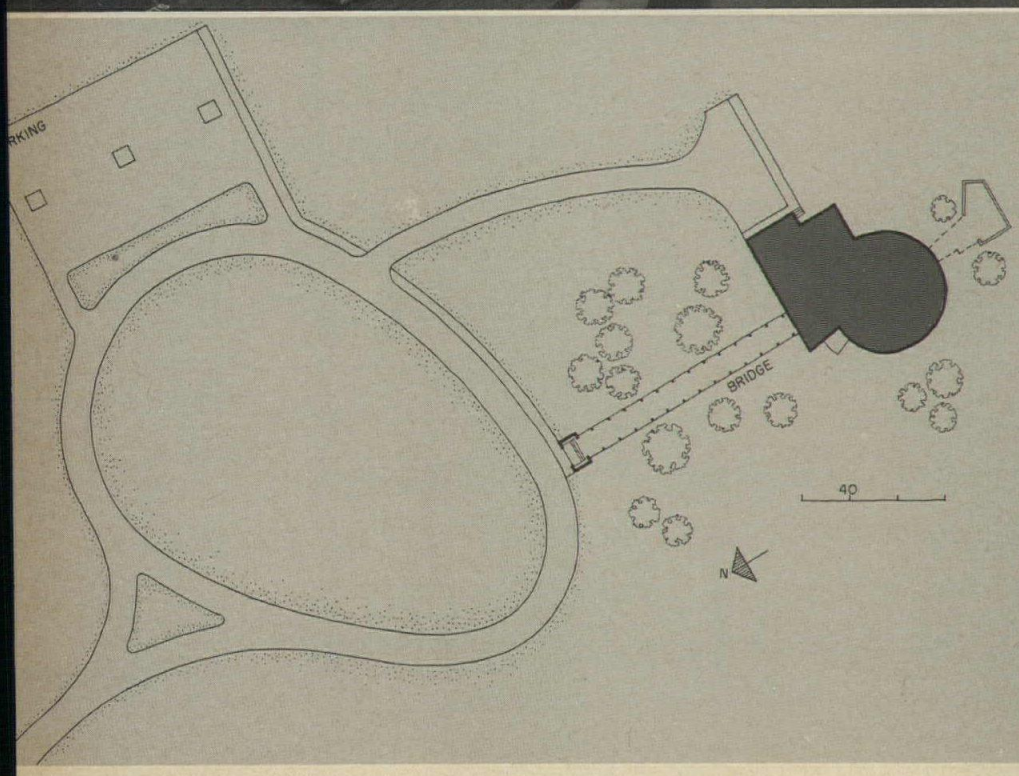
I believe that if all the professions could come to a clearer understanding of the relationship between science and art, a great new era of creativity might follow. Art is personal, intuitive knowledge that springs from our feelings and our sensitivities. Science, on the other hand, is the idea that once was a feeling that has become fact. It tells us a bridge across a stream must have a certain cross-section of steel and concrete to perform its task. If we are to do something new and creative with such facts, we shall have to let man's feelings express themselves. The feeling for a subject is the art of that subject, and this art of a subject directs the facts or science of the subject—which in turn offer stepping stones for new feelings or a new art. There would never be a new fact or a new science if there were not a personal feeling involved. New feelings can develop around old facts, but new facts demand new feelings. Consider, for example, the effect of a new instrument upon music, or of a powerful electrical battery upon transportation. Art is always the inventor—science is material for building. *—Alden B. Dow*

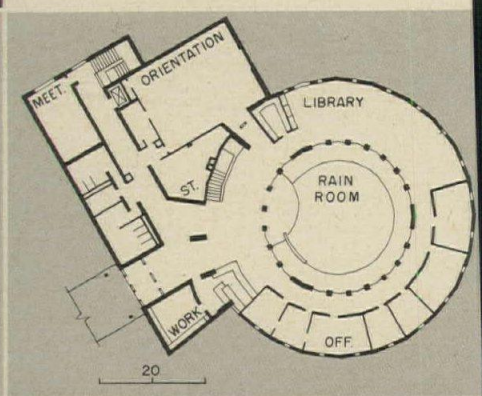
NATURE CENTER WITH GLASS-DOMED HALL

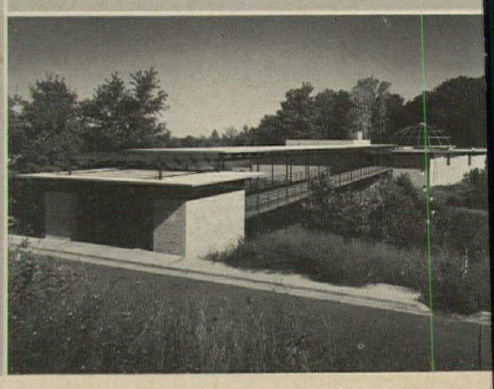
All photos by Hedrich-Blessing

Dow: The Kalamazoo Nature Cente entered by walking across a bridge t spans a wooded valley between the trance road and the building prop Trees in the valley will eventually gr over the bridge so that crossing it will like walking through the branches of trees. One is thus led into a circu glass-domed space enclosing a ra winding down to the floor below. Th the principal space of the center, is cal the "Rain Room," and symbolizes the b ginning of growth on the earth. At t lower level, a series of exhibits circli the area tells the history of the natu growth of this part of Michigan. From t circular room, a tunnel flares out throu a ridge to open upon a beautiful glen where one may stroll in today's wor

KALAMAZOO NATURE CENTER, Kalamaz County, Michigan. Architects: *Alden B. D Associates;* structural engineer: *Robert Davis;* mechanical engineers: *Hyde & Bo bio;* contractors: *Miller-Davis Company.*







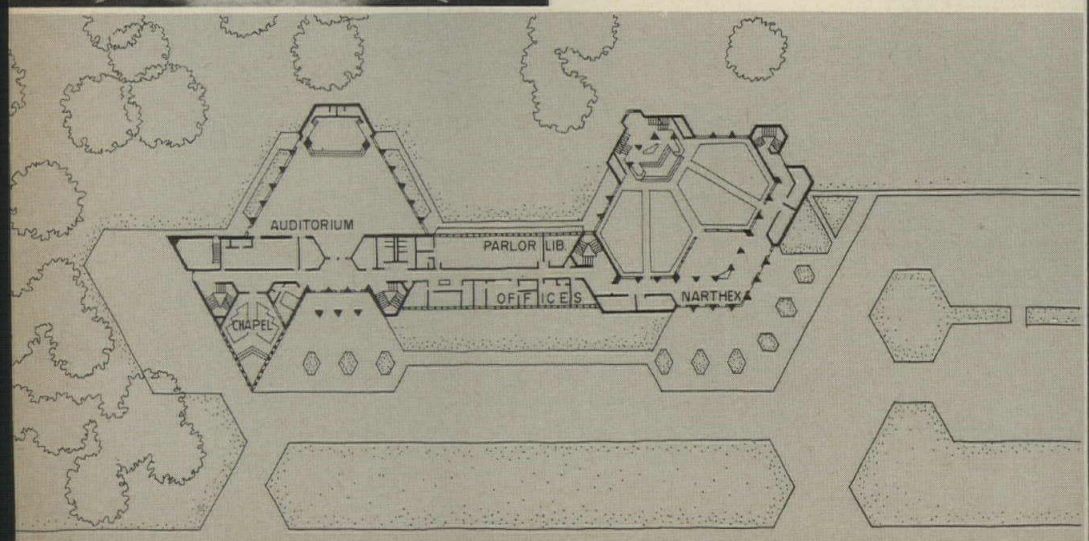
WORK BY ALDEN B. DOW

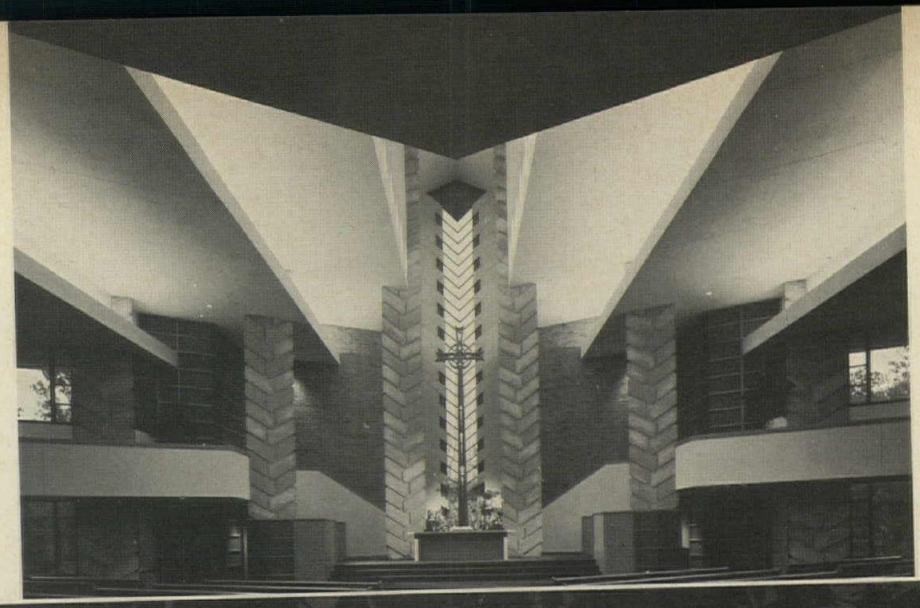
CHURCH CEILING FORM SHAPED BY ACOUSTICS

Dow: The design module for this Presbyterian church in Dearborn is a 4-foot equilateral triangle which is, in turn, the module of a hexagon. The blocks that jacket the structural steel columns emphasize the triangular motif; right and left forms of the blocks lock together to make an organic pattern. The pattern, which results from the structural system, is used on the columns and for the walls of the chapel (photos at left).

Seating in the nave is arranged in two large groupings—each hexagonal in shape. The ceiling rises through a series of steps to a maximum height of 50 feet for the central, 12-foot-wide portion, which extends from the front to the rear of the church. Thus, the reverberation time over the pulpit and lectern is a minimum, and in the center—under the high ceiling—at a maximum. The choir is located directly over the narthex and center aisle to take advantage of the added reverberations for sound reinforcement. Stairs on either side of the sanctuary enable the processional to proceed from the central aisle up to the flanking balconies and encircle the congregation.

FIRST PRESBYTERIAN CHURCH OF DEARBORN, Dearborn, Michigan. Architects: *Alden B. Dow Associates;* structural engineer: *Robert J. Davis;* mechanical engineers: *Hyde & Bobbio;* general contractors: *A. Z. Schmina & Sons Company.*





WORK BY ALDEN B. DOW

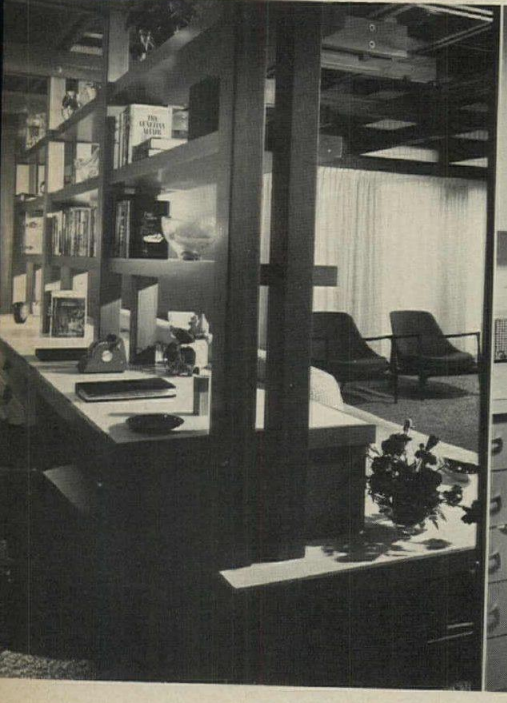
PREFABRICATED SYSTEM ALLOWS VARIETY IN HOUSE DESIGN

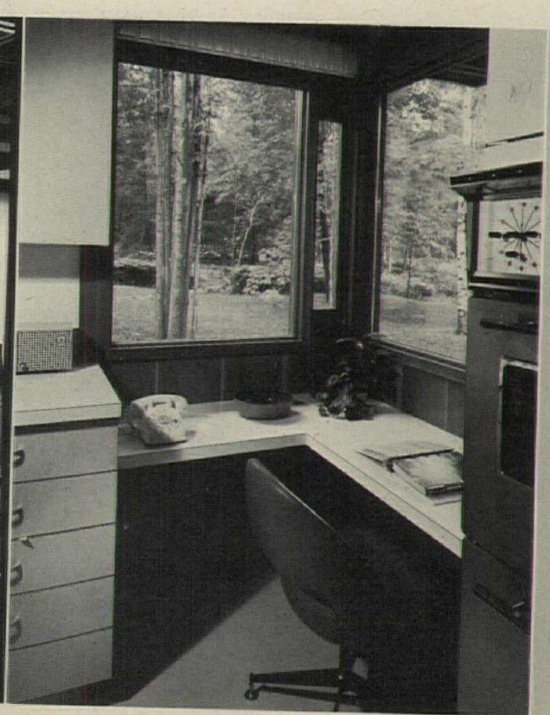
Dow: This house represents the sa approach to structure as the Rie house (page 174), yet is in princip prefabricated house. The walls are al redwood and fir sandwich panels c taining 1⅝ inches of foam insulat Similar panels were used for the r The system of double and interlock roof beams made it a simple matte vary roof elevations and add clerest windows, for a rich overhead effect a well expressed three-dimensionality

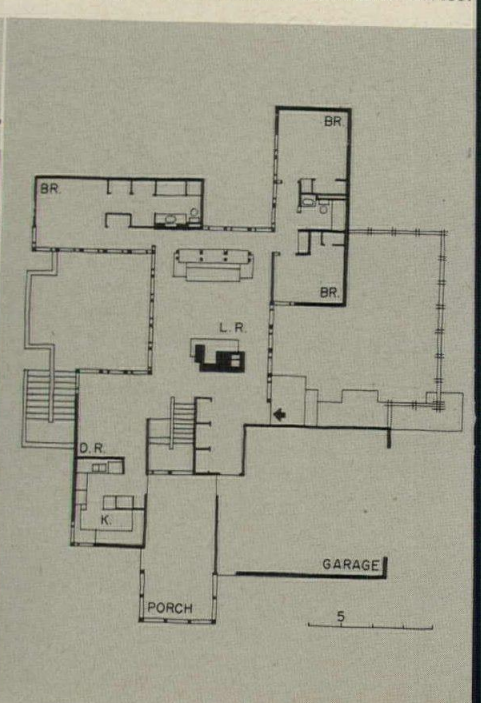
The 4,160-square-foot house is co pletely modular in plan, and all cle story windows are therefore identica size and shape. In this house they made of a double layer of vacuu formed sheet plastic.

The weakness of most prefabrica house ideas is their inflexibility as far structure goes. In this case, there many ways of varying the structure, a the resulting freedom makes more va ety of form possible.

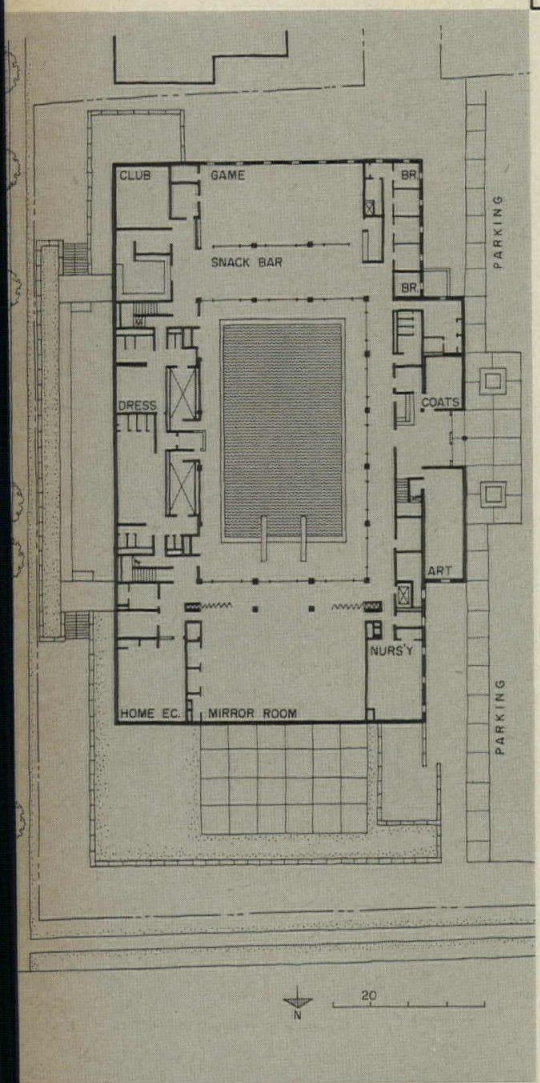
THE PETER J. CARRAS RESIDENCE, Midla Michigan. Architects: *Alden B. Dow Asso ates;* general contractor: *Lawrence Bartos.*

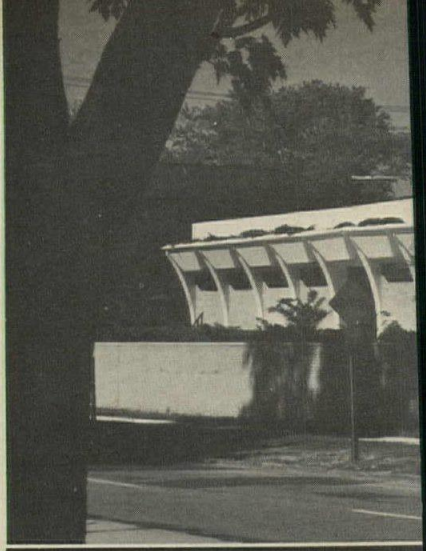


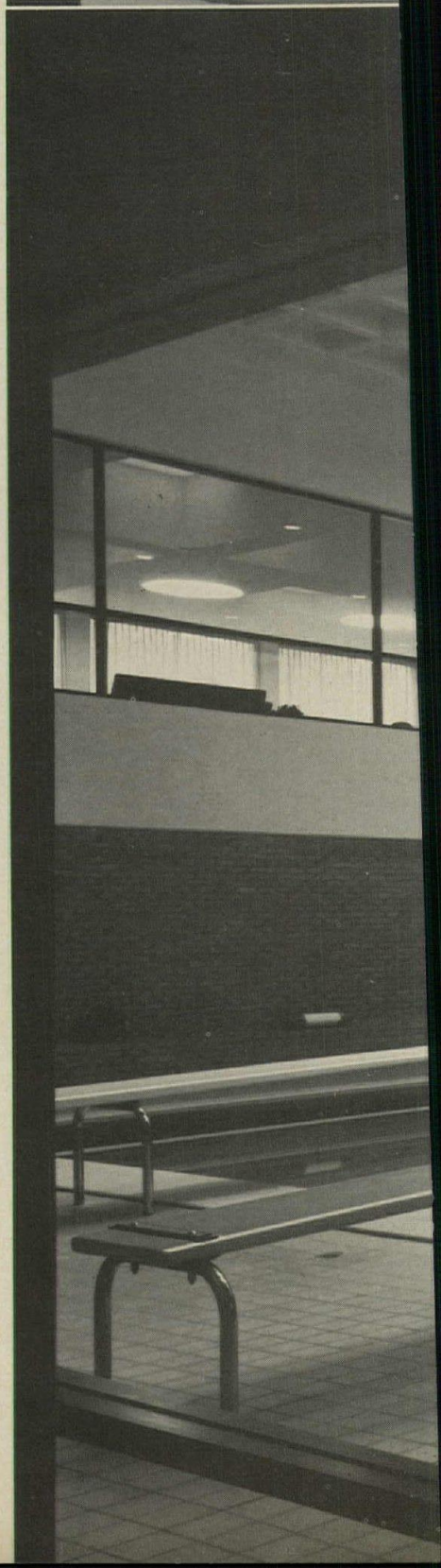




ELABORATED STRUCTURE A MAIN FEATURE OF THIS YWCA





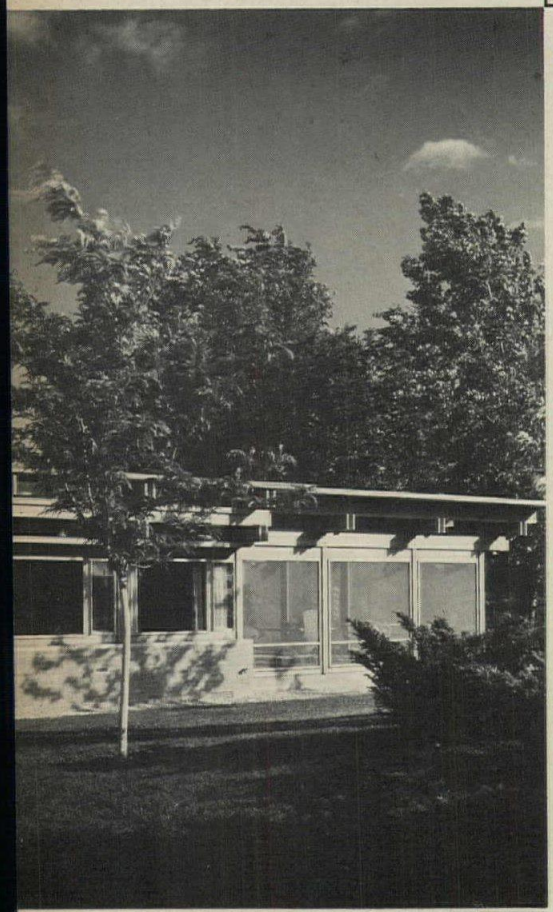


Dow: All of the social spaces in this 49,500-square-foot YWCA building are clustered about a centrally located swimming pool, and are arranged on two levels about it. As the dominant feature of the interior, it lends a lively, youthful touch in both daytime and evening.

The reinforced concrete structural frame is clearly expressed on the exterior as well as inside the building. To soften the harsh pattern of rectilinear concrete frame and brick infilling, the columns were shaped to become brackets which, in turn, support concrete planting boxes that hang free of the wall. The angular form of the boxes obviates the problem of winter freezing of the earth they contain, and adds visual interest to the building's exterior. Since the planting has had only one year in which to develop, its eventual, richer effect is not apparent in the photographs.

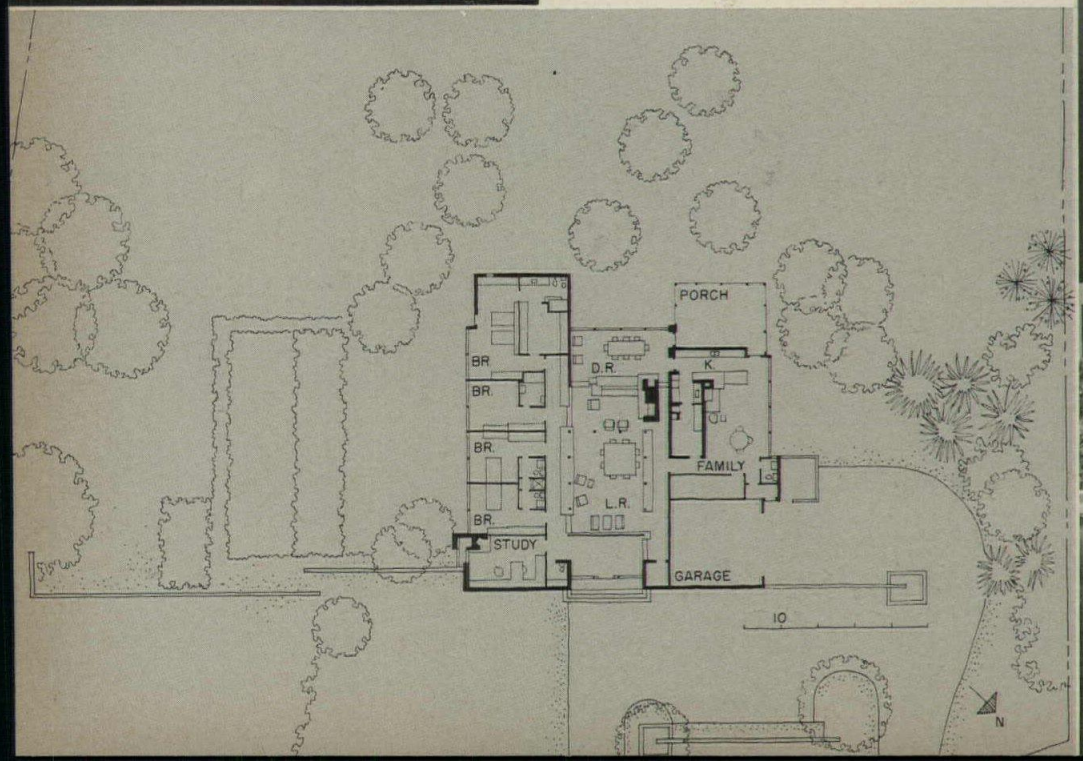
YOUNG WOMEN'S CHRISTIAN ASSOCIATION, Saginaw, Michigan. Architects: *Alden B. Dow Associates;* associate architects: *Pring, Toshach, Spears Architects & Engineers;* structural engineers: *Robert J. Davis;* mechanical engineers: *Hyde & Bobbio;* general contractor: *Collinson Construction Co.*

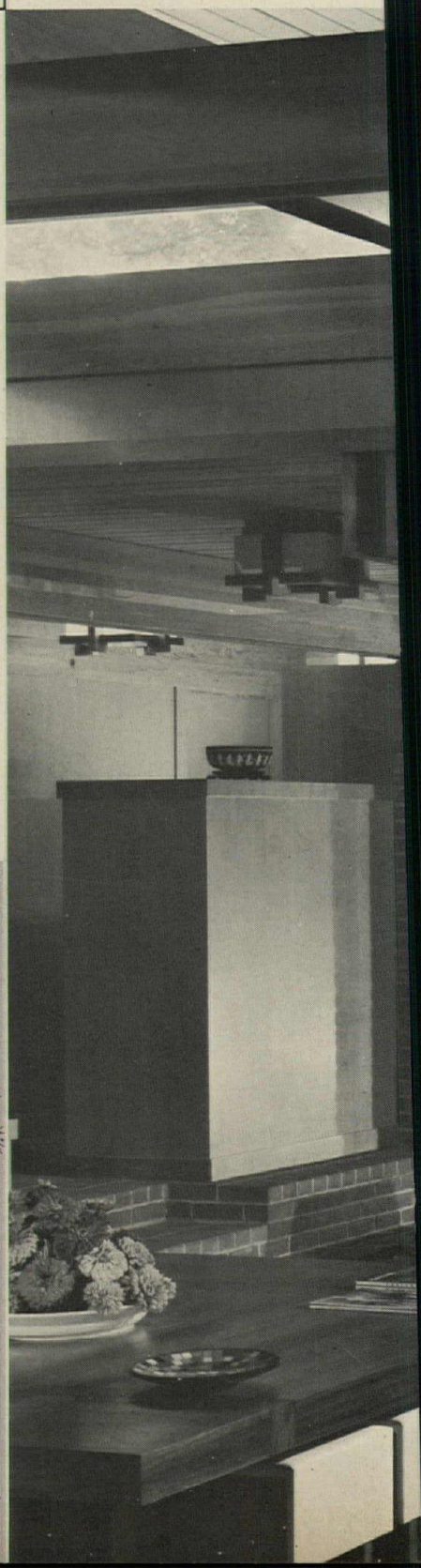
INTERLOCKING BEAM SYSTEM MAKES POSSIBLE GREATER ROOF SPANS AND CLERESTORIES

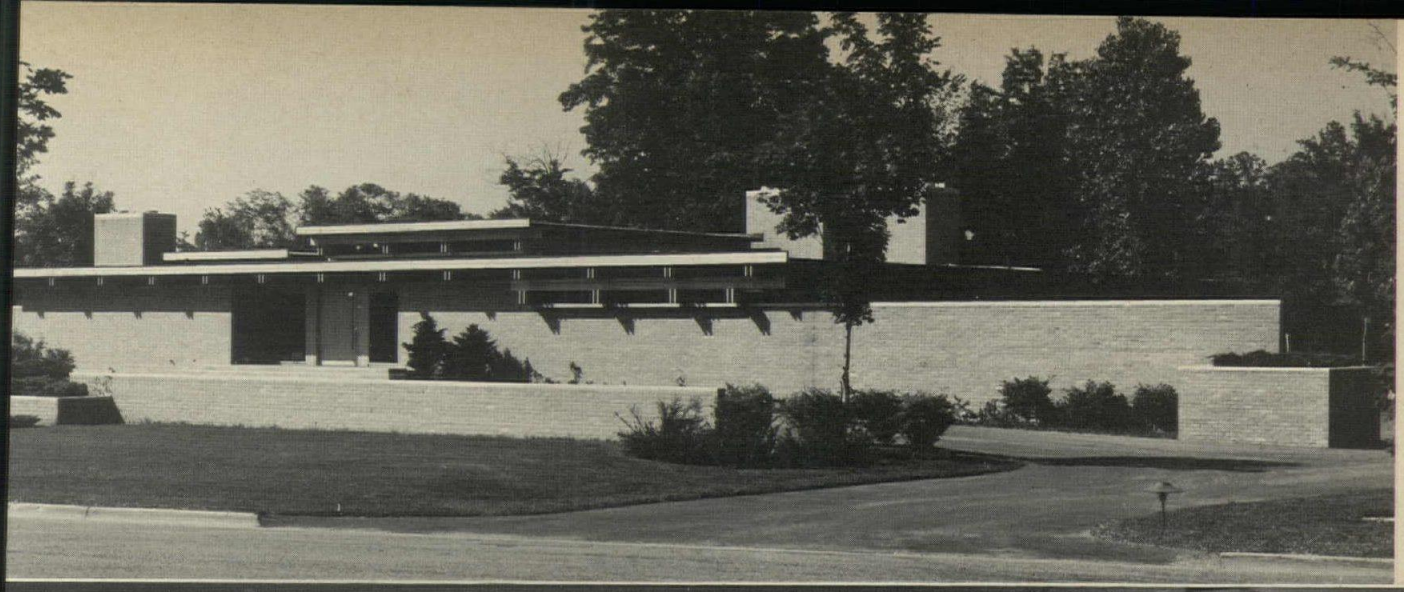


Dow: The Riecker house makes use of a structural system that is the feature of the design and controls the pattern of the ceiling above. Cross beams and span beams are interlocked, as seen in the pictures, in a way that makes greater spans possible and results in a ceiling pattern rich in form. This method of framing the roof makes clerestory windows or different elevations in the roof directly related to the inside framing. In other words, the clerestory windows become a natural or organic development of the roof framing. The clerestory windows make it possible to have an inside living room which opens to the outside through the dining room area only. Putting the dining room on a lower level helps to make the view through the dining room more open.

THE JOHN RIECKER RESIDENCE, Midland, Michigan. Architects: *Alden B. Dow Associates;* general contractor: *Lawrence Bartos.*

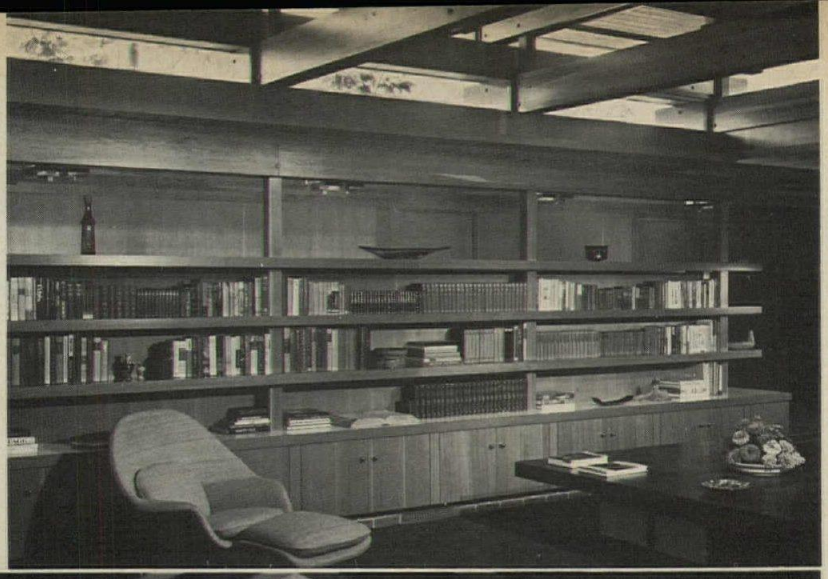




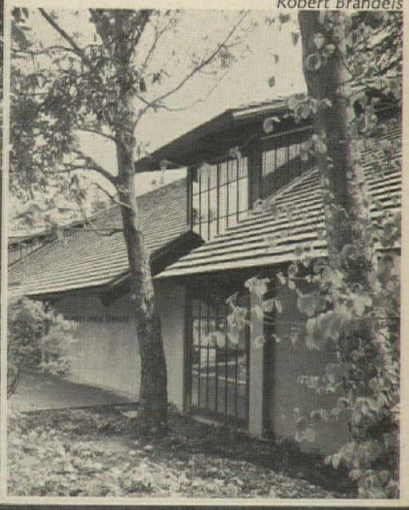


ALDEN B. DOW: *RIECKER HOUSE*

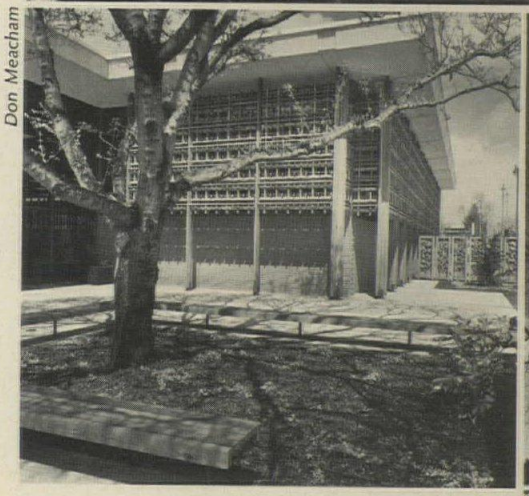
The interesting and attractive effect the structural system yields inside the house becomes its leading visual feature and sets its character. Note also how the carefully detailed cabinetry and spatial dividers are integrated with the structure.



Hugh Stratford



Robert Brandeis

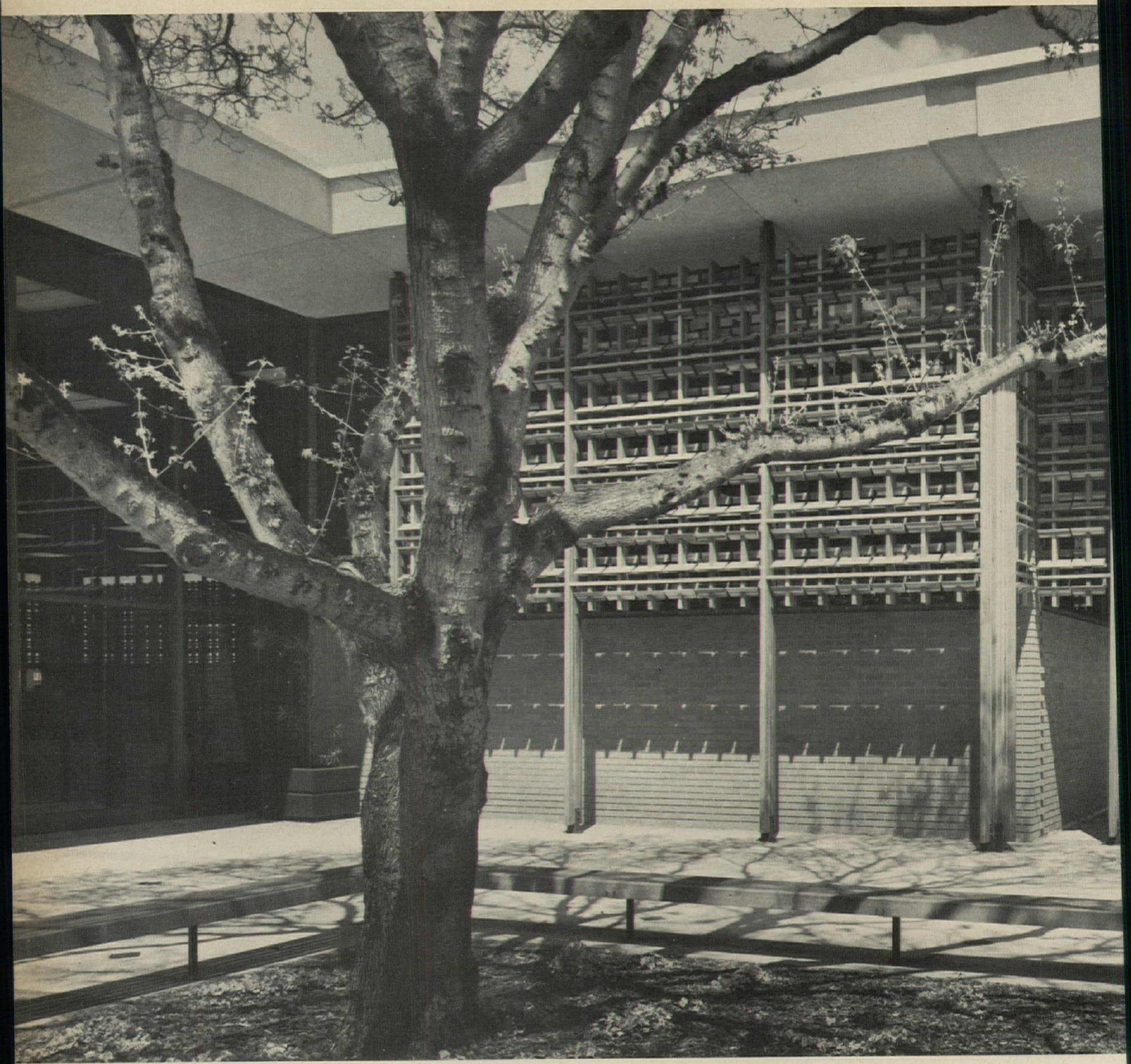


Don Meacham

Hugh Stratford

Four Public Libraries

They demonstrate the variety with which the new generation of library buildings is responding to today's demands. Thanks to Title II of the Library and Services Act, many communities are now able to obtain Federal funds to supplement their local bond issues for replacement of the aging Carnegie grant buildings which played so important a role in development of American educational opportunities. Two of the buildings shown here are main libraries, one for a city and county; two are new branches representing an expanding system. To an encouraging degree, works of art are integral with the design of several of these buildings.

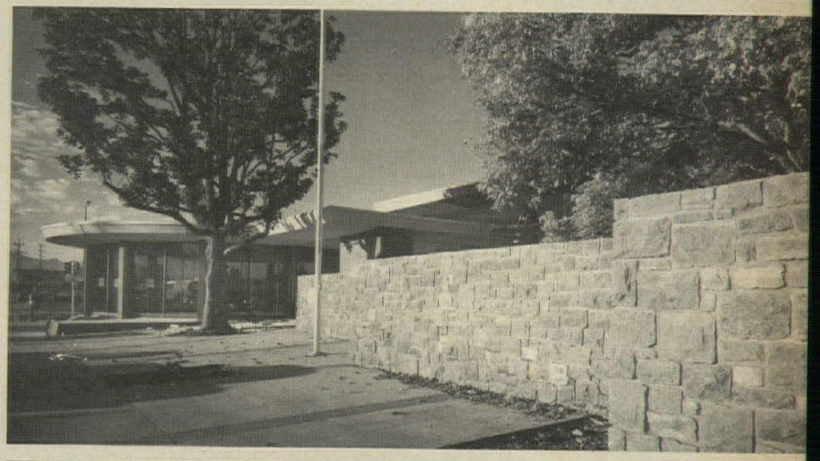


Don Meacham photos

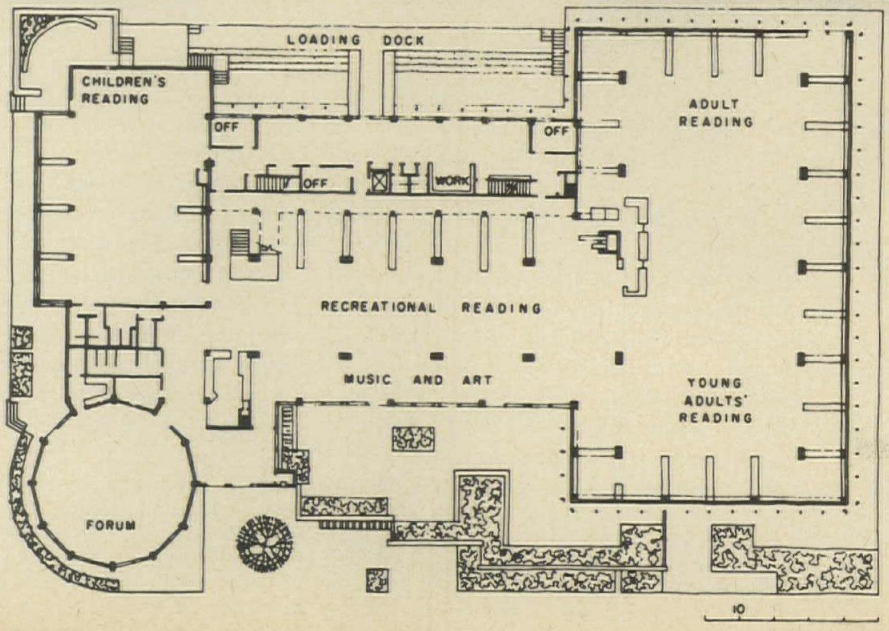
City-county library in a business district

This handsome library—the last building to be designed by the late Francis Joseph McCarthy of San Francisco—serves as main library for the city of Santa Rosa and the county of Sonoma, and as a reference center for adjacent counties in the North San Francisco Bay area. Located in the Santa Rosa business district where it can encourage drop-in patronage, the building is important as a center for cultural meetings and exhibitions in its Forum Room. Specially commissioned works of art (2 per cent of construction cost was allocated for this)—sculptured fence, clerestory stained glass windows and others yet to come—add to its cultural role. Open stacks for 100,000 books (capacity is 330,000) and publi services are on the main floor, semi-pub lic activities on a mezzanine, and close stacks, work room, etc., below. Th building is steel framed with flecked brown brick finish and architect-designe redwood screens.

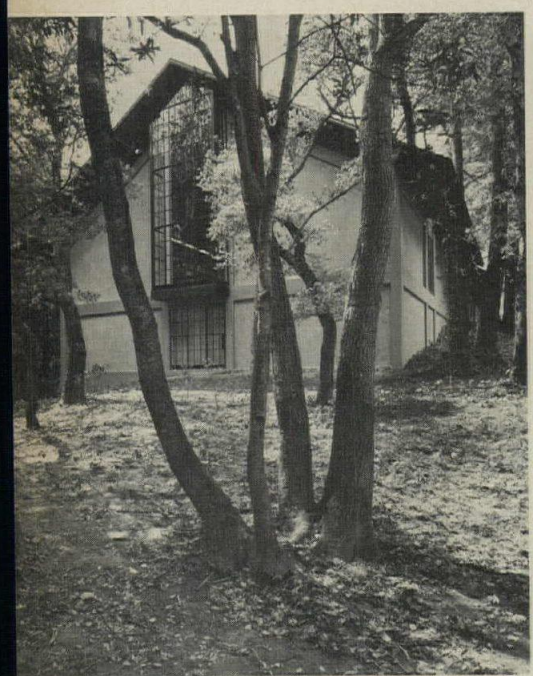
SANTA ROSA-SONOMA COUNTY PUBLIC LI BRARY, Santa Rosa, California. Architect: *Franci Joseph McCarthy, F.A.I.A.;* supervising architect *James O. Brummett;* structural engineer: *John Brown & Assoc.;* mechanical and electrical engi neer: *G. M. Simonson;* landscape architect: *Le land Noel;* color consultant: *Marjorie McCarthy* furnishings: *Muriel Citret;* sculptor: *Stefan No vak;* stained glass: *Donald Drury;* general con tractor: *Christensen & Foster.*



The new building replaces an old Carnegie library, some of whose stone is used for the wall. The interior colors are brown, amber and olive, with gold and black accents. The public areas of the library are fully carpeted.

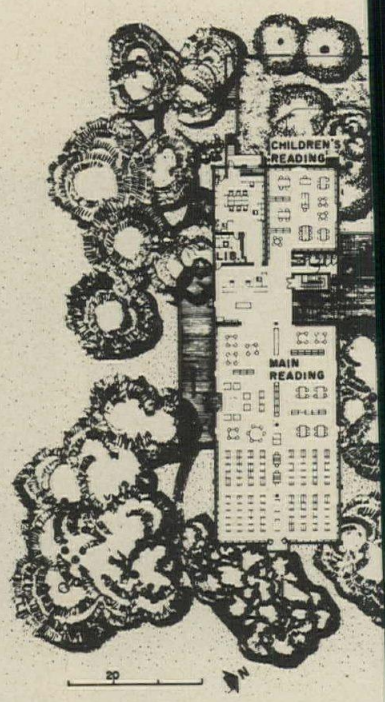


Robert Brandeis



Robert Brandeis

Alexandre Georges



The total volume capacity of the library's col tion is 100,000 with 40,000 on open shelves. gallery on the lower floor is for community

A library in a city park with unusual assets

The beautiful grove of redwood trees in which the new Mill Valley, California, library is situated was a strong factor in the building's design. Essentially simple and subordinated to the grandeur of the trees, the building fits into its location and the community with rare appropriateness. Its size and shape were limited by the trees, none of which were damaged or destroyed. The density of the trees, however, permits only filtered light on the site. To get a maximum amount of light into the building, full-length windows are used at each end and, along the length of the building, tall windows extend into glass-sided dormers. The sloping site made possible a one-story street front, and a two-story rear. This inform kind of building, and the warm, invit character of the interior, reflect the ch acter of the community. Exterior wa are of tilt-up concrete; the interior is f ished in redwood boards. The budg provided for two per cent of the buildi cost to be used for works of art, comm sioned to local artists or purchased, a for custom-designed furnishings.

MILL VALLEY PUBLIC LIBRARY, Mill Vall California. Architects: *Wurster, Bernardi & E mons;* structural engineers: *Gilbert-Forsbe Diekmann-Schmidt;* mechanical and electri engineers: *Gayner Engineers;* landscape arc tects: *Lawrence Halprin and Associates;* gene contractor: *Ira W. Coburn, Inc.*

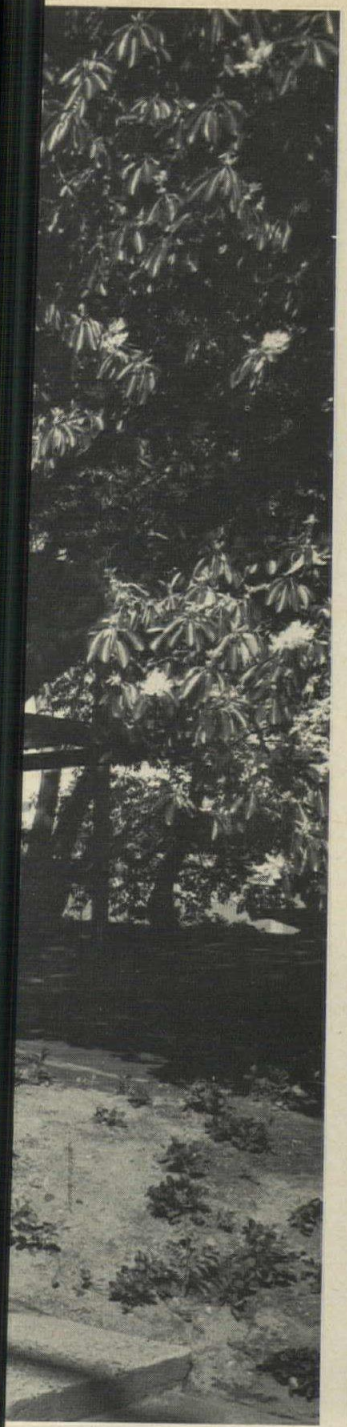
Palmer

Hugh Stratford photos

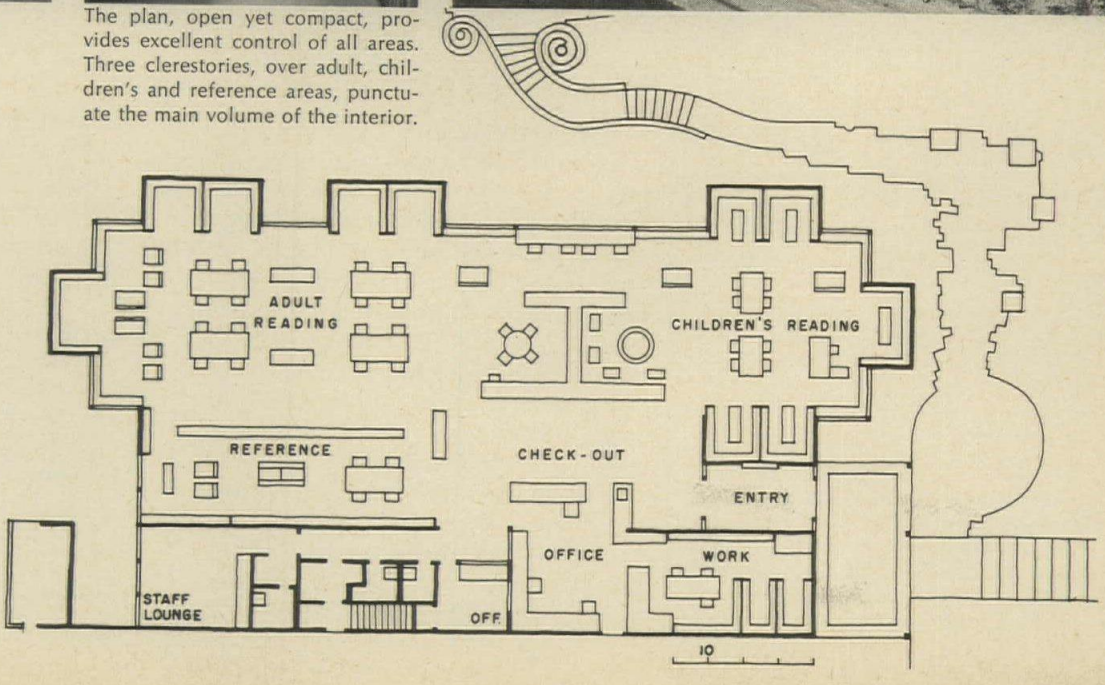
Scale and character for a residential area

The charm of this small branch library in one of Seattle's many neighborhoods (once small communities which still retain much of their identity) comes from the modesty of its architectural solution, the unaffected residential scale appropriate to the area it serves, and the delightful use it makes of its wooded hill site. Taking as a premise that the library should be "so like a living room that users would treat it as if it were in their own homes", the architects have de-institutionalized the library function without reducing its efficient operation. Stacks are grouped in "browsing alcoves" which project in pairs from the building line, freeing large wall areas for windows with views to the surround trees and shrubs. Clerestories dayli the reading room and allow variation ceiling height. Night lighting is indir from fixtures in the lengthwise bea Tables and chairs were custom-desig by George Nakashima. The building wood framed, with exterior surfacing red cedar shingles, left natural.

MAGNOLIA BRANCH LIBRARY, Seattle, Wa ington. Architects: *Kirk, Wallace, McKinley Associates;* structural engineers: *Skilling, Wor ington, Helle & Christianson;* mechanical en neers: *Benjamin S. Notkin & Associates;* elec cal engineers: *Thomas E. Sparling & Associat* landscape architect: *Richard Haag & Associat* general contractor: *Collins & Hunt.*



The plan, open yet compact, provides excellent control of all areas. Three clerestories, over adult, children's and reference areas, punctuate the main volume of the interior.



Hugh Stratford photos

John Morse

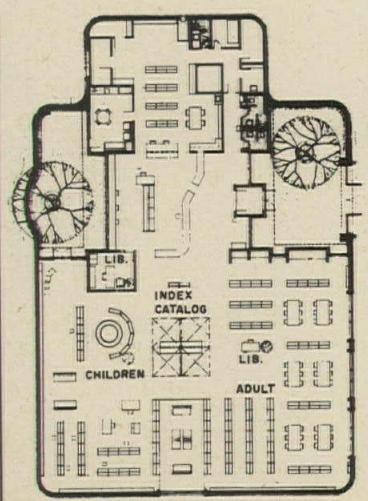
The entrance is through a paved court enclosed by wrought iron gates by sculptor George Tsutakawa. The building is designed for a capacity of 40,000 volumes.

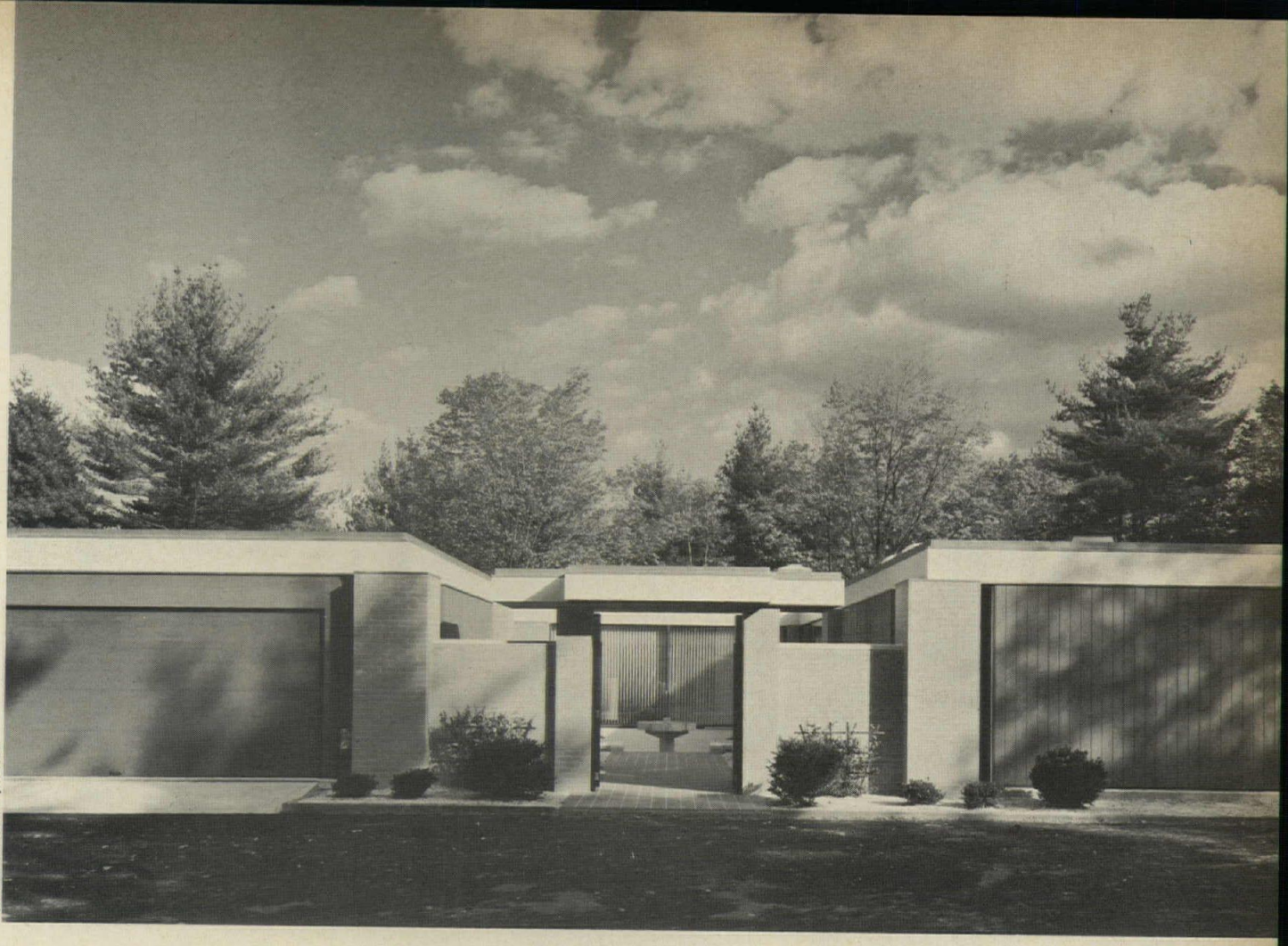
Hugh Stratford photos

Civic dignity in a commercial area

LAKE CITY BRANCH LIBRARY, Seattle, Washington. Architects: *John Morse & Associates;* structural engineer: *Gerard Torrence;* mechanical engineers: *Beverly Travis & Associates;* landscape architect: *Glen Hunt & Associates;* entrance gates: *George Tsustakawa;* contractor: *R. O. Bordner Construction Company.*

The strong architectural treatment of the brick walls and the few low arched openings in this branch library building make it an appropriately dignified and distinctive civic building, and minimize the impact on it of the unattractive commercial area in which it is located. Handsome bronze gates lead to a paved entrance court. The interior space is restful and inviting, the flexibility of its clear span space permitting a variety of arrangements to delineate special areas: adult reading, children's section, even a browsing area near one of the arched windows. The exterior walls are of reinforced brick, the roof structure is made up of steel trusses and wood decking.





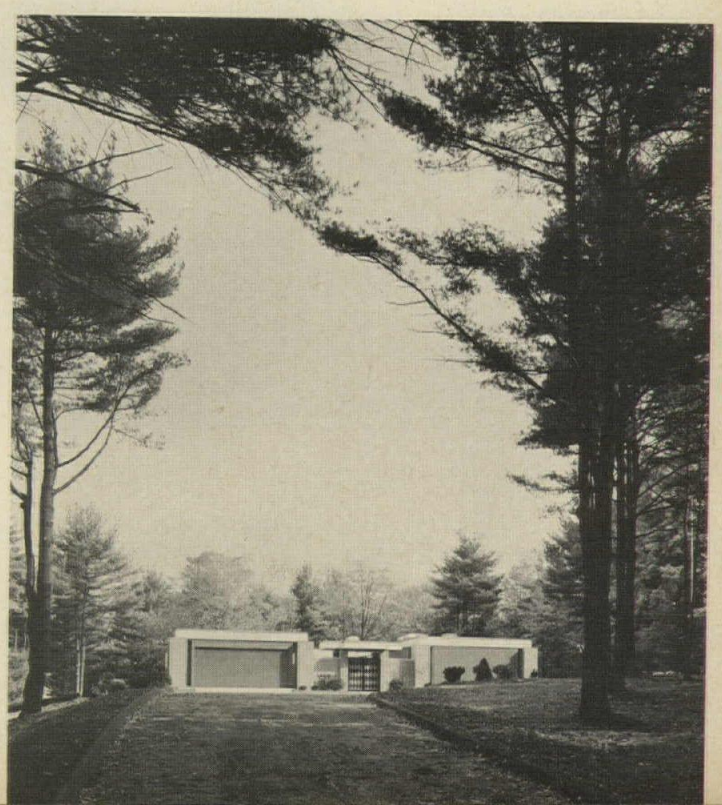
Charles N. Pratt photos

SERENE FACADE CONCEALS POOLS, FOUNTAINS AND SPATIAL EXCITEMENT

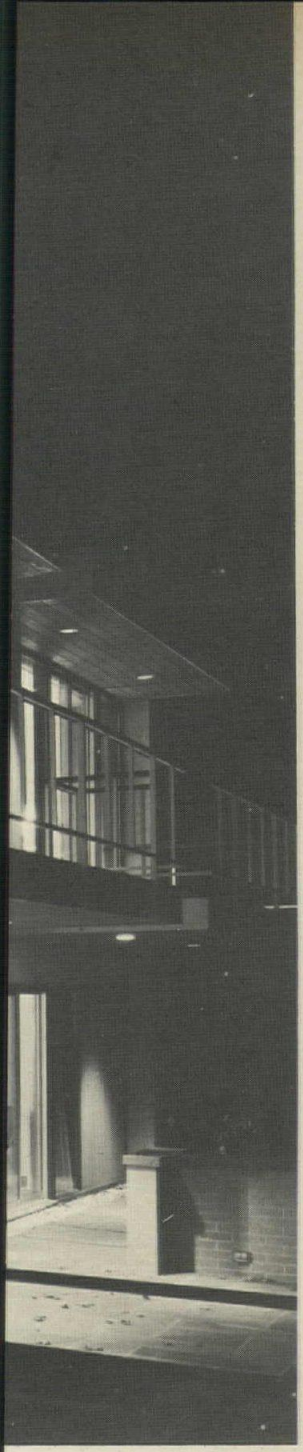
This spacious summer and weekend house offers a big surprise: from the street the exterior, which is quiet and serene and blends so well with its calm environment, conceals an interior disposed on five different levels. This change of level—under a constant roof line—has been fully exploited to give visual and spatial excitement to every room. Further, the multi-level solution is a good one for the steeply-sloping Connecticut woodland site.

Because terraces, courts, pools and fountains were an important program requirement, the architect has organized a plan that not only focuses on these outdoor spaces, but also makes them an integral part of the over-all scheme. The tiled entrance walk and enclosed inner court with its central fountain and pool give an air of seclusion and traditional formality to the house. In contrast, the rear elevation, totally in glass, opens on a series of terraces with another fountain and a swimming pool. The two upper bedrooms have generous, cantilevered balconies overlooking the backyard pool area.

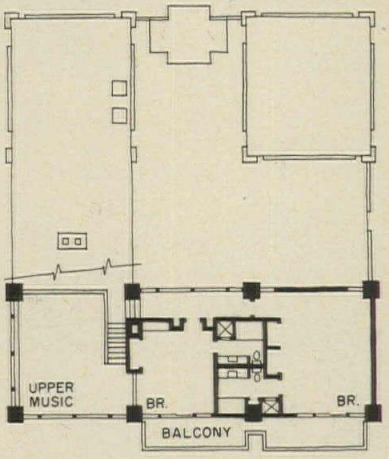
RESIDENCE for Mrs. Reddington Fennell, Wilton, Connecticut. Architect: *Robert W. Van Summern of Van Summern and Weigold;* mechanical engineers: *Smith and Hess;* contractor: *Ernest Rau*—job superintendent: *Joseph Fekety.*



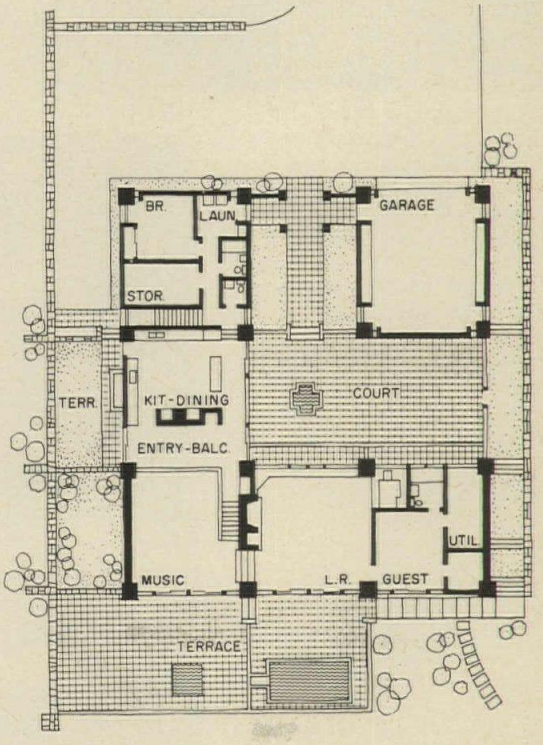
FENNELL HOUSE



The approach leads from the driveway to the entrance gate, garage and tiled walk on the first level. The next level contains the inner court with its fountain, pool and outdoor seating, and the dining-kitchen/entry-balcony area. From the entry-balcony a short flight of steps leads up to the two main bedrooms, and a longer flight leads down to the two-story high music room. The guest bedroom, adjoining living room, outdoor terrace and pool are on the lowest level. A glass-sided gallery flanks one side of the bedroom wing giving a view over the entrance court; one bedroom has an opening overlooking the music room, and both have balconies that give a view of the pool, terraces and woodlands at the back of the house.

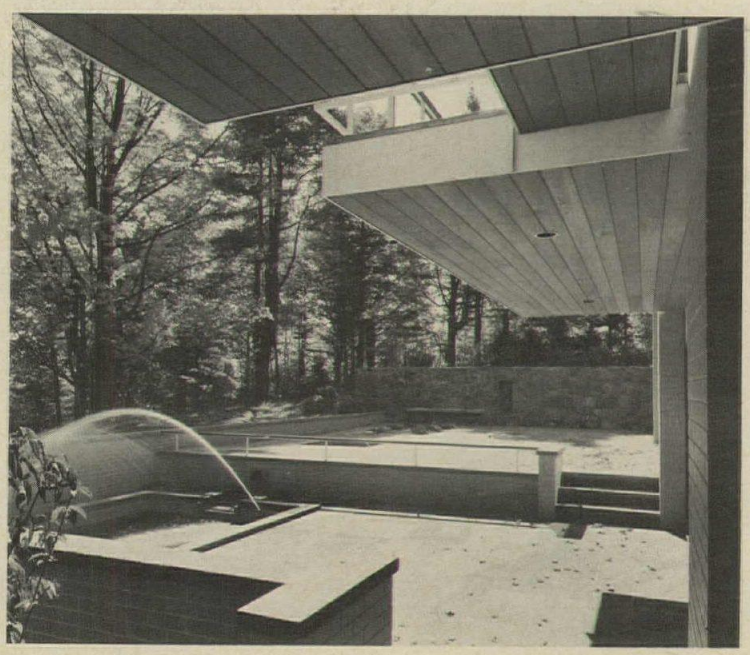


UPPER LEVEL



LOWER LEVEL

The modular construction system uses brick columns with steel-beam framing and wood joists spanning between beams. The constant roof line creates a strong white fascia effect all around the house, giving unity to the building as a whole. The roof line is set back from the edge of the masonry columns. Exterior walls are vertical cedar boards, redwood trim and areas of glass.



The carefully detailed pools and fountains and the quarry tile in walks, terraces and courtyards give an almost classical elegance to the landscaping of the house. The variety of formal and informal outdoor areas makes some kind of outdoor living possible most of the year.

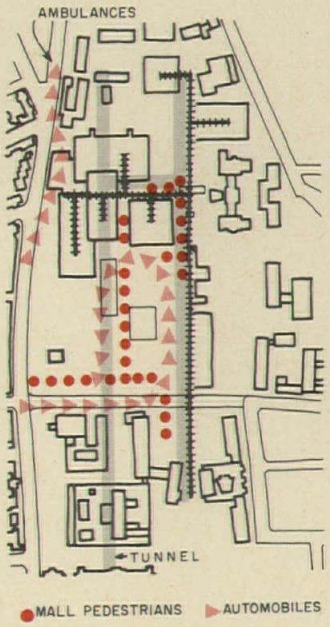
HOSPITALS

The most difficult condition confronting architects in the design of hospitals is the need—despite extremely long periods of project development—to cope with an extremely rapid evolution in medical technology. Five to 10 years is not an unusual lapse of time between inception and completion of a hospital project, and indeed there was a 20-year period between master plan and near-completion of the U.C.L.A. Center for Health Sciences, page 198. Over such long time-spans there have been radical changes demanding architectural attention, not only in the hardware of medicine—the operating room, its lighting, equipment and air supply; diagnostic and radiological suites; rehabilitation devices, etc.—but also in the very nature and arrangement of spaces required. Within recent years, for example, layout of the nursing unit itself has evolved through circles, triangles and racetrack corridors. The list of areas affected by new ideas and technology—intensive care; cardiac units; hyperbaric chambers; ambulatory, extended and advanced care units—is long and growing daily. How does the architect cope with it?

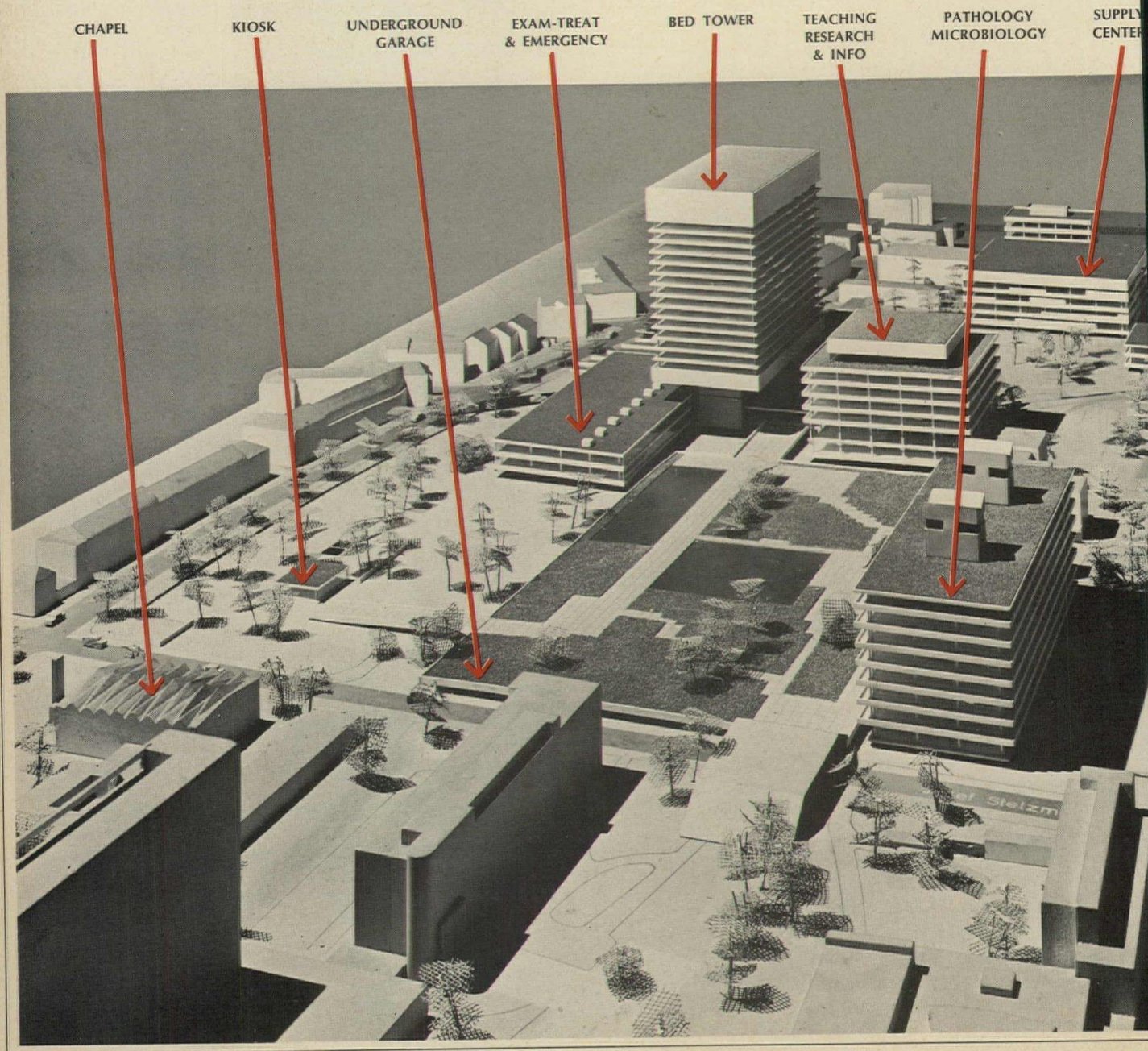
Flexibility is too pat an answer, although basic to any architectural approach. Advanced concepts of expansibility and mechanization give some assurance of long-term usefulness—as at Cologne, page 190. Deliberate obsolescence or moving to a new site—page 194—may offer a solution. New wings—at Evanston, page 196, or Long Beach, page 204,—often make possible the redesign of existing facilities. The examples of long-term planning on these pages all show awareness, adventure, and adroitness.

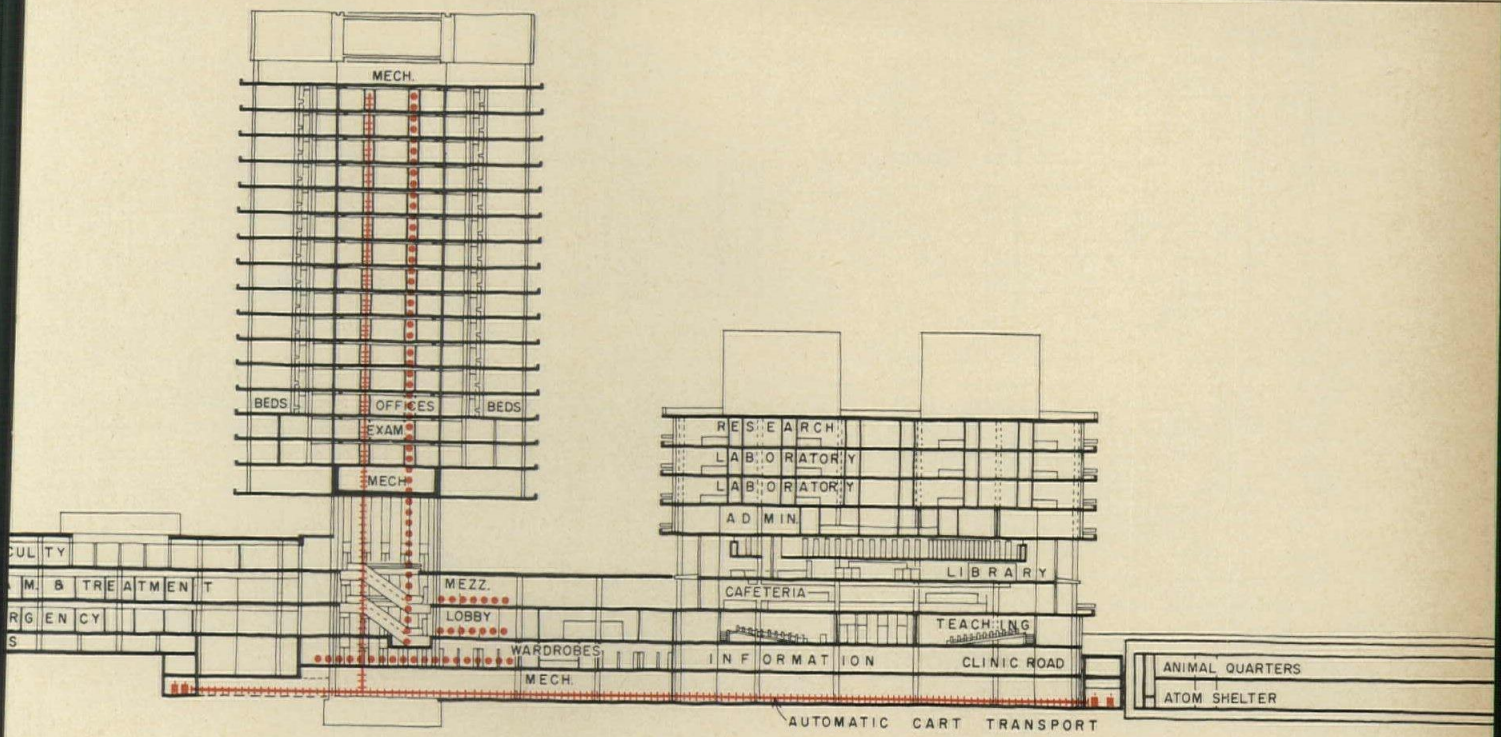
—William B. Foxhall

1 COLOGNE'S DRIVE-IN HOSPITAL: TRAFFIC IN THREE DIMENSIONS



"Truly a drive-in hospital" says John Ryan, Cologne project man for hospital consultants Gordon A. Friesen International. Traffic and distribution patterns develop logicall from the architect's placement of related functions. Patient care is centered in the new three-unit cluster at top comprising treatment and diagnostic wings incorporated into the base of a bed tower.





Traffic control in its broadest sense was approached with fresh inventiveness in this 1,000-bed, multi-building addition to the medical teaching complex of Cologne University. The original design of architects Heinle & Wischer won an international competition.

Especially at home with the concept of well-defined areas flexibly linked by underground passageways and garage-reception areas is the U. S. consultant firm of Gordon A. Friesen International, Inc., whose recommended systems of central supply preparation and distribution, automatic cart transport and other conveyors were well adapted to the Cologne situation.

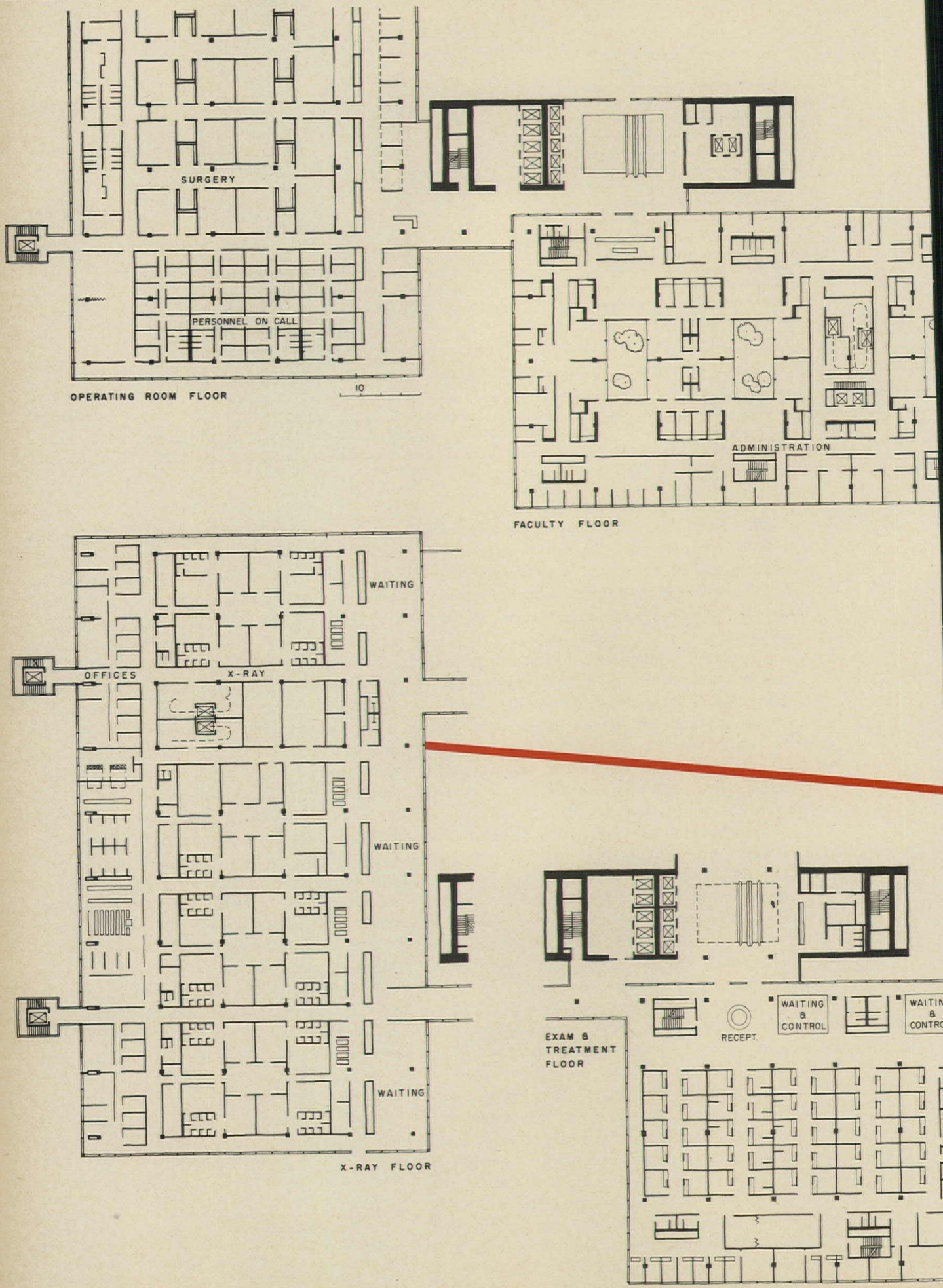
Patient reception and treatment areas are centered in an interlocking, three-unit clustered structure consisting of a three-floor examination and treatment block, a diagnostic and operating block and a bed tower linked together and to a three-level underground garage by below-grade passages and reception areas as indicated above and in the exploded diagram overleaf.

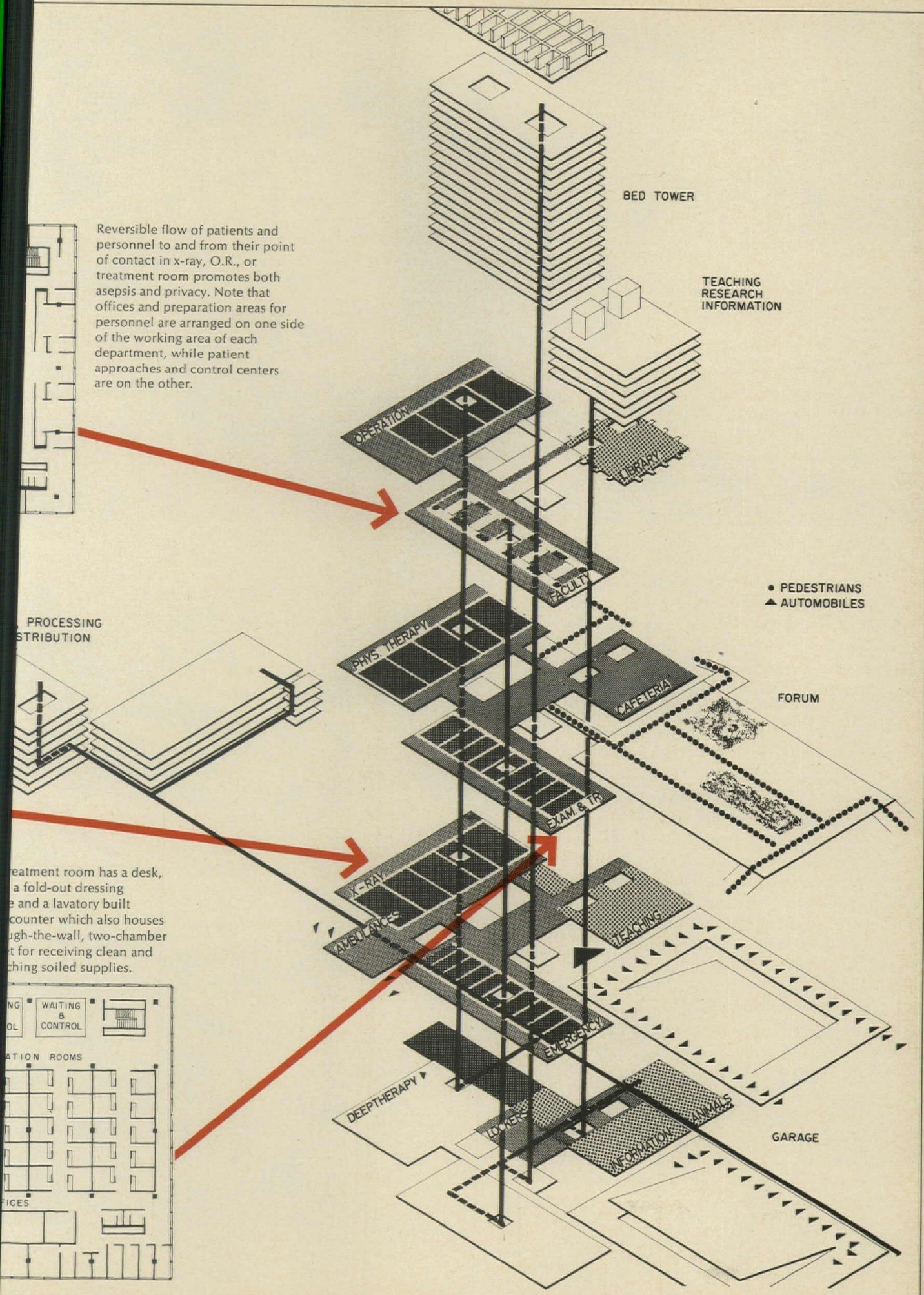
Emergency patients arrive (from the highway at left in the model photo) at an enclosed area big enough for six ambulances and 12 cars. This area is adjacant to both emergency and x-ray departments. Contiguous to the 17-room emergency department is a 54-room suite of examination-treatment rooms normally used by the outpatient department but available to emergency in case of disaster. Access to the outpatient department and to the main lobby of the bed tower is from the center of the complex by underground drive-in from the upper garage level or by pedestrian walkway over a planted forum atop the garage. These routes traverse the center of the complex from a cross street. Placement of faculty suites on the top level of the exam-treatment block permits rapid access via two staff elevators directly to emergency or, at the same level, to surgery.

Admissions other than emergency are directed from an information center near the entrance to an appointment center visible at the mid-level of the exam-treatment block reached by moving stairs. From here, an admissions officer from a nearby administrative control center assigns the patient to one of the exam-treatment rooms and puts basic personal data into a central computer system. A doctor, assigned on the basis of these data, next comes to the same room and adds his findings to the computer input. Via intercom (or computer) he arranges any needed appointments with the diagnostic department, then calls a lab technician who collects needed specimens and places them on a mobile lab station. The patient is then escorted either to appointments or to a bedroom, while the technician continues other collections, ultimately placing the specimen cart into the automatic cart transport system which takes it to the lab in the research block. For more immediate tests a pneumatic tube system is used.

Outpatient traffic is similarly controlled from an appointment center at each level, from which patients are directed to color-coded control centers, each of which has visual and intercom contact with no treatment rooms.

COLOGNE UNIVERSITY MEDICAL CENTER, Cologne, Germany. Architects: *Erwin Heinle & Robert Wischer*, Stuttgart; hospital consultants: *Gordon A. Friesen International*, Washington—*John Ryan*, project manager; medical consultant-programmer: *Dr. H. U. Reithmuller, Tubingen;* structural engineers; *Leonhardt & Andra*, Stuttgart; mechanical engineers: *Brandi*, Cologne; electrical engineers: *BMS*, Cologne; traffic engineer: *Hans Billinger*, Stuttgart.

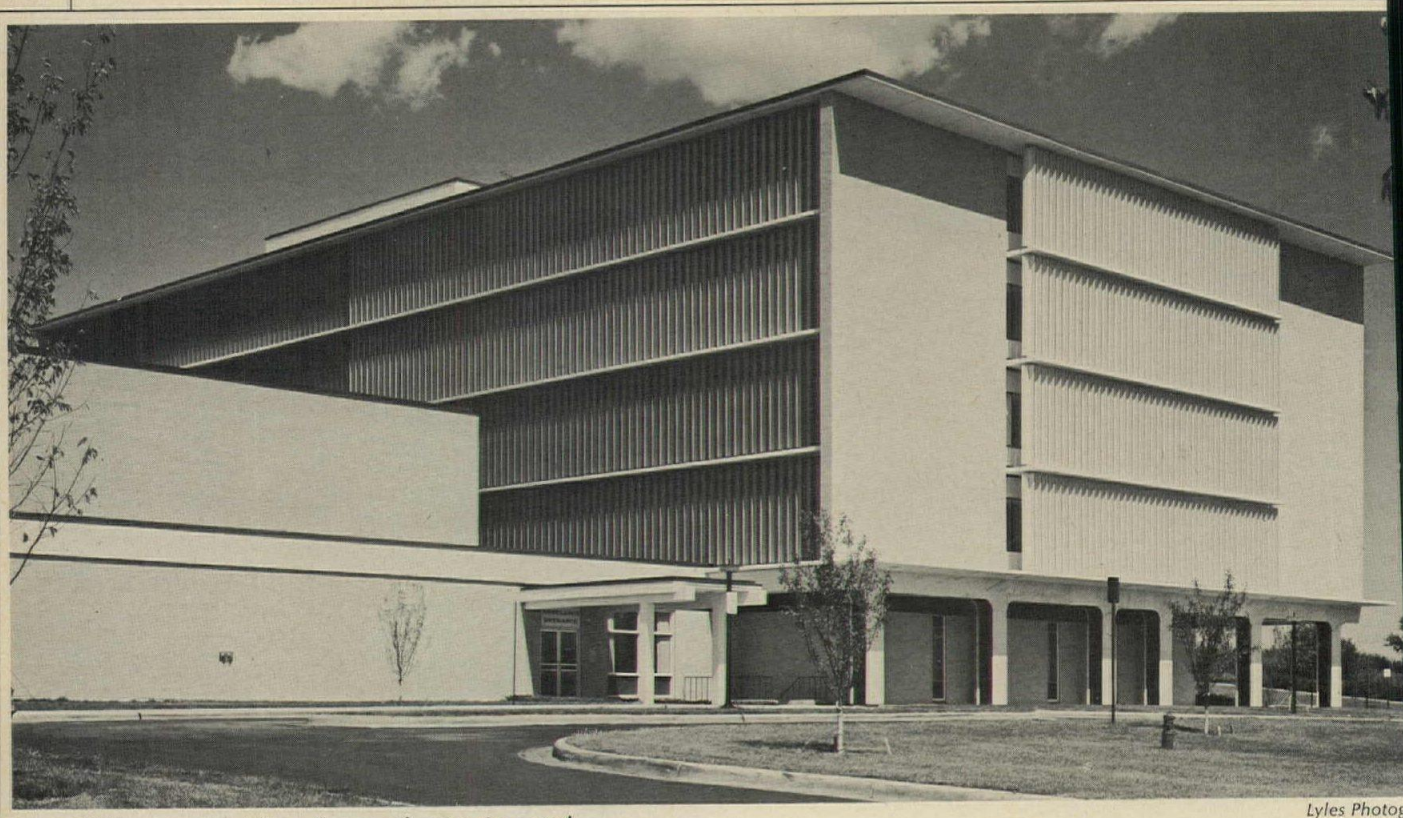

SURGERY
PERSONNEL ON CALL
OPERATING ROOM FLOOR
10
ADMINISTRATION
FACULTY FLOOR
WAITING
OFFICES
X-RAY
WAITING
WAITING
X-RAY FLOOR
EXAM & TREATMENT FLOOR
RECEPT.
WAITING & CONTROL
WAITING & CONTROL



Reversible flow of patients and personnel to and from their point of contact in x-ray, O.R., or treatment room promotes both asepsis and privacy. Note that offices and preparation areas for personnel are arranged on one side of the working area of each department, while patient approaches and control centers are on the other.

eatment room has a desk,
a fold-out dressing
e and a lavatory built
counter which also houses
ugh-the-wall, two-chamber
t for receiving clean and
ching soiled supplies.

2 ARCHBISHOP BERGAN MERCY: GROWTH ON A NEW SITE



Lyles Photog

In addition to providing for modernization and expansion, a move from the city area of Omaha, Nebraska to a western suburb has enabled the new Archbishop Bergan Mercy Hospital to draw patients and staff from the growing residential area. The move has proved so successful, that in order to relieve a 98 per cent occupancy rate, a 193-bed addition originally planned for 1970 is already nearly completed.

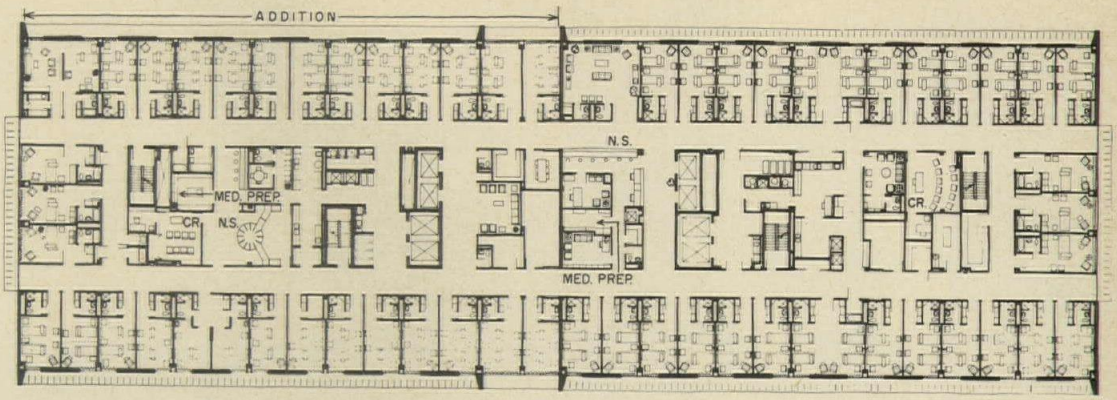
The 500-bed facility offers three phases of progressive patient care—intensive, intermediate, and ambulatory. The first floor accommodates an 11-bed intensive care unit, and a 21-bed self-care unit. The double-corridor racetrack plan, with bedrooms about the perimeter, nurses' station at one end, and service areas in a central island, is typical for the maternity, pediatric, medical and surgical units. In the new addition, this design has been altered to more efficiently locate the nurses station in the center of the oval design serving each 52-bed unit. Also, to expand critical working area, the medicine-preparation area has been tripled in size. The mostly semi-private bedrooms are equipped with private baths, and serviced by a heating-cooling coil with a high-velocity induction system for ventilation. All air is exhausted directly to the outside to prevent cross infection.

Elevations are face brick, relieved by four-story window wall panels. Roof and floor slabs project four feet and support the dramatic, automatically movable vertical louvers which act as sunshades.

ARCHBISHOP BERGAN MERCY HOSPITAL, Omaha, Nebraska. Architects: *Leo A. Daly Company;* mechanical engineers: *Natkin & Company;* electrical engineers: *David A. Baxter & Sons, Inc.*

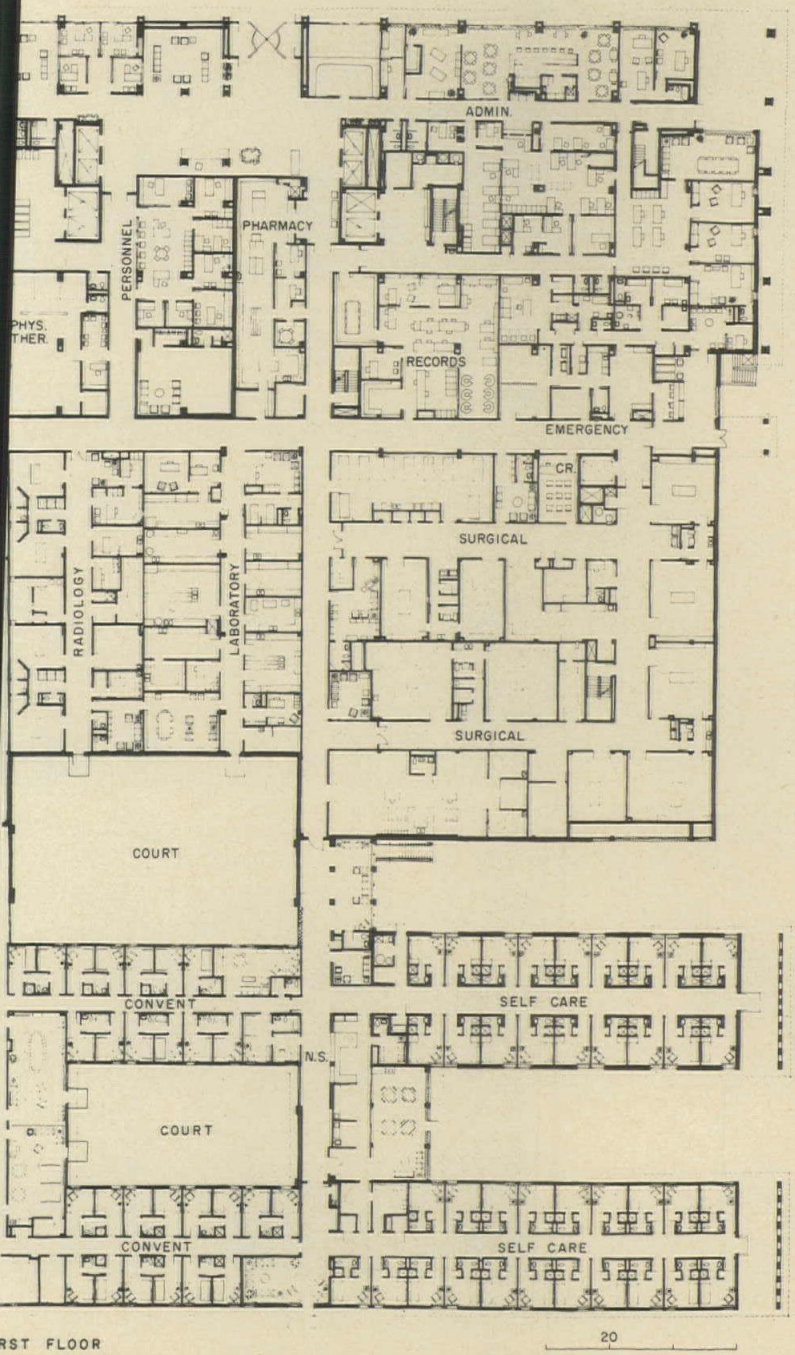
Internal visibility in pediatrics department is promoted by glass partitions in play areas.

Medical records department, visible from supervisor's office, is equipped with lock-away files.



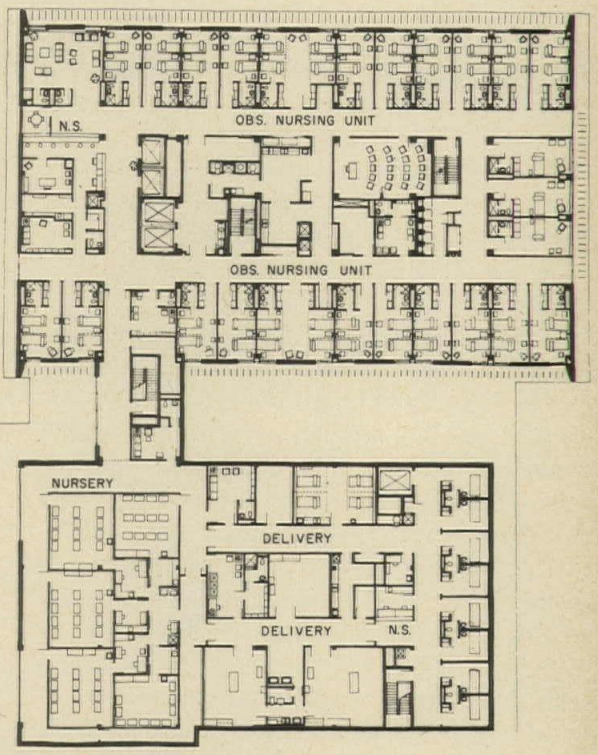
TYPICAL PATIENT NURSING UNIT

20

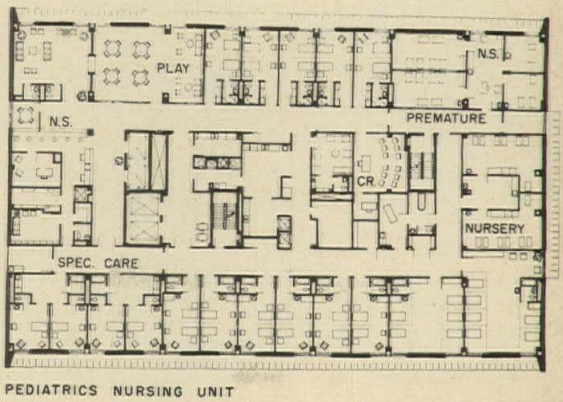


FIRST FLOOR

20



SECOND FLOOR



PEDIATRICS NURSING UNIT

3 EVANSTON HOSPITAL: UPDATING IN A NEW WING

Evanston Photographic Service

The design of the new John J. Louis addition to Evanston (Ill.) Hospital illustrates the trend toward highly specialized facilities in hospital design.

The fifth floor houses an intensive care unit consisting of 18 glass-enclosed private cubicles, 10 for critically ill post-surgical patients, eight for patients with severe heart conditions. The rooms are arranged around an open central area where two nursing stations are located, one for each type of ailment. In the cardiac cubicles, special equipment continuously monitors the patient's heart action on an oscilloscope above the patient's bed, in view of the nurse, and on another "scope" in the nursing station.

A special-disease unit on the fourth floor is equipped with ventilation and air-conditioning devices for the control of cross-infection, two high-humidity rooms, gown and scrub alcoves outside each pair of rooms, corridor doors to limit the isolation area, and three rooms designed especially for children.

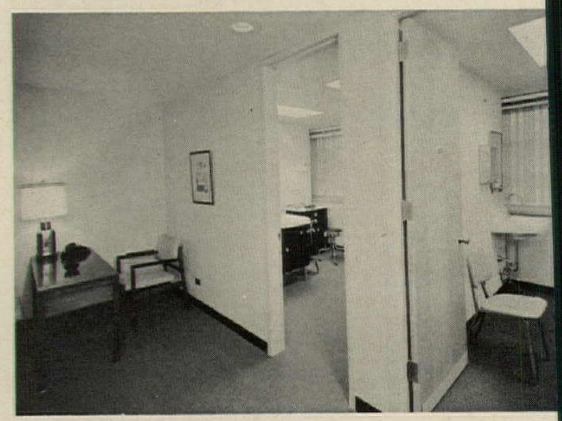
Ground and first floors of the building provide facilities for modern group private practice. On the first floor, the hospital's doctors share 11 examining rooms with adjoining consultation rooms. No space or equipment is permanently assigned. A central core consisting of nursing facilities, laboratories and proctology services this private practice area as well as the adjoining complex of seven "hotel-type" rooms designed to accommodate those visiting the hospital for an annual health checkup. A suite of three large offices opposite the physical therapy department on the ground floor provides private practice facilities for the hospital's chiefs of staff.

A noteworthy design feature of the second, third and fourth floor semi-private surgical-nursing bedrooms is a mirror-washbasin-cabinet assembly separated from the bathroom by a partition which thus permits their simultaneous—yet private—use.

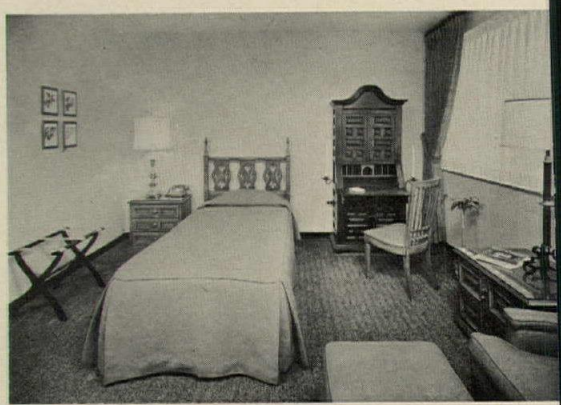
THE JOHN J. LOUIS BUILDING OF EVANSTON HOSPITAL, Evanston, Illinois. Architects: *Mittelbusher & Tourtelot;* structural engineer: *John R. Gullaksen;* mechanical-electrical engineers: *Neiler, Rich & Bladen, Inc.;* general contractors: *R. C. Weiboldt Co.* and (for intensive care unit) *Pepper Construction Co.*

Orlando R. Cabanban photos

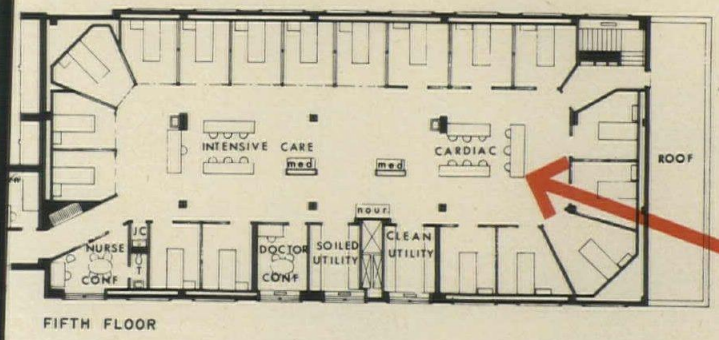
Typical semi-private patient rooms feature washbasin assembly which is partitioned from adjoining bath.



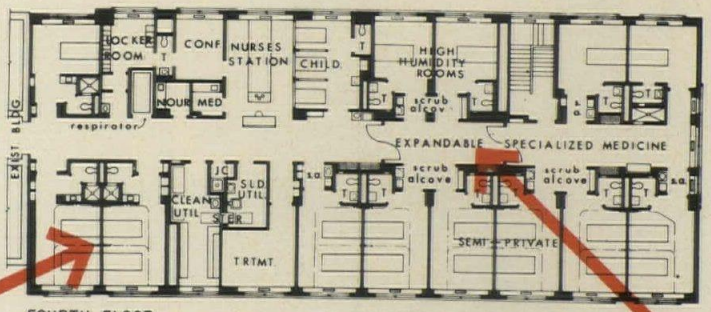
Examination-consultation suites provide shared private practice areas for staff doctors.



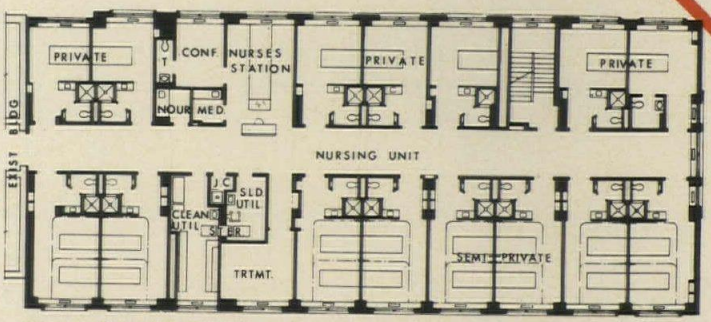
Each of the seven private "hotel-type" rooms of the diagnostic clinic emphasizes residential environment.



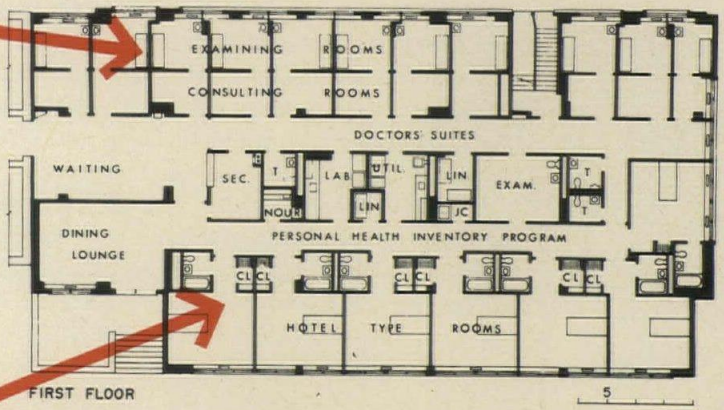
FIFTH FLOOR



FOURTH FLOOR

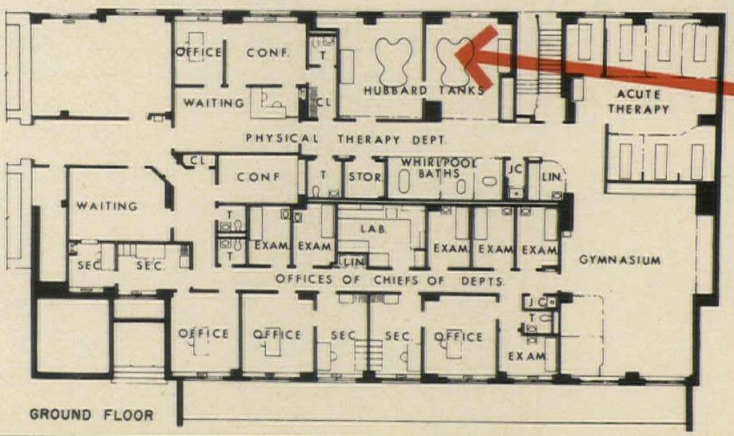


SECOND AND THIRD FLOORS

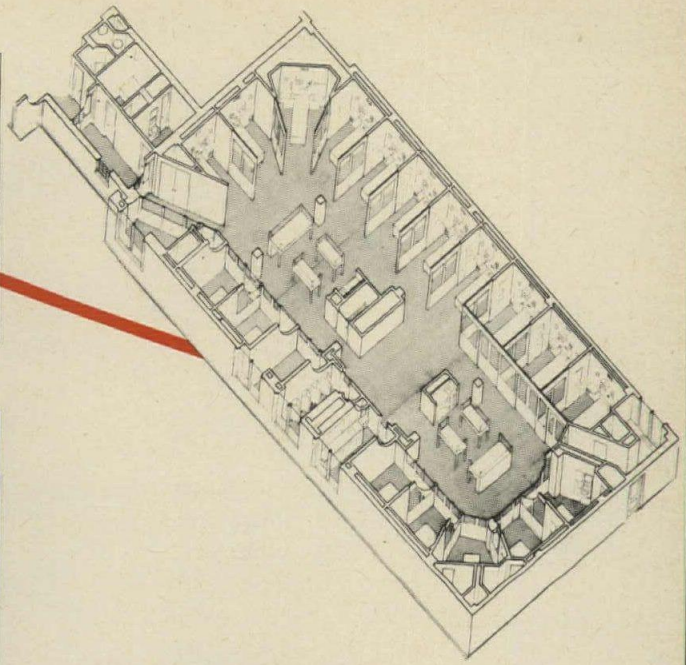


FIRST FLOOR

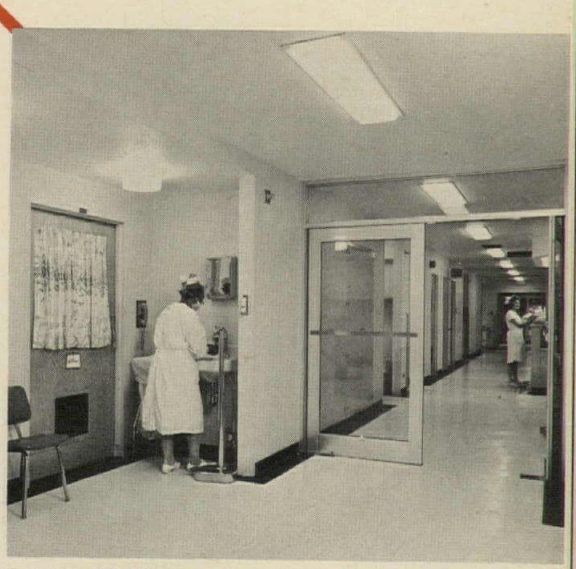
5



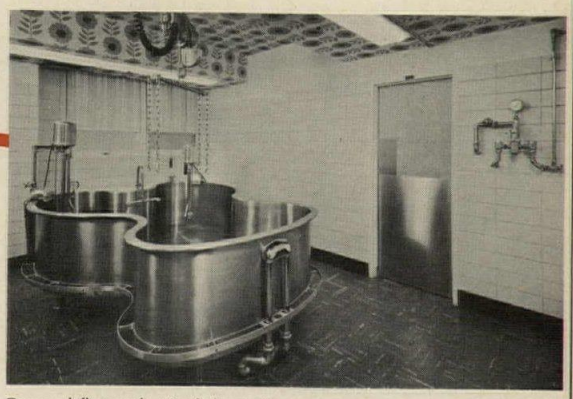
GROUND FLOOR



Some intensive and cardiac-care rooms are flexibly interchangeable between nurses stations.



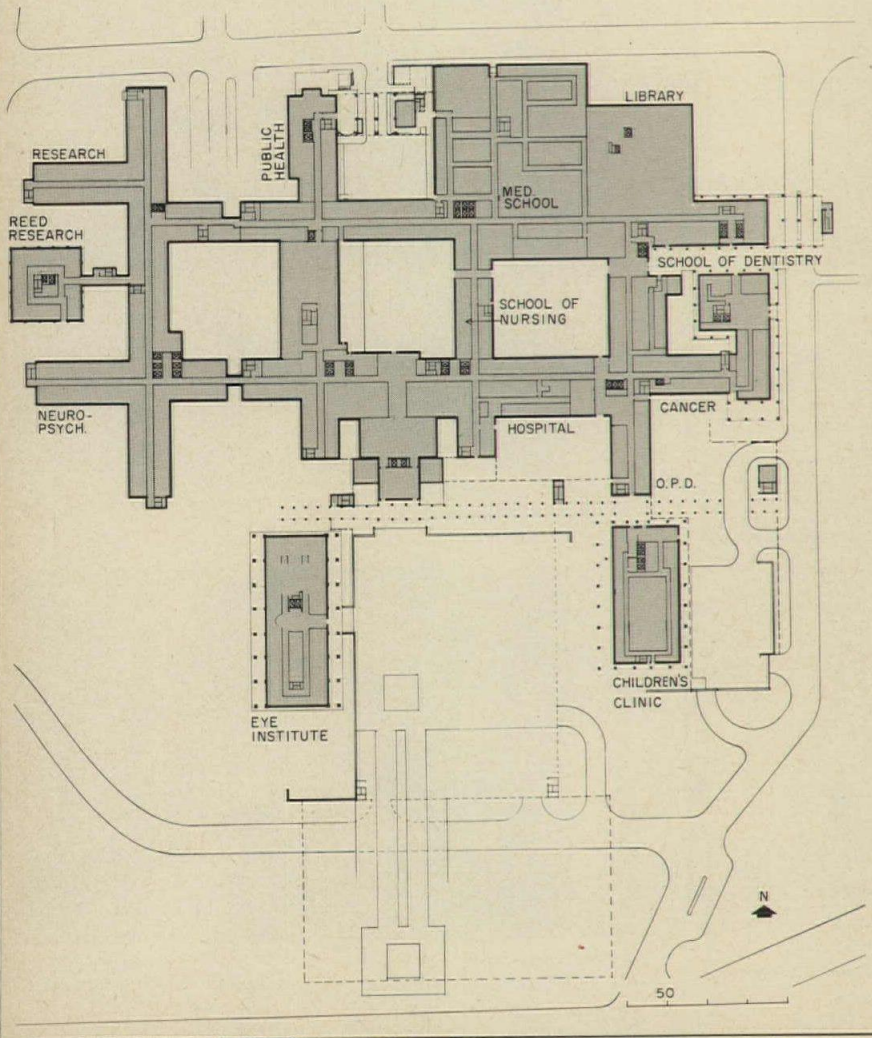
Cross corridor doors and scrub areas promote asepsis in specialized areas.



Ground floor physical therapy department is equipped for acute care and hydrotherapy.

4 U.C.L.A.'S 20-YEAR PLAN FOR HEALTH SCIENCES: . . .

Marvin Rand photos



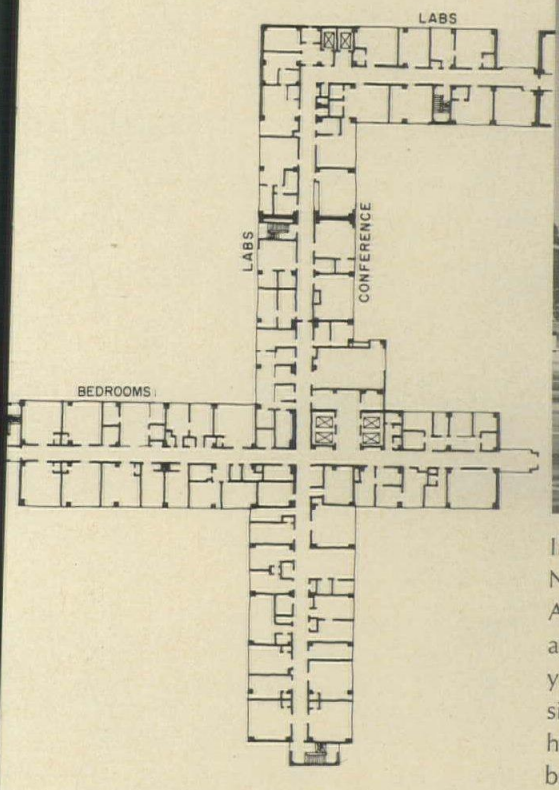
The giant, 2-million-square-foot U.C.L.A. Ce for the Health Sciences, which entered const tion in 1951, is embarking on its final phase of sign and construction. With completion of the building—the Reed Neurological Research Ce —in 1970, the complex will become the lar single building in Southern California. It will r resent a total building cost of $75 million, an total project cost of $106.75 million, includ garages and equipment. Welton Becket and As ciates have been continuously engaged as ar tects and engineers on the project since 1948 both master planning and design.

The center includes three basic activities: medical, dental, nursing and social welfare edu tion; (2) research; and (3) teaching and resea hospitals and outpatient clinics.

The architects decided to unite these rela activities in one structure and integrate them ho zontally so that students and professors engag in one service, surgery for example, could mo between classrooms and laboratories at one flo level and hospital patients at the same level.

At the same time, it was decided that t center would have to be constructed in incremen with enlargement of original units and with ne units capable of being appended over a period 20 years or more years vertically and horizonta in all four directions.

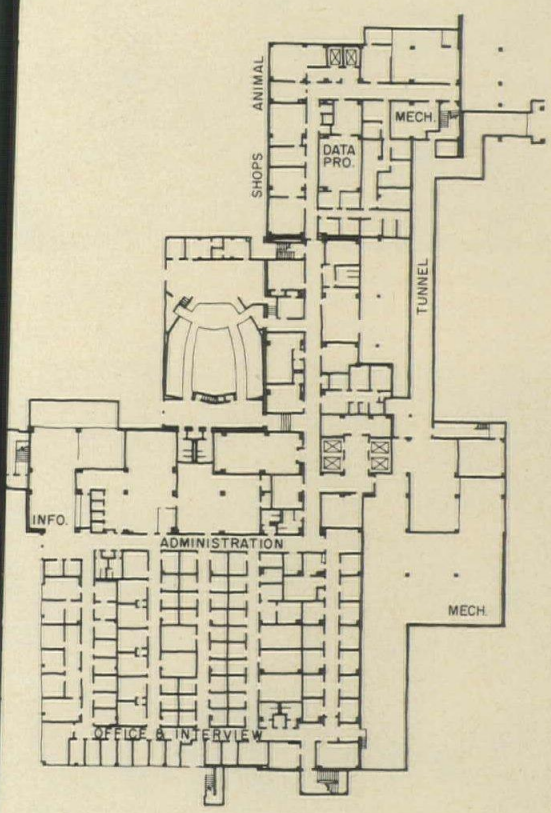
In order to permit this kind of growth in basic structure which would provide ample lig and air, the original medical center building w designed in the shape of a double Lorraine Cro with common center arms. This created large i terior courtyards and provided 10 exterior poin at which additional structures could be added the project developed.

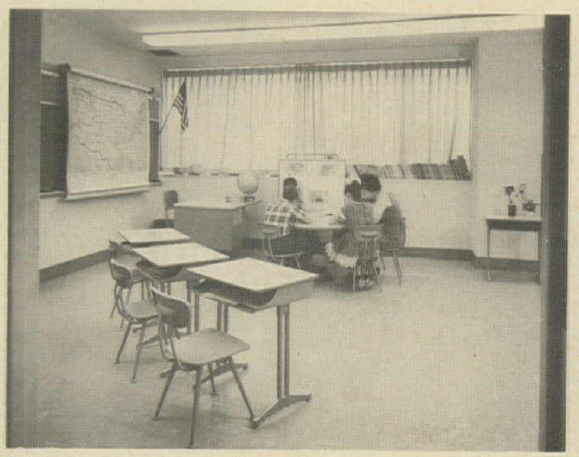


In the fall of 1958, construction started on the Neuropsychiatric and Brain Research Institutes. Attached to the main structure's two westward arms, this addition enclosed a third interior courtyard. The Neuropsychiatric segment consists of a six-level cross shaped building with a 188-bed hospital, clinic and research facilities, while the brain research segment, consisting of a 10-story L-shaped wing attached to one arm of the cross, contains extensive neurosurgical, neurological and research facilities. The two were completed in January 1961.

The U.C.L.A. Mental Retardation Unit is a four-story addition being built of structural steel on top of the Neuropsychiatric Institute as shown at left in the photo opposite. It will include 66 beds, and completion is set for February 1969.

All of these mental facilities are integrated over a podium of admissions, examination and teaching spaces.





Spacious classrooms provide for rehabilitation and observation of young mental patients in school-like situation.

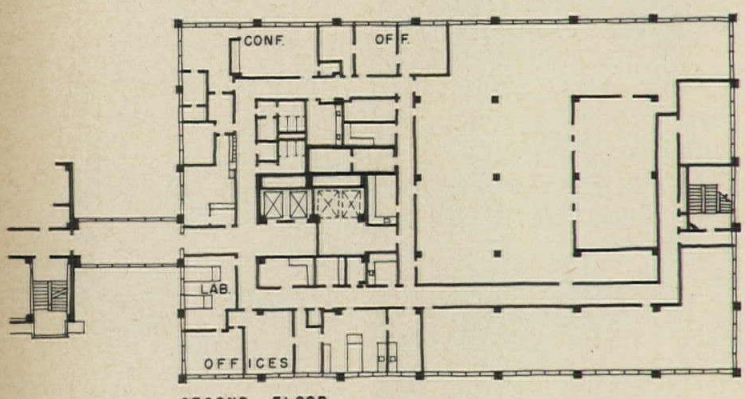
Outdoor recreation space is atop reinforced concrete podium of the psychiatric complex.

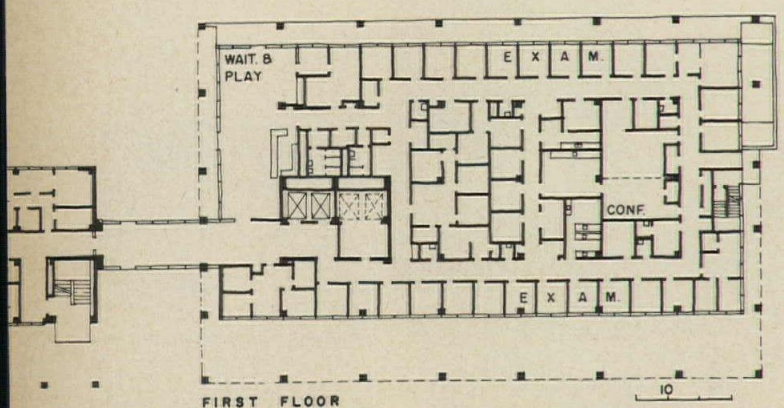
. . . OUTPATIENT SERVICES FOR CHILDREN

Marvin Rand photos

The Marion Davies Children's Clinic, completed in 1962, is a four-level structure, reinforced concrete with brick exterior, designed for future expansion to 10 levels. It houses the outpatient pediatrics department and research laboratories and extends, with its own forecourt and entrance, southward from the original outpatient wing, to which it is connected at each level.

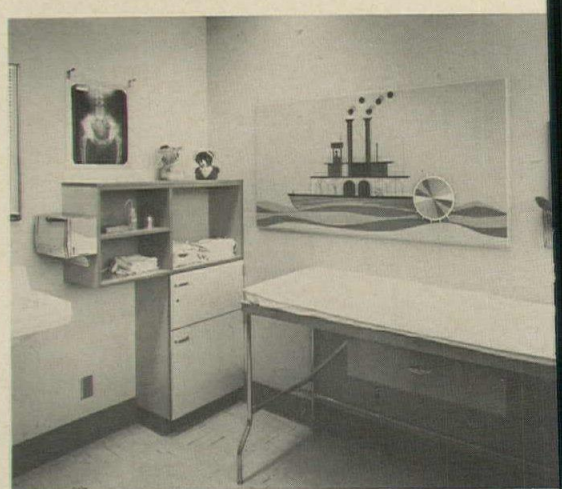
Construction of this clinic is followed by an eye clinic (opposite), school of dentistry (1967), school of public health (1968), and top floor additions and renovations already scheduled.





Outpatient waiting area for children and parents is designed for reassurance.

A complete animal surgery suite is located in the research department.

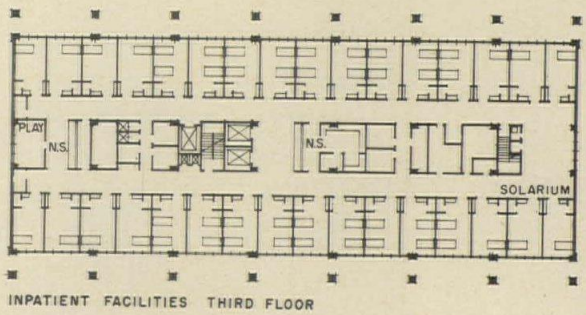


Children's examination room, one of 31 such rooms, means business, but with toys.

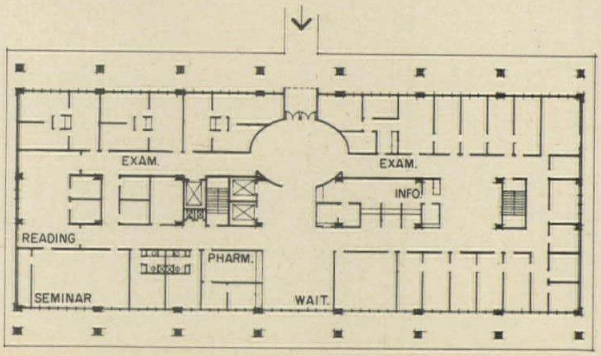
. . A TEACHING EYE INSTITUTE

The Jules Stein Eye Institute, one of the largest centers of ophthalmic research in the United States, went into construction in September 1964 and is nearing completion. It is a five-level building for teaching, research and treatment, containing first-floor outpatient clinics, a basement surgery suite with viewing galleries, seminar and library rooms and a 50-bed nursing unit. Cost was over $5 million including $640,000 in special equipment for operating rooms and laboratories.

CENTER FOR THE HEALTH SCIENCES, UNIVERSITY OF CALIFORNIA AT LOS ANGELES. Architects and engineers: *Welton Becket and Associates;* structural engineers: *Stacy & Meadville, Inc.;* for the university Office of Architects and Engineers: *Carl McElvy* and *Vernon Barker* (to 1963) and (since 1963) *James E. Westphall*, chief, and *Asa Smith*, project architect.



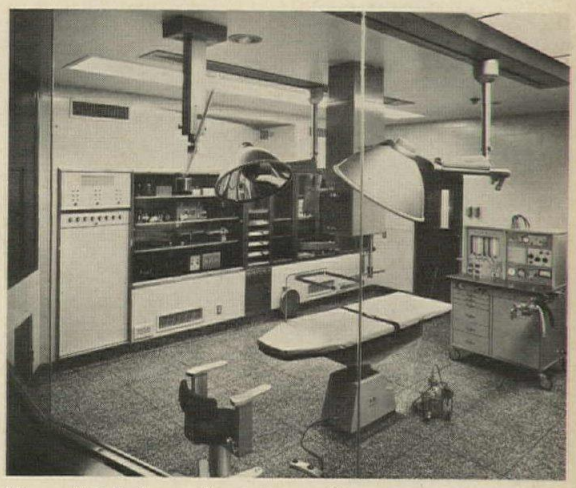
INPATIENT FACILITIES THIRD FLOOR



OUTPATIENT FACILITIES FIRST FLOOR

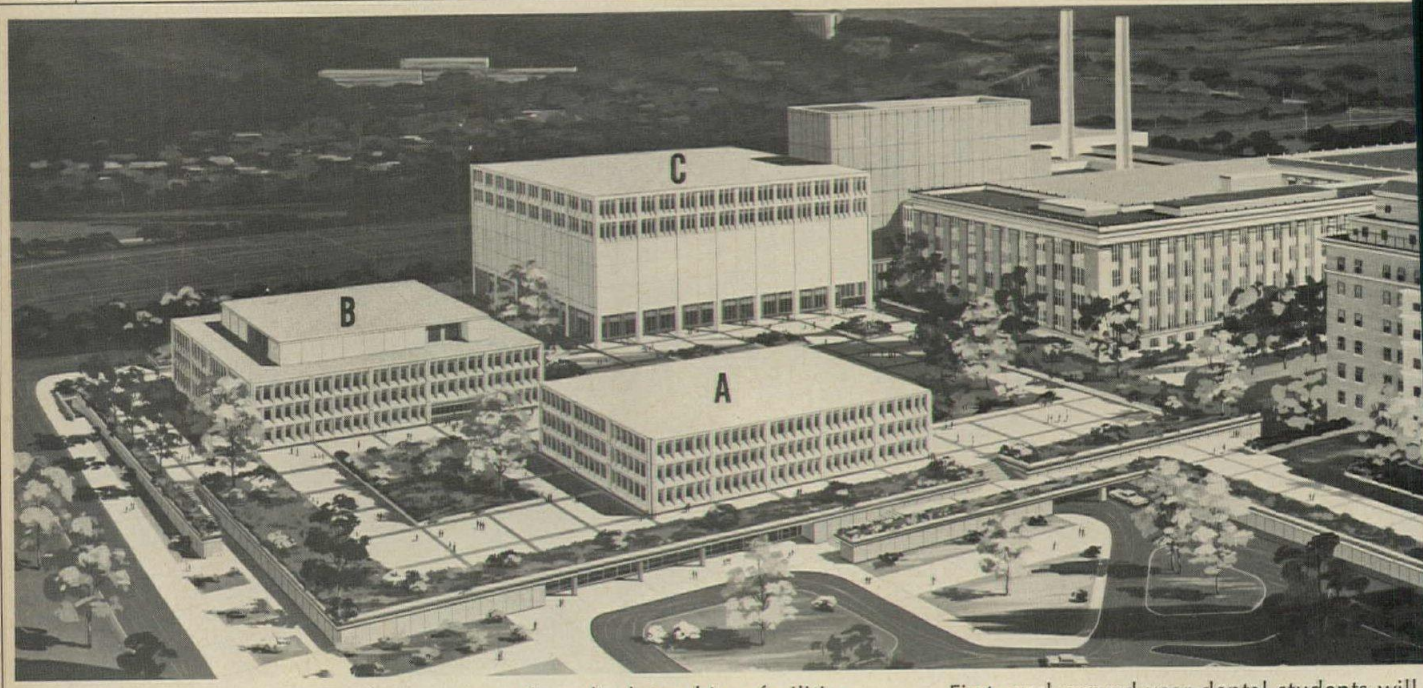
Outpatient examination and treatment areas are accessible from an oval foyer.

Two-bed patients' room has direct-indirect lighting, TV monitor, few underfoot hazards.



View of O.R. from observation gallery shows equipment for magnifying minute procedures and closed circuit TV.

5 WESTERN RESERVE UNIVERSITY: THREE SCHOOLS ON ONE BASE



Planned expansion of medical teaching facilities at Western Reserve University takes long-term advantage of multi-discipline and shared teaching spaces in a five-acre, two-level structure which serves as a podium for three schools—medical, nursing and dental. The basement of the podium houses animal facilities, parking and experimental surgery areas. A dental clinic and nurses' laboratories, lounge areas and additional parking are located at the ground level. Atop the planted podium, superstructures of the three schools emerge.

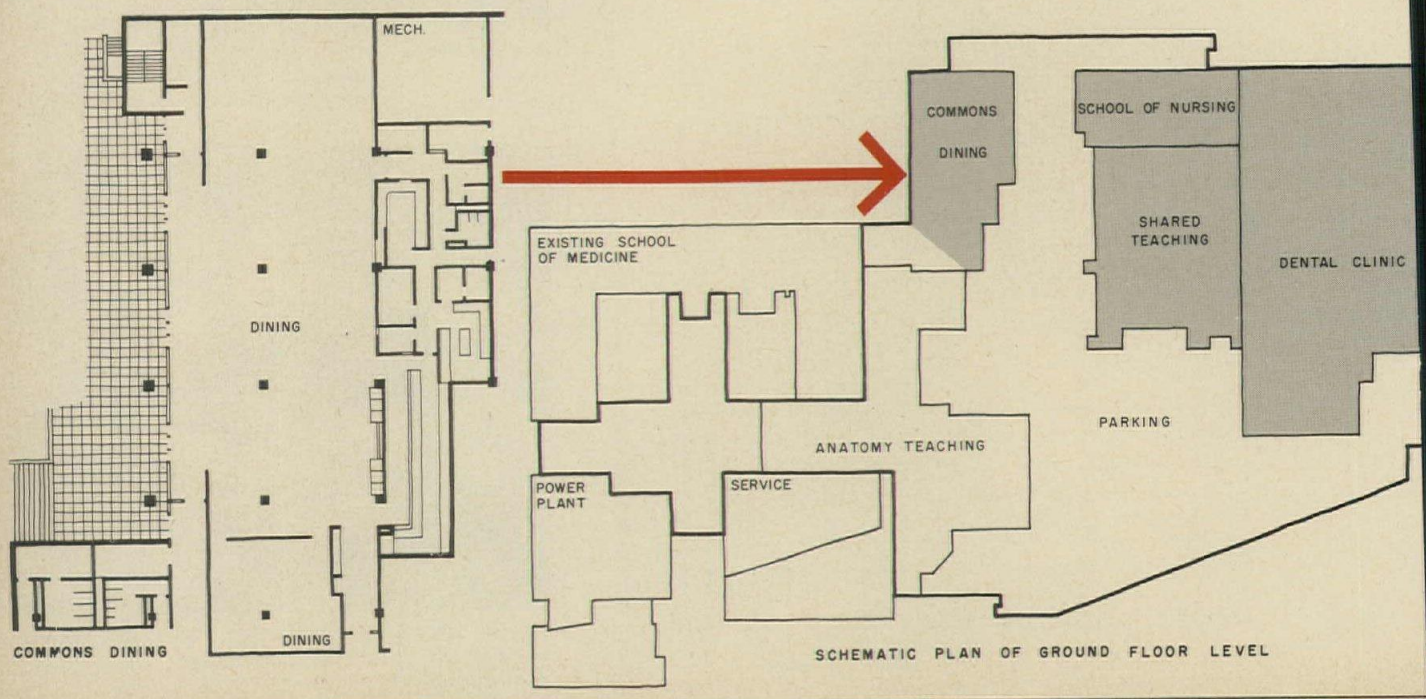
The Nursing School will be three stories high with the first-floor housing offices, conference and lounge areas. Geared to graduate student activity, the second floor will provide space for extensive behavioral science research. The third floor will include faculty offices, mechanical equipment, and a simulated hospital ward.

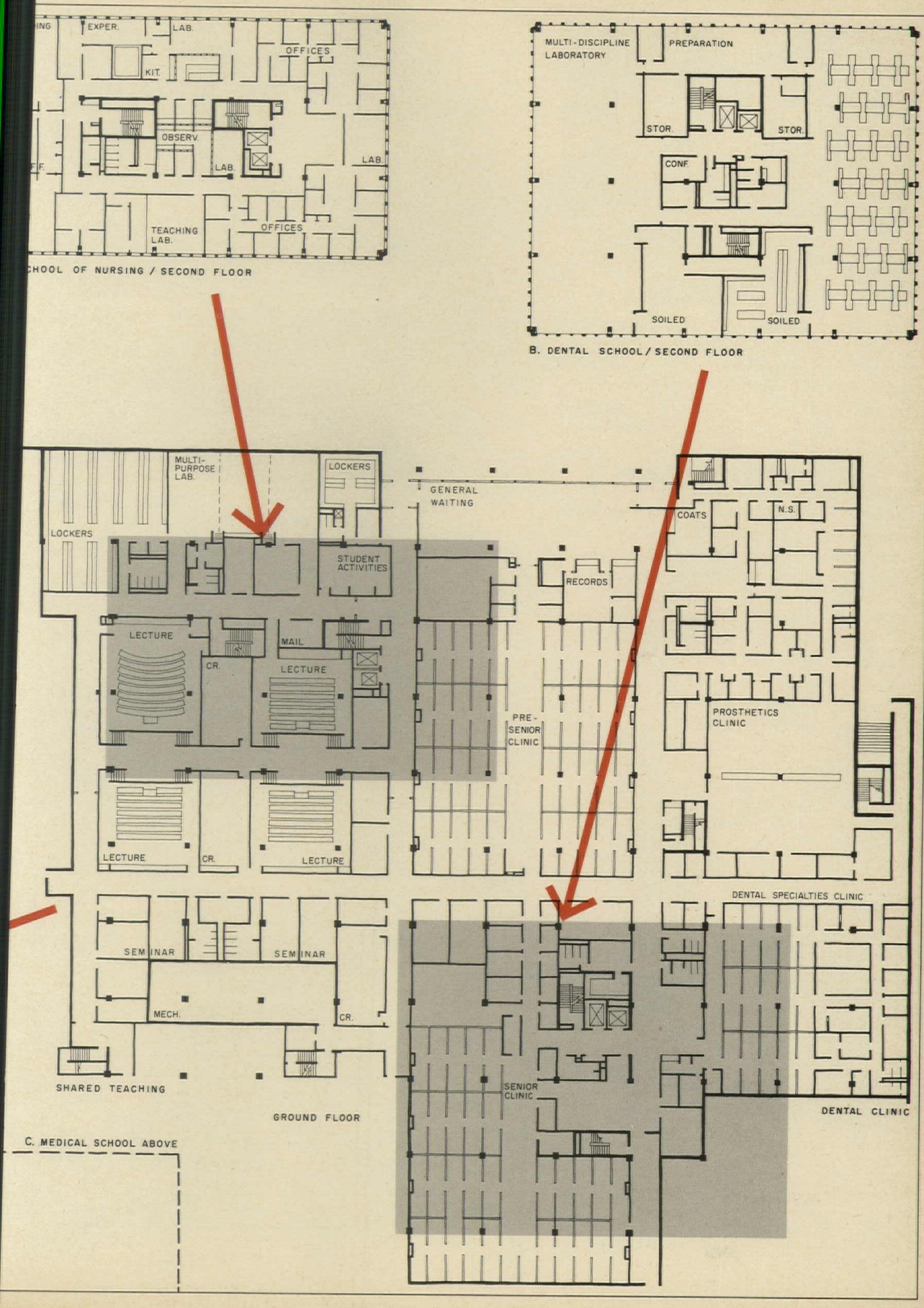
First- and second-year dental students will c most of their studying in the two large mul discipline laboratory areas on the second floor the three-story School of Dentistry. The first flo will house a dental museum and lounge areas, ar the third floor will provide space for gradua research.

The seven-story East Wing of the Medic School will contain all the classroom, study area and student multi-discipline laboratory facilitie of the school, permitting conversion of the exis ing building into a basic science research buildin

---

HEALTH SCIENCES CENTER, WESTERN RESERVE UNIVE SITY, CLEVELAND, OHIO. Architects: *Barnes, Neiswander Associates* for nursing and dental schools, podium ar power plant; *John A. Williams & Associates* for medic school and animal facilities; structural engineer: *R. M. Ger sert*, mechanical and electrical engineers: *Byers, Urba Klug & Pittenger*.





CHOOL OF NURSING / SECOND FLOOR

B. DENTAL SCHOOL / SECOND FLOOR

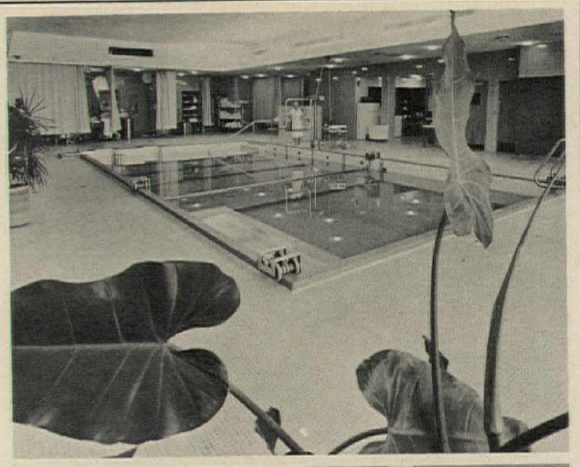
6 LONG BEACH HOSPITAL: A HOTEL FOR REHABILITATION

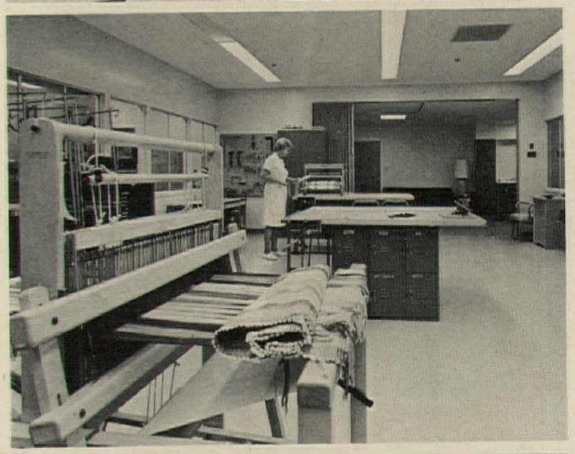
This two-unit addition to Memorial Hospital of Long Beach provides specialized spaces for patient and outpatient rehabilitation, and a service called "advanced care" which is similar in concept to ambulatory and self-care units but is adapted to pre-discharge care of rehabilitation patients. Special features of the rehabilitation units include a speech and audiometric evaluation center, an "activities of daily living" apartment designed to simulate a home environment, and a long, many-surfaced area in the gymnasium (including wood, gravel, concrete, grass, and blacktop) which provides training for wheelchair and ambulatory patients under virtually every condition.

Memorial West, the 86-bed advanced-care unit, is sensitively designed. Each two-bed room is equipped with individual climate control, intercom, full bath, personal storage space, coffee maker, and wheelchair-height vanity.

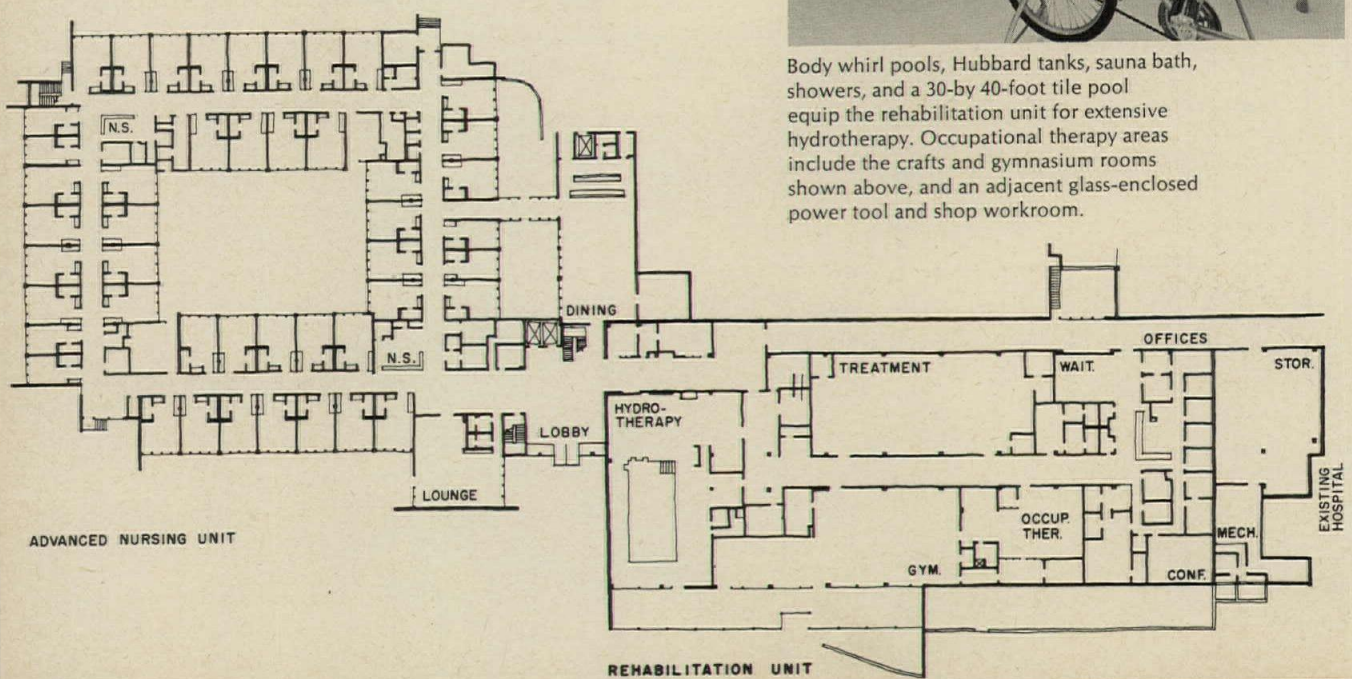
Exterior design is straightforward, pleasant, and functional. Foundations and structure are designed to allow for expansion to four floors.

ADDITION TO MEMORIAL HOSPITAL OF LONG BEACH, Long Beach, California. Architect: *William A. Lockett.*





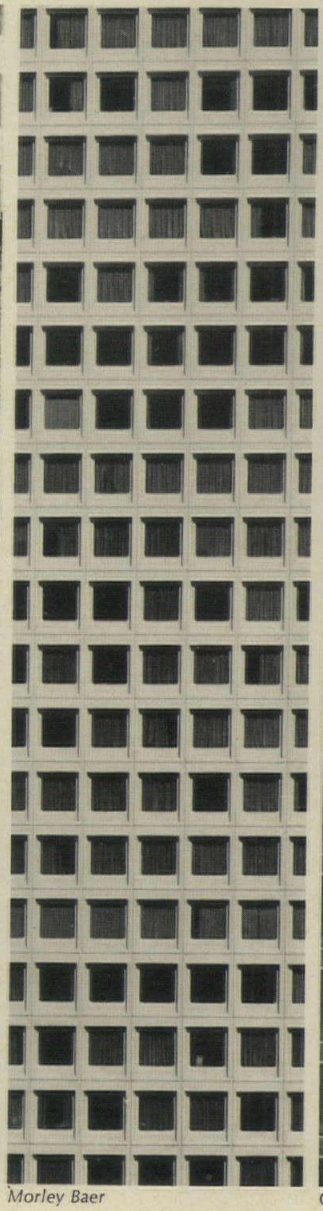
Body whirl pools, Hubbard tanks, sauna bath, showers, and a 30-by 40-foot tile pool equip the rehabilitation unit for extensive hydrotherapy. Occupational therapy areas include the crafts and gymnasium rooms shown above, and an adjacent glass-enclosed power tool and shop workroom.



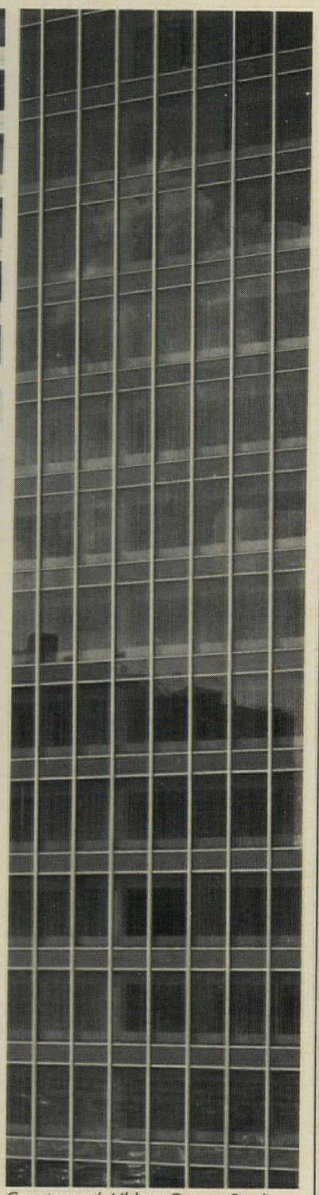
CIAL REPORT NO. 2

Wind, sun, rain and the exterior wall

Associated Photographers



Morley Baer

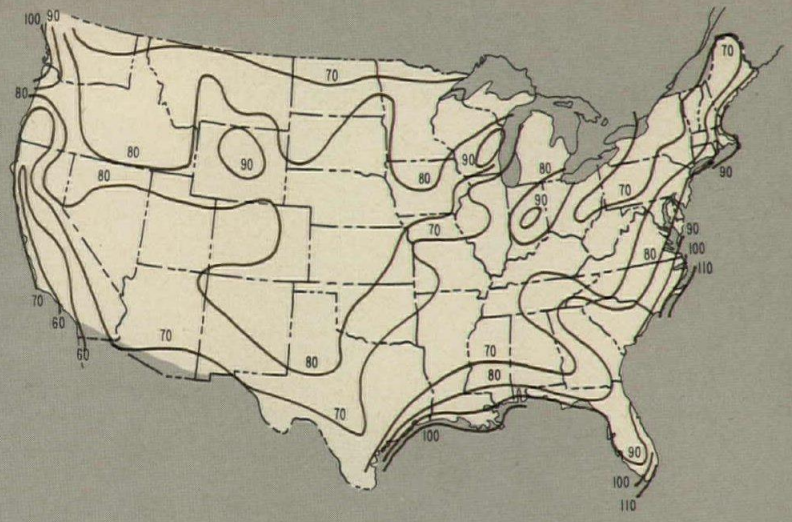


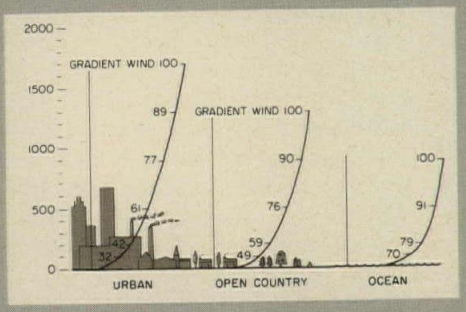
Courtesy of Libbey-Owens-Ford

The curtain wall has many faces and places—the United States Steel building in Pittsburgh, Hartford Plaza in San Francisco, the Libbey-Owens-Ford building in Toledo shown here are but a microscopic sample of the seemingly endless array of design concepts, materials and systems that have been used to date. And still more are lurking on the horizon. In the glass area alone, there are countless developments. Among them: lightweight, high-strength glass; flexible glass; glass which changes color with the light; glass-ceramic panels for building cladding; suspended glass; glass mullions. . . .

With such a vast field, one can only skim a few of the highlights in a report such as this: NAAMM's new tentative standards for wind loads; Eliot Noyes' further explorations into the precast window wall; curtain wall details of New York's pending World Trade Center; a glimpse at some of the new analysis and research developments; and an occasional recall of some of the many comprehensive articles from past issues of ARCHITECTURAL RECORD that bear on the subject of fenestration and the exterior wall.

Perhaps the most important development in the whole area is the increasing tendency for concern, care, and co-operation of all concerned in the construction of a curtain wall building. In the May-June 1967 issue of Building Research, L. J. Heitmann, structural and test engineering manager of Cupples Products Corporation, is quoted as saying much the same thing: "In my capacity as a representative of a metal curtain-wall manufacturer, I find myself constantly engaged in evaluation and performance testing of complete curtain-wall assemblies . . . we must be concerned with evaluating all of the materials in the wall, both on an individual and interaction basis. Failure of any one of the components (causes) unsatisfactory results in the over-all wall."





Wind variations across the country are indicated on the map above, which shows maximum annual extreme-mile wind velocities, 30 ft. above the ground, predicted by the U.S. Weather Bureau for a 50-year recurrence interval.

Local conditions, or terrain roughness, also affect wind velocity, as can be seen in the graph at left, based on work by A. G. Davenport.

NAAMM stresses the importance of a building's surroundings in its new "Tentative Standard for Design Wind Loads for Walls of Rectangular Buildings" by providing charts for three basic types of exposure:

Table A: heavily built-up urban sites protected by tall buildings, or sites protected by such natural barriers as hills or mountains.

Table B: suburbs, towns, wooded areas or rolling terrain, where nearby low buildings, trees or natural barriers provide general protection on all sides.

Table C: unprotected sites in flat, open country or near shorelines of large bodies of water, fully exposed to a long fetch of wind.

TABLE A DESIGN WIND PRESSURES (psf) FOR TYPE A EXPOSURE

Height (feet)	K_h	T_h	Gust Factor	Wind Velocities and (q_{30} values) 60 (9.2)	70 (12.5)	80 (16.4)	90 (20.7)	100 (25.6)	Over 100
10	0.2	.37	2.13	15*	15	15	15	15	
20	0.2	.37	2.13	15	15	15	15	15	
30	0.2	.37	2.13	15	15	15	15	15	
40	0.24	.337	2.00	15	15	15	15	15	
50	0.28	.315	1.91	15	15	15	15	15	
100	0.44	.253	1.66	15	15	15	17	21	
200	0.69	.201	1.45	15	15	18	23	28	
300	0.90	.175	1.35	15	17	22	28	34	
400	1.08	.160	1.29	15	19	25	32	39	
500	1.27	.149	1.25	16	22	29	36	45	
600	1.43	.140	1.21	18	24	31	39	49	
800	1.73	.127	1.16	20	28	36	46	57	
1000	1.98	.117	1.12	22	30	40	50	62	
over 1000				Design load values for heights and/or velocities in shaded area should be determined by special engineering analysis.					

*15 psf is minimum design load to be used in any case

TABLE B DESIGN WIND PRESSURES (psf) FOR TYPE B EXPOSURE

Height (feet)	K_h	T_h	Gust Factor	Wind Velocities and (q_{30} values) 60 (9.2)	70 (12.5)	80 (16.4)	90 (20.7)	100 (25.6)	Over 100
10	0.5	.235	1.59	15*	15	15	18	22	
20	0.5	.235	1.59	15	15	15	18	22	
30	0.5	.235	1.59	15	15	15	18	22	
40	0.57	.220	1.53	15	15	16	20	25	
50	0.63	.210	1.49	15	15	17	21	26	
100	0.85	.180	1.37	15	16	21	27	33	
200	1.16	.154	1.27	15	20	27	34	41	
300	1.39	.142	1.22	17	23	31	39	47	
400	1.56	.132	1.18	19	25	33	42	52	
500	1.75	.125	1.15	20	28	36	46	57	
600	1.88	.120	1.13	22	29	38	48	60	
800	2.13	.112	1.10	24	32	42	53	66	
1000	2.34	.107	1.08	26	35	46	58	71	
over 1000				Design load values for heights and/or velocities in shaded area should be determined by special engineering analysis.					

*15 psf is minimum design load to be used in any case

TABLE C DESIGN WIND PRESSURES (psf) FOR TYPE C EXPOSURE

Height (feet)	K_h	T_h	Gust Factor	Wind Velocities and (q_{30} values) 60 (9.2)	70 (12.5)	80 (16.4)	90 (20.7)	100 (25.6)	Over 100
10	1.0	.167	1.32	15*	18	24	30	37	
20	1.0	.167	1.32	15	18	24	30	37	
30	1.0	.167	1.32	15	18	24	30	37	
40	1.07	.160	1.29	15	19	25	31	39	
50	1.15	.154	1.27	15	20	26	33	41	
100	1.40	.140	1.21	17	23	31	39	48	
200	1.70	.125	1.15	20	27	35	45	55	
300	1.90	.117	1.12	22	29	38	49	60	
400	2.05	.112	1.10	23	31	41	51	64	
500	2.20	.108	1.08	24	33	43	54	67	
600	2.31	.105	1.07	25	34	45	56	70	
800	2.53	.102	1.06	27	37	48	61	76	
1000	2.60	.098	1.04	27	37	49	62	77	
over 1000				Design load values for heights and/or velocities in shaded area should be determined by special engineering analysis.					

*15 psf is minimum design load to be used in any case

The problem of wind loads versus a building's shape, height and locale

With the increasing attention being to the problems of wind loads on bu ings of ever-mounting size, height glass area, many new and more soph cated engineering approaches are b developed, with increasing attentio conditions in the immediate vicinit the project. Some of these, including cial analysis, and the testing of scale m els with approximated terrain roughn in boundary layer wind tunnels, were cussed for very tall buildings in "An gineering Approach To Designing G For Wind", ARCHITECTURAL RECO February 1967. As these methods are plied to more and more major build projects, no doubt the fund of kno edge thus acquired will eventually l to a very authorative and precise se standards on the nature of wind for and their effects in our cities.

In the interim, a more simpli and handy method of estimating des wind loads has been proposed by National Association of Architectu Metal Manufacturers in their recen published "Tentative Standard for D sign Wind Loads for Walls of Rectangu Buildings" (NAAMM Standard WL-67). Although it reflects much of the c rent knowledge on wind design pro dures, NAAMM stresses that the sta ard is necessarily tentative, and furt revisions may be anticipated.

In a 1-2-3 procedure, the applica wind loads for walls of rectangular bui ings are determined as follows:

1. Find the wind velocity given the geographic location of the buildi on U.S. Weather Bureau map (top le

2. Determine which type of exp sure governs (Table A, B or C, left).

3. Find the design loads to be us for various heights from the correspon ing Design Wind Pressure Table (A, B C), and in the column headed by the a propriate velocity from the map.

For intermediate heights not list in the tables, a supplementary graph given (right) showing continuous valu for K_h (height factor) and T_h (exposu factor). These values for any height c be substituted in a general formula find the design load:

Design Wind Pressure $K_h\, q_{30}\, G(C_{po} + C_{pi})$

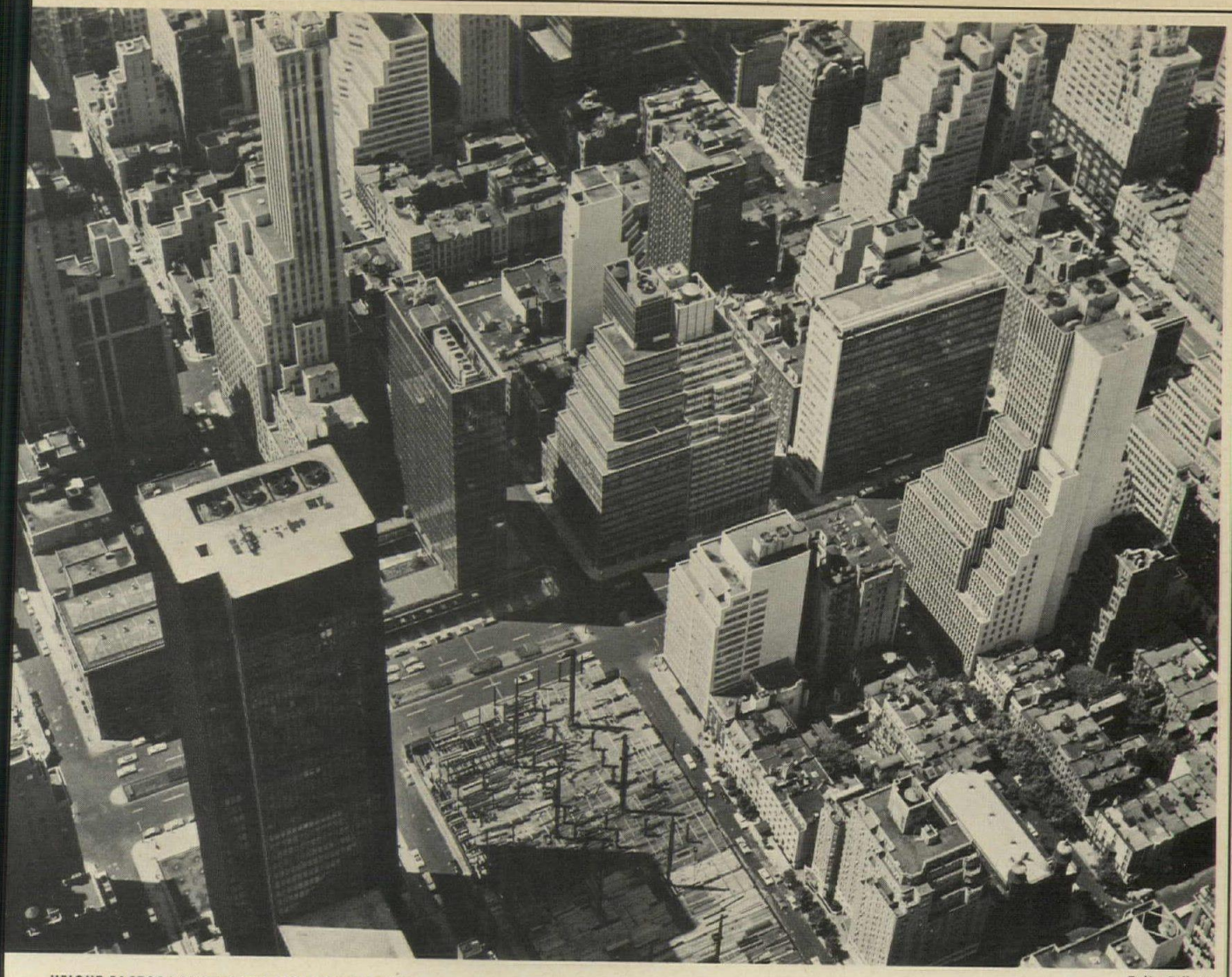
in which q_{30} = velocity pressure at 30-f height = $.00256V^2_{30}$

(V_{30} is velocity from map)

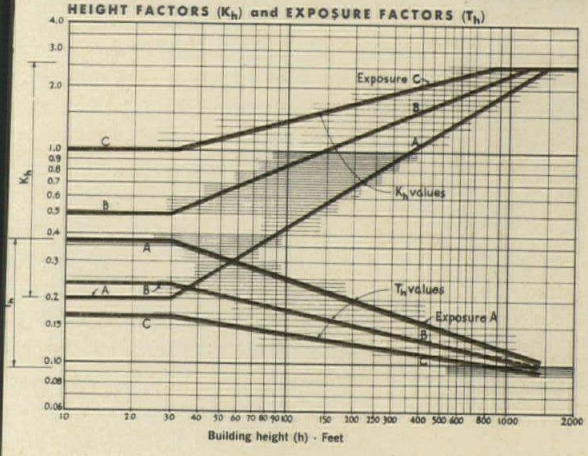
G = gust factor $0.65 + 4\, T_h$

C_{po} = external pressure coefficien The value ± 0.9 is used

C_{pi} = internal presurre coefficien The value ± 0.2 is used.

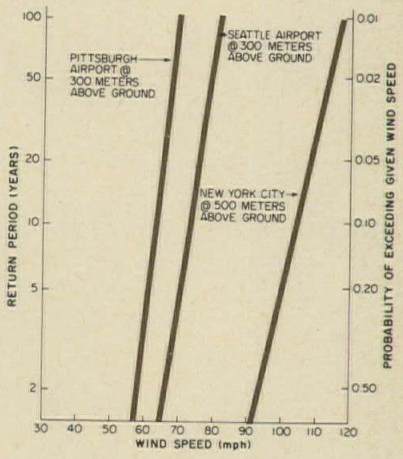


Felix Gilbert

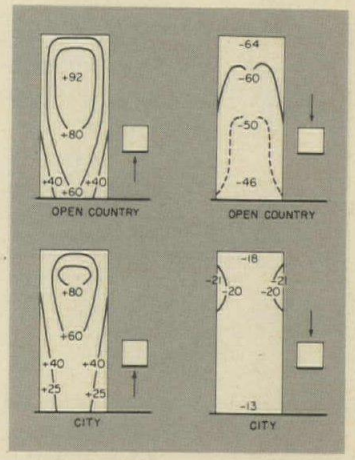


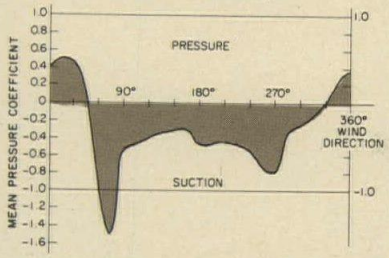
For large cities, as New York (above), with very tall buildings, engineers Worthington, Skilling, Helle & Jackson plot 20-minute extreme winds versus return years or probability (right) to help decide wind loads to design for.

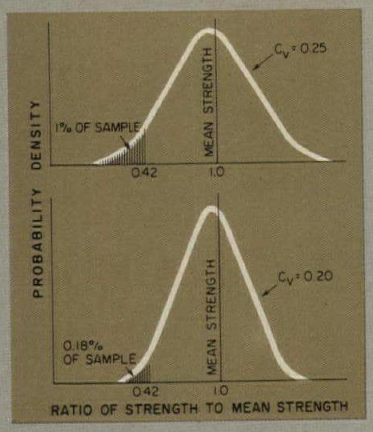
NAAMM provides a graph (left) to obtain design wind loads for building heights not given in the charts at far left. Values of K_h (height factor) and T_h (exposure factor) for any height may be substituted in the general formula given in the text.



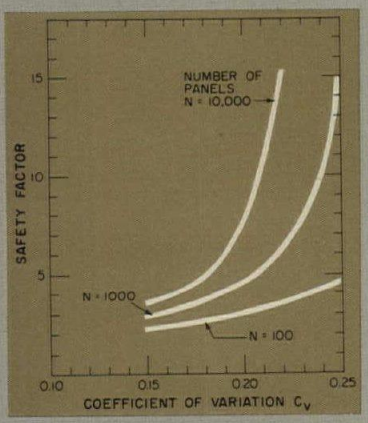
Wind tunnel tests on models by Worthington, Skilling, Helle & Jackson show (below and left) how wind direction can create negative pressures, or suctions, as well as positive ones, and how wind pressure can vary over a facade (in percentages of gradient wind velocity).

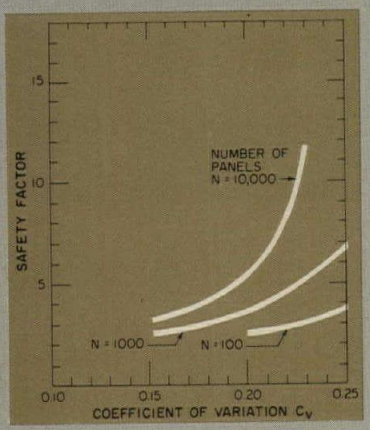






The smaller the coefficient of variation, the fewer lights of glass would have a given percentage of strength less than the mean. A figure of 42 per cent less than the mean is used in the probability curves top left as an example. The two lower charts show how both the coefficient of variation and the total number of lights in a building change the required safety factor.





THE RELATIONSHIP OF LOADING TO BREAKING STRESSES

Type of Loading	Approx. Load Duration	Typical Breaking Stress—Large Lights (Normal Surface Quality—As Glazed)			
		Regular		Heat Strengthened P.S.I.	fully tempered P.S.I.
		Plate Glass P.S.I.	Window Glass P.S.I.		
Sonic Booms, Blasts*	0.1 second	6,000	6,600	15,000	30,000
Wind Gusts	5-10 seconds	5,500	6,050	13,750	27,500
Fastest Mile Wind	1 minute	4,000	4,400	10,000	20,000
Long Term	2 hours-indefinite	3,000	3,300	7,500	15,000

*The complex nature of these loads requires special engineering study when design criteria are to be established.

The effect of loads of different duration of time on various strength glass is shown in the table, top right. The lower table shows the probable effects of employing different factors of safety.

THE RELATIONSHIP OF SAFETY FACTORS TO THE STATISTICAL PROBABILITY OF FAILURE

SAFETY FACTOR	Probable Number of Lights* Which Will Break at Initial Occurrence of Design Load (of each 1,000 loaded)
1	500
2	22
2.5	**8**
3	4
4	1.3
5	**0.7**
8	**0.2**
10	0.150

*Rectangular lights adequately supported on four edges in a weather-tight rabbet, assuming statistically normal strength distribution and a coefficient of variation of 25%.

The strength of any glass is a variable factor

Statistical analysis, especially as it ap to the variability in strength for any g type of glass, is becoming as impo for determining the factor of safet glass, as it is in determining the loads of very tall buildings. As pointed out in the article, "Enginee approach to designing glass for wi ARCHITECTURAL RECORD, Febr 1967, there are always some minute f in glass, and more in polished plate than sheet glass. The obvious differe in strength from flaws causes similar ferences in probability of breakage. pressed as a coefficient of varia (C_v), its current values are 0.25 for nealed glass, 0.20 for heat-strengthe glass and 0.15 for fully tempered g The last two processes tend to heal flaws and strengthen the glass, and create a lower coefficient. What means to the safety and the probab of breakage can be noted in the gra at left. Incidentally, the safety factor lowed for in most manufacturers' w load charts is 2.5; a more complete ta of safety factors is given below left.

Without doubt, statistical meth applied to predicting probability of ure of glass can be very useful to structural designer. Ed Michalik, of P burgh Plate Glass, points out, thou "that a difference exists between labo tory test data, which assume statistic normal strength distributions with a efficient of variation of 25 per cent, a actual job exposures. The desig should be aware that various fabricat techniques and job-site exposure con tions may influence the coefficient variation. When it is larger than 25 cent, more breaks per thousand can expected; or when the coefficient is l than 25 per cent, fewer breaks per th sand need be expected.

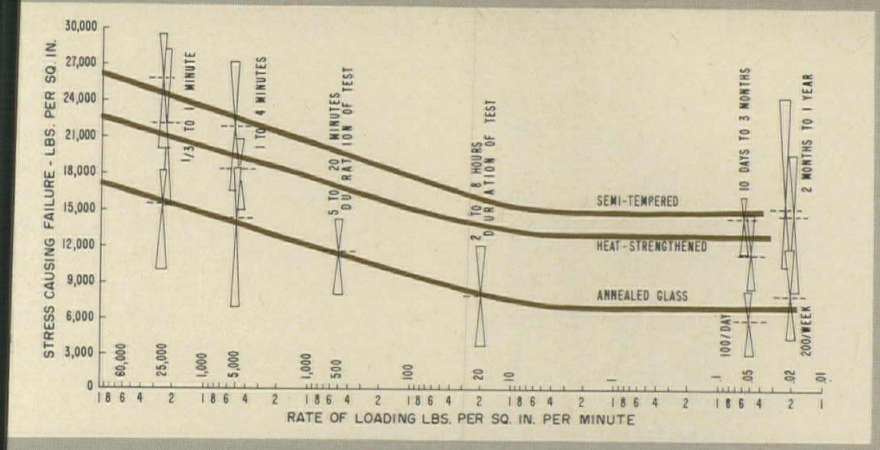
"An areal effect is related to the c jectured areal distribution of the numb and intensity of flaws in the surface. E dence shows that large lights of glass w fracture at a lower applied stress th smaller lights.

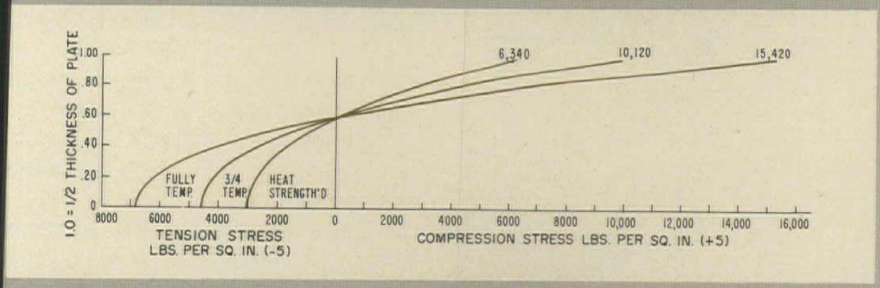
"Glass reacts differently also to loa of short duration and to loads of lo duration [see chart top right]. The tens strength of glass for short duration loa [in seconds] is higher than the tens strength under long-term loadi [months]. For normal surface quality glazed, the ratio is approximately 2 to 1

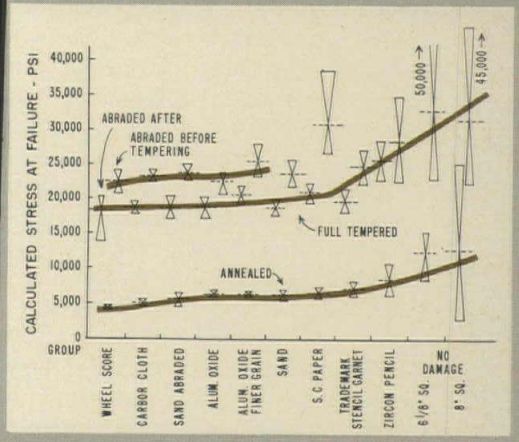
It is also interesting to note the e fects on glass strength of such "mino damage as a label, as in chart at rig

Cost versus strength

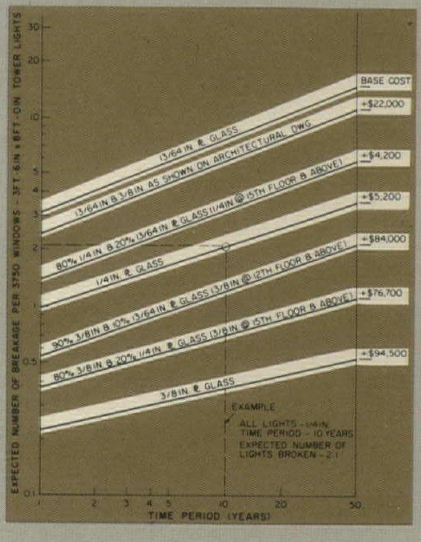
Of course, the usual problem these da is not to find a glass strong enough

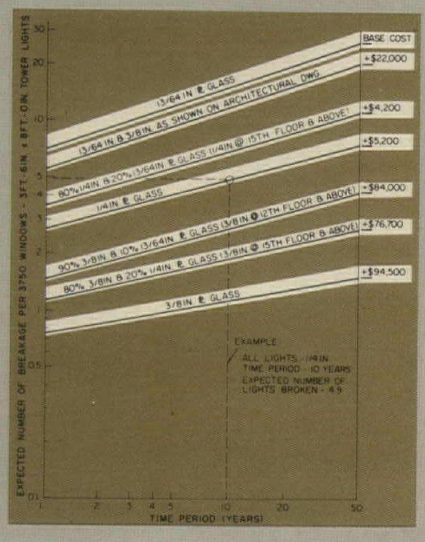






The graph at top plots the variations encountered in load/time tests on different glasses, and illustrates them as roughly hour-glass shapes. It is interesting to note in the next chart down that most all glass changes from compression to tension at about 21 per cent of the depth. The third chart plots the effects of different abrasions on glass. Note the effect of tempering before and after the abrasion. The charts below indicate the effect of using thicker glass on both costs and probability of breakage.





assure minimum breakage, but to keep both the cost and the probability of breakage over a given period of time within reason. The graphs shown at the bottom of the page show how a study analysis might be constructed to weigh the pros and cons.

Damage to glass after installation

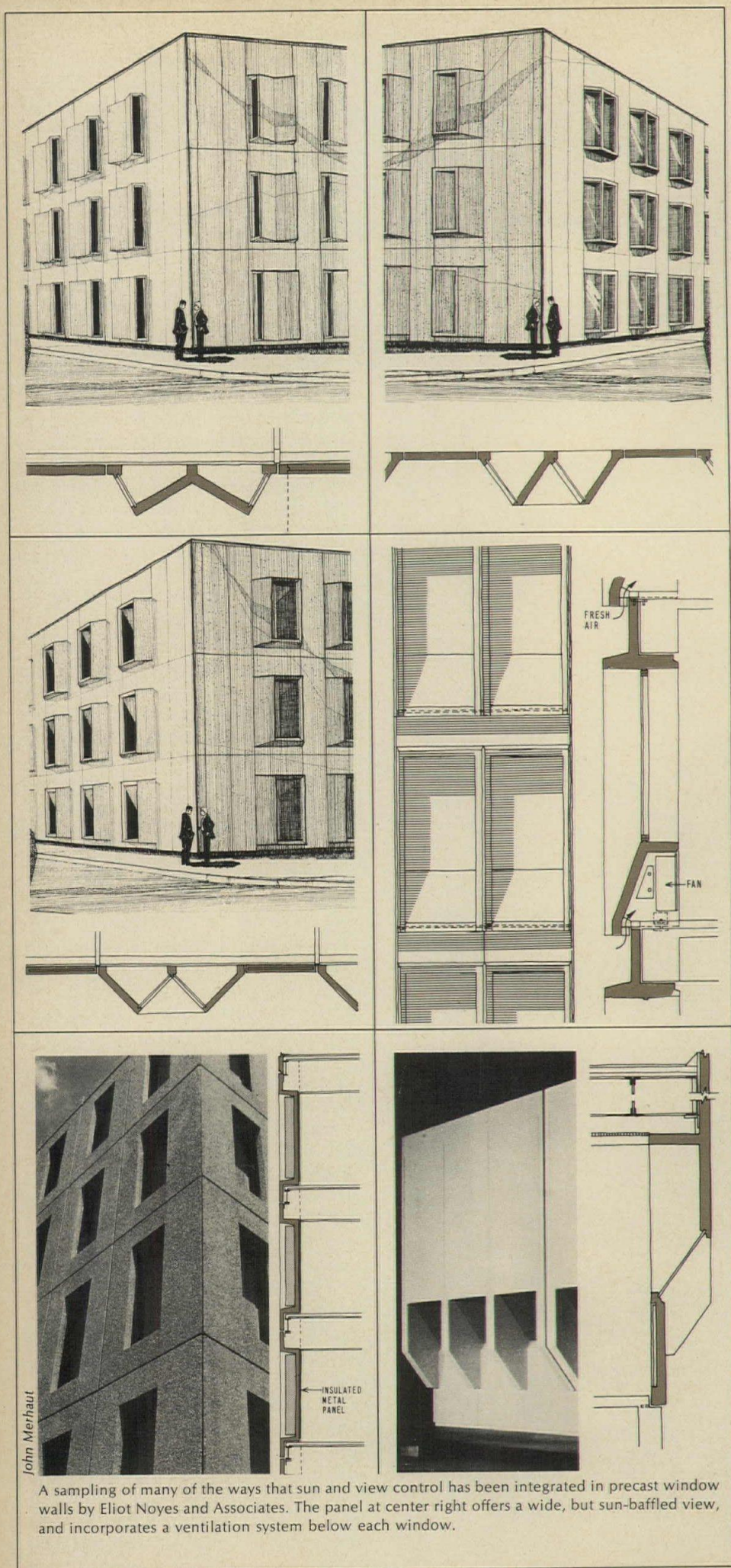
It is becoming more evident that a number of conditions can significantly damage the surface of glass after installation. Otto F. Wenzler, of Libbey-Owens-Ford Glass Company, pointed out a number in recent speech at the University of Wisconsin: "Damage to the surfaces of glass can be caused by the alkalis which may be leached from precast concrete panels by rain. Damage to glass may also be caused by fluorides in the washoff from concrete floors which have been treated for hardening with solutions of zinc or magnesium fluosilicates. These materials will stain or etch the surface of glass if allowed to remain for a few days. There is no practical method for restoring the glass surfaces. The corrosive materials leached will appear as white streaks.

Such staining will be more noticeable on the tinted heat-absorbing type glasses and on the darker colors of opaque glass because of the greater contrast between the generally light color of the stain or etch and the darker glass. There is nothing in the composition of these glasses which will influence their susceptibility to staining and etching, as compared to regular plate or sheet glass.

"The best way to avoid this problem is to wash the glass just as soon as practical following rain or other washoff conditions. Protection of glass against damage is usually the responsibilty of the general contractor and it is therefore good practice to advise him that the windows should be washed during construction so that the washing may be included in his job bid. It may be advisable to alert the building owner of this condition when the building is turned over to him because the glass should be washed until the alkalis are no longer leached from the concrete.

"Installation of neoprene structural gaskets on the surrounding frame and the installation of the glass and neoprene locking strips are facilitated when a lubricant is used. A lubricant which is highly alkaline should not be used because the washoff due to rain can stain or etch the glass. Cases are known where a household liquid detergent was used as a lubricant that contained the alkali sodium silicate and the washoff stained the glass.

"We suggest that the gasket manufacturer recommend a suitable lubricant. One manufacturer recommends a small amount of glycerine in water."



John Merhaut

A sampling of many of the ways that sun and view control has been integrated in precast window walls by Eliot Noyes and Associates. The panel at center right offers a wide, but sun-baffled view, and incorporates a ventilation system below each window.

New directions for sun cont range from precast innovati to reflecting glass buildings

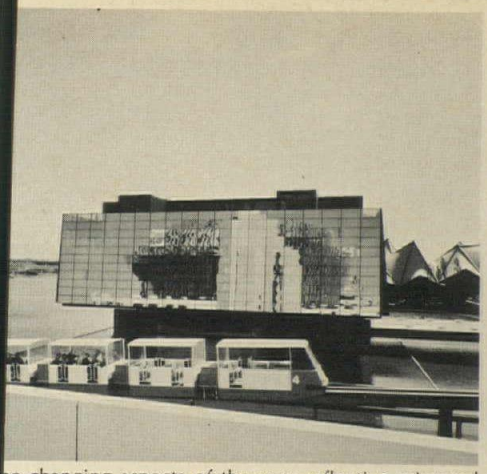
In addition to continuing studies and oratory research to improve the effec ness of such orthodox sun shading vices as blinds and draperies, there growing trend toward the use of da and darker glass, the new reflec glasses, and precast window units of casionally highly unorthodox shape projection.

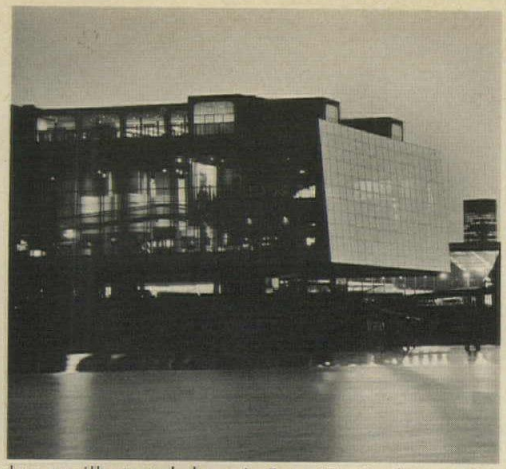
One of the architectural off which was one of the forerunners— still a constant innovator in develop integral sun shading in precast winc wall panels—is that of Eliot Noyes & sociates. When questioned about t objectives and problems in desig their many variations (see sketches and below right), Arthur DeSalvo, Jr. associate of the firm, made the follow comments:

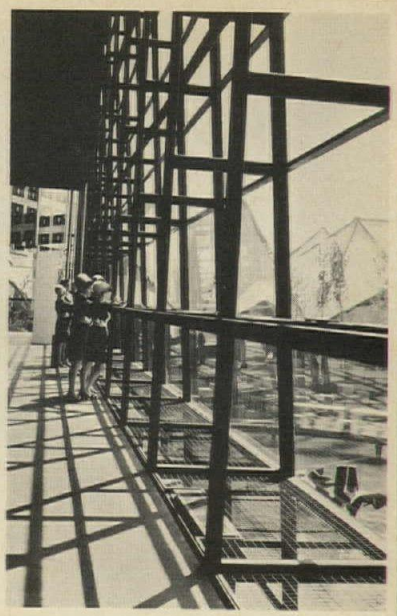
"Our continuing study of concr building walls has been a serious effor find new architectural solutions, wit the vocabulary of advanced technolo that will provide better solutions to problems of environment. Each indiv ual study is related to a specific use the building and its surrounding envir ment, yet it also is related to the pr esses and results of preceding proje We feel that each project, with its in vidual requirements and conditions, i new challenge, but that there is a thre of continuity in the entire series based knowledge gained through the proc of development and execution.

In our studies, we consider the to building fabric, which is made up voids and solids, as a series of units th in their total assembly, produce both t wall and the window. Traditionally, t window has three basic functions: transmits natural daylight, it provides means of ventilation, and it provides view (sometimes undesirable) for the o cupants of the building. In our air-conc tioned buildings, only the former and th latter become real considerations.

Through observation, we becam more and more aware that windows fa ing direct sunlight produced an exce sive heat gain within the building, an ceased to function as window becaus blinds were dropped to the sill blockin the view from the building. In our stud ies, we have tried to overcome this prob lem by providing a limited unobstructe view through openings in the wall turne away from direct sunlight. The sunligh still enters the building in limite amounts, but falls in areas that are no objectionable to the occupant. In mos designs, the need for any blinds or exte

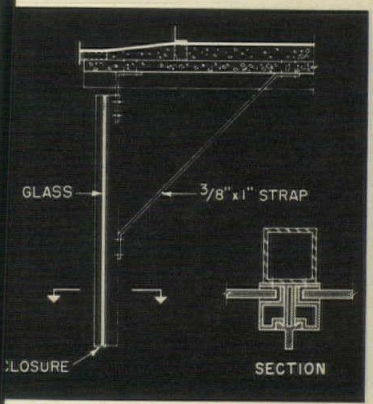


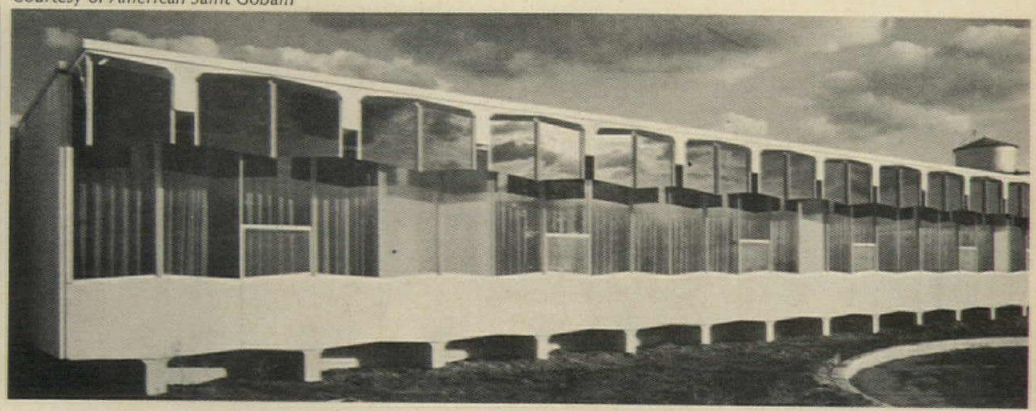


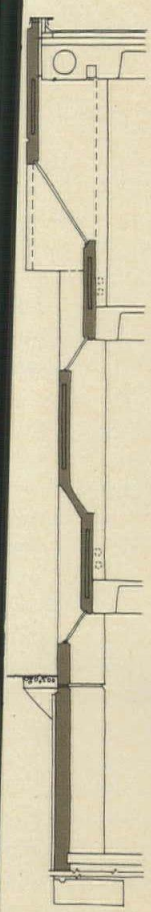


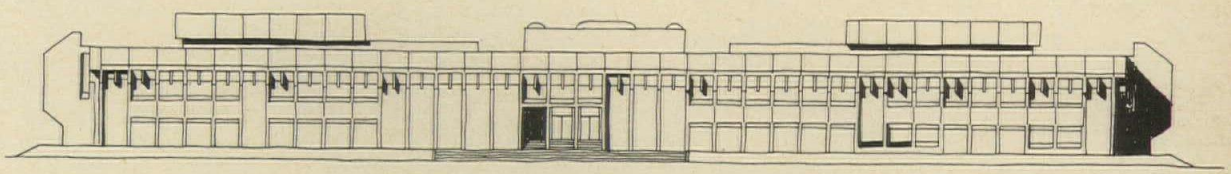
he changing aspects of the new reflective mirrored glass are illustrated above in Expo 67's Quebec Pavil-n by architects Papineau, Gerin-Lajoie, Leblanc & Durand. Below: glare and heat control are augmented y light-gray glass walls and a darker-gray sunscreen.

Courtesy of American Saint Gobain

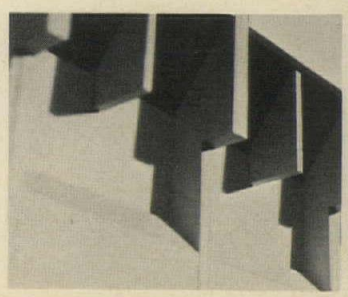


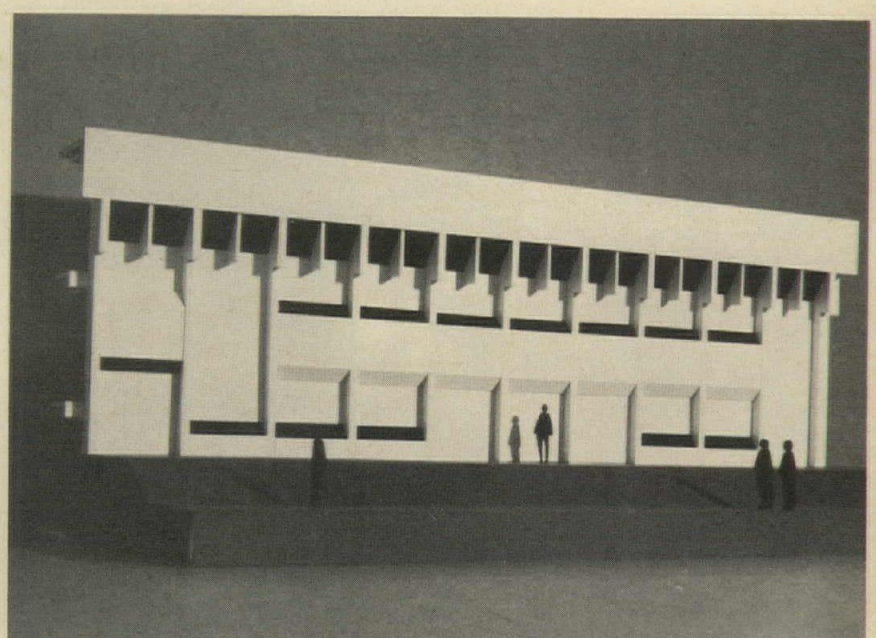


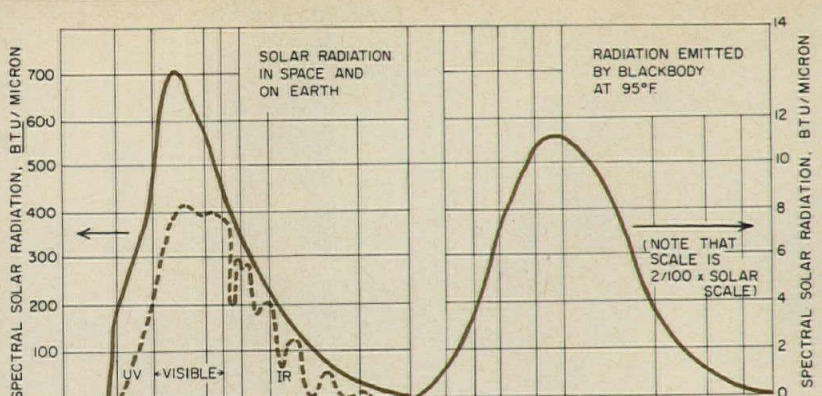


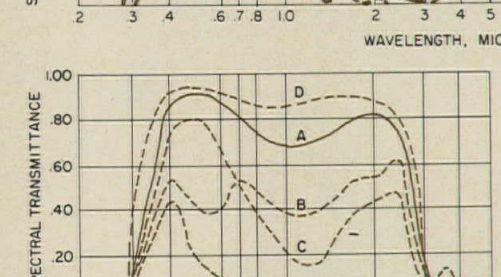


Probably a logical development from Eliot Noyes' separate panel studies is this scheme which uses a number of differently fenestrated panels, which, in combination, permit windows to be placed most anywhere on the plan as desired, and with most any kind of directional view. The section of a typical panel is shown at left.

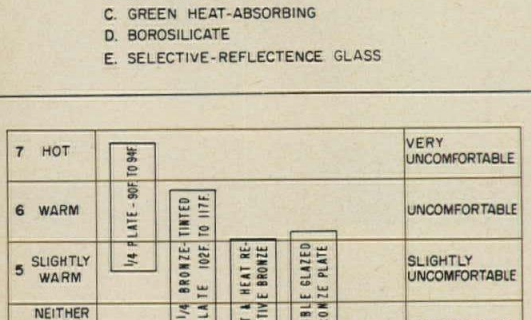








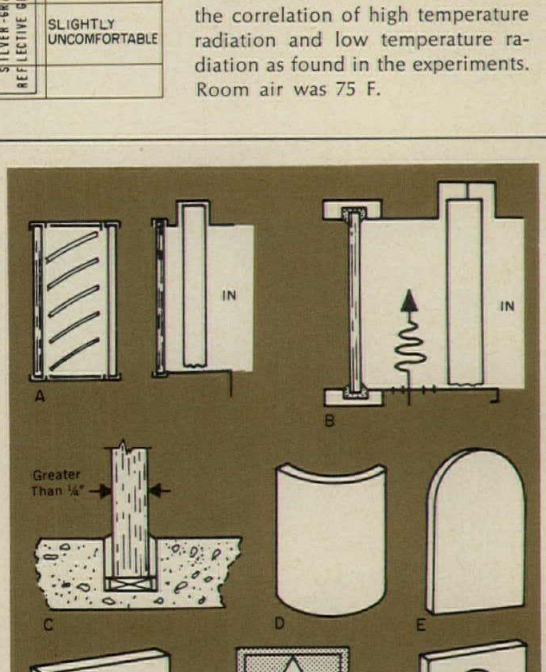
When solar radiation strikes a sheet of glass it is either reflected, transmitted or absorbed. Chart compares transmittance of various glasses, including special glasses available with low transmittance to the sun's infrared heat.



Thermal comfort studies rank among the current research projects of the PPG Environmental Laboratory. The chart at left gives the vote reactions to various glasses by a group of sedentary women seated with their backs towards the windows. The vote of sensation of warmth-cool is determined from the correlation of high temperature radiation and low temperature radiation as found in the experiments. Room air was 75 F.

Tinted glass glazing recommendations by Pittsburgh Plate Glass include: tinted clean-cut edges; protection of edges; no glass-metal contact; resilient glazing compound; do not nip or damage edges; do not sandblast.

However, custom (extra cost) factory fabrication is stated to be required if any of the conditions sketched at left apply: A. when glass-shade space is less than 1 in. or non-vented or shading between glass or in spandrels; B. heat source between glass and shade; C. concrete or other framing with large heat capacity (not recommended for tinted glass unless tight tolerance control is kept); D. bent glass; E. pattern cuts when thickness is over ¼ in.; F. edge area over 200 sq in.; G. outdoor shading with double diagonal shade lines; H. pattern-cuts with notches or holes.



rior sun control devices has been c
pletely eliminated and, also, the coo
requirements have been substantially
duced.

We have limited our investigatio
precast building elements because of
broad range of finishes and color tha
available to the designer. Since all
faces are completed and can be insp
ed before the building takes form,
never have the problem of a poured
place surface which must sometimes
patched or replaced.

In studying precast building e
ments, we have found there is an over
maximum size which is ideal for truck
and erection. The normal limitations
10 feet in one dimension and up to
feet for panels bearing on grade foun
tion. For panels which must be raised
sheath an individual story above gra
we think in terms of about 100 squ
feet of surface. If the design of the pa
requires a greater thickness or has v
deep reveals, the weight factor may
fluence the over-all size of the pan
Each individual design must be carefu
thought out in relation to the techniqu
of molding in a form, withdrawal fr
the form, and handling thereafter. V
add no special surface aggregates; t
final finished surface is produced throu
the careful selection of natural aggrega
which is exposed by retarders or sa
blasting. Many of the designs have
duced the percentage of glass in t
building wall to the extent that me
window frames have been eliminat
and glazing is accomplished by placi
the glass directly into grooves provide
in the precast panels."

Solar control with glass

Probably the major trend at the momen
however, is toward more and larg
panes of glass, and the use of glass itse
to cope with the sun. Much has bee
written in the past several months on th
burgeoning field of heat-absorbing an
solar-reflective glass. And the architec
tural profession has been extraordinaril
receptive. Already, the elegant dark glas
facade is a familiar sight in most of ou
cities, and the shimmering mirror qualit
of the Quebec pavilion at Expo 67 is hav
ing its due recognition. Data on proper
ties and performance of the various type
of glass currently on the market is readil
available from the various manufacturer
(for a summary of the characteristics o
special glass, see John L. Yellott's article
"How materials react To solar energy,"
ARCHITECTURAL RECORD, June 1966).
And, of course, special properties often
bring special problems; many of them
are reviewed in "Glazing recommenda-
tions For tinted glass," RECORD, Decem-
ber 1966.

World Trade Center ain wall details ss latest ideas

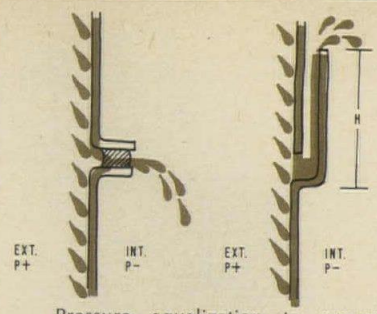
ably the most newsworthy of current inum and glass curtain walls being loped are those of New York City's d Trade Center. As everyone cer- y knows, the center will include twin rs which, when completed by archi- Minoru Yamasaki and Associates Emery Roth & Sons, will be the tall- uildings in the world. Because of the est in the project, and because the oning behind its curtain wall system esents a sort of primer of much cur- thinking on the subject, the next pages are devoted to basic details on and why this particular system is g developed for the center.

The criteria set up for the integrated al wall system were as follows:*

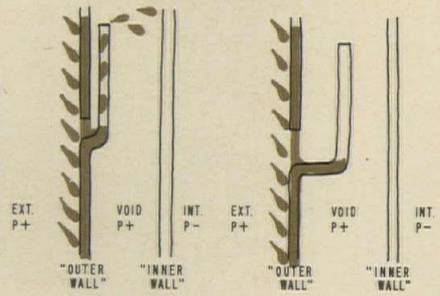
- Weatherproofing against infiltra- of water, air, and dust as well as trol of vapor transmission and con- sation, utilizing creative engineering metalcraft to avoid primary reliance esilient gaskets and compounds.
- Engineering compatibility of the with the structure it encloses, with- ding all imposed live and dead loads, viding adequate insulation for com- and fireproofing, relieving or con- ling all differential thermal move- nts.
- Simplicity of design to minimize ts and other points of vulnerability, fabrication to minimize space, cost scheduling problems, of erection for ed, flexibility and safety.
- Erection details and techniques ich permit freedom of weather effects, edom of sequence and conflict with er trades, easy replacement of dam- d components, and convenient ad- tment to permissible tolerances of the uctural frame.
- A finish developed to comple- nt the character of World Trade Cen- , accomplishing the designer's esthetic ent with maximum life and minimum intenance.
- A favorable performance/cost re- ionship.

To meet these ideals, a great num- r of ideas were explored, including nolithic column covers of aluminum nded to fireproofing; absorption of ex- nsion in compressive stress; one piece d multiple extruded column covers; tomated field welded joints; "boot- ap" erection utilizing window cleaner acks; board and foamed-in-place ure- ane; and fireproofing of several basic

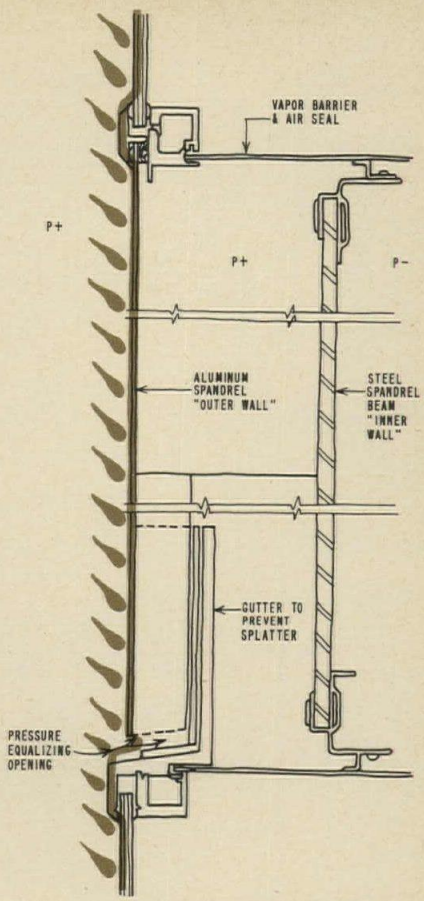
*Material in this report is from a presentation by uminum Company of America and Cupples Prod- s Corporation for the development of the curtain ll system.



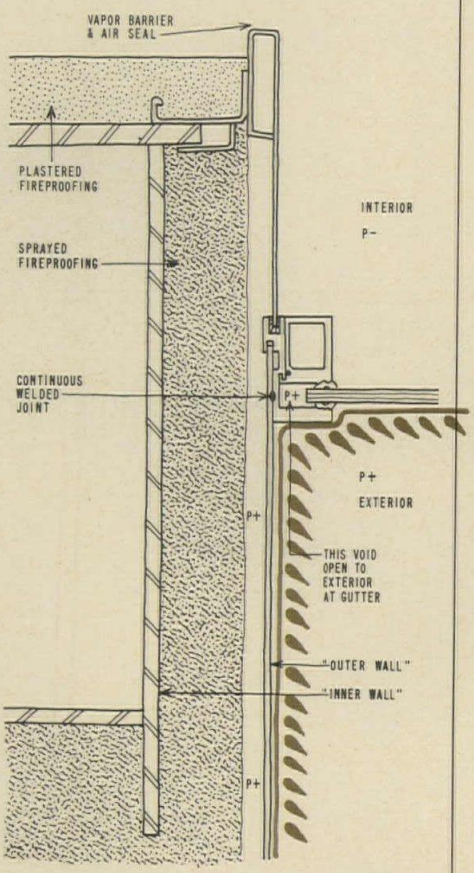
Pressure equalization to prevent leakage stems from the following observations: difference in pressure from wind loads sucks water through tiniest openings (above left); flashing gutters do not prevent water build-up under constant pressure differential (above right).



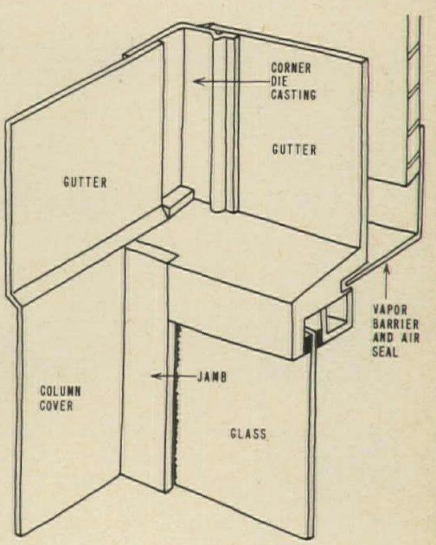
A pressure tight inner wall equalizes pressure, but too large a void, combined with narrow air path (above left) still permits overspray. A smaller void and wide air path (above right) help by giving immediate equalization response. Wide aperture reduces air velocity and stops overspray.



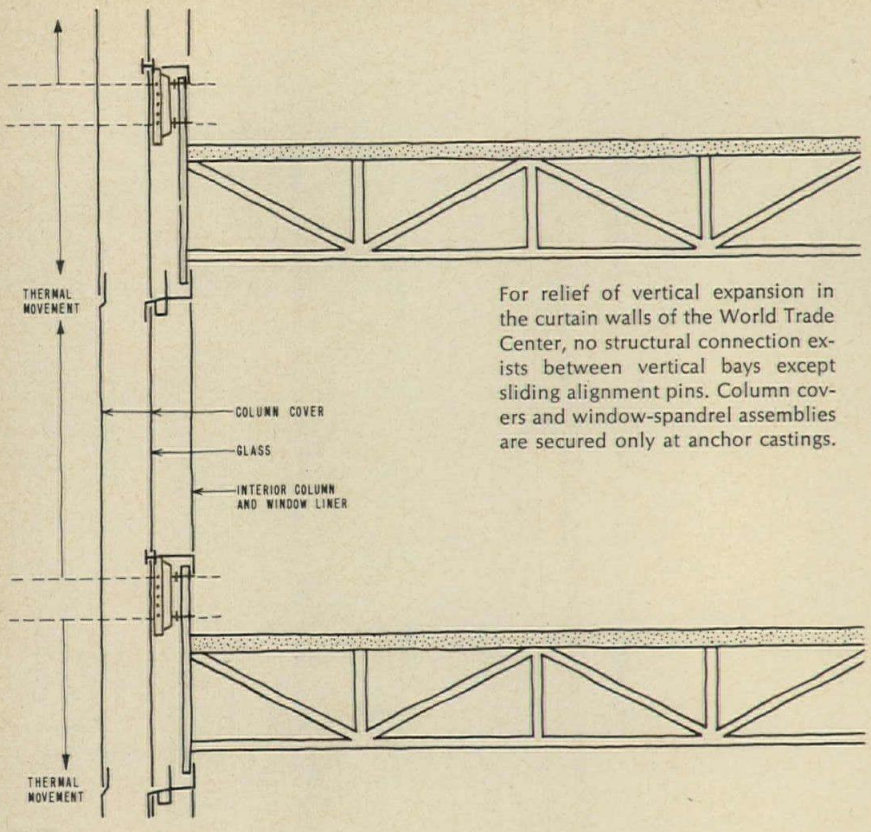
The World Trade Center curtain wall spandrels use steel structure as inner wall to achieve pressure equalization.



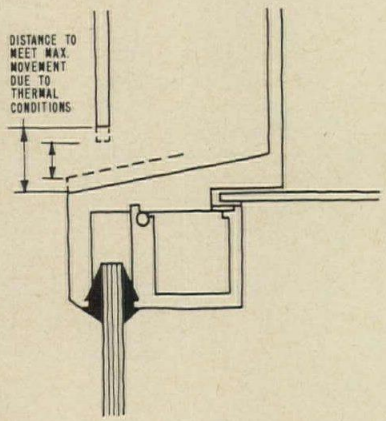
The horizontal section above shows how the pressure equalization theory is adapted to glazing.



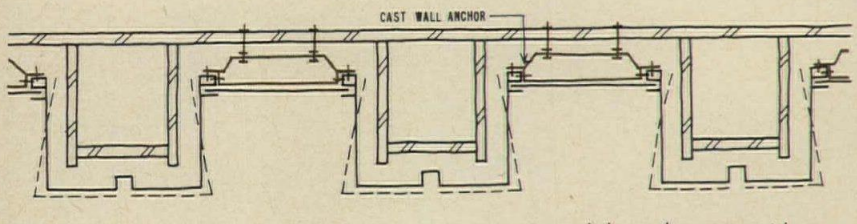
The cut-away detail above shows the flashing gutter, which is continuous around the entire building at every floor.



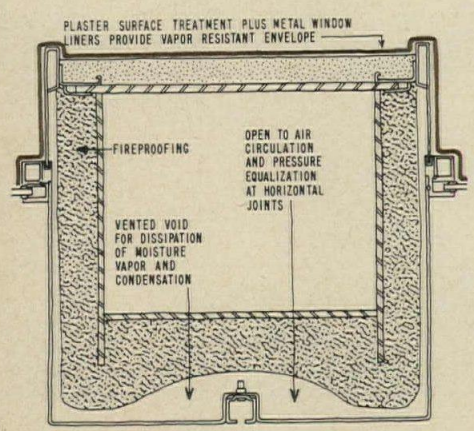
For relief of vertical expansion in the curtain walls of the World Trade Center, no structural connection exists between vertical bays except sliding alignment pins. Column covers and window-spandrel assemblies are secured only at anchor castings.



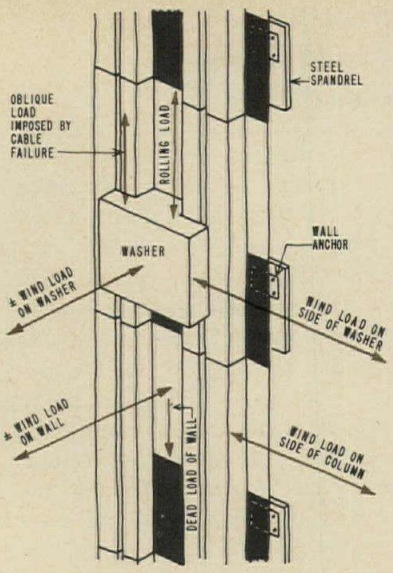
Horizontal joint widths at sills and column covers are dimensioned to permit full "hot travel" and still provide sufficient aperture for pressure equalization.



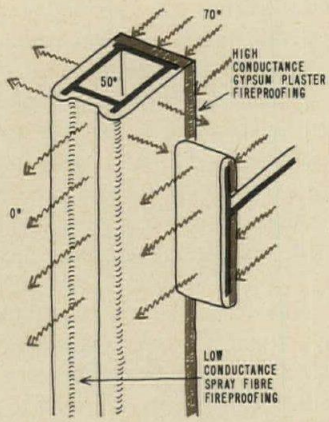
Horizontal thermal movement is relieved by accordion action of column covers, indicated by dotted lines.



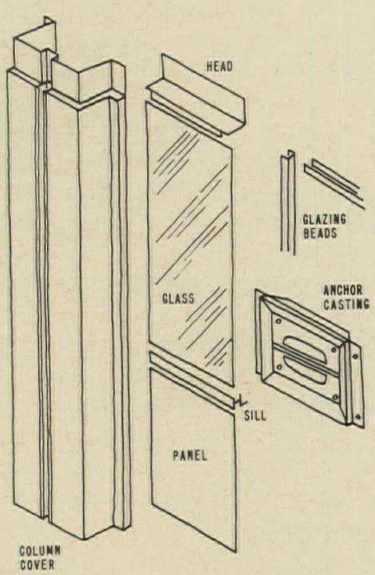
The horizontal column section (left) shows relationship of the vapor resistant envelope to the vented void which also separates the inner wall from the outer wall to accomplish pressure equalization.



The metal curtain wall is designed to resist total design loads and transfer them into the building frame. Direct wind loads on washer and wall are not considered additive due to air voids between them.



The heat flow characteristics of column, spandrel and fireproofing are shown in this diagram.



The basic standardized components which assemble to form the curtain wall are shown in the diagrammatic sketch above.

erials—cast, extruded, laminated, yn, and poured in place.

ention of leakage

major factor in developing a water- f wall, according to Irving E. Ger- , partner in charge of design for ry Roth & Sons, was the adoption of dual" wall system to equalize pres- on both sides of the exposed ex- r surface. This technique is based on concept that three conditions must simultaneously before rain pene- s a *single-wall* system: an opening, r at the opening, and force to drive water through the opening. Due to extreme difficulty of eliminating any these conditions in windy, rainy ther, the double wall system (utiliz- pressure equalization) takes it for ted that there will be openings in outer wall—provided deliberately by t requirements or inadvertently by ng and thermal movement. Such nings in the outer wall are designed "gravity shed" of water and are ned up to such a degree that air pres- e outside from wind and gusts is im- diately reflected and equalized in the d between outer and inner wall. By inating the pressure differential, re is no force to carry water through opening. The elimination of force re- tedly also greatly reduces wind load- s on the outer wall (in this case, the minum curtain wall), and transfers m to the inner wall (the steel struc- e) which is designed with few open- s to minimize air infiltration.

The glazing is not treated as a uble wall", but as glass is an imper- us membrane it was considered only cessary to pressure equalize the glaz- seal and carry the seal to the inner ll. To confirm the actual performance the system, a complete wall section, 8 et wide by 26 feet high was put through series of wind and water infiltration sts.

ermal considerations

ovement in the curtain wall due to ermal expansion has been provided for rtically (see sketches on preceding ge) by having no structural connection tween vertical bays except sliding gnment pins, which are also designed resolve horizontal loads equally be- veen vertical bays. Column covers and indow spandrel assemblies are secured nly at anchor castings. Thermal move- ent is planned to occur vertically in ther direction without restriction of the otted hole fasteners or spring-type an- nors. Horizontal thermal movement is niefly relieved by an accordion action f the column covers.

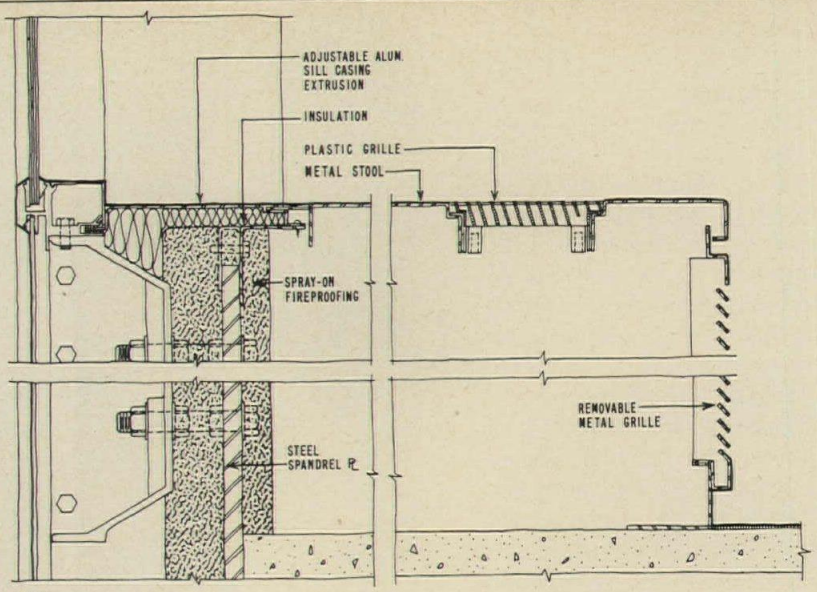
For thermal insulation to be applied

to the structural steel components of the wall (columns and spandrels), a sprayed mineral fiber was selected which reportedly serves to control column temperature to a minimum of 50 degrees with 70 degrees inside and 0 degrees outside; provides fireproofing to meet a four-hour test on a heavy column; and minimizes heat loss and gain to satisfy HVAC requirements. The sprayed insulation will be used on the three exterior sides of the column and both sides of the spandrel plate. The room side of the column will be covered with gypsum plaster to meet fireproofing requirements with a relatively high "K" value to permit heat migration to the steel and thus hold steel temperatures above specified minimum during extreme and prolonged cold periods.

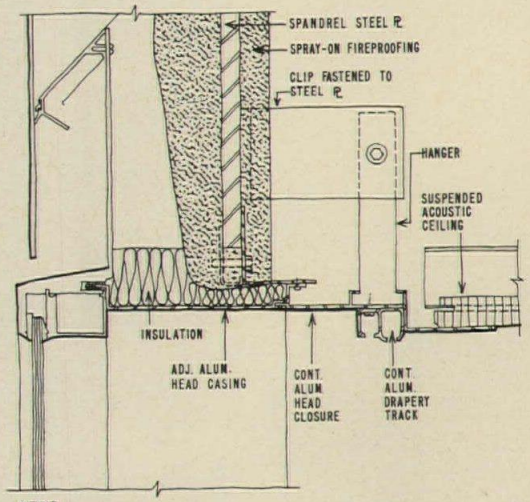
As fireproofing materials can deteriorate with trapped moisture, particularly under freeze and thaw cycles, a vapor barrier is provided on the warm side of the wall, coupled with free breathing to a vented void on the cold side. This is, of course, a standard safeguard against damage from unvented vapor transfer, weather change condensation and existence of any minor leaks or siphonage. To prevent any "poultice corrosion" of the aluminum facing, which can occur under close long-term contact with moisture-laden materials that are markedly acidic or alkaline, the metal wall is separated by the same vented void from contact with the absorbent fireproofing. To prevent possible corrosion from dissimilar metal contact, a stainless steel which is a film forming material and compatible with aluminum was selected for a window washer track.

Simplicity of panels

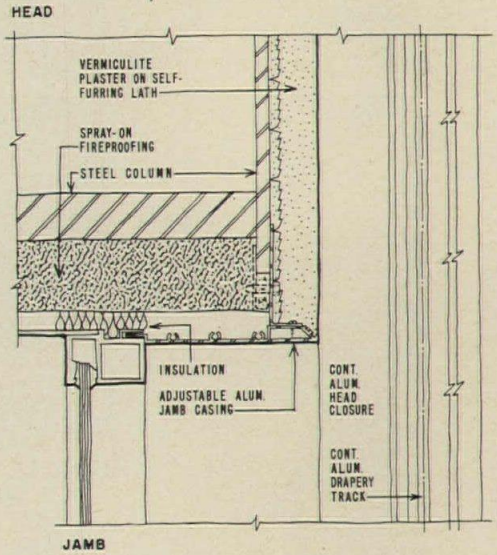
Based on a relatively few standardized components designed to be assembled simply and easily in the field, the curtain wall panels for the World Trade Center (right) are also planned for inside setting of all metal and glass to avoid delays. All components subject to exterior damage during and after construction are designed so they can be replaced individually without disturbing similar adjacent members. The wall design also permits erection of any column cover on a floor without regard to the sequence of erection of any other column cover. They will be a clad "sandwich" type sheet, specially alloyed and processed to produce a warm color tone with a 1-mil anodized coating, and thick enough to maintain flatness through fabrication and erection. After such thorough programing and testing, which seem to cover the entire "problem" of the curtain wall, the effects of real wind, sun and rain are awaited with huge interest.



SILL

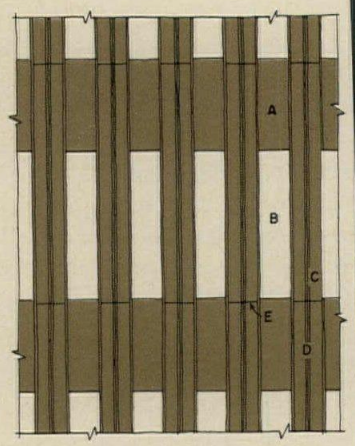


HEAD



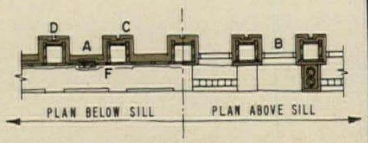
JAMB

The details of the curtain wall developed for the World Trade Center carry out the principles illustrated in the diagrammatic sketches on the preceding pages. A panel of the assembled wall exterior is shown below.



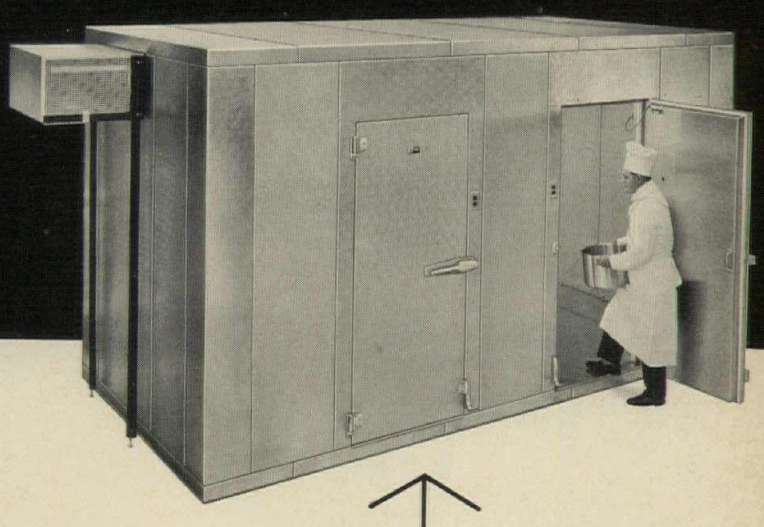
ELEVATION OF TYPICAL BAY

A. ALUM. SPANDREL PANEL
B. FIXED WINDOW GLASS
C. ALUM. COLUMN COVER
D. POLISHED STAINLESS STEEL WINDOW WASHER TRACK
E. EXPANSION JOINT
F. SPANDREL PLATE



PLAN OF TYPICAL BAY

When your client confronts you with a tough walk-in cooler or walk-in freezer problem, come to Bally...



Chances are we already have the answer...

comes from thousands of Bally efab Walk-In Coolers and Freezers ready in use. Installed in schools, spitals, hotels and motels, food ores, bakeries, dairies, research lab- atories . . . wherever the finest in frigeration is required. Each time, e answers to problems come more asily because we keep perfecting our echniques and our product.

o ask us. No matter how difficult e problem. Ask us for details about andling every type of food . . . and pecial materials including drugs, lood plasma, epoxys, film, chem- cals. Ask us about relative insula- tion efficiencies . . . how to plan special sizes or layouts . . . shelving . . . special doors or display windows. The answers come from our experience.

Answers from Bally are answers from the leader in the industry. The company that developed the use of 4" self-extinguishing urethane foam insulation equal to 8½" of fiberglass; the inventor of self-closing magnetically sealed doors; the company who designed the patented Speed-Lok that makes installation easy . . . makes it easy to add sections for size increase . . . equally easy to disassemble and relocate.

For more data, circle 101 on inquiry card

Our Engineering Department will be happy to work with you. For more information, send for free Architect's Fact File which includes a 32-page catalog and a sample of urethane.

See our catalog in Sweet's Architectural File, No. 23a/BaL.

Bally Case and Cooler, Inc.
Bally, Pennsylvania 19503

Bally

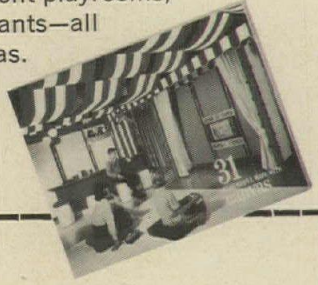
Address all correspondence to Dept. AR-9

new ideas

for decorating and shading with

canvas

Imaginative design ideas for patios, apartment terraces, townhouses, basement playrooms, shopping plazas, and restaurants—all using color-coordinated canvas. Order your copy of 16-page, full-color booklet featuring designs by Ving Smith, A.I.D.



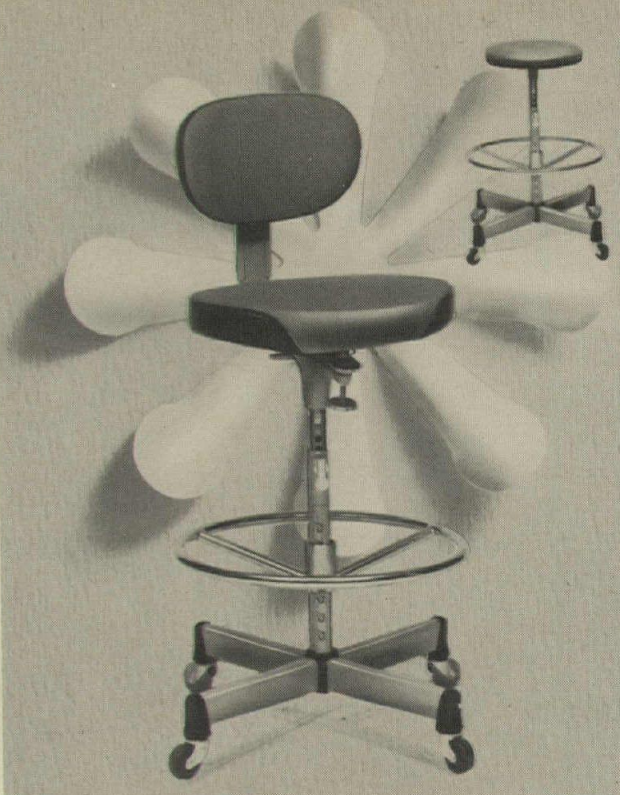
Canvas Awning Institute, Inc.
and National Cotton Council
P. O. Box 12287-XG Memphis, Tennessee 38112

Firm name _____

Address _____

City _____ State _____ Zip _____

COTTON—THE FIBER YOU CAN TRUST



*Comfortable...

The draftsmen who design Cramer draftsman's chairs must sit on these same chairs most all day. So they design them to be comfortable. Can you think of a better reason?

Here are just a few of the things they've included for comfort.

*A seat that tilts forward to relieve under leg pressure . . . it's individually adjustable (only Cramer chairs have this). *Adjustable foot rings. *Adjustable back for your individual height and tension comfort. *A soft thick seat cushion that's cool. *And for your esthetic sense, you have a wide choice of fabric colors . . . and you can change colors, because covers are easily replaceable.

If you can't find a supplier close-by that carries Cramer draftsman's chairs —write us. We'll reply. Immediately! Cramer Industries, Inc., 625 Adams St., Kansas City, Kansas 66105.

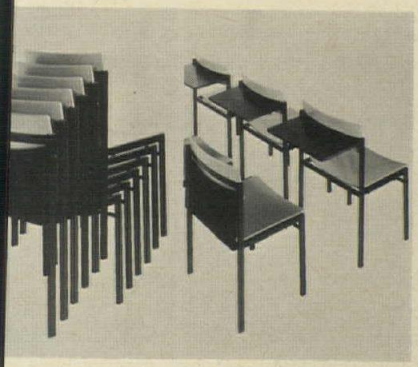
CRAMER
CRAMER INDUSTRIES INC. • KANSAS CITY, KANSAS
A Subsidiary of U S M Oil Co.

Cramer - The leader in style and quality

For more data, circle 103 on inquiry card

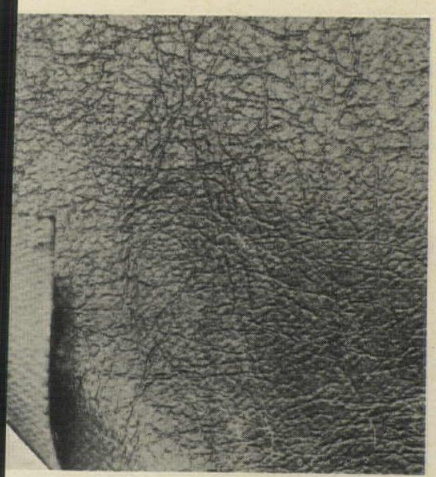
For more data, circle 102 on inquiry card

For more information circle selected item numbers on Reader Service Inquiry Cards, pages 349-350



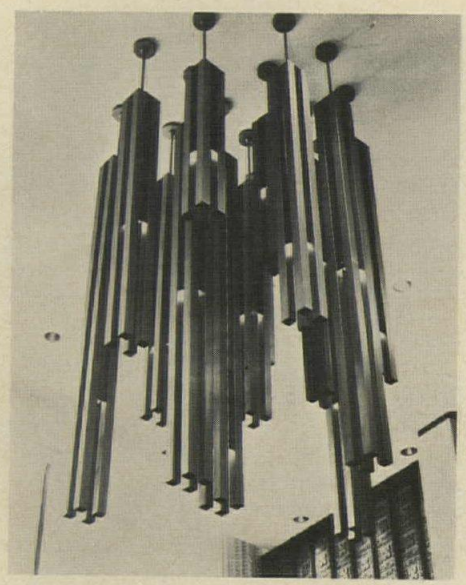
DENT STACKING CHAIR / This ver- e chair features a laminate lift-flap ting tablet fixed to the back. The chair have a plywood or upholstered seat may have arms. The frame is a rec- gular welded steel tube with a baked mel finish. Other chairs have been igned for specialized functions. For mple, there are chairs with a special e for cantilevered wall mounting for dium seating, and chairs with a remov- e tablet arm. ▪ Harvey Probber, w York City.

Circle 300 on inquiry card



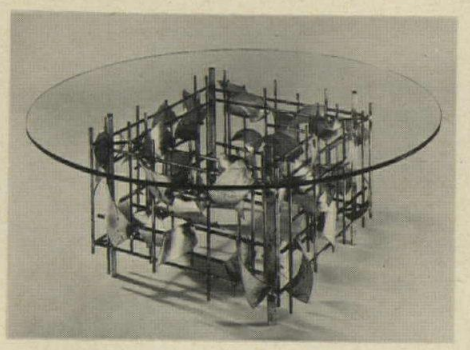
ALLCOVERING / Heavy-duty *Duotone* crtex vinyl wallcovering is designed for o functions: "to provide warmth and tractiveness to heavy-traffic areas; to thstand extreme day-to-day punish- ent." It is especially suggested for com- ete walls, or beneath wainscoting in spitals, schools, business and public ildings. The wallcovering comes in 50 o-tone colors, permanently fused. ▪ E. Carpenter and Company, New York ty.

Circle 301 on inquiry card



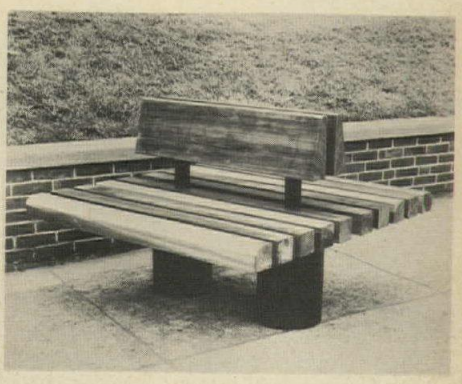
SCULPTURE LIGHT / This fixture, with a baken-on bronze finish, was designed for such commercial installations as hotels and motels, but it can be adapted to a lower ceiling by adjusting the tube lengths. The different lengths of the fifteen sets of tubes and the varying positions of the lights between are said to give a definite psychedelic effect. The inside of the tubes are black so that there will be no diversion of interest from the outside. ▪ Trimble House Corporation, Atlanta.

Circle 302 on inquiry card



SCULPTURE UNDER GLASS / Sculpture with glass tops may be used as tables. The table shown has a base of gold and silver leafed steel that measures 15 in. high by 22 in. square. The ½-in. glass top is 42 in. in diameter. The sculptor works with architects in creating custom design tables. ▪ William Bowie, The Sculpture Studio, Inc., New York City.

Circle 303 on inquiry card



PARK BENCH / This vandal-proof, corrosion-proof bench is available in eight modular variations. It combines a modern design with non-maintenance characteristics and carries a 10-year factory guarantee. ▪ Colorguard Corporation, New York City.

Circle 304 on inquiry card

SPECIAL TABLES / Shown is the lounge area at Boston University. The table bases may be cast iron, aluminum or bronze with a variety of finishes. The tops are hardwood plywood with a choice of plastic laminate coverings, and the edges are guaranteed for the life of table. ▪ Chicago Hardware Foundry Company, North Chicago.

Circle 305 on inquiry card

more products on page 225

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Cards, pages 349-350

ROOFING SYSTEMS / *Engineering Properties of Roofing Systems—409* presents information on the forces to which a roofing system is subjected and the resulting response. Included are: the results of a study on the deformation response of a fluid-applied nonbituminous roof coating; roofing systems using bituminous materials for waterproofing and the properties of these materials; the effects of wind, moisture changes, and thermal changes on roofing systems; and information on the laboratory response of roofing systems to the application of load. The book is illustrated with photographs, charts and graphs. Each paper is abstracted and contains a key-word index and several of the papers include discussions. $14. ▪ American Society for Testing and Materials, 1916 Race Street, Philadelphia.

BUILDING PRODUCTS / Standard-type and special-design products developed for commercial, industrial, educational, institutional, warehousing and governmental service building construction are featured in a revised 68-page, instant-reference "encyclopedia." Detailed data is presented on such products as insulated metal curtain walls, rolling steel doors, steel floors, deck, and ceiling systems. Letterhead requests. ▪ The R. C. Mahon Company, 6565 E. Eight Mile Road, Detroit.*

OPERABLE WALLS / A comprehensive architectural products manual contains nine sections with detailed data on 42 partitioning lines. The architect will automatically receive new loose-leaf literature from time to time. Letterhead requests. ▪ New Castle Products, Inc., Dept. APM-67, P.O. Box 310, New Castle, Ind.

STAINLESS STEEL ROOFING / A booklet that describes the latest developments in designs and specifications for stainless steel roofing systems and components incorporates a complete range of applications. Details demonstrate how stainless steel can be incorporated into complete metal systems. ▪ Republic Steel Corporation, Cleveland.

Circle 400 on inquiry card

CENTRALIZED CONTROL SYSTEMS / A 28-page color booklet discusses basic types of systems along with case-history examples of actual installations. Coverage ranges from functions handled by a building centralization system, such as mechanical control, equipment surveillance, security and fire detection, and programming, to economic benefits and costs involved. ▪ Honeywell's Commercial Division, Minneapolis.*

Circle 401 on inquiry card

CARPETS / A 24-page color booklet pictures more than a hundred designs and explains that there are a hundred standard colors, or if necessary special colors may be ordered. Included in the booklet are sections on handmade area accent rugs, custom order designs for handmade fabrics, custom carving designs and textural combinations and accent tufting. ▪ Berven of California, Fresno, Calif.

Circle 402 on inquiry card

CONCRETE PROTECTION / The cause and prevention of surface spalling of roadways, bridges and other exposed concrete structures are examined in an 8-page brochure. Text findings, as summarized in the brochure, indicate that conservative use of air entrainment coupled with application of *Linseed Anti-Spalling Compound* offer a good solution to the problem of exposed concrete surface preservation and maintenance. ▪ National Flaxseed Processors Association, Chicago.

Circle 403 on inquiry card

LIGHTING SYSTEMS / An 8-page booklet presents basic data for system design. Charts include detailed information on spacing ratio, lamp data and watts per square foot for various foot candle levels. ▪ Lightolier, Jersey City, N.J.

Circle 404 on inquiry card

CHURCH FURNITURE / A 4-page brochure seeks cooperation between architects and church furniture makers and covers points toward achieving this goal. ▪ Church Furniture Manufacturers Association, Chicago.

Circle 405 on inquiry card

STEEL / "Steel Architectural Product The New Generation," is a 22-page bo let that shows many colors, textu sizes and shapes found in steel build components. Product divisions inclu roof decking, floor decking, windo and window walls and panels. ▪ Am ican Iron and Steel Institute, New Y City.

Circle 406 on inquiry c

SHINGLES INDOORS / An illustrat brochure shows novel interior appli tions of shingles and shakes. ▪ R Cedar Shingle & Handsplit Shake Bure Seattle.*

Circle 407 on inquiry c

CHLORINATED RUBBER COATINGS A bulletin describes *Korchem* coatin which can be applied in five- to six-m dry film thickness in one spray or bru application. These coatings are reco mended for steel and concrete surfac which are exposed to severe conditio such as chemical fumes and spillage immersion in water. ▪ Subox Co ings Division, Wyandotte Chemicals C poration, Hackensack, N.J.

Circle 408 on inquiry ca

PERFORATED MATERIALS / A 176-pag wire-bound handbook offers technic data, application photos, pattern d scriptions and actual-size illustrations, well as informational tables on perf rated designs and materials. Metallic m terials include steel, aluminum, stainle steel, brass, copper, monel, zinc a bronze. Such non-metallic materials plastic, wood, composition, paper, a cloth may also be perforated. ▪ Th Harrington & King Perforating Co., In Chicago.*

Circle 409 on inquiry ca

ACRYLIC SHEET / A 12-page color cata log shows applications for building co struction as well as descriptive data. American Cyanamid Company, Wak field, Mass.

Circle 410 on inquiry ca

** Additional product information in Sweet Architectural File*

more literature on page 27

His heating and cooling costs are going up and up.
Low-cost, water-susceptible roof insulation may work at first. But, gradually there's a loss of insulation efficiency.
Vapor barriers are not completely effective. They deteriorate. The movement of the building splits them. The moisture-laden air penetrates the insulation. Moisture forms through condensation, reducing insulation efficiency.

What to do? Specify STYROFOAM® RM brand plastic foam roof insulation. It's the finest, most effective roof insulation you can buy. Remains effective even if the roofing leaks. Because it's not affected by water or water vapor, STYROFOAM brand plastic foam retains a permanently low "k" factor, which means lifetime insulation effectiveness.

Eliminates a major cause of roof blis and subsequent leaking.
Never rots, molds or deteriorates. quires no vapor barrier. It's flame tardant and easy to install. A bundle 100 board feet weighs only 25 pou It is tough. The skin will take the ab of normal roof traffic without ha For more information, write: The D Chemical Company, Constructi Materials Sales, Dept. 71330, Midla Michigan 48640.

DOW

No one will ever know you installed bargain roof insulation

(Until the owner blows his top).

For more data, circle 107 on inquiry card

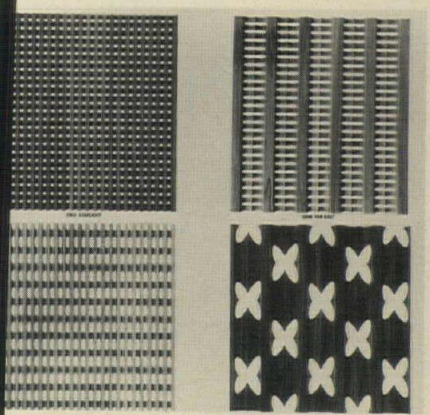
continued from page 221

METRIC WALLCOVERINGS / *The ass Collection* is composed of ten rns available in wallpaper and vinyl matching fabrics. Shown are *Ripples* *Chevronstitch* designed by Kent nt and produced by Blue River prints, Inc. The former is in basic red or black on white ground, pre- ng a target-like view. The latter, with me-stitch design, has subtle textural nd effects and a band of comple- tary color. ▪ Connoisseur Wall- rings, Inc., New York City.

Circle 306 on inquiry card

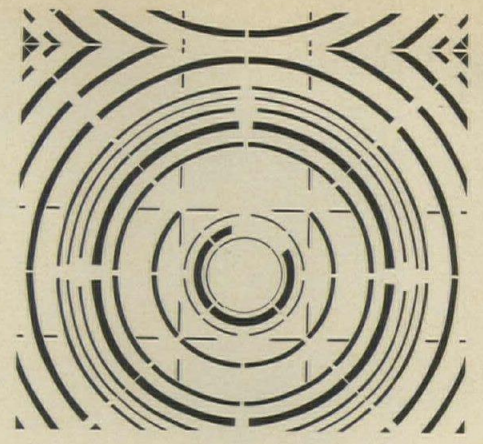
ESTONE WALL COVERING / Actually l, this wall covering, which is pat- ed after limestone, is made of an il sheet of pigmented virgin vinyl tronically laminated to a cotton king. The backing is bleached and is dew-proofed, flame-retardant and -extinguishing. The total weight is 11 per sq yd; total thickness is 17 mils. Laminating Services, Inc., Louisville,

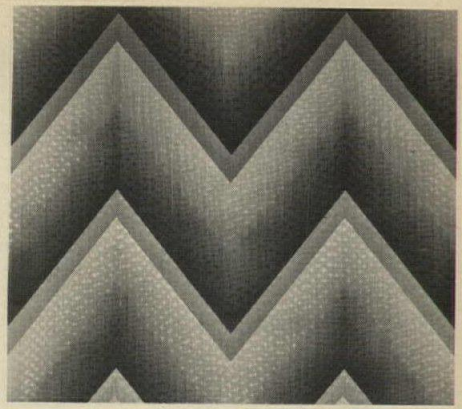
Circle 307 on inquiry card



ARDWOOD PANELS / Four designs in lnut, birch and poplar are ½ in. thick, t wide by 2 ft, 3 ft and 4 ft high panels. e *petite* designs are slightly different ck and front, so a varied effect can be hieved if used as screens. They can so be used for furniture, lamps, and all treatments. The panels are supplied nish sanded both sides and can be fur- shed framed or unframed. ▪ Pen- rthy Architectural Products, Los An- les.

Circle 308 on inquiry card





more products on page 233

montgomery® moves people on 12 elevators at...

DEL WEBB'S

TowneHouse

PHOENIX, ARIZONA

Twelve Montgomery elevators move people and equipment at speeds up to 700 FPM in this striking new twenty-three floor tower. Montgomery E.S.P.* MEASURED DEMAND® controls traffic flow on the local and express banks of elevators.

Architect:
Flatlow-Moore-Bryan & Fairburn

Contractor:
Del Webb Corp.

Go high as you want . . . Montgomery high-rise elevators match performance to your design, with elevator traffic served precisely by E.S.P. MEASURED DEMAND® group supervisory control. Montgomery high-rise design and performance are "test tower" proved in our sophisticated research facility. And, you can count on dependable Montgomery maintenance service from one of 120 locations.

*Electronic Sensor Programing

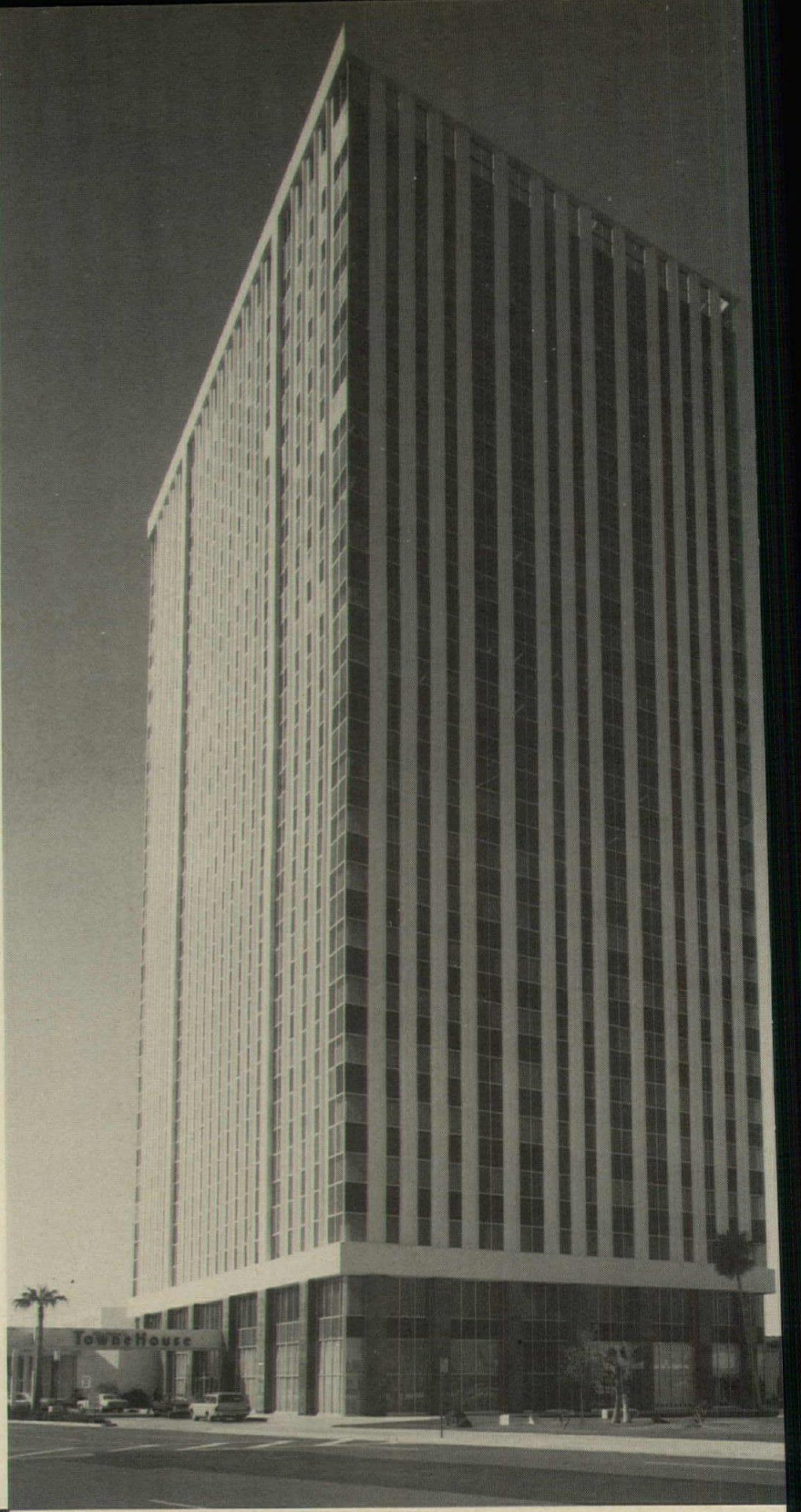
montgomery® elevator company

moline, illinois 61265

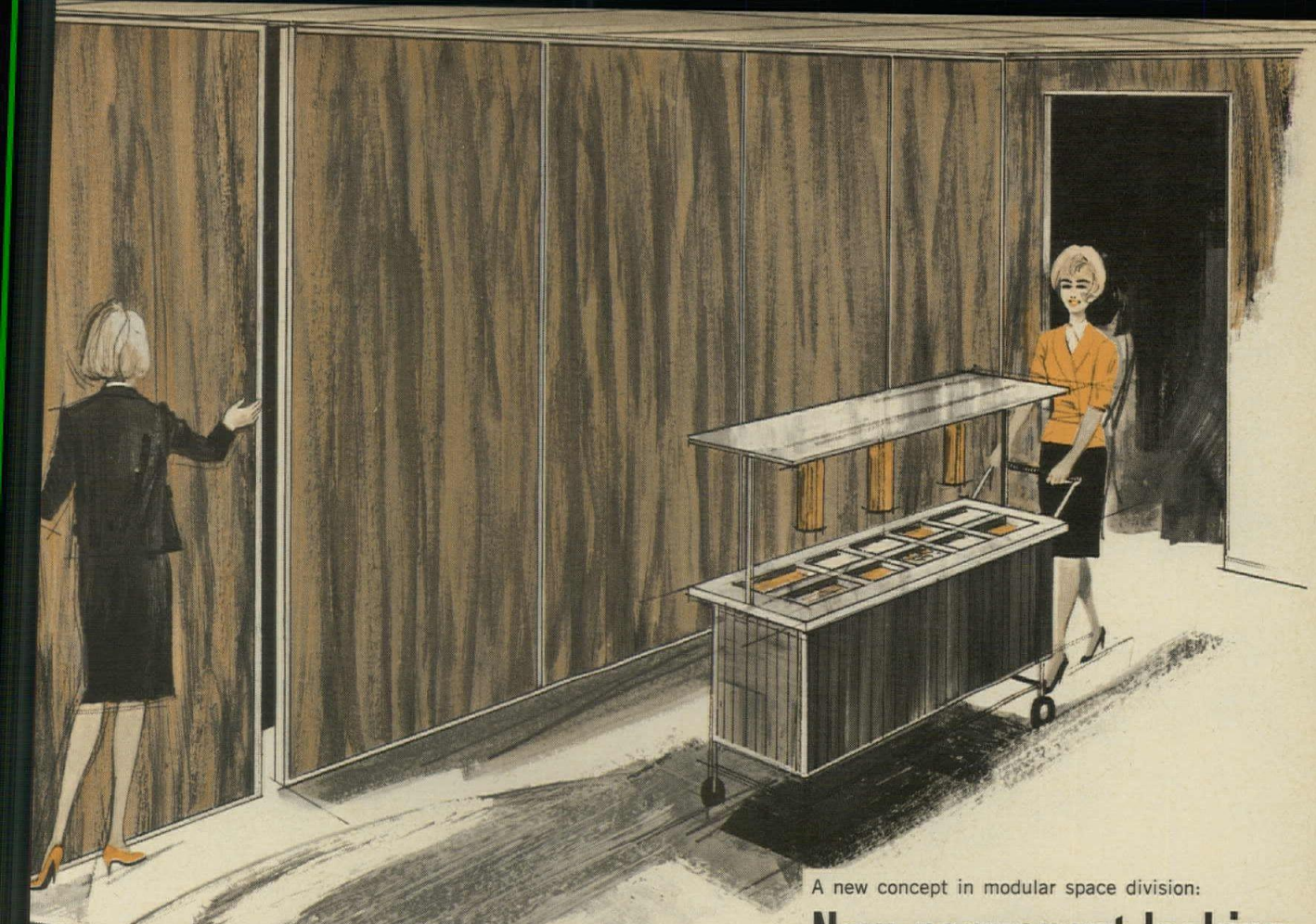
ELEVATORS • ESCALATORS • MOVING WALKS & RAMPS

For more data, circle 109 on inquiry card

Write for FREE planning guide



montgomery® high-rise elevators



A new concept in modular space division:

New permanent-looking movable walls let you decorate in over 1526 exciting patterns

Beautiful Kwik-Wall movable walls make it fast and easy to divide large areas into smaller profitable rooms. A choice of more than 1526 high-fashion laminates, vinyls, prefinished hardwood, print grains and unfinished ready-to-paint surfaces gives this movable wall a permanent look that will complement your decor. Both the fully portable units and the ceiling track-mounted Kwik-Wall movable walls have sound retardant qualities. Both lock solidly into position with a simple one-hand lever operation. Matching walk-thru doors are available for either style. For more information, send coupon today.

KWIK-WALL

KWIK-WALL CO., Box 319, Dept. A
Springfield, Illinois 62705

Please tell me more about KWIK-WALL movable walls.

Name _____

Title _____

Company _____

Address _____

City _____ State _____ ZIP _____

☐ New construction ☐ Remodeling

Room(s) dimensions: _____

Construction date: _____

☐ Send literature ☐ Have representative call

For more data, circle 110 on inquiry card

Gas absorption cooling has a simple answer to noise, vibration and trouble.

It's the very simplicity of its operating design. There are no major moving parts. Instead, low pressure steam from a Gas-fired boiler energizes the liquid chiller. Quietly and without friction.

You'd think anything that operates with so little strain would have a long and efficient service life. And you'd be right. Gas absorption cooling operates efficiently even under partial loads.

It's economical, too, because the refrigeration unit gets its energy from the same Gas boiler that delivers heat and hot water. (Or from rejected engine heat.) And Gas costs very little.

Carrier lends year-round comfort to a Mies van der Rohe design.

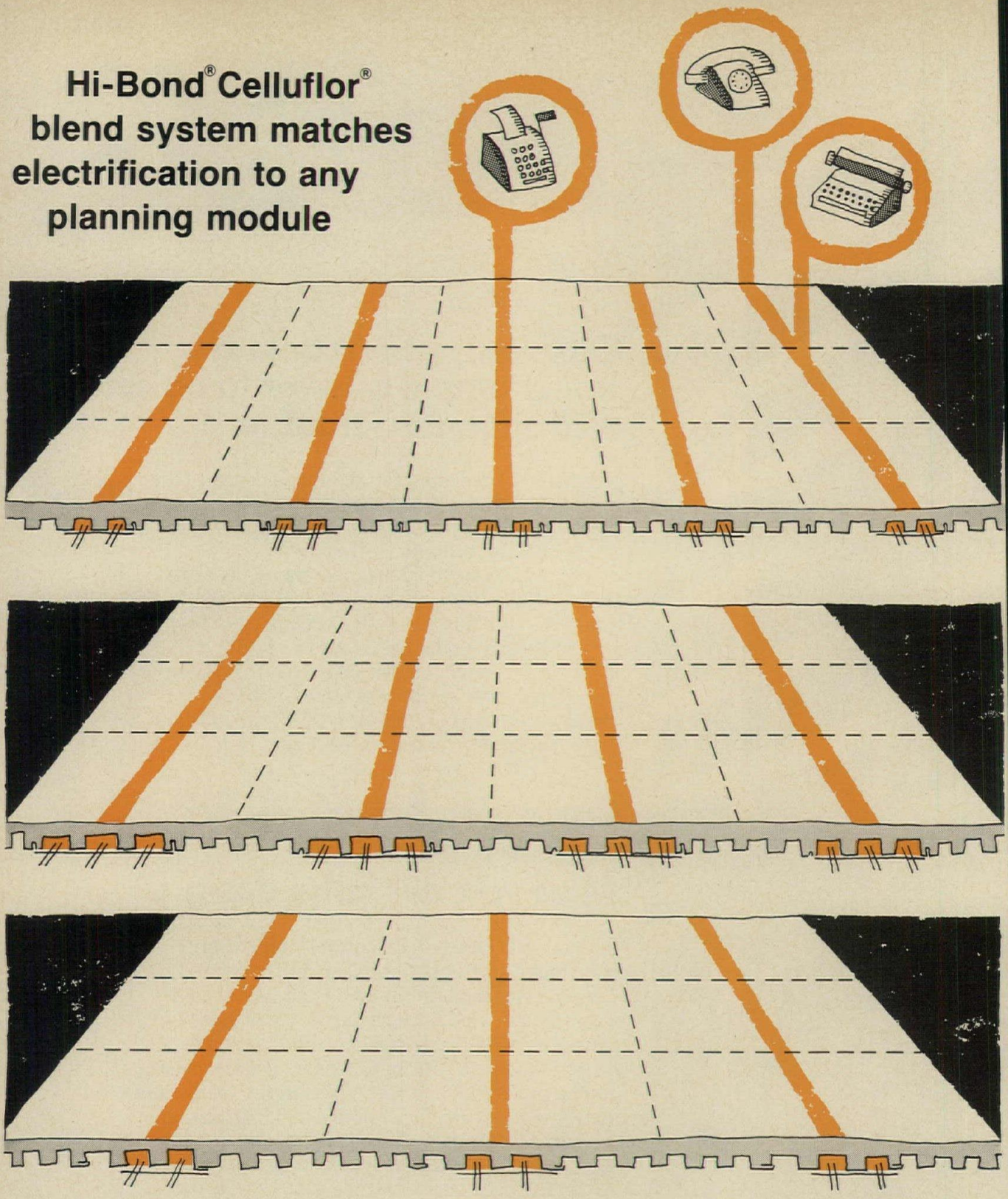
It's Highfield House in Baltimore. The central equipment room contains a Gas-fired boiler and a Carrier absorption refrigeration unit. Hot or cold water is circulated through Carrier Weathermaker® fan coil, room air conditioning units. Each can be individually controlled by tenants to the precise comfort desired. Shouldn't you consider Gas-powered cooling and heating for your next building? Ask your local Gas Company for details. Or write: Carrier Air Conditioning Company, Syracuse, N. Y. 13210. AMERICAN GAS ASSOCIATION, INC.

For cooling and heating...Gas makes the big difference

Architect: Mies van der Rohe, Chicago, Ill.
Consulting Engineer: Cosentini Associates, New York, N.Y.
General Contractor: Metropolitan Builders, Baltimore, Md.
Mechanical Contractor: L. E. Mitchell, Inc., Baltimore, Md.

For more data, circle 111 on inquiry card

Hi-Bond® Celluflor® blend system matches electrification to any planning module



Things have changed. Inland Hi-Bond Celluflor and floor deck are now available in such a wide range of profiles that you can match electrification and building modules simply by blending the cellular and non-cellular steel panels.

You are not limited to 2', 4' or 6' grids—or to completely floor-wide installations that are too extensive and expensive for the requirements. Instead, you design electrification specifically to meet the client's present and anticipated needs.

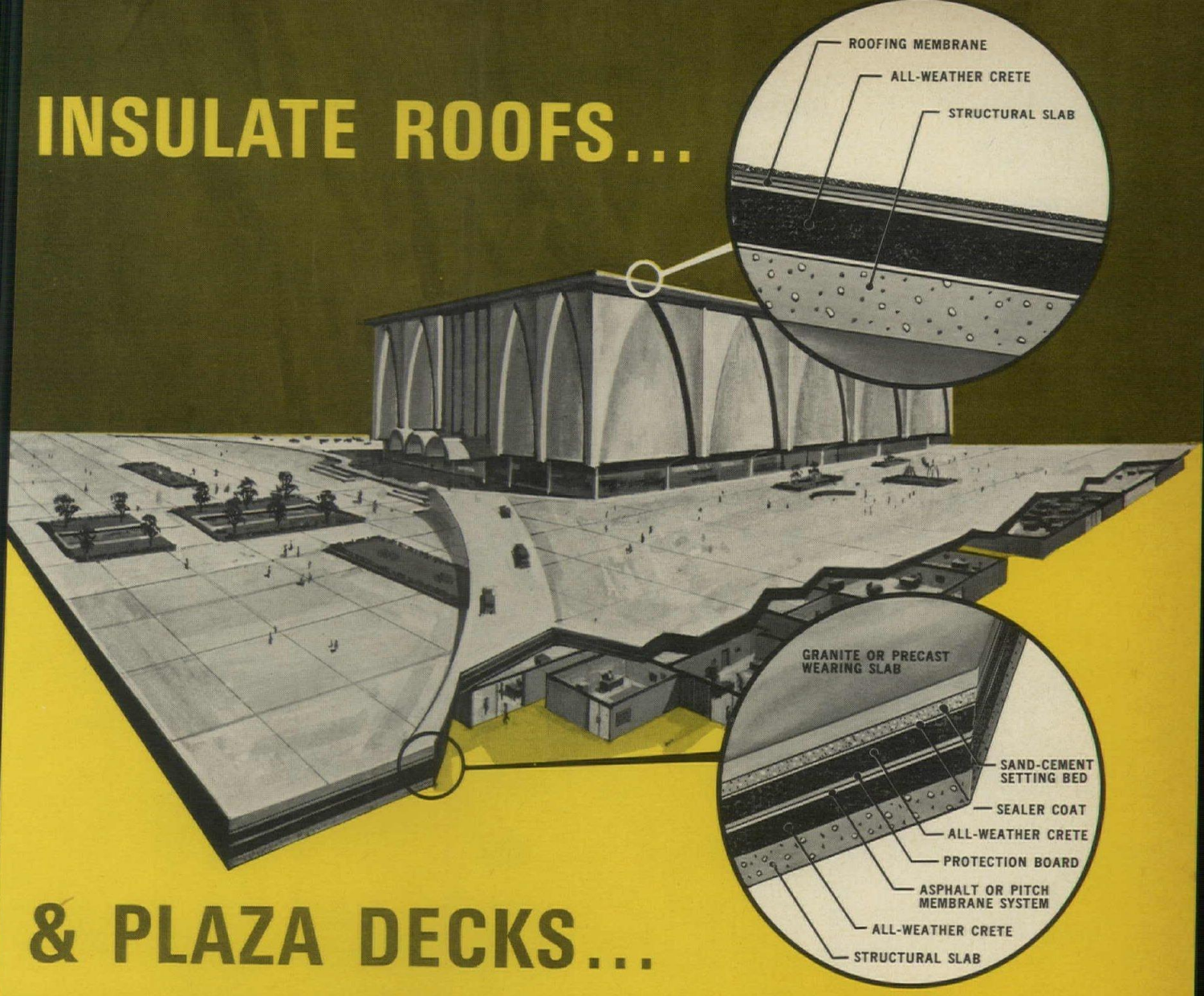
For instance, if you are planning around a 4'-6" building module, you can choose from six combinations of Inland Celluflor and floor deck to deliver electrification on this module. There are other economical Hi-Bond Celluflor blend systems to satisfy the requirements of architectural modules from 3'-0" to 6'-0"—in 6" increments. Each is an exceptionally strong, fire-rated floor system. And—you can provide the strength and economy of composite slab/beam construction.

That's real flexibility, isn't it? Let us tell you more about it in the brochure, "Unlimited Flexibility in Floor System Electrification." Write today to Inland Steel Products Company, Dept. F, 4069 W. Burnham St., Milwaukee, Wis. 53201.

INLAND **Inland Floor Systems**

F-1

INSULATE ROOFS...



& PLAZA DECKS...

with the dry fill insulation that slopes to drains

All-weather Crete®

Multi-function All-weather Crete on roofs or plaza decks provides much more than excellent insulation. It is compacted with a light-weight roller to offer a sub-strate having excellent load bearing qualities for plaza deck surfaces or roofing membranes.

The trained licensed applicator contours All-weather Crete to the architect's specifications—covering irregularities, sloping to drains and eliminating camber from pre-stressed beams. Compare these features . . . then specify All-weather Crete.

- Contains no water—sets instantly—even in freezing weather
- Has no seams or joints to allow heat loss
- Excellent K Factor—far better insulation than other fills
- Can be sloped to provide drainage on level decks
- Covers irregularities such as conduit, beams and protrusions
- Smooth surface for roofing membrane or plaza deck surface

SILBRICO CORPORATION
6300 River Road • Hodgkins, Illinois 60525

Write today for complete All-weather Crete Information:

☐ Roof decks ☐ Plazas ☐ Promenade and sun decks
☐ Re-roof and future floors ☐ Underground pipe
☐ Parking decks ☐ Installations list ☐ Tank bases

Write for addresses of domestic and foreign applicators.

Name _____
Firm _____
Address _____
City _____ State _____

For more data, circle 113 on inquiry card

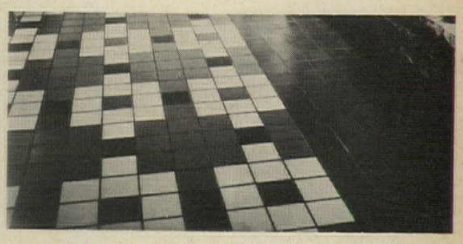
continued from page 225

CERAMIC BASE / *Berlin Satin-glazed Top Set Ceramic Base* for application with all kinds of wall and floor coverings is impervious to dirt and acid, and is shock and scratch resistant. The skirtings are suggested for schools, hospitals, hotels, offices and other buildings where sanitation and cleanliness are a problem. They are available in sizes of 8 in. by 2⅜ in. and 8 in. by 3⅜ in. and there are several colors. ▪ Latco Products, Los Angeles.

Circle 309 on inquiry card

ONE-STEP SHOWER UNIT / The walls of this unit are a rigid sandwich construction that is said to provide sound control and durability. The *Formica* sheets—available in eight patterns—are permanently bonded to water-impervious foam cores and melamine back-up sheets. The cascade shower floor is made of *Molded-Stone*, a material that won't crack, chip or discolor. This comes in eight colors to coordinate with the *Formica*. The floor is warm, slipproof and leakproof. The three-panel enclosure is of shatterproof acrylic and the smooth interior has no joints, seams or cracks. ▪ Fiat Products, American Cyanamid Co., Plainview, N.Y.

Circle 310 on inquiry card

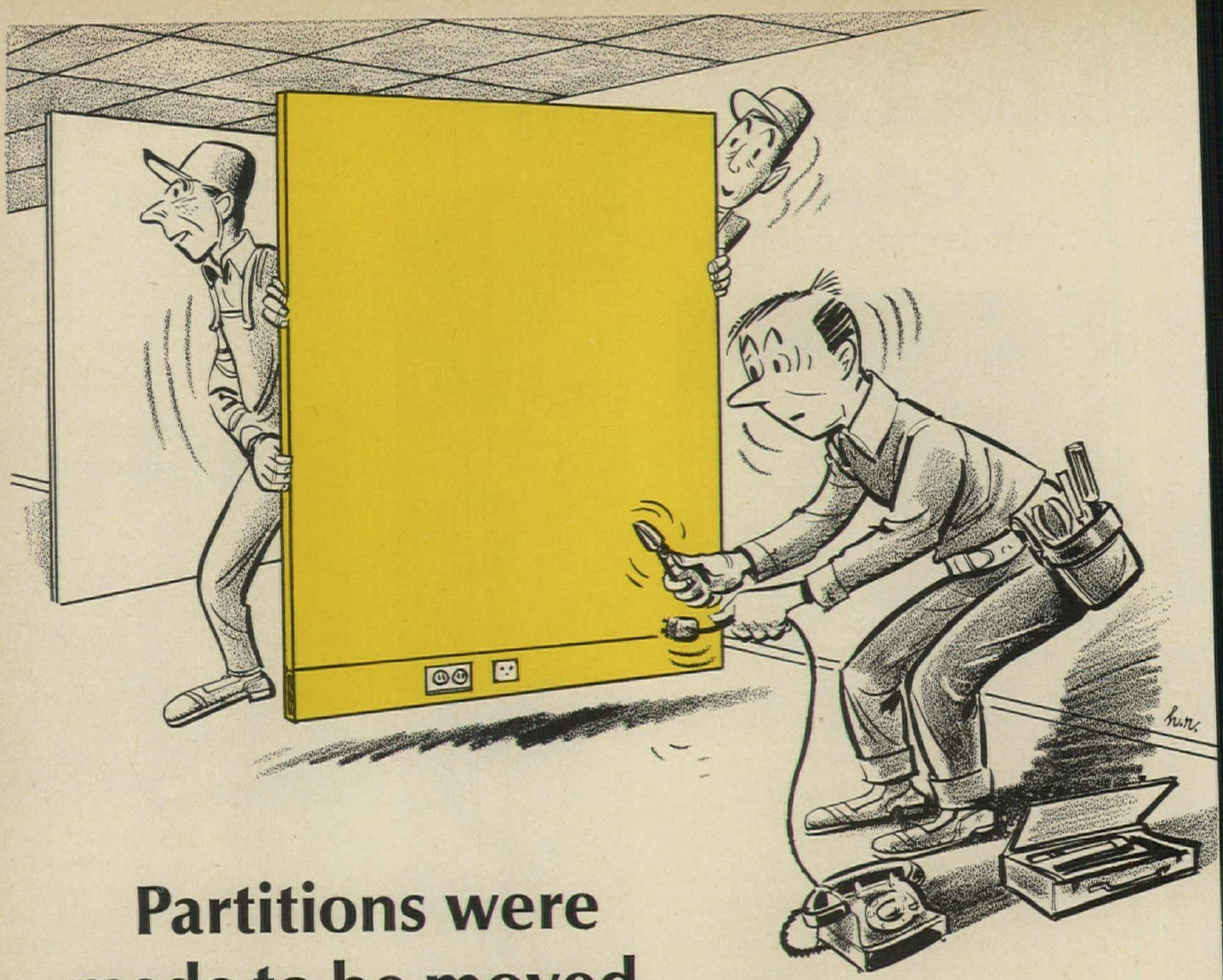


HEAVY-DUTY TILE / Specifically recommended for heavy-duty flooring, this tile resists grease, moisture, acids and harsh detergents. It is particularly suitable for food preparation and serving areas. The natural clay tile is available in a broad range of eleven colors ▪ The Mosaic Tile Company, Cleveland, Ohio.

Circle 311 on inquiry card

more products on page 236

For more data, circle 114 on inquiry card



Partitions were made to be moved

And you can bet that your client will take advantage of that fact during the life of his building. That's why the wiring system you recommend is so important.

Take in-partition wiring for example. Each time a move is necessary, electricians and telephone men have a double task. One trip to remove or deactivate power and telephone cables; another trip to rewire after the new partitions are installed. Precious time and money go down the drain and you never get away from unsightly termination boxes hung on the partitions.

The real answer to effective wiring in a modern building is a PYRAMIDAL FEED* underfloor raceway system. It can carry heavy loads of power and communication cable to any location in the floor. And the Pyramidal Feed system allows you to plan the most beautiful floors, tiled or carpeted. Square D junction boxes and service fittings were designed with this in mind.

The Pyramidal Feed system saves money, both in the original installation and in countless changes in the building, while still offering unparalleled versatility. Find out more about it. Write Square D Company, Dept. SA, Lexington, Kentucky 40505.

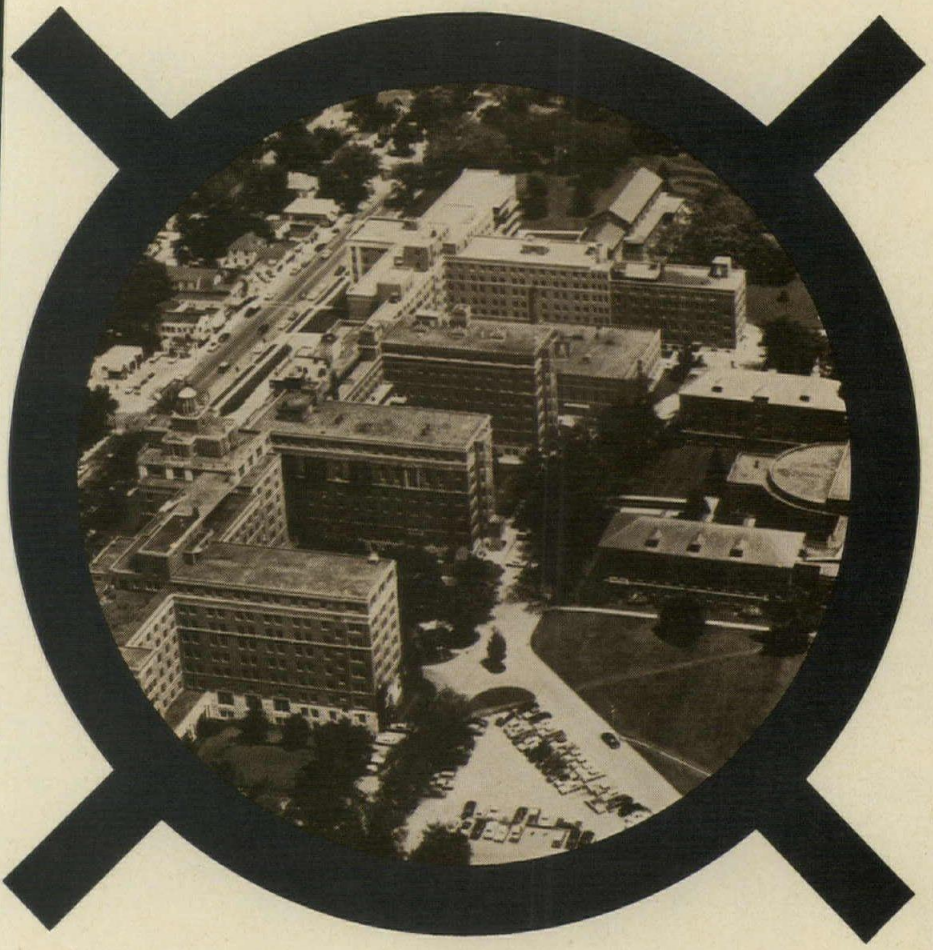
*Trademark of Square D Company

SQUARE D COMPANY

Wherever Electricity is Distributed and Controlled

For more data, circle 115 on inquiry card

MORE HOSPITALS LOOK TO THE LEADER...McQUAY®

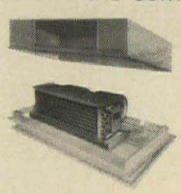


ST. MARY'S HOSPITAL DID!

St. Mary's Hospital, Rochester, Minnesota—one of the country's largest private hospitals, with more than 900 beds
Hospital Administrator: Sister Mary Brigh, St. Mary's
Executive Engineer: W. O. Cribbs, St. Mary's
Engineer: Evans, Michaud, Cooley, Hallberg & Erickson, Minneapolis
Architects: McCann-Wasmuth, Minneapolis
Mechanical Contractor: Utility Sales Engineering, Rochester

Here's why:

When the decision was made to air condition the entire hospital, McQuay had the best solution to St. Mary's sensitive performance requirements. Custom engineered for the job, McQuay Hideaway Type Seasonmakers were selected for maximum accessibility, simplified installation with easy field adaptation to nearly any type ceiling, whisper-quiet operation and the comfort assured by individual room temperature control.



Hinged ceiling panel with integral return air grill allows complete access. Internal hinged plates of base unit provide access for cleaning of both coil faces. Return air grill and filter assembly with hinged core permits easy filter cleaning without removing or dropping ceiling panel.

Ceiling and Hideaway Seasonmakers are available in 4 models, each in 9 sizes from 200 thru 1,200 cfm. For complete information call your McQuay Representative or write direct.

MAKE THE SEASONS COME TO YOU®

McQuay INC.

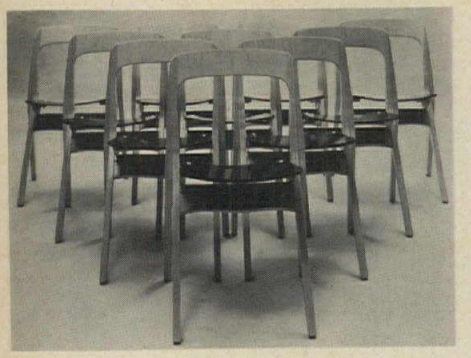
Box 1551, 13600 Industrial Park Blvd.,
Minneapolis, Minnesota 55440

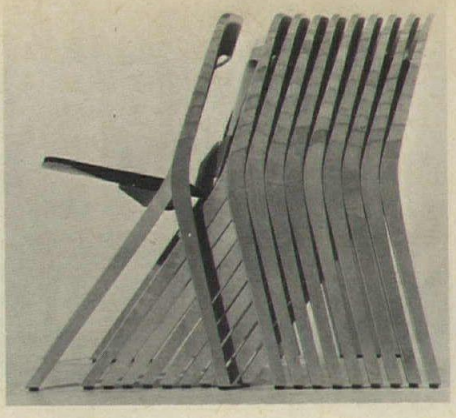
AIR CONDITIONING • REFRIGERATION • HEATING • VENTILATING

MANUFACTURING PLANTS AT FARIBAULT, MINNESOTA • GRENADA, MISSISSIPPI • VISALIA, CALIFORNIA

For more data, circle 116 on inquiry card

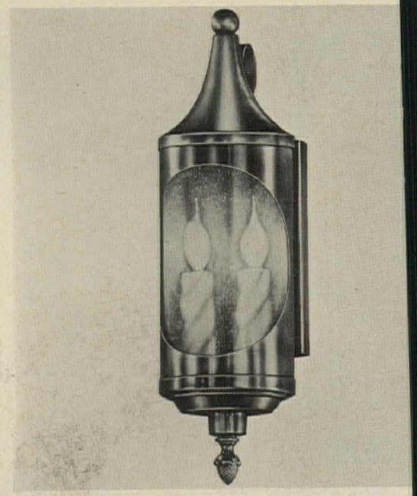
continued from page 233





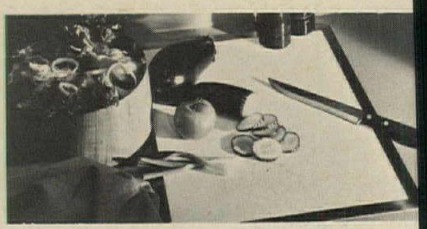
FINNISH STACKING CHAIR / Fif
these *Boman* folding chairs will fit
11 sq ft of space. The natural lacqu
birch plywood frame has a black pl
finished seat. The size: 19¼ in.
16½ in. deep, 29⅛ in. high with a
in. seat height. Weight is eight lb
Hank Loewenstein, Inc., Dallas.

Circle 312 on inquir



COUNTRY FRENCH LANTERNS / T
lanterns are available in a one-light
sion for indoor use and a larger two-l
unit for outdoors. Finishes are anti
brass, antique copper and antique p
ter, all of which are hand rubbed.
oval opening frames a curved, seedy
tique glass panel and the inside is a
brant burgundy red. The lanterns
part of a thirty-fixture grouping, all in
"Country French" style which inclu
chandeliers, drops, brackets, kitch
bathroom and commercial pieces.
Lite-Trend Division, Halo Lighting, I
Rosemont, Ill.

Circle 313 on inquiry



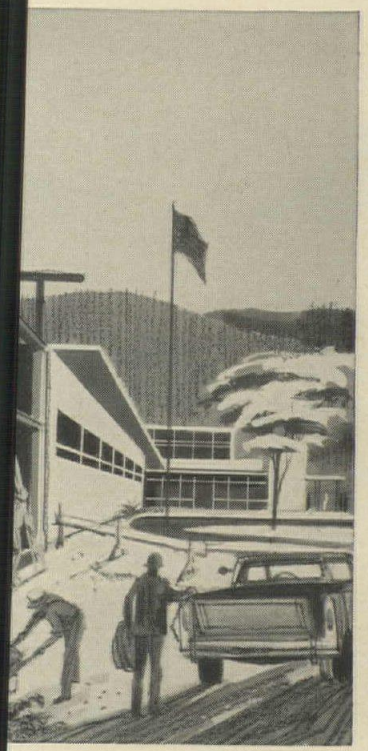
KITCHEN SURFACE / Heat cannot da
age this flat, smooth sheet of white *Py*
ceram brand material, so hot pans can
put directly on it. It is non-porous, no
absorbent and scratch resistant; can
used as a cutting board, and dough w
not stick to it. The surface can be
stalled as an island work area, surroun
ed by stainless steel mounting rim, or c
be mounted flush with the counter su
face without a rim. ▪ Corning Gla
Works, Corning, N.Y.

Circle 314 on inquiry ca

more products on page

esign can offer
najor benefits

EASIER EXPANSION



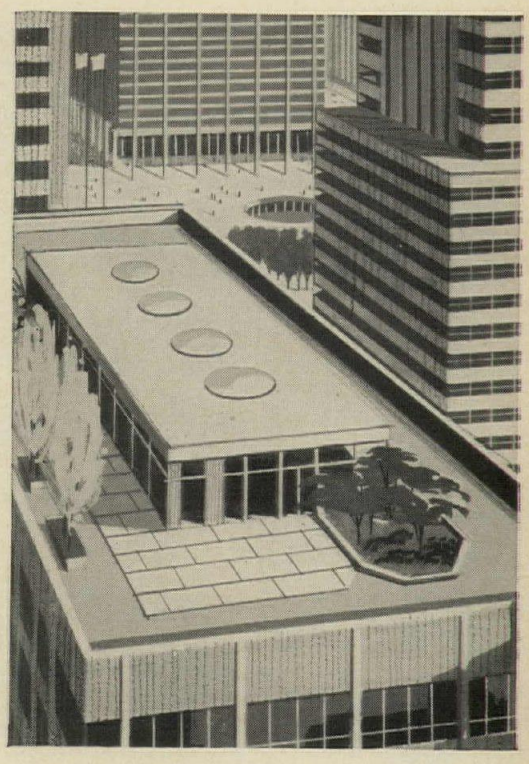
is it much easier to expand an
lectric building? Because you
orget about boilers and boiler
city problems. And there's no
for concern about boiler
s, fuel storage or stacks. In-
, expansion is accomplished
wiring and a compact control
net.
xample? Central High School,
pia Fields, Ill., expanded from
00 sq. ft. to 159,685 sq. ft. at
timated saving of $38,610.

ROOM-BY-ROOM TEMPERATURE CONTROL

In many buildings, individual room temperature control is a must. Nursing homes require it for critical health reasons. Motels want it for economy. And it is also fast becoming standard in other buildings in which occupancy and activities vary daily from room to room; e.g. schools, churches and hospitals.

Only All-Electric design permits room temperatures to be controlled directly, either by occupants inside their rooms or by management from a remote central location... or both.

EXTRA RENTABLE SPACE



A penthouse serves best as a source of revenue—not as a storeroom for boilers, cooling equipment and fuel. That's one reason why the builders of the $3 million People's Savings Bank Building in Bridgeport, Conn., chose All-Electric design.

By specifying through-the-wall electric heating/cooling units, they freed 4,800 sq. ft. of penthouse space for extra owner income. The added return on capital? $15,000 per year.

Shouldn't you incorporate these All-Electric benefits into your next project? For more facts, call your electric utility company.

LIVE BETTER ELECTRICALLY

Edison Electric Institute, 750 Third Avenue, New York, N.Y. 10017

ALL-ELECTRIC BUILDING AWARD

For more data, circle 133 on inquiry card

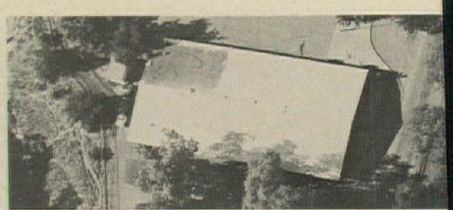
continued from page

INDOOR-OUTDOOR CARPET / Sev hundred sq yds of *Four Seasons* car have been installed outside the main t minal building at the Tulsa Internatio Airport. Made of *Marvess olefin fi* produced by Alamo Industries, Inc., carpet is said to withstand exposure precipitation and sunlight without m dewing, rotting or fading. The carp may be vacuumed or hosed down. General Felt Industries, Chicago.

Circle 318 on inquiry c

CONTRACT CARPET / Shown is a typ cal dormitory room in Shay-Loughle Residence Hall for women at St. Bona venture (N.Y.) University. Individual pe sonalized decor and color planning ar keyed to *Fortress* carpet installed wall t wall in every room, and in all corridors lounges, foyers and public areas through out the building. Seven different color were used. The carpet is a heavy-duty grade nylon for heavy traffic use and i expected to last fifteen to twenty years ■ Contract Carpet Engineering, Lenn Mills, Pa.

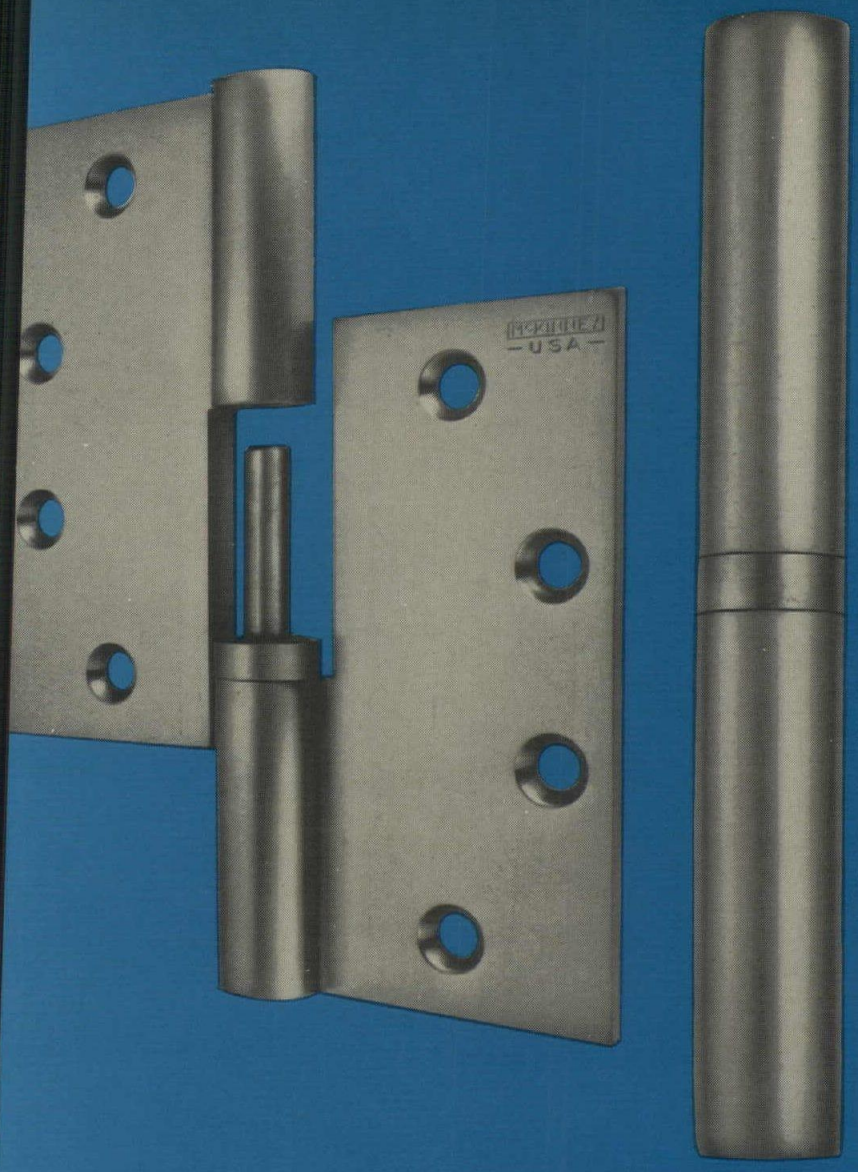
Circle 319 on inquiry card



WHITE ROOF COATING / This spray-type coating, applied over gravel-surfaced built-up roofs, is a cement base coating with polyvinyl additives and asbestos fibres. *White Cap* is reported long-lasting and excellent in reflecting the sun. Buildings with no air conditioning are said to be up to 20 deg cooler in summer. ■ Pabco Roofing, San Francisco.

Circle 320 on inquiry card

more products on page 268



nobody

has ever had to replace a McKinney Moderne hinge

Six years ago, McKinney introduced the first really, different hinge the industry had seen in years, the McKINNEY MODERNE.

First of all, the McKINNEY MODERNE is architecturally beautiful. Straight, simple lines. Clean in appearance.

Secondly, McKINNEY MODERNE is designed for quiet, heavy duty service with one dependable stainless steel oil-impregnated bearing. And third, McKINNEY MODERNE integrated stainless steel pin means easier, labor saving installation. No pins to insert or lose. No difficulty lining up the door.

BUT DOES IT WORK? This question has been fully answered. There is no more dependable hinge, no better looking hinge, no better operating hinge on the market than McKINNEY MODERNE.

Thousands are in use right now. On the doors of the Astrodome in Houston, the GE Space Center in Valley Forge, the Amsterdam, N. Y. Memorial Hospital, the Toronto City Hall, the United States National Bank Building in San Diego and hundreds of other new buildings.

In actual tests, McKINNEY MODERNE extra heavy hinges showed less vertical wear than three competitive makes of 4-bearing hinges.

Since it has been introduced, NOBODY HAS EVER HAD TO REPLACE A McKINNEY MODERNE HINGE.

And quite probably, nobody ever will.

Available in all types, finishes and materials.

Full Mortise • Full Surface • Half Mortise • Half Surface • Hospital Tip Hinges (all types) • Full Mortise Swing-Clear • Full Surface Swing-Clear • Half Mortise Swing-Clear • Half Surface Swing-Clear

(Swing-Clear hinges extra heavy only)

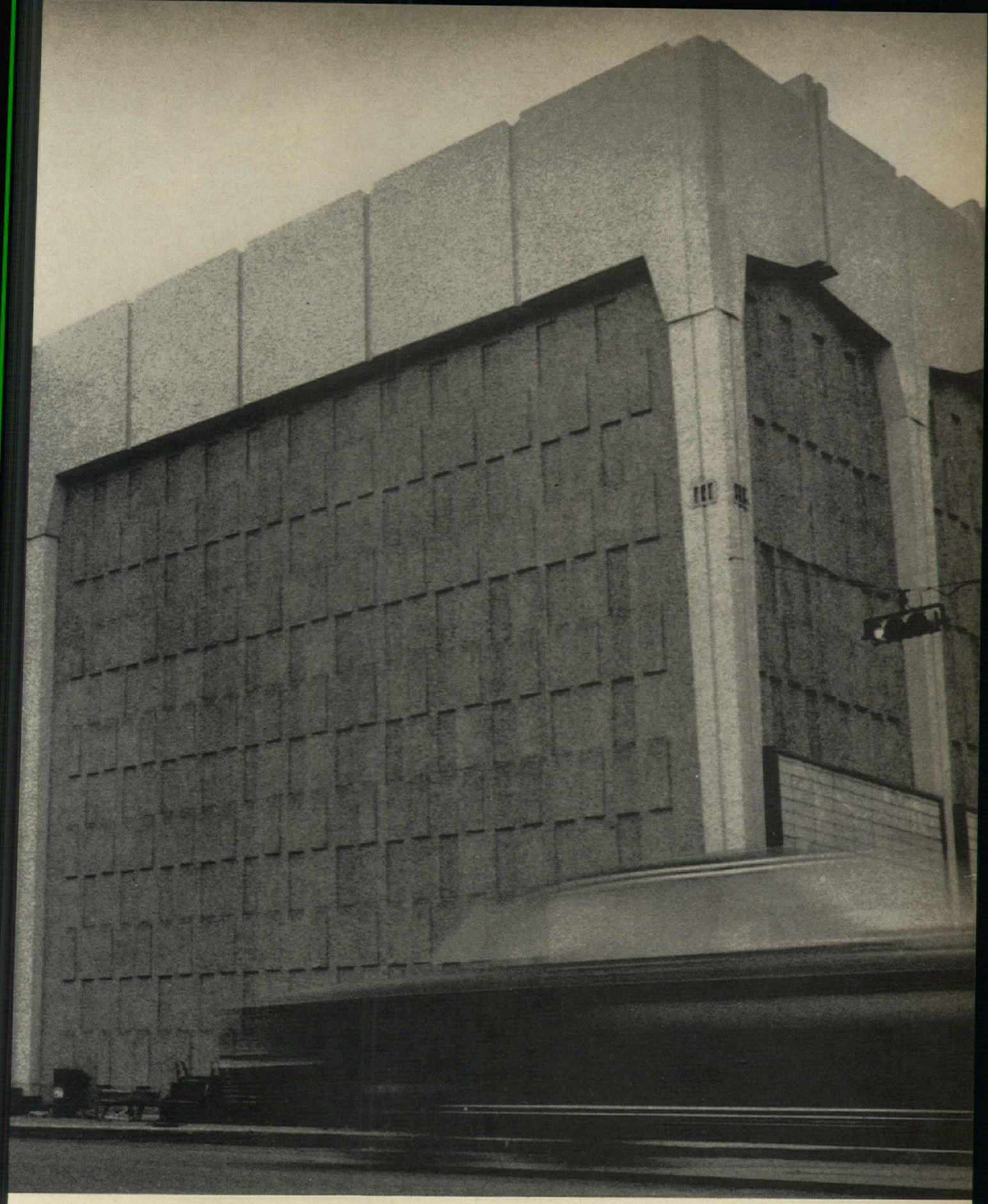
McKinney

McKinney Sales Company, Scranton, Pennsylvania 18505

For more data, circle 135 on inquiry card

For more data, circle 136 on inquiry card

A SELF-SERVICE RESTAURANT DOESN'T HAVE TO LOOK LIKE A CAFETERIA.



free service: send us your floor plans and we'll hustle 'em back to you fully detailed.

So now you know why the Cincinnati Center, designed by Harry Hake and Harry Hake, Jr. with Hixon-Tarter, Consulting Structural Engineers, and built by the Turner Construction Company, has floors made with Wheeling Tensilform.

Why it has a roof made with Wheeling Super Rib Roof Deck is another story.

That one you probably know already.

Have you looked at Wheeling lately?

Wheeling

Wheeling Corrugating Co. Div. Wheeling Steel Corp.,
Wheeling, West Virginia

For more data, circle 137 on inquiry card

continued from page

HEAVY DUTY AIR DUCT / *HD Rectangular Duct* is made entirely from high density glass fiber faced with heavy-duty aluminum vapor barrier. The firmly bonded glass fiber structure is lightweight yet has strength to span considerable distances while retaining its shape. The duct provides thermal insulation, sound absorption, and a vapor barrier. ▪ Gustin-Bacon Manufacturing Company, Kansas City, Mo.

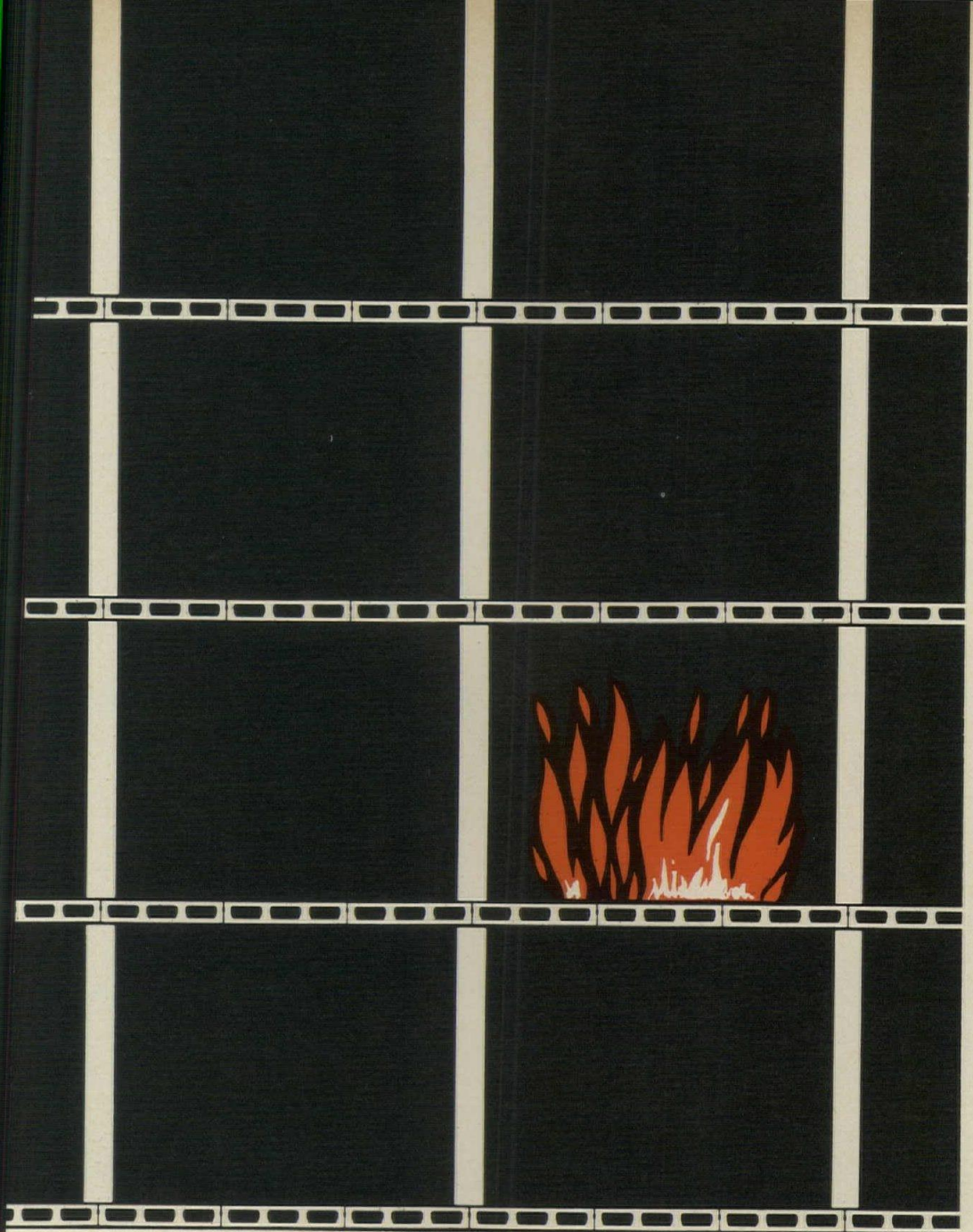
Circle 321 on inquiry card

STRETCH SHELVING / Wall and island modules for supermarkets are available in sections 36 and 48 in. long, and in heights up to 76 in. Interlocking components can be changed quickly to handle new merchandising arrangements. Shelves accommodate almost any combination of packaged products, large and small, heavy and light, and the shelving is engineered to take uneven loading. Many accessories attach to the basic units. All shelving is painted electrostatically and the finish is baked on. ▪ Clark Equipment Company, Niles, Mich.

Circle 322 on inquiry card

CHAIRS AND BLEACHERS / All-aluminum, maintenance-free units feature one-piece aluminum die castings for the side standards, and formed aluminum extrusions for the chair slats. Seats have a series of serrations in the extruded planks for safety. Aluminum slats are either anodized or baked enamel finish, and side standards are baked enamel to match school colors or area requirements. ▪ Liskey Aluminum, Inc., Los Angeles.

Circle 323 on inquiry card



United Metro Materials and Concrete Co., Inc.
P.O. Box 13309
Phoenix, Ariz. 85005

C. W. Blakeslee & Sons, Inc.
P.O. Box 1809
New Haven, Conn. 06507

Concrete Materials of Georgia, Inc.
P.O. Box 864
Forest Park, Ga. 30050

Midwest Prestressed Concrete Co.
P.O. Box 1389
Springfield, Ill. 62705

Cedar Rapids Block Co.
620 12th Ave., S.W.
Cedar Rapids, Ia. 52404

Prestressed Concrete of Iowa, Inc.
P.O. Box 822
Iowa Falls, Ia. 50126

Louisiana Concrete Products, Inc.
P.O. Box 1107
Baton Rouge, La. 70821

Superior Products Co.
10701 Lyndon Ave.
Detroit, Mich. 48238

Jackson Ready Mix Concrete
P.O. Drawer 1292
Jackson, Miss. 39205

Concrete Materials, Inc.
P.O. Box 5247
Charlotte, N.C. 28205

Arnold Stone Co.
P.O. Box 3346
Greensboro, N.C. 27402

Cleveland Builders Supply Co.
5161 Warner Rd.
Cleveland, Ohio 44125

Nitterhouse Concrete Products, Inc.
P.O. Box N
Chambersburg, Pa. 17201

Strescon Industries, Inc.
Pennsylvania Ave. & Post Rd.
Morrisville, Pa. 19067

Dickerson Structural Concrete Corp.
P.O. Box 160
Youngwood, Pa. 15697

Southern Cast Stone Co., Inc.
P.O. Box 1669
Knoxville, Tenn. 37901

Shelby Pre-Casting Corp.
P.O. Box 13202
Memphis, Tenn. 38113

Breeko Industries
P.O. Box 1247
Nashville, Tenn. 37202

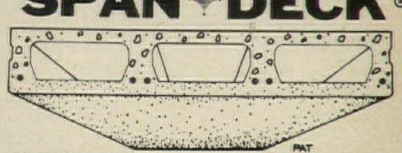
Texas Industries, Inc.
8100 Carpenter Freeway
Dallas, Tex. 75247

Economy Cast Stone Co.
P.O. Box 3-P
Richmond, Va. 23207

A FIRE FIGHTER, TOO

SPAN✦DECK® precast and prestressed, hollow-core concrete floor and roof plank will keep the fire bottled up between floors for two to four hours—dependent upon concrete topping thickness—long enough time for firemen to have the blaze under control if not out. This fire fighting quality results in low fire insurance rates for both the building and the contents—a decided advantage to your client. Besides these money-saving factors, the underside is an exposable fine-textured soffit with built-in acoustics rated at 0.55 NRC. For additional information, write your nearest SPAN✦DECK® supplier or Box 99, Franklin, Tenn. 37064.

PRESTRESSED
SPAN✦DECK®

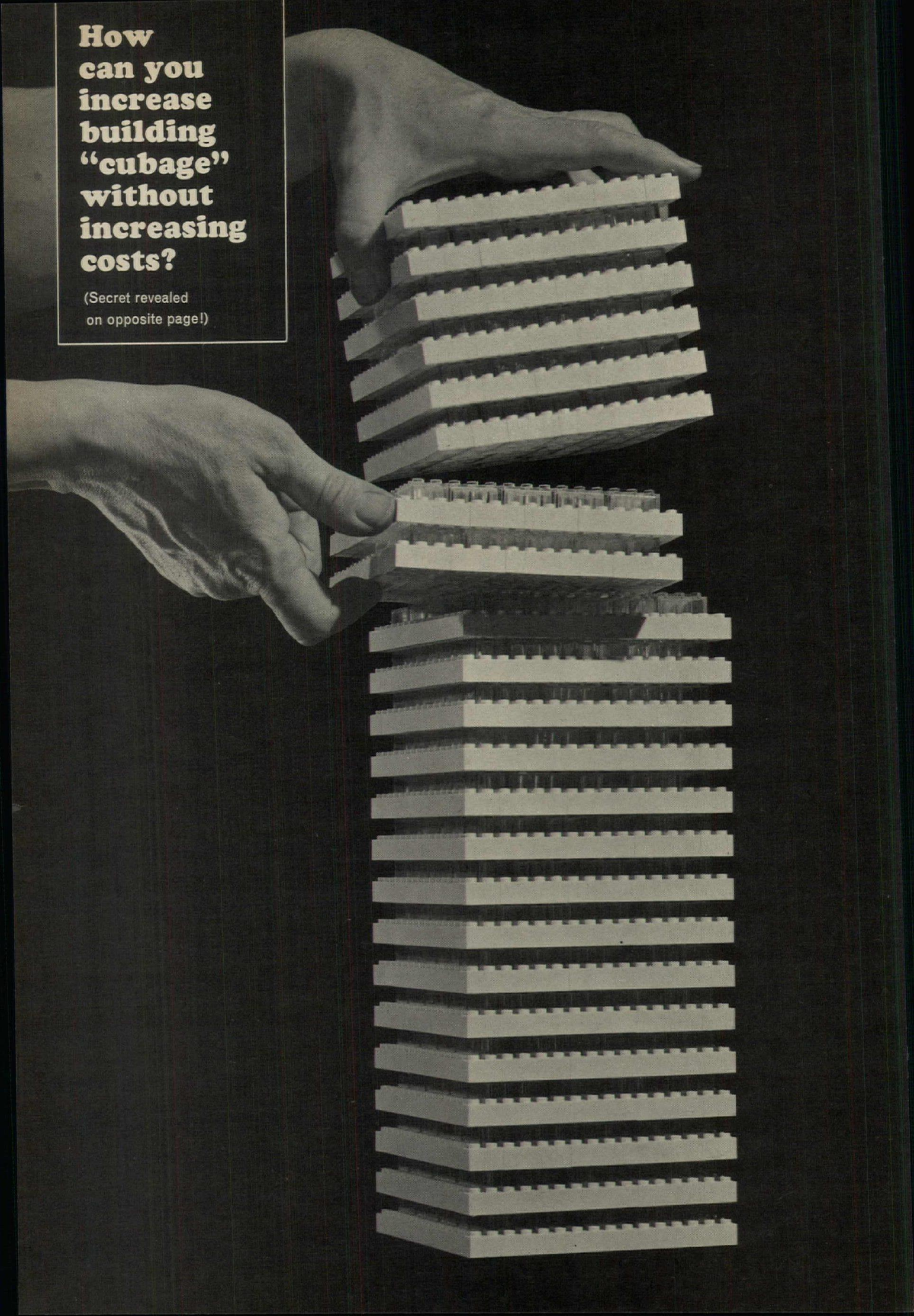


PAT
FOR FAST INSTALLATION OF ACOUSTICAL CONCRETE CEILINGS, FLOORS AND WALLS

For more data, circle 139 on inquiry card

How can you increase building "cubage" without increasing costs?

(Secret revealed on opposite page!)



"All air-conditioning systems steal usable space."

preposterous!

The Barber-Colman Heat-of-Light System® actually increases usable space in existing buildings and permits the design of new buildings with a smaller envelope and more income-producing space than was previously possible. Result: Your total building cost per occupant per year can actually be reduced. Clip coupon for more facts.

BEFORE Barber-Colman Company developed the Heat-of-Light System it was absolutely true that you had to sacrifice ceiling, floor and interfloor space to reap the advantages of efficient Environmental Systems.

In those days, light-generated heat was considered part of the air conditioning space load in the summer . . . and . . . it was not used as a source of heat in the winter. What a waste!

In the BHoL (Before Heat-of-Light) days, duct work was massive in cross section. Only the most progressive engineers and architects could envision 1967-model, small-diameter High Velocity Ducts that could squeeze into 5" with room to spare.

And, had you told them how much room could be added to a building through elimination of space-stealing reheat coils, hot air ducts, piping, boilers, and clutter-type diffusers, even they would have been skeptical.

Heat-of-Light System makes good economic sense

The modern Barber-Colman Heat-of-Light System is more efficient and costs less to install and operate than the traditional systems that do not take advantage of modern energy-conservation principles. Additionally, any increase in costs for automatic controls required to provide smaller-than-room-size comfort zones is more than offset by the reduction in ducting and other hardware by the HoL System.

Integrated air/light diffusers lend aesthetic simplicity

When you combine a lighting fixture and a Barber-Colman air diffuser, the sum of one plus one is considerably less than two. Multifunction diffusers provide maximum light levels *and* diffuse air . . . transfer Heat-of-Light to heat exterior zones, where it is needed . . . and furnish local reheat when required. They provide Dynamic Sensing thermostat locations where the temperature of *moving* room air is measured. Response is up to 15 times faster than with wall-mounted thermostats.

Best of all, all Barber-Colman Heat-of-Light Systems, with or without trofferdelivered air, provide superior environmental control unobtrusively . . . quietly! Blended invisibly into the architect's design, the Heat-of-Light System never intrudes . . . never detracts.

Automatic design freedom!

With the Heat-of-Light System, every overhead lighting fixture can provide an individually controlled air mixing and air distribution zone. Or other, equally inconspicuous diffusers can provide draftless air delivery and still conserve light-generated heat.

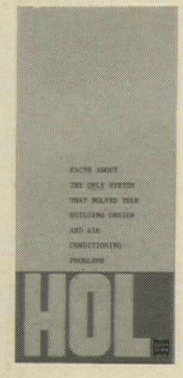
What does this mean to you as a designer? First of all you can move walls, and alter the space any way you want, and still provide each person or work-group with individual zone control without system changes. *And you aren't tied down to predesigned look-alike, "packaged" ceilings.*

Barber-Colman controls furnished with a Heat-of-Light System permit these space alterations without regard to costly control system revisions. There is no need to run new pneumatic lines or electric wires. Once installed, it meets all future needs.

Control is the most flexible there is. You can place the set point dial on the wall, in a locked custodial closet, mount it on a central panel, or on a desk top. You name the place. We'll provide a set point selector to meet your need.

Get the facts. To learn how much "cubage" you can add to your next building by using costsaving, space-saving Heat-of-Light, use the coupon below, or contact your local Barber-Colman Field Office.

BARBER COLMAN



BARBER-COLMAN COMPANY
ROCKFORD, ILLINOIS 61101
. . . where originality works for you
In Canada: BARBER-COLMAN OF CANADA, LTD.
Weston, Ontario

☐ Please have your local representative call me to arrange a computerized Feasibility Study.

☐ Please send me your new booklet on the Barber-Colman Heat-of-Light System.

Name_____

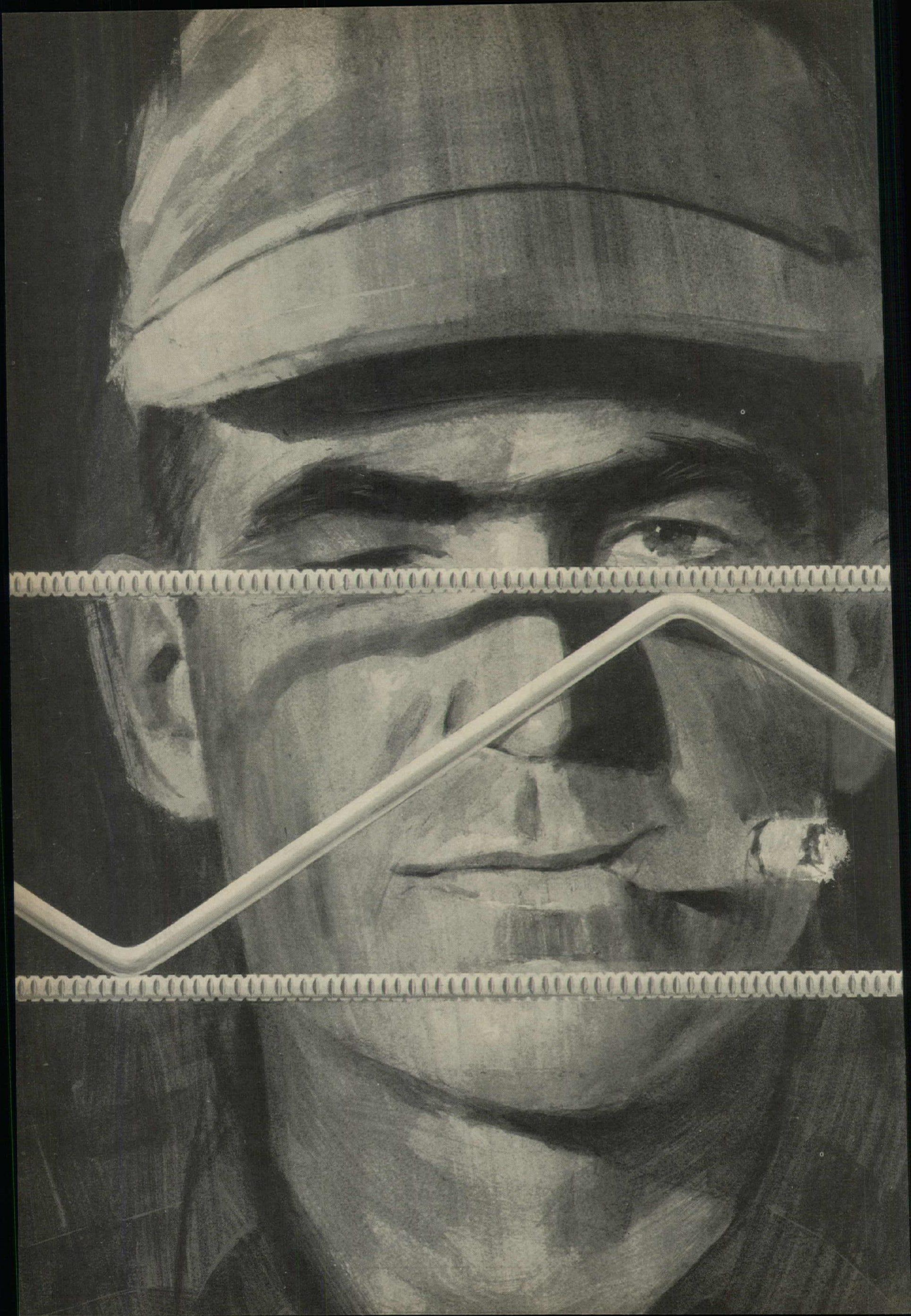
Title_____

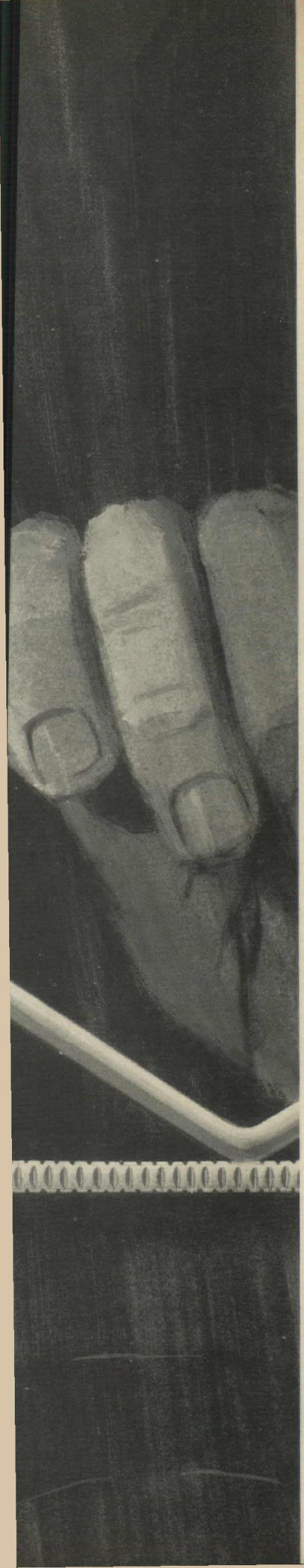
Company_____

Street_____

City_____ State_____ Zip Code_____

For more data, circle 140 on inquiry card





Who made all the fuss about a truss?

We did, sir, it's one of ten good reasons to use Dur-O-waL® masonry wall reinforcement.

You're looking at the most efficient masonry wall reinforcement ever devised, Dur-O-waL Truss Design.

1. You can't beat the truss for performance, adding both flexural strength and stability to masonry walls.

2. Dur-O-waL truss is the original masonry wall reinforcement and is used in more masonry walls than any other brand.

3. Dur-O-waL truss carries materials approvals from three important building codes: BOCA, ICBO, SBCC and many state and local codes.

4. Dur-O-waL truss is available in a wide selection of shapes, sizes and finishes. You can reinforce almost any masonry wall—single wythe, cavity or composite.

5. Dur-O-waL research is the most extensive in the business. We back up every claim for our product with independent research.

6. When you need Dur-O-waL truss you can get it. Over eight thousand dealers stock and sell our product.

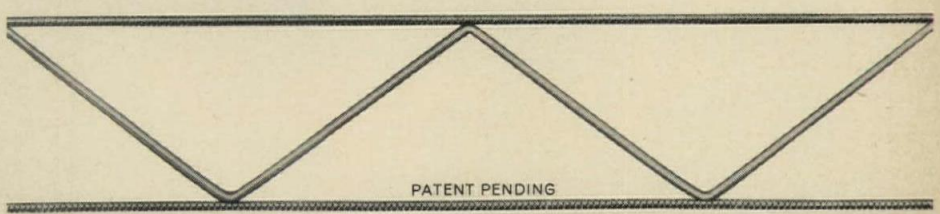
7. Dur-O-waL truss is nationally distributed.

8. Dur-O-waL has trained factory representatives who can help you with reinforcing problems.

9. A constant supply of technical literature based on current research is available to users of the product.

10. Dur-O-waL offers additional products exclusively for masonry construction, all backed by the same reputation for quality.

Any other questions on masonry wall reinforcing will be cheerfully answered by Dur-O-waL, P.O. Box 368, Cedar Rapids, Iowa 52406.



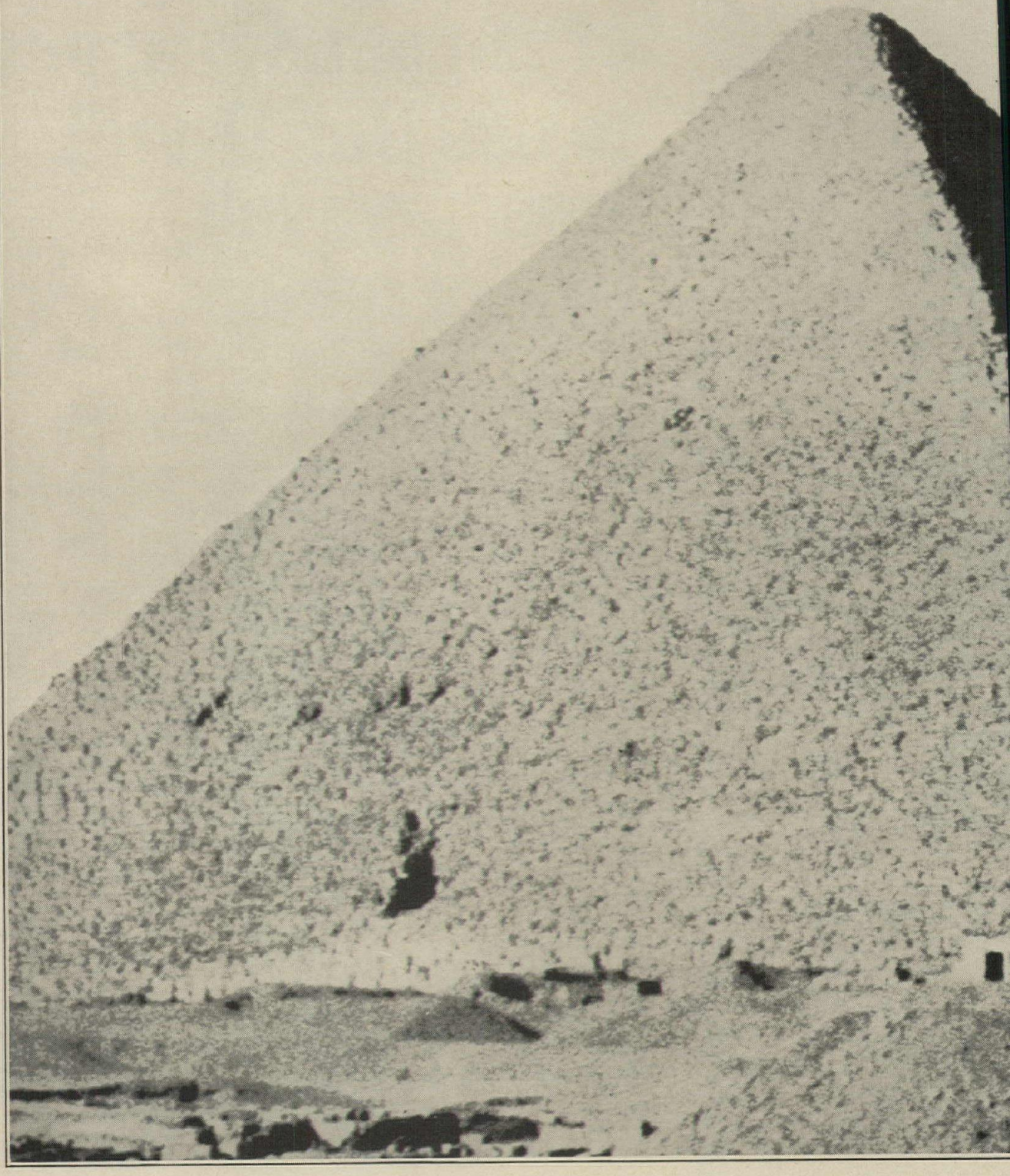
DUR-O-WAL®

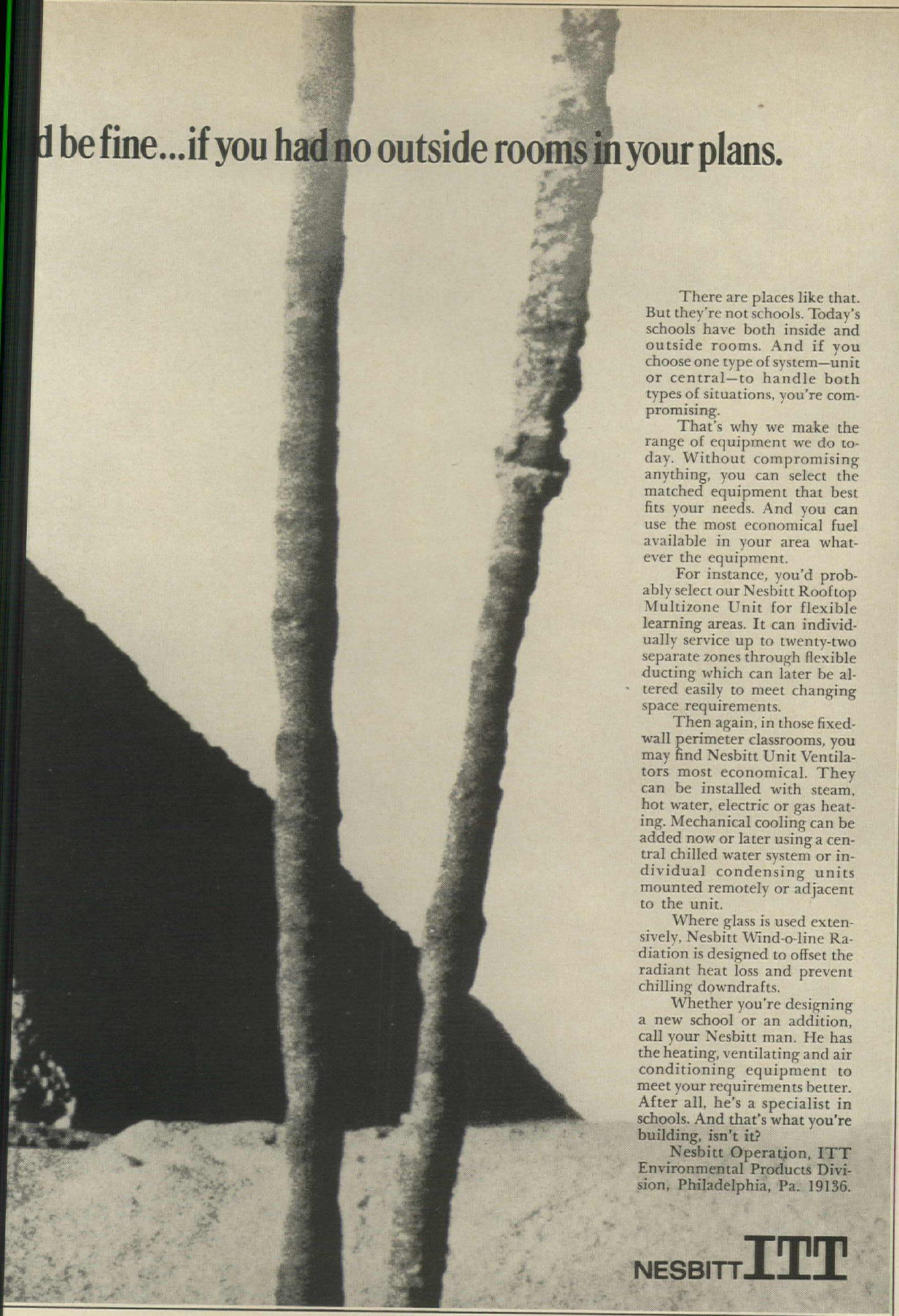
THE ORIGINAL MASONRY WALL REINFORCEMENT WITH THE TRUSS DESIGN

DUR-O-WAL MANUFACTURING PLANTS • Cedar Rapids, Iowa, P.O. Box 368 • Syracuse, N. Y., P.O. Box 628 • Baltimore, Md., 4500 E. Lombard St. • Birmingham, Ala., P.O. Box 5446 • Aurora, Ill., 625 Crane St. • Pueblo, Colo., 29th and Court St. • Toledo, Ohio, 1678 Norwood Ave. • Mesa, Ariz., 213 So. Alma School Rd. • Seattle, Wash., 3310 Wallingford Ave. • Minneapolis, Minn., 2653 37th Ave. So. • Also manufactured in Canada.

For more data, circle 141 on inquiry card

A single climate conditioning system for each campus buil





d be fine...if you had no outside rooms in your plans.

There are places like that. But they're not schools. Today's schools have both inside and outside rooms. And if you choose one type of system—unit or central—to handle both types of situations, you're compromising.

That's why we make the range of equipment we do today. Without compromising anything, you can select the matched equipment that best fits your needs. And you can use the most economical fuel available in your area whatever the equipment.

For instance, you'd probably select our Nesbitt Rooftop Multizone Unit for flexible learning areas. It can individually service up to twenty-two separate zones through flexible ducting which can later be altered easily to meet changing space requirements.

Then again, in those fixed-wall perimeter classrooms, you may find Nesbitt Unit Ventilators most economical. They can be installed with steam, hot water, electric or gas heating. Mechanical cooling can be added now or later using a central chilled water system or individual condensing units mounted remotely or adjacent to the unit.

Where glass is used extensively, Nesbitt Wind-o-line Radiation is designed to offset the radiant heat loss and prevent chilling downdrafts.

Whether you're designing a new school or an addition, call your Nesbitt man. He has the heating, ventilating and air conditioning equipment to meet your requirements better. After all, he's a specialist in schools. And that's what you're building, isn't it?

Nesbitt Operation, ITT Environmental Products Division, Philadelphia, Pa. 19136.

NESBITT ITT

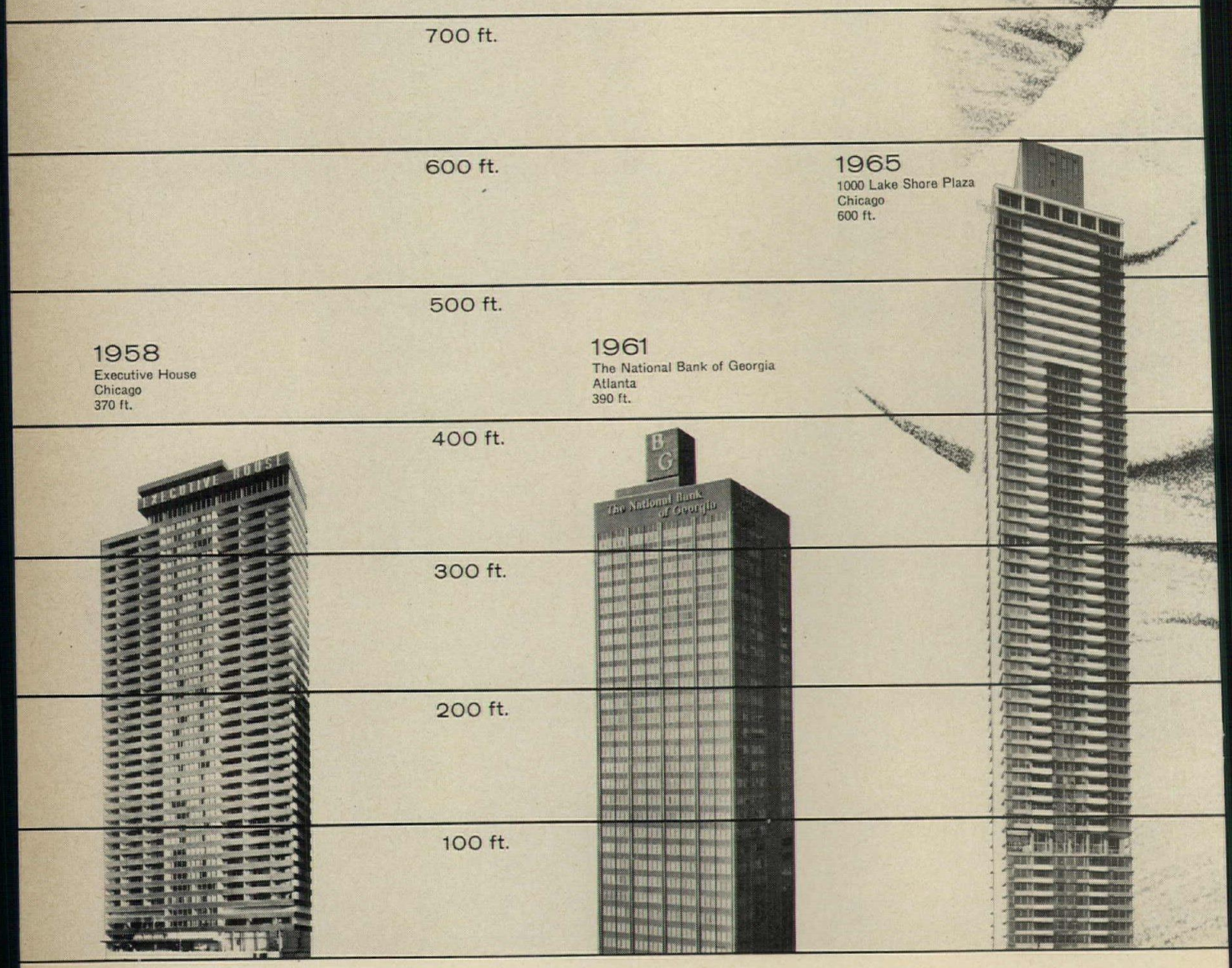
For more data, circle 145 on inquiry card

the beautiful world of reinforced concrete is looking up

Twenty years ago, reinforced concrete building construction literally hugged the ground. Not any more. It's on the rise, reaching for the clouds. And the trend to taller, more beautiful buildings in reinforced concrete has just begun. Look at what has happened in just the past ten years.

One of the major reasons for this spectacular breakthrough is the new Grade 60 reinforcing steel. It has 50% greater yield strength. Helps designers achieve slimmer columns. Greater usable floor space. Reduced overall construction costs. Gives construction a material as versatile as the men's minds that design, engineer, and build with it. Beauty, utility, economy are all a part of the package.

If you have a building that's going up, ask your consulting engineer about the many benefits high-strength reinforcing steels offer in modern concrete building design. Do it soon.



continued from pa

CONCRETE BLOCK / A 16-page bo features outdoor applications for floors and decorative fences. ▪ Nat Concrete Masonry Association, A ton, Va.

Circle 411 on inquir

INSTITUTIONAL FURNITURE / A page booklet presents activity ta stacking chairs and library chairs. car Plastic Corp., Bellwood, Ill.

Circle 412 on inquir

FOLDING DOORS AND PARTITIO A 16-page full-color book illustr many applications in churches, sch offices, restaurants, stores and a ments. Standard wood veneers inc Philippine mahogany, oak, uns birch, pine, ash, and American wal Others are available on special orde Rolscreen Company, Pella, Iowa.

Circle 413 on inquiry

METALS AND GRATINGS / A 12-p bulletin illustrates actual sizes of po lar patterns of standard and flattened panded metal and grating available carbon steel, stainless and alumin The booklet charts weights and pat dimensions for each of 74 stock patte ▪ Joseph T. Ryerson & Son, Inc., cago.

Circle 414 on inquiry

STEEL LITERATURE / A guide to infor tive literature and films lists a wide v ety of free material describing steel pr ucts and applications. ▪ American and Steel Institute, New York City.

Circle 415 on inquiry

ESCALATORS AND ELEVATORS / May 1967 issue of "Stainless Steel in chitecture" includes data on verti transport applications in office, gove ment, residential, bank, transportati and retail buildings. Actual installatio are shown, and some design drawi are included. ▪ Committee of Sta less Steel Producers, American Iron a Steel Institute, New York City.

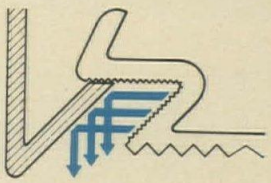
Circle 416 on inquiry

STAINLESS STEEL / A 17-page book with sample plates explains *Ezefor* made of stainless steel, for such appli tions as roofing, flashing, siding, cla ding and corrugated sheathing. ▪ At Alloys Co., Cleveland.

Circle 417 on inquiry

**Additional product information in Sweet's Architectural File*

more literature on page 3



"Z" lens gives all-luminous look

OUR NEW "Z" FRAMELESS

is the closest thing to a modular lens

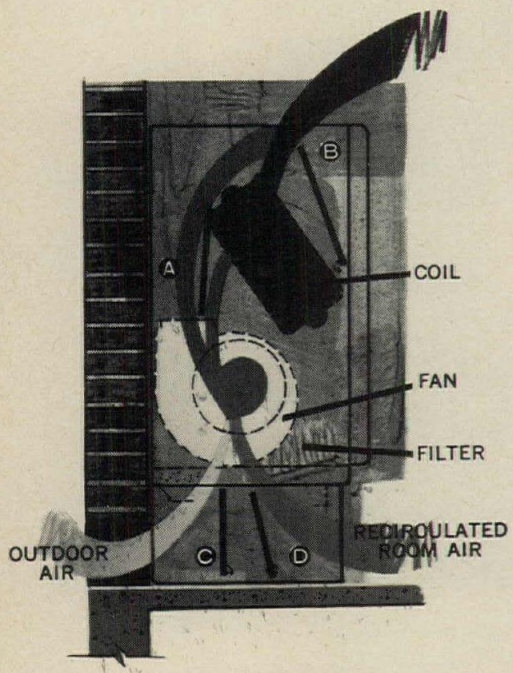
The "Z" lens configuration of Wakefield's new "Z" Frameless troffers and surface luminaires actually gives greater lens surface, greater efficiency and the least metal showing of any flanged unit. 1x4, 1x8, 2x2 and 2x4 sizes with Acrylic or Styrene lenses that hinge from either side. Fixed metal pins project from the housing and slip into new, stronger, injection-molded end caps attached to the lens by ultrasonic fusing. Ends of all lenses are light-sealed to fixtures. Luminous joints between fixtures in rows, with no metal showing at joints. Here is the fixture that best meets your need for the modular lens look. Call your Wakefield man or write for new brochure. ITT Environmental Products Division, International Telephone and Telegraph Corporation, P. O. Box 195, Vermilion, Ohio 44089.

WAKEFIELD LIGHTING ITT

in Canada, Wakefield Lighting Ltd., London, Ontario

For more data, circle 144 on inquiry card

How Modine clears the stuffy, drowsy, overheated air



Dampers C and D control fresh air mix with room air. Face and bypass damper (A) regulates air flow through heating/cooling coil. Exclusive Modine anti-wipe damper (B) reduces heat pick-up from coil to 5% when heat is not needed.

Remember those afternoon classes when just staying awake was an accomplishment?

Now Modine Valedictorian unit ventilators make schoolrooms more tolerable. They heat, cool, filter and dehumidify —blending fresh outdoor air with room air instead of recirculating the same stale atmosphere.

With a unique air-control damper system, Valedictorians automatically react to changes in weather or room occupancy. Four dampers control the mix of fresh air with room air as well as the air flow through the heating/cooling coil. Modine's anti-wipe damper reduces heat pick-up from the coil to 5%. Without it, a room can turn stuffy, sticky and over-heated in minutes.

Say, for example, it's the heating season and Modine Valedictorians are holding room temperature at a steady 70°. When 28 students enter the room, each brings his own 500 Btu's (normal body heat). Valedictorians sense the change and immediately adjust by reducing heat output.

Because some schools want heating only, with the option to add cooling later, we've designed Valedictorian with the future in mind, too. Installed with a combination heating/cooling coil, you simply add a water chiller to the system—at any time in the future—without spending a dime to convert the unit ventilator.

Efficient, quiet performance. Smart appearance. Plenty of versatility with a wide selection of shelf and cabinet accessories. We spell out all the details in our Valedictorian catalog. Write: Modine, 1510 DeKoven Ave., Racine, Wis. 53401.

MODINE

We're not saying commercial carpeting is obsolete, but...

Only Walk·Ease® vinyl flooring with fiber glass offers you so many important advantages

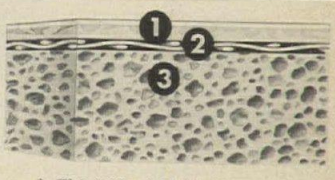
Walk·Ease by Flintkote is a cushioned sheet vinyl flooring made with a unique reinforcing layer of fiber glass. This distinctive, modern flooring combines the luxury of carpeting with the unsurpassed practical advantages of gleaming sheet vinyl.

Walk·Ease flooring is unquestionably the easiest and most economical type of flooring to maintain. It is dust free, needs no waxing, is hygienic and non-allergenic. It is also one of the longest-lasting floors you can select. Seams are quickly and tightly sealed at installation to provide a continuous expanse of easy-to-clean beauty.

But **Walk·Ease** flooring is more than just practical. An extra thick vinyl foam cushion makes it superbly comfortable underfoot. Moreover, it is acoustically designed to deaden impact sounds, virtually eliminates the clatter of heels within rooms and between floors. **Walk·Ease** flooring is also warm, stays at near room temperatures, even when installed over concrete.

Walk·Ease flooring is recommended for almost every type of project—schools, hospitals, offices, commercial areas and private residences. It is especially desirable for clean rooms and pharmaceutical and electronic plants.

Never before has a flooring offered you so many advantages. Remember the name —**Walk·Ease.** Your clients won't forget it.



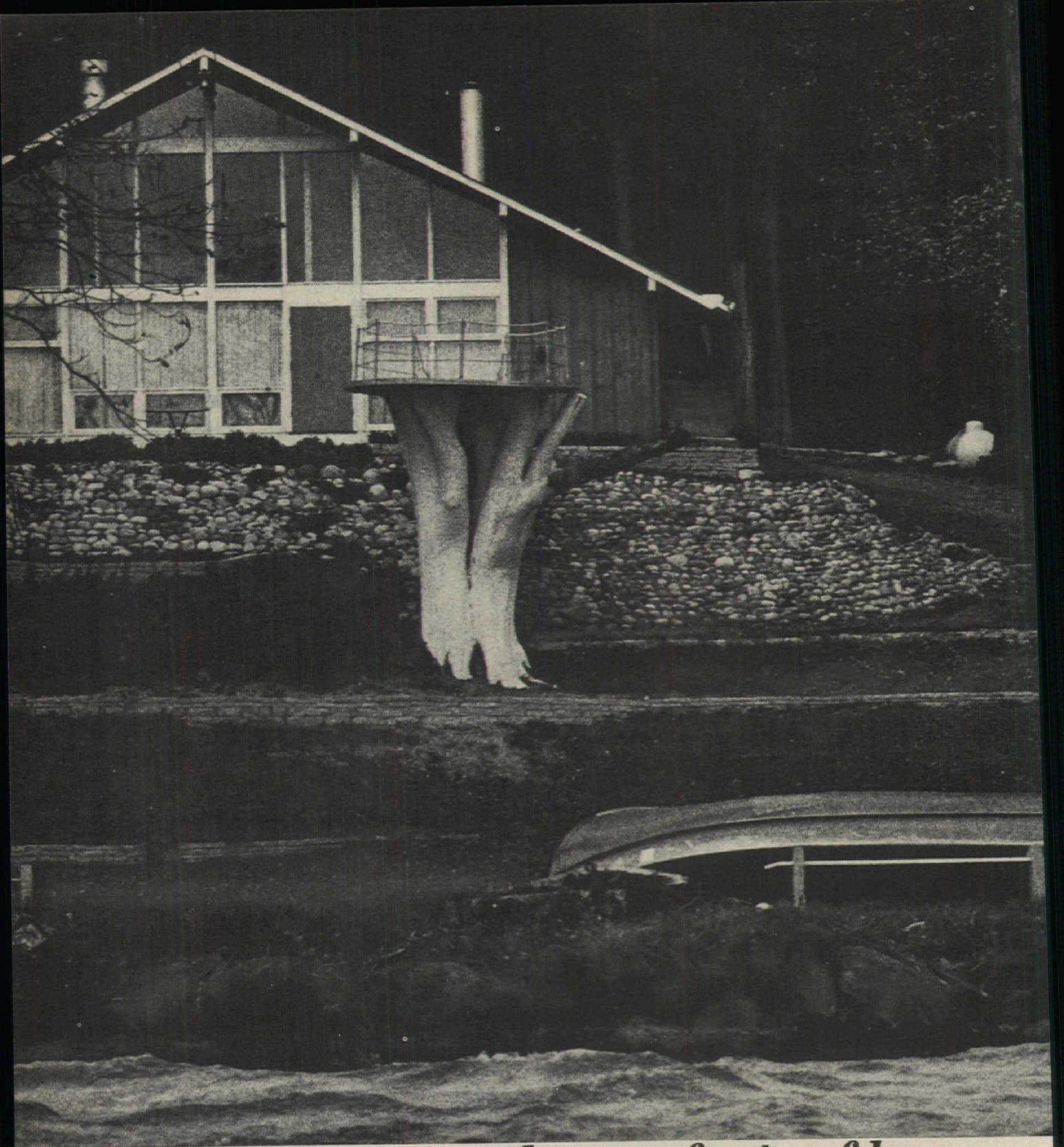
1. Thick Vinyl Surface
2. Fiber Glass Reinforcement
3. Vinyl Foam Backing

From the FLINTKOTE Floor Fashion Collection—including Peel and Stick tile and other vinyl asbestos styles.

Walk-Ease® BY FLINTKOTE®

For specification data and literature write: The Flintkote Company, 201 E. 42nd St., New York, N.Y. 10017 • P.O. Box 2218, T.A., Los Angeles, Calif. 90054

For more data, circle 163 on inquiry card

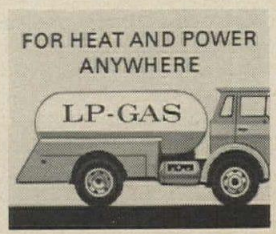


LP-gas supplies the comforts of home away from home

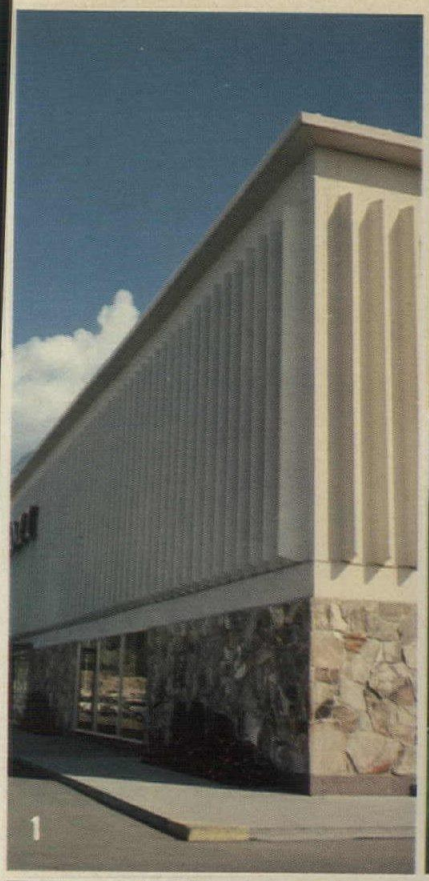
Call it a summer place, a hideaway or a second home. If it's beyond the reach of the pipeline, you can bet it's equipped with LP-gas. Versatile LP-gas is available to people *wherever* they live—providing heat, cooking food, heating water, powering generators. It's even found at pool side where it takes the nip out of a dip. Wherever heat and power are required, LP-gas does the job. *And gas makes the big difference.* Safe. Clean. Dependable. Modern.

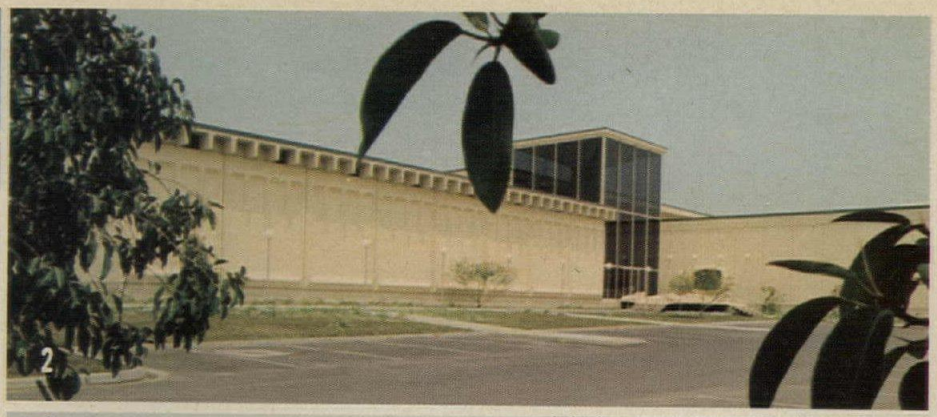
Of America's great sources of energy, only LP-gas serves you in so many ways.

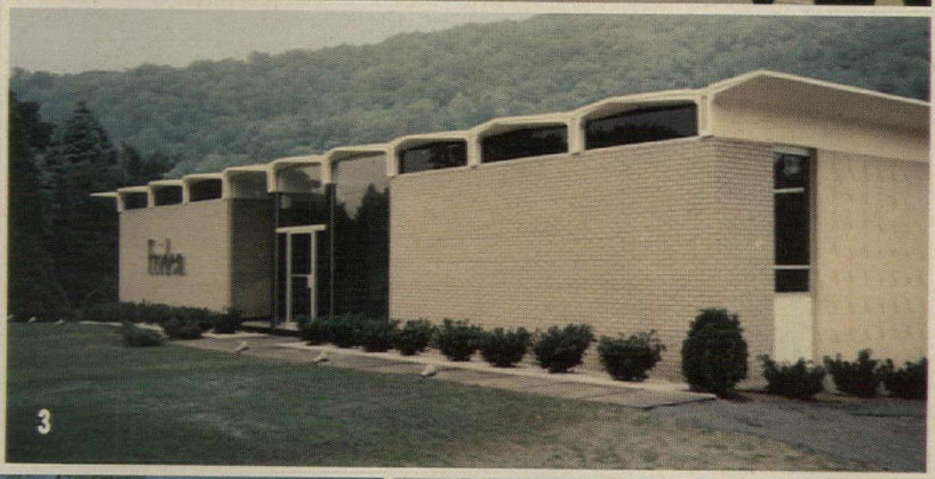
NATIONAL LP-GAS MARKET DEVELOPMENT COUNCIL, Chicago, Illinois 60603

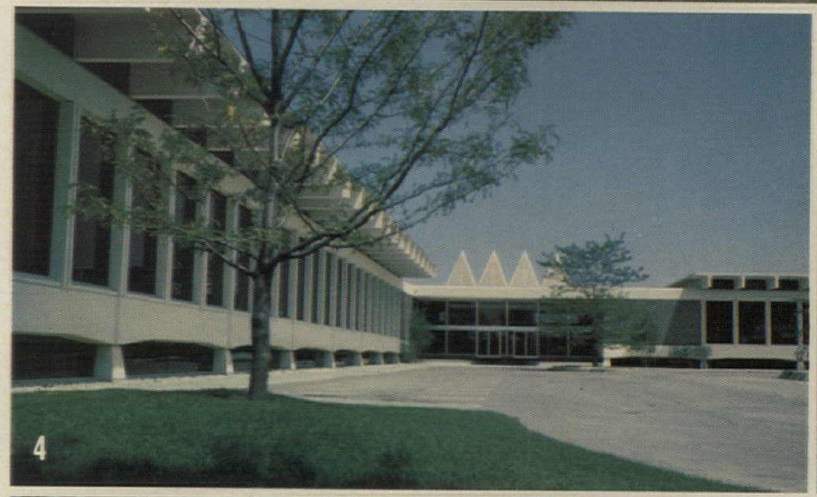


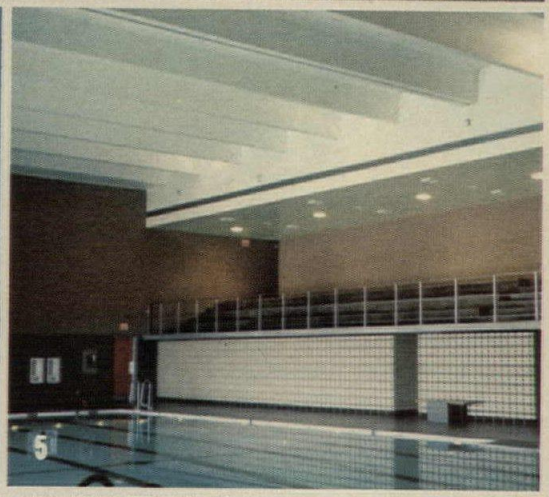
For more data, circle 164 on inquiry card











ARCHITECTS: (1) JOHN GRAHAM & COMPANY; (2) DANIEL, MANN, JOHNSON & MENDENHALL; (3) JOSEPH D. LANSING; (4) FRIDSTEIN & FITCH; (5) PAUL HALLBECK ASSOCIATES; (6) CONE AND DORNBUSCH.

PRESTRESSED CONCRETE

offers beautiful solutions to a wide range of design problems for every building type. Best man to talk to in the earliest planning stage is your local PCI member. Odds are he has good answers to questions you face right now. If you don't know his name already, write us at 205 W. Wacker Dr., Chicago, Illinois 60606.

PRESTRESSED CONCRETE INSTITUTE PCI®

ARCHITECTURAL STRUCTURAL

For more data, circle 165 on inquiry card

continued from page 278

DRAWING FILES / A 12-page booklet presents vertical files which require no punched holes or glued strips on drawings. The pockets remain in the cabinet and do not have to be removed. ▪ Kuhlmann-Impex, Inc., Houston.*

Circle 418 on inquiry card

FLOORING / A 14-page booklet presents some of the latest designs in vinyl and rubber flooring. ▪ Robbins Products, Inc., Tuscumbia, Ala.*

Circle 419 on inquiry card

BATHROOMS / "What's New In Bathrooms" is a 28-page booklet that includes information ranging from floor plans to final decorative details. There are also wall and floor coverings and storage suggestions ▪ Philip Carey Manufacturing Company, Cincinnati.*

Circle 420 on inquiry card

LIGHTING SHADES / A 4-page brochure shows 12 shapes of *Tenite* acetate shades for accent lighting indoors or out. Shapes include skandles, bongos, cosmos, tear drops and temple bells. ▪ Glowtex Lighting Products, Erie, Pa.*

Circle 421 on inquiry card

LIGHTING FIXTURES / A 36-page exposition of commercial, industrial and institutional fixtures ranges through fluorescent, mercury vapor, incandescent and the new *Lucalox*. Letterhead requests. ▪ The Edwin F. Guth Co., Box 70799, St. Louis.*

STEEL SHELVING / A 24-page reference catalog contains photos showing many designs and sizes. ▪ Lyon Metal Products, Inc., Aurora, Ill.*

Circle 422 on inquiry card

ADHESIVE BONDING / A hard-cover handbook aims to help aluminum users make "realistic preliminary appraisals of adhesive-bonding applications." The 106-page illustrated book covers surface preparation, adhesive classifications, design of an adhesive-bonded joint, selection of an adhesive, and safety precautions. Letterhead requests. ▪ Aluminum Company of America, 773 Alcoa Building, Pittsburgh.*

DUCT SILENCER / A 12-page bulletin contains over 30 illustrations and tables on the rectangular *Quiet-Duct* and tubular *Conic-Flow* silencers. ▪ Industrial Acoustics Co., Inc., Bronx, N.Y.

Circle 423 on inquiry card

** Additional product information in Sweet's Architectural File*

For more data, circle 166 on inquiry card

For more data, circle 167 on inquiry card

If you think patterns look wild on women, wait'll you see them on Ozite's newest carpet.

New Ozite Futuristic . . . the kind of exciting idea you'd expect from the creators of outdoor-indoor carpet.

Futuristic carpet for indoor use . . . a totally new commercial and residential floor covering that gives you just about every plus in the book. Dramatic new patterns . . . ranging from the bold and brilliant to the soft and subtle. And everything in-between. Fresh, clear colors. Rugged commercial carpet quality, with a high density foam rubber back built-in for extra plushness. Easy to install. A snap to maintain.

Futuristic . . . an inspired combination of Ozite's Needlebond manufacturing process and the ultimate in color and design techniques. All at a fraction of what you'd expect to pay.

Mail in the coupon and discover why your carpet installations should follow a different pattern. Ozite's Futuristic.

OZITE CORPORATION Dept. CM.
7-120 Merchandise Mart • Chicago, Illinois 60654

Please send me complete information on new Futuristic carpet by Ozite.

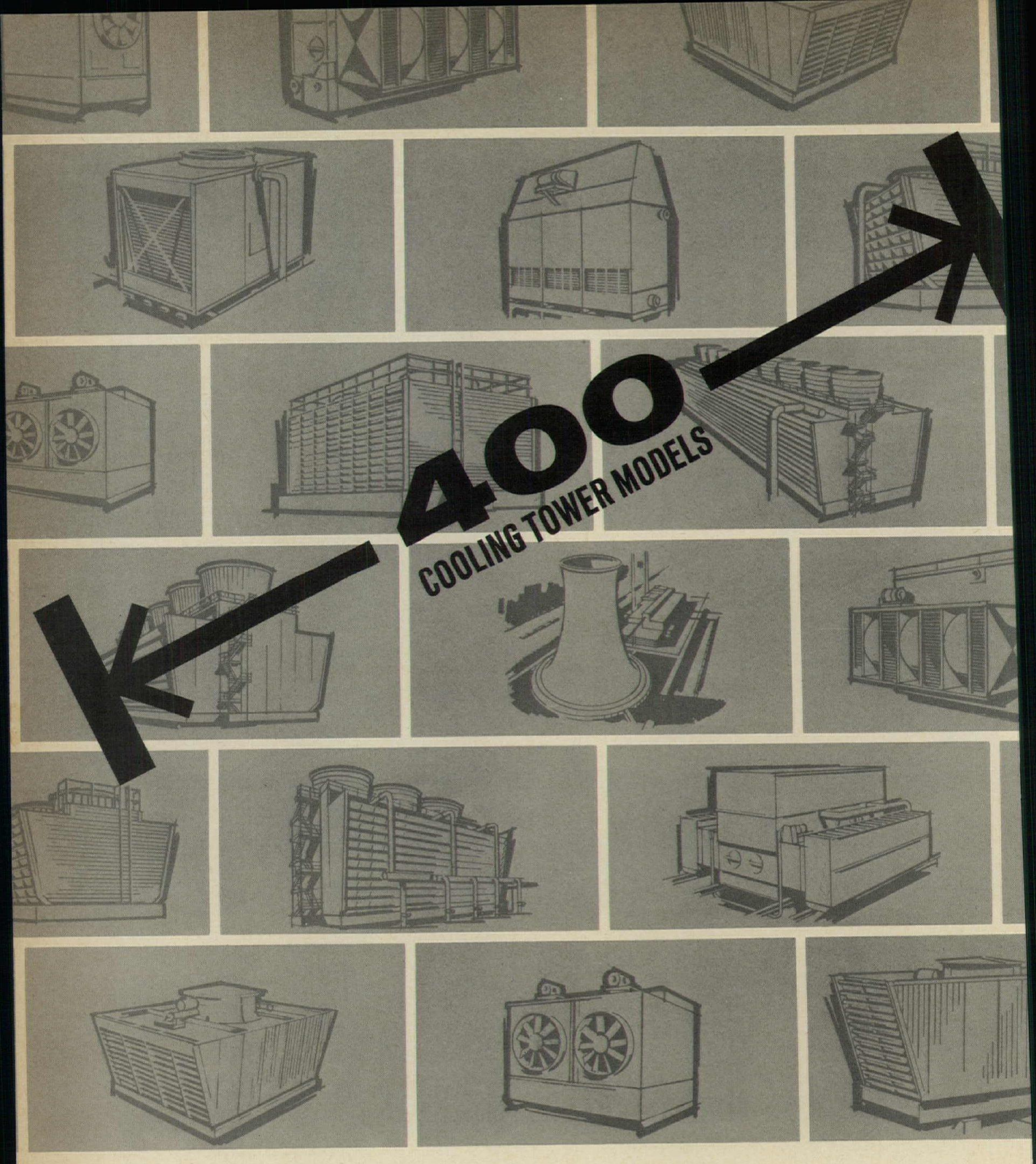
Name_____
Firm_____
Title_____
Address_____
City_____
State_____ Zip Code_____

Futuristic CARPET BY **Ozite®**

®Ozite is the exclusive trademark of the Ozite Corp., 7-120 Merchandise Mart, Chicago, Illinois.

Dress by Rudi Gernreich available at Splendiferous. Shoes by Capezio.

For more data, circle 168 on inquiry card



Marley gives architects more to work with

More models, more designs, more flexibility. Because Marley offers architects the most complete and advanced line of cooling towers in the industry.

Need a tower that can butt up against a wall? Marley's got one. Need a low silhouette model to tuck into a corner? Marley's got it. Need an indoor tower that can dolly through a 30" doorway? Marley stocks it.

Whether it must be factory-assembled or field-erected, 3 or 30,000 ton capacity — under-flow, counter-flow, cross-flow, single or double-flow — there's a Marley tower to exactly fit your needs.

And since Marley men are stationed around the world, there's one near you who's capable of lending engineering assistance from the world's most experienced and knowledgeable cooling tower manufacturer.

Call him. Or write Marley Company, 222 W. Gregory, Kansas City, Missouri 64114.

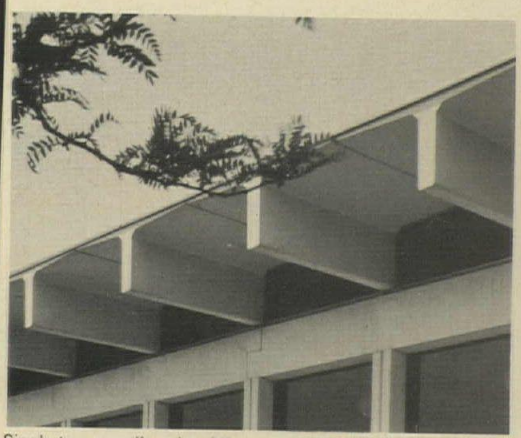
MARLEY

For more data, circle 169 on inquiry card

Medical Merchandise Mart, Lincolnwood, Illinois
Owner: Moss Corporation · Architects: Fridstein & Fitch, Chicago · Structural Engineers: George A. Kennedy & Associates, Inc.
Prestressed Concrete Fabrication: J. W. Peters & Sons, Inc., Burlington, Wisc.

Prescription for economy: Concrete tees that combine mechanical and structural functions

At the Medical Merchandise Mart, a one-stop shopping center for doctors, prestressed single-tee units span the 96-ft. wide showroom and cantilever beyond. Only prestressed concrete could combine the long spans and striking appearance within the budget limitations of this project.



Single tees, cantilevering 8 feet, provide a boldly modern roofline.

Contributing to its economy was the ability of the tees to perform beyond their primary structural function. Their very shape reduced the cost of air distribution and made practical the use of inexpensive light fixtures.

Again, the undersides of the tees require no weather protection outside and only a coat of light-reflecting paint inside if desired.

The structural system is a combination of prestressed concrete tees and precast framing. The high white ceilings and freedom from columns give the feeling of an open-air display that enhances the building's function—the display of medical equipment.

The Medical Merchandise Mart is typical of structures being built today for new reasons and new functions; an excellent example of how total thinking and cooperation between owner and architect can create a structural answer that is both aesthetically pleasing and commercially functional.

For the full story on design and construction details of the Medical Merchandise Mart, write for free literature. (U.S. and Canada only)

PCA PORTLAND CEMENT ASSOCIATION
DEPT. A9-8, 33 WEST GRAND AVE., CHICAGO, ILLINOIS 60610

An organization of cement manufacturers to improve and extend the uses of portland cement and concrete

For more data, circle 170 on inquiry card

Frank Lloyd Wright believed that form should follow function.

We took him to heart when we designed Wheeler's High Bay Mercury fixture. Which explains why it performs as well as it looks.

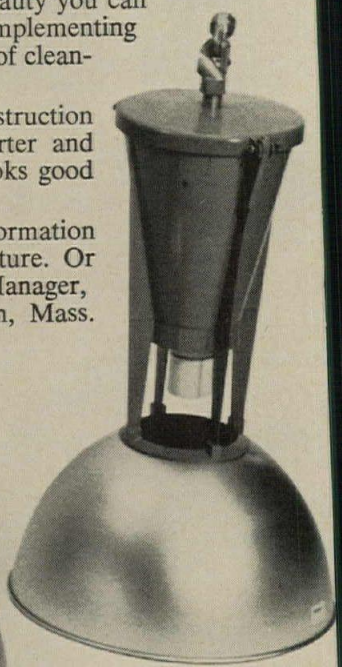
But let the specifics speak for themselves: cover, body and reflector support are all lightweight, die-cast aluminum, finished in baked gray enamel. Reflector is aluminum, Alzak-finished for highest reflectivity. The housing has a constant-wattage ballast, potted with Dri-Lok C2 (so the fill material can never leak out of the housing.) Other ballasts also available.

And you can have your choice of 400 (single or twin) or 1000 watt (single) fixtures.

Install Wheeler's High Bay Mercury in any industrial setting, and certain things become obvious: half the beauty you can see . . . the other half is performance. Complementing the space-age styling is a remarkable ease of cleaning and maintenance.

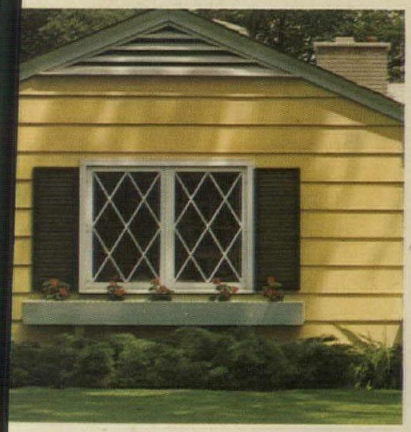
Nothing's wasted on this fixture. The construction is simple and straightforward. It's shorter and lighter than conventional fixtures. It looks good in any company.

Contact your wholesaler for more information on Wheeler's High Bay Mercury fixture. Or write: E. Quintiliani, General Sales Manager, Wheeler Reflector Co., Inc., Hanson, Mass.

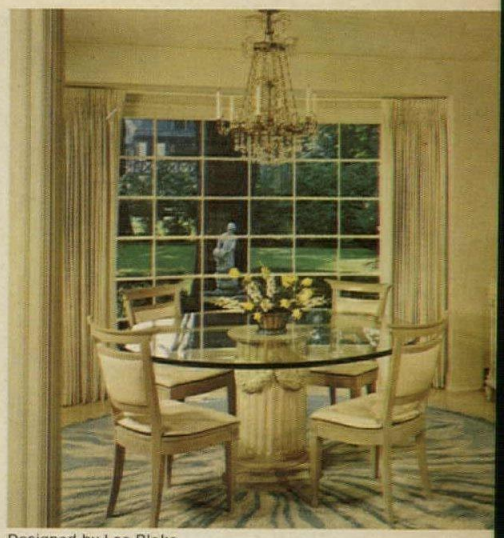


WHEELER REFLECTOR

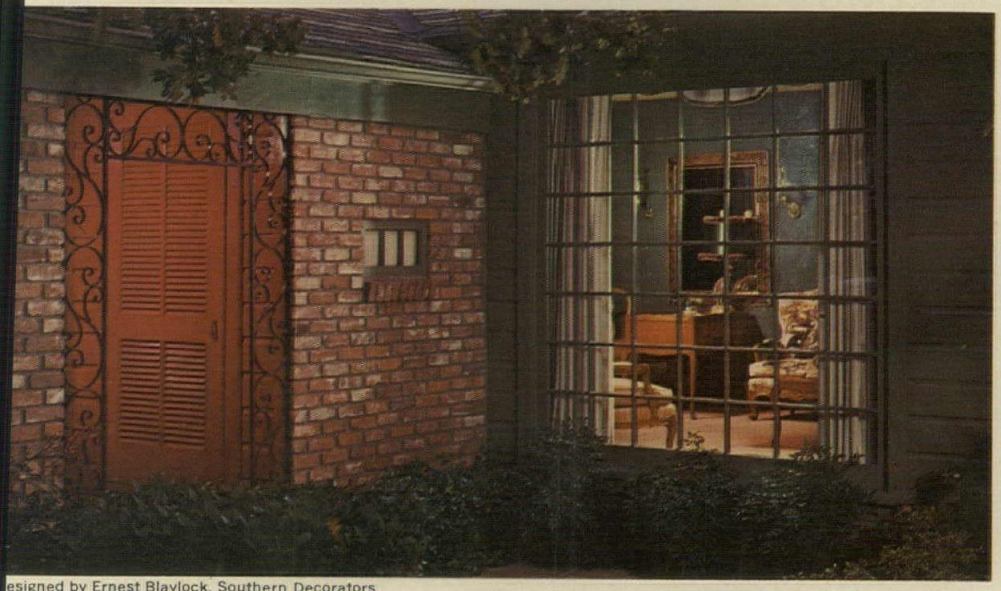
For the better homes in any neighborhood it's wood windows.



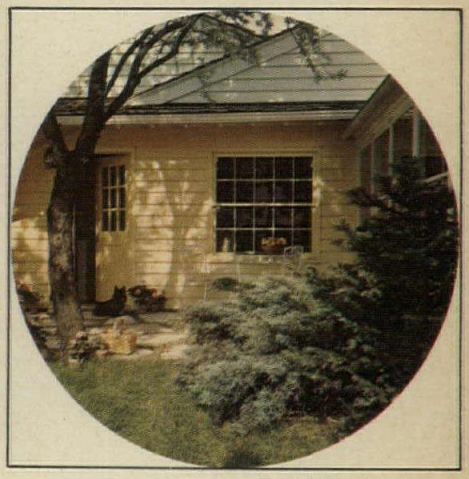
Ralph Huszagh, Architect



Designed by Lee Blake



esigned by Ernest Blaylock, Southern Decorators



Why wood windows?

First, let's take condensation. When warm interior humidity hits a cold metal frame in winter, condensation takes place. Water drops form, drip over sills and down walls or wallpaper. Homeowners can't do anything about this problem. It's just the nature of metal—what heating engineers call excessive Thermal Conductivity. With quality wood windows, troublesome condensation cannot happen—the chart at right tells you why.

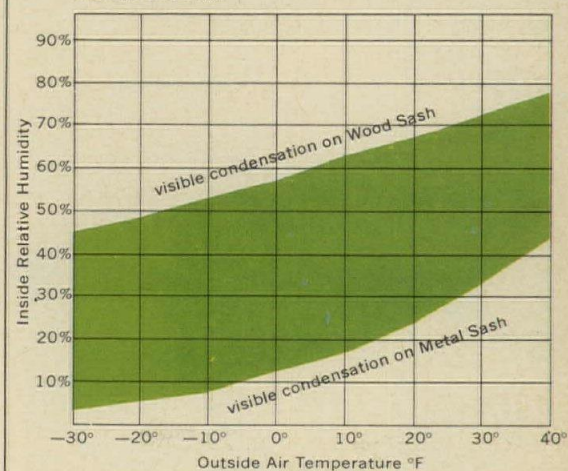
Then, take total home comfort. Cold metal surfaces conduct heat or cold from rooms faster than wood surfaces. Again, too much Thermal Conductivity. Wood simply is a better insulator against heat and cold. That's why wood windows help keep homes more comfortable in winter, cooler in summer.

From every standpoint, it's wood windows! Wood windows blend with any architectural style – they're available in every type, style and size imaginable. And they give homes a warmth and beauty unmatched by any other type of window.

Free Window Condensation Calculator. Based on ASHRAE data, our exclusive Condensation Calculator helps you determine condensation problems so you can select the correct windows for the homes you design and build. It's free. Send requests on your business letterhead.

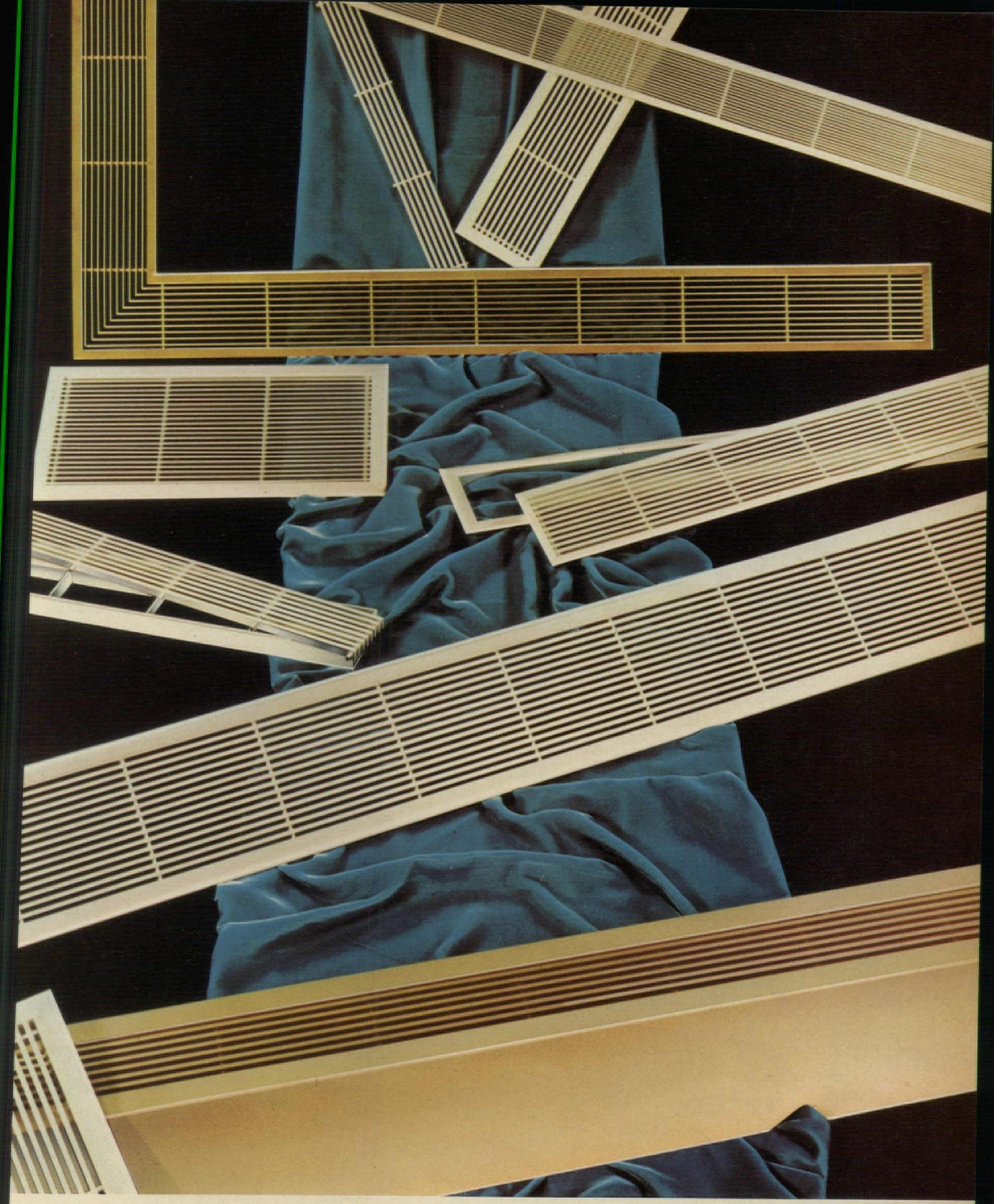
Visible Condensation of Inside Surfaces.
Room temperature 70°. Outside wind velocity 15 mph.

Chart shows comparative condensation on inside surface as outside temperature drops. Example: when outside temperature is 20° it would take as much as 69% inside relative humidity before condensation would appear on wood sash—but condensation will form on aluminum sash with just 22% inside relative humidity (and, most homes average 30-35%).



Source: ASHRAE Standard Psychrometric Chart

PONDEROSA PINE WOODWORK
and the Western Wood Products Assn.
DEPT. AR-97, 39 South La Salle Street
Chicago, Illinois 60603



EXTRUDED ALUMINUM LINEAR REGISTERS & GRILLES

WATERLOO *Air Diffusion* EQUIPMENT

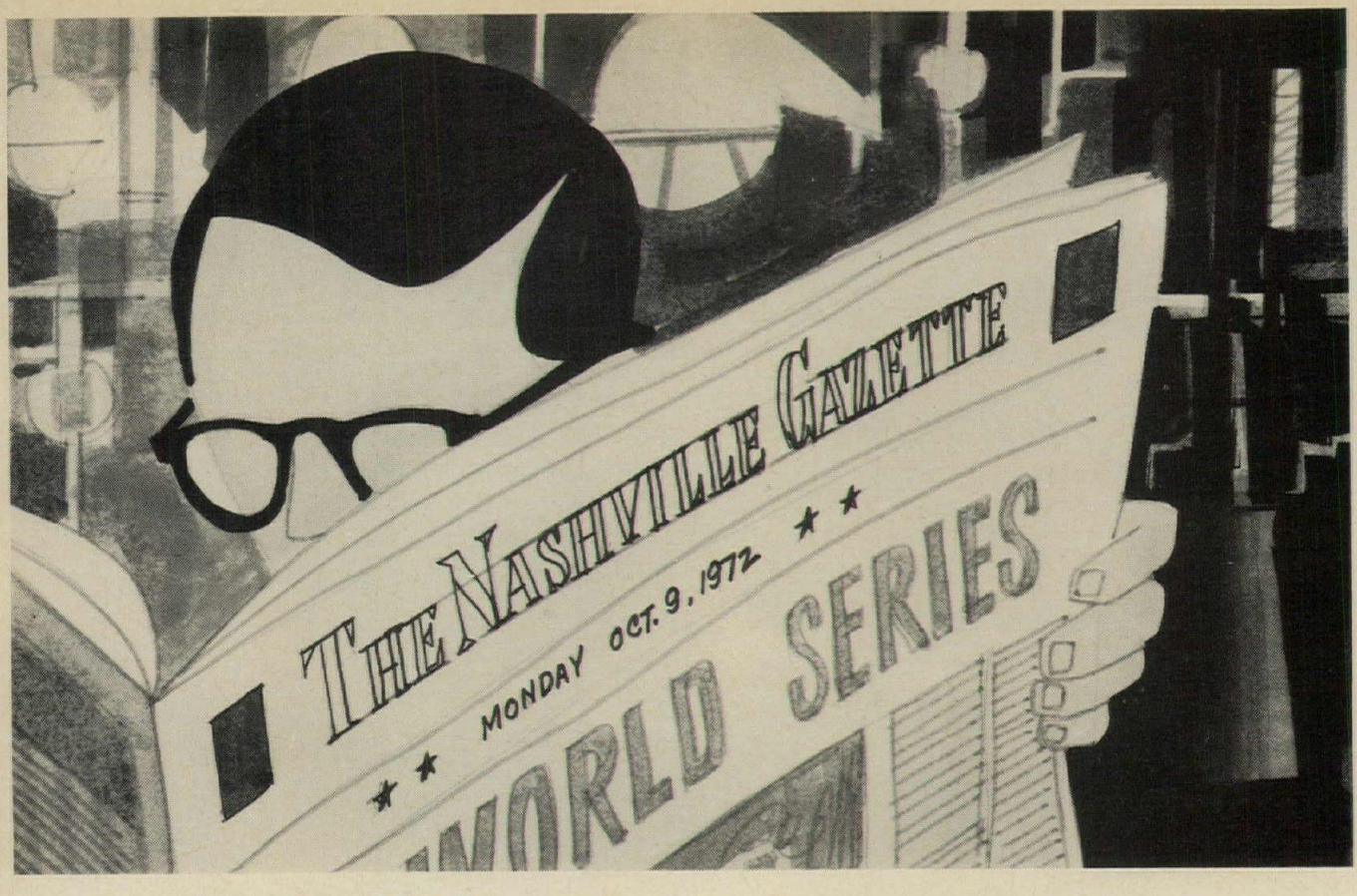
DESIGN ORIENTED..... THE *COMPLETE* QUALITY LINE

For more data, circle 173 on inquiry card

MEMBER OF THE AIR DIFFUSION COUNCIL

WATERLOO REGISTER CO. - DIVISION OF DYNAMICS CORPORATION OF AMERICA
Cedar Falls, Iowa

DCA



FOR YEARS-AHEAD IDEAS IN ADVANCED WATER FILTERS . . .

come to Bowser-Briggs where it's 1972

What does filtration really offer you – an investment in future product efficiency, right? Then the more you think "future", the more you deserve Bowser-Briggs water filtration equipment, years ahead in design and performance for years-ahead efficiency.

You see, to the men at Bowser-Briggs it's 1972 – and this attitude in thinking five years ahead gives you developments like the Model 610-E with patented Star-Cor® elements or the fiberglass vacuum diatomite swimming pool filters with new rectangular star-leaf construction. Leaves are individually removable for greatest ease of maintenance, and offer uniform precoating-filtering and the most unrestricted water flow.

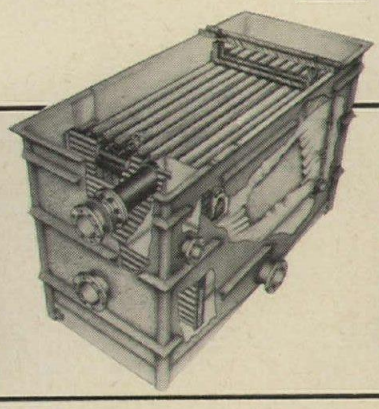
These are just two examples of Bowser-Briggs' 1972-thinking. You'll also see it in many other areas . . . anywhere there's a need for dehydration, oily waste treatment, filtration, absorption or coalescence. We've been specializing in looking ahead since 1885 (1890 to us), so if you'd like a view of 1972 – in filtration – call your man from Bowser-Briggs. Or send us your requirements, without obligation.

Your future is our business . . . today.

Bowser inc.

BOWSER-BRIGGS FILTRATION DIVISION
COOKEVILLE, TENNESSEE 38501

IN CANADA: S. F. BOWSER CO., LTD., HAMILTON, ONTARIO



BOWSER-BRIGGS MODEL 618A-FG, FIBERGLASS VACUUM DIATOMITE SWIMMING POOL FILTER

Preferred by leading municipalities. For swimming pools of 134,000 to 806,400 gallon capacity. Approved by National Sanitation Foundation. Complete data available. Write Dept AR-2

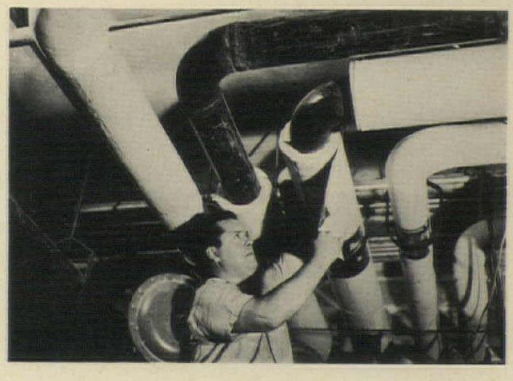
For more data, circle 174 on inquiry card

Pyro-Kure® Vapor Barriers Protect Insulation And Are Permanently Non-Combustible

Pyro-Kure facing and jacketing are the safest possible vapor barrier materials to use with insulation for walls, ceilings and floors, on low temperature pipe and service lines, and on air conditioning ducts.

They differ in three important ways from any other vapor barrier:

1. A patented flame-extinguishing adhesive between the plies of paper, foil or vinyl makes Pyro-Kure *permanently* non-combustible. This means its U/L Flame Spread Rating of "25 or less" will never be reduced by age, moisture or humidity, as can happen with chemically treated barriers. **2.** Pyro-Kure meets the standards for non-combustibility of the National Building Code and has been approved by the Board of Standards and Appeals of New York City. **3.** Pyro-Kure has a minimum MVT rate for maximum protection against condensation damage to insulation.



All leading insulation manufacturers offer Pyro-Kure-faced insulation under their own brand names. Also available in roll form for local facing. Write for samples and data on various grades. Contact Sisalkraft, 73 Starkey Avenue, Attleboro, Massachusetts.

ST REGIS
SISALKRAFT DIVISION

For more data, circle 175 on inquiry card

ON THE CALENDAR

SEPTEMBER

14-16 New Jersey A.I.A. Regional Conference—Berkeley Carteret Hotel, Asbury Park, N. J.

19-22 46th Annual Meeting Producers' Council—Hotel America, Houston.

25-28 New York A.I.A. Regional Conference—Nevele Hotel, Ellenville, N. Y.

OCTOBER

1-6 50th Anniversary Conference, American Institute of Planners—Shoreham Hotel, Washington, D.C.

2-4 Northwest A.I.A. Regional Conference—Ridpath Motor Hotel, Spokane.

4-8 Florida A.I.A. Regional Conference—Diplomat Hotel, Hollywood-by-the-Sea, Fla.

5-8 California A.I.A. Regional Conference—Vacation Village, Mission Bay Park, San Diego.

6-8 New England A.I.A. Regional Conference—Sheraton-Eastland Motor Hotel, Portland, Maine.

9-12 Architectural Aluminum Manufacturers Association Annual Meeting—Statler-Hilton Hotel, Dallas.

11-14 East Central States A.I.A. Regional Conference—Hammond, Indiana.

12-14 Ohio A.I.A. Regional Conference—Nationwide Inn, Columbus. (Seminars Oct. 10-11.)

18-20 Texas A.I.A. Regional Conference—Rice Hotel, Houston.

19-21 Pennsylvania A.I.A. Regional Conference—Hotel Hershey, Hershey, Pa.

26-28 Illinois A.I.A. Regional Conference—Rock Island, Illinois.

ADDENDUM

The architectural firm of **Kelly & Gruzen,** New York and Newark, announces the admission of six new partners and the change of its name to **Gruzen & Partners, Architecture-Planning-Engineering.** The new partners are **Rolland D. Thompson, Richard P. Rosenthal** and **Peter Samton,** who have been associates in the firm of Kelly & Gruzen; and **Norval C. White, Julian H. Whittlesey** and **William D. Wilson,** all formerly partners in their own firms. The RECORD regrets the incorrect notice on page 56 of the July issue.

Bright idea

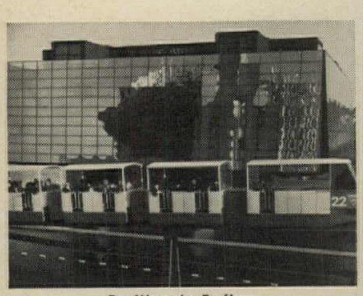
This column shower serves 6 people with one set of plumbing connections! So it cuts installation costs up to 80%. Like all Bradley Group Showers, it saves space, too—serving more people in far less space than ordinary showers. It eliminates double-wall construction and piping in outside walls. And it has its own drain, saving the cost of drains along the perimeter. Made in 2 to 6 person units. Other Bradley Group Showers include Modesty Module®, Multi-Stall, Wall-Saver®, and Panelon types. Bright ideas—space and money-saving ideas from Bradley! See your Bradley representative. And write for latest literature. Bradley Washfountain Co., 9109 Fountain Dr., Menomonee Falls, Wis. 53055.

from Bradley!

BRADLEY

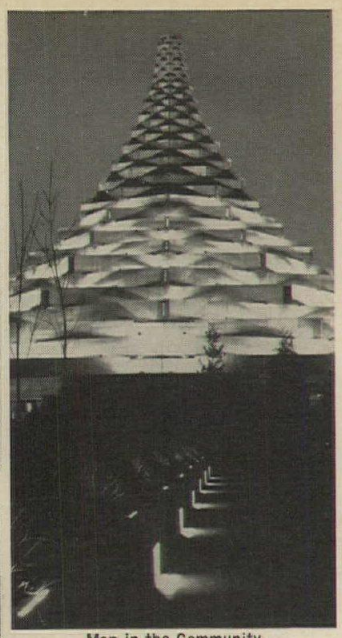
For more data, circle 178 on inquiry card

expo67



Pavillon du Québec

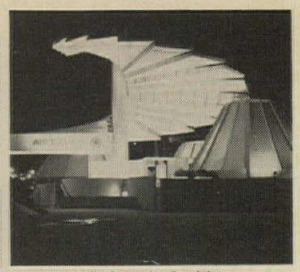
Administration Building



Man in the Community, Man in Health Pavilion

Netherlands Pavilion

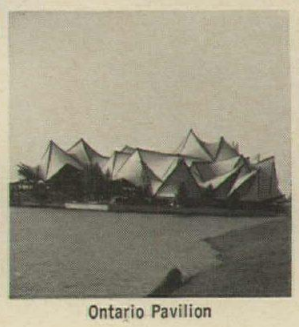
Swiss Pavilion



Air Canada Pavilion

Museum of Fine Arts

Expo Theatre



Ontario Pavilion

Labyrinth Exhibition Building

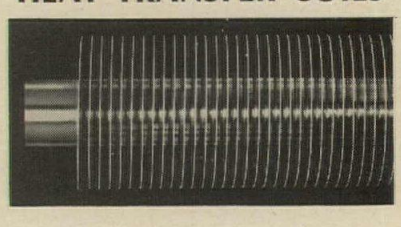
AEROFIN INSTALLED

Visitors linger longer because of Aerofin Heating and Cooling Comfort. This broad spectrum of imaginative architectural design at EXPO 67 specified complete visitor comfort, and that dictated the use of Aerofin Heat Transfer Coils in over 18 different buildings.

Modern smooth-fin design of Aerofin coils deliver ample heat-exchange capacity in compact space—permits the high air velocities without objectionable noise levels or excessive resistance—all vital considerations in these Expo installations.

Aerofin performance data are laboratory and field proved. You can safely specify Aerofin coils at full published ratings.

Smooth-Fin
HEAT TRANSFER COILS



Aerofin-equipped buildings not shown: Belgium Pavilion, Burma Pavilion, United Nations Pavilion, Tunisia Pavilion, Sermons for Science Pavilion, Canadian Pacific-Cominco Pavilion, Dupont Auditorium, Expo Operations Control Centre.

AEROFIN CORPORATION

Lynchburg, Virginia 24505

Aerofin is sold only by manufacturers of fan system apparatus. List on request.

ENGINEERING OFFICES IN PRINCIPAL CITIES

Thinking about siding?

Rough sawn Southern Pine is good thinking...

Exterior walls of Southern Pine give distinction to a home . . . harmonize with surroundings . . . and show beautiful reasons for the growing trend to rough sawn siding. Superb grain takes new stains and finishes . . . looks rich and elegant . . . has proven endurance. Yet, initial and long-term costs are low.

"Hidden Values" are impressive, too—durability, efficient insulation, minimum maintenance.

Specify Southern Pine as produced by the member mills of the Southern Pine Association.

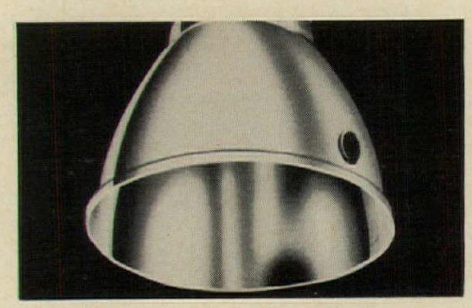
For free booklet, with complete information on grades, patterns, application and finishing, write: SPA, P. O. Box 52468, New Orleans, La. 70150.

For more data, circle 180 on inquiry card

GE engineers discovered how to coat aluminum with glass.

Now we're making light of it in new Filterglow™ industrial luminaires to give you lowest total cost of light.

New GE ALGLAS™ reflector increases lighting effectiveness and reduces maintenance costs. An unbreakable coating of silicate glass is chemically bonded to the aluminum. Reflector resists baked-on dirt and discoloration. Cleaning time doesn't come very often, because...



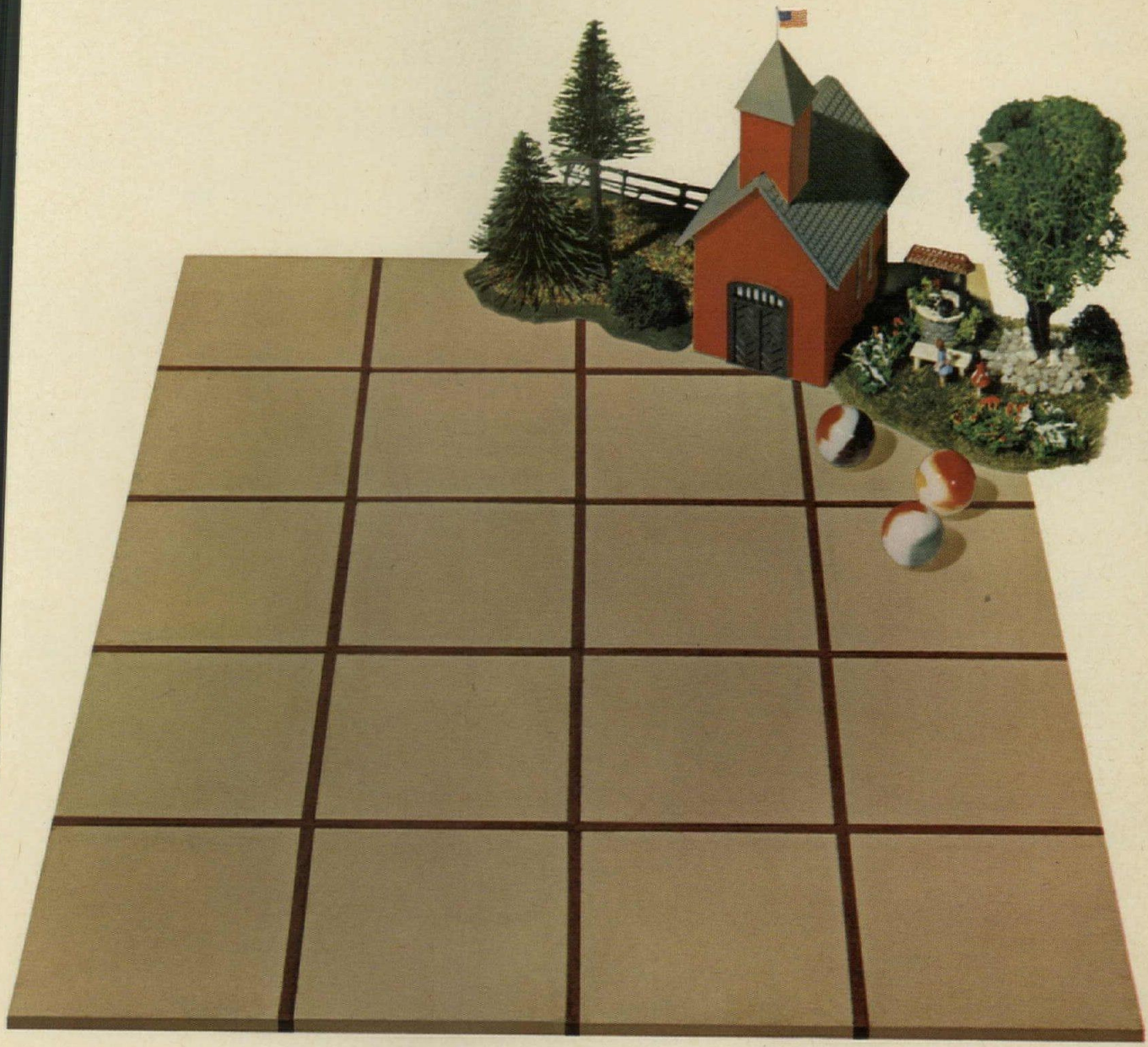
New activated charcoal filter keeps dirt away from lamp, reflector and inside door glass. Even *enclosed* luminaires "breathe" air in and out through natural expansion and contraction of the air inside. But the filtered optical assembly in Filterglow fixtures permits the entrance of *cleaned air only*. The results: an absolute minimum of efficiency-reducing dirt build-up inside, better maintained light output, and less frequent cleaning.

Now—up-lighting for improved down-lighting in a fully enclosed luminaire. About 10 per cent of the light output of Filterglow luminaires is directed upward to reduce contrast and improve visual comfort. You benefit by greater worker efficiency.

Available in single or twin units and many beam spreads for lighting with mercury-vapor, Multi-Vapor™ or Lucalox™ lamps. There's also a complete line of open units. See your GE Sales Engineer or authorized agent for full details. Or, write for Bulletin GEA-8364 to General Electric Company, Section 460-94F , Hendersonville, N.C. 28739.

GENERAL ELECTRIC

For more data, circle 181 on inquiry card



Color grout is here!

HYDROMENT JOINT FILLER—now stronger than ever—gives you ten colors to stir your imagination. There's a color to match, accent or enhance any quarry tile or brick paver you specify. Best of all, Hydroment Joint Filler has a twenty-five year reputation for pleasing thousands of architects, owners and contractors.

Reason: it's the one quarry tile and brick paver grout that is 1. dense, tight, non-shrinking, non-expanding. 2. highly resistant to corrosion and wear, quick and easy to clean.

We have a free data chart for you—"Handy Estimator For Upco Floor And Tile Products." It's yours for the asking.

Colors available: Tile Red, Tan, Terra Cotta, French Gray, Champagne, Brown (shown), Sand Beige, Black, White and Natural.

USM **THE UPCO COMPANY** 4805 Lexington Ave. • Cleveland, O. 44103 / a subsidiary of **United Shoe Machinery**

For more data, circle 182 on inquiry card

This executive office building's steelwork is "painting" itself

Bliss and Laughlin Industries' executive offices photographed about three years after erection.

The exterior steelwork on Bliss and Laughlin Industries' executive office building in Oak Brook, Illinois, will never need painting. It is bare, unpainted USS COR-TEN High-Strength Low-Alloy Steel—the steel that "paints" itself. As it weathers, COR-TEN Steel forms a dense, tight, attractive oxide coating that seals out corrosion. If the coating is scratched, it heals itself.

Project Architect, Mr. Richard Borvansky of Ralph Stoetzel Inc., selected bare USS COR-TEN Steel for the columns, fascia, and gravel stop. The fascia is separated by a ¾-inch gap from the soffit to prevent staining. As the bare steel weathers in this semi-industrial atmosphere, it is taking on a rich color and texture that only nature can provide.

Bare USS COR-TEN Steel is a natural for maintenance-free good looks, and for structural use. COR-TEN members can be lighter, more graceful, because it is about 40% stronger than structural carbon steel. It is available in a full range of structural shapes, plates, bars, and sheets. For full details on the suggested use of COR-TEN Steel in architectural applications, call our nearest sales office and ask for a USS Construction Marketing Representative. Or write U. S. Steel, Room 4714, 525 William Penn Place, Pittsburgh, Pa. 15230.

USS and COR-TEN are registered trademarks.

USS **United States Steel: where the big idea is innovation**

Facings and Construction: Aluminum Co. of Canada. Architect: Karl Schwanzer, Vienna.

How many sandwiches can you count in this Expo 67 pavilion?

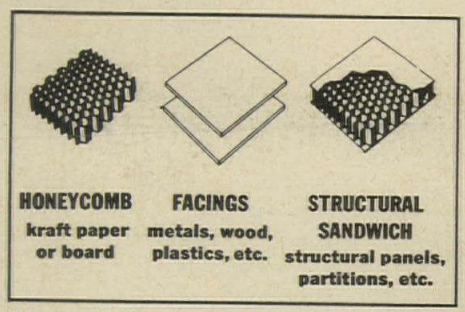
There are 264 triangular aluminum faced panels in the Austrian Pavilion.

And every one is fabricated with Union Camp Honeycomb structural sandwich core.

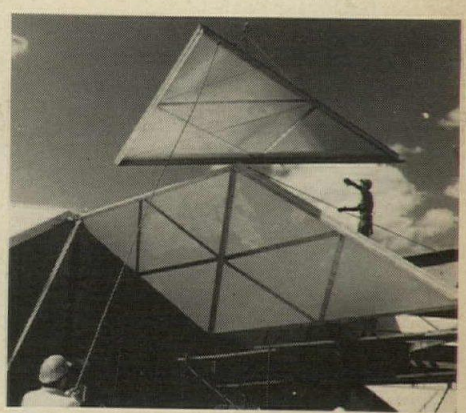
Why Union Camp Honeycomb?

Most of the Expo 67 pavilions are built on newly filled land, and beefing up a foundation is expensive. But structural sandwich panels made with honeycomb keep weight to a minimum while maintaining maximum *strength.* In fact, honeycomb has the most favorable strength/weight ratio of any structural core material made. Yet honeycomb core density is only 1½ lbs. per cubic inch.

Modular honeycomb panels require less time and labor than conventional construction. Floor, wall and roof sections are lighter and easier to handle. So if your building problems involve strength, weight or economy, maybe you should get to the core of the matter, too. With Union Camp Honeycomb.



Honeycomb, as manufactured by Union Camp, is a resin-impregnated kraft fibre structure fabricated as to form nested hexagonal shaped cells. This remarkable lightweight material is similar in appearance and principle to the honeycomb of bees—yet is as modern as the space-age. Honeycomb is manufactured in various grades and sizes and can be designed to meet the requirements of a variety of design problems. Honeycomb is especially effective when panels combining light weight and high structural strength are required.



Austrian pavilion's large modular structural units are made up of four separate panels. Each panel is filled with Union Camp kraft Honeycomb cores. These give facings continuous support—eliminate need for rivets or spot welds that have to be finished off before painting.

HONEYCOMB CORES

Union Camp

Union Camp Corporation, 233 Broadway, New York, New York 10007

For more data, circle 183 on inquiry card

Expressionism in architecture

MODERN ARCHITECTURE AND EXPRESSIONISM. By Dennis Sharp. George Braziller, One Park Avenue, N.Y. 10016. 204 pp., illus., $15.00.

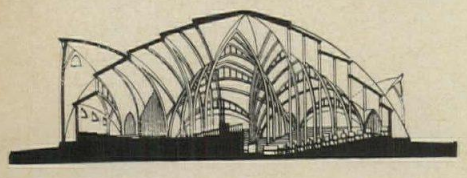
Modern architecture today, in the words of Mies van der Rohe, is a kind of Yin-Yang affair, a duality of conflicting tendencies: "One has a structural basis," he has said, "and you might call it the more objective. The other has a plastic basis, which you could call the emotional."

Mies, of course, is the personification and conscience of the former approach, and most architectural critics (Giedion, Pevsner), in the name of technological modernity and social responsibility, gravitate around his pole. Architecture, as they see it, looks, Januslike, toward reason and light, and blinks behind in the cryptic darkness of unreason.

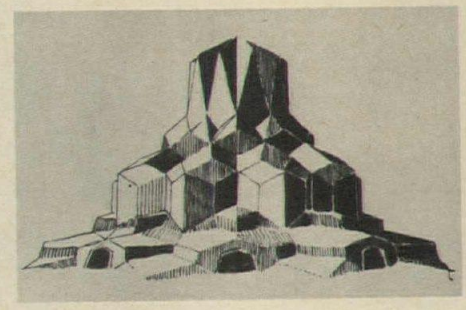
Dennis Sharp, lecturer at the University of Manchester and editor-elect of the prestigious, mod British architectural journal, *Arena*, has decided that anti-rationalism's most astounding modern manifestation, the German Expressionism of the World War I era, has been wantonly snubbed from source lists of modern architecture by critics busily toasting the functionalist cause. His *Modern Architecture and Expressionism* is intended as a vindication and corrective.

Expressionism in architecture, as defined by Mr. Sharp, is the external manifestation of the dream world, the dark element, the "Dionysian" psyche. He does not allow the word to collapse into its most common usage—that of a term undistinguishable from "self-expression" or "art." Expressionism in Sharp's book becomes the name of a rigorously defined historical period, a phenomenon which erupted both as a premonition and product of World War I.

"It was in Germany's atmosphere of postwar disintegration and despair that a search for a deeper and more personal expression in the arts took place," explains Sharp. A temperamentally anxious, national psyche found revolutionary expression and cataclysmic release in all the arts—the painting of Beckmann, Kokoschka, Munche and the theater of Brecht, inheriting the ill-ease and hypersensitivity of Art Nouveau while drawing inspiration from such Nordic writers as Nietsche and Strindberg.

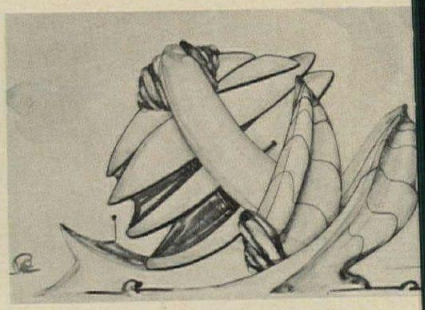


Bartning: the Sternkirche, 1921



Luckhardt: House of Culture, 1920

Architecture partook of the general mood, though the Expressionist attitude in architecture never coalesced into a school and is only so labeled retrospectively. (Indeed, the "Expressionist" architects, who conceived in dynamic, fluid forms, would presumably have shunned such self-definition, rejecting classification and other rigid patterns of rational thought.) It was, too, above all a revolutionary attitude, born of a special, paradoxical fusion of intense suprarational (even mystical) subjectivity on the one hand, and of a radical, visionary social concern on the other. Rejecting tradition wholesale, these architects (who numbered Bruno Taut, Hans Poelzig, Mendelsohn, Rudolph Steiner, the little-known Hermann Finsterlin, and even youthful Mies himself) were all excited by the opportunities to create yet-to-be-imagined forms. Their work ranged from "free exploration of the possibilities of plastic expression" to occultist research into the symbolic and spiritual significance of form. This antirational approach to design seemed to spark an intuitively deduced, visionary, "Utopian" architecture. Ideals were deeply sought in the aftermath of war, and German architecture was to be expressive not only of the time, but also of the hopes, political and social, of a nation reshaping and recreating its society.



Finsterlin: A technical high school, 1924

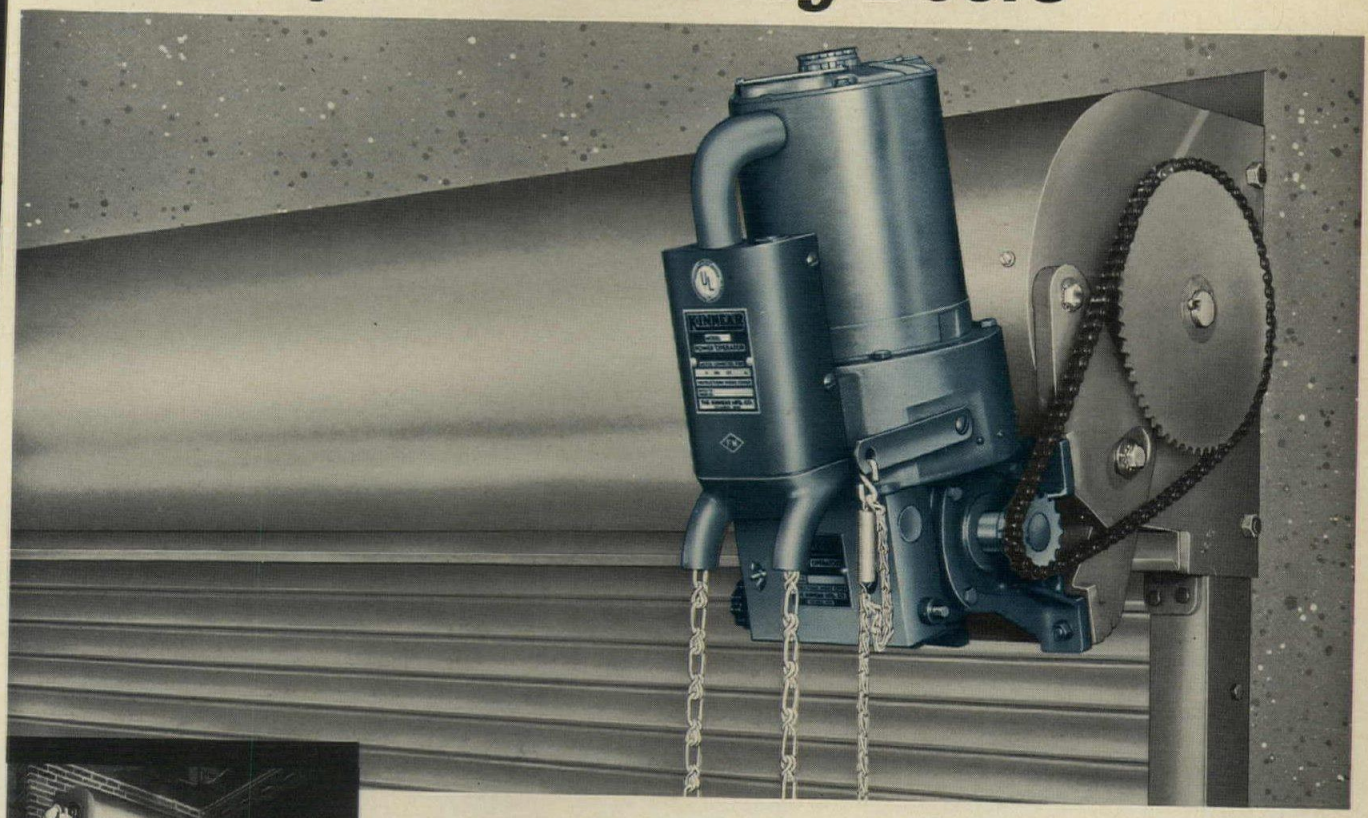
The strength of a personal, Utop architecture was also its fatal weakne it was visionary, but also fantastic. T trouble with Finsterlin's plasticine "for plays" and the Luckhardt brothers' pap projects was that they ignored t market place. The Utopian dreams we irrelevant to the day's building terr A lack of building opportunity—of "r clients" with real money—merely p longed the dreaming. So Expressioni succumbed to its competitor, a fitter a mal, the rationalist functionalism of t day, "Neue Sachlichkeit" (the New O jectivity) whose collectivist and mate alist genes enabled it to thrive on Ge many's improving financial and mater conditions. And Mies, by now "purifie by de Stijl, his early plastic bent r aligned, was already articulating th "skin and bones" vocabulary and pristi logic of engineered geometry. Germa Expressionist architecture can be said have been over by 1924.

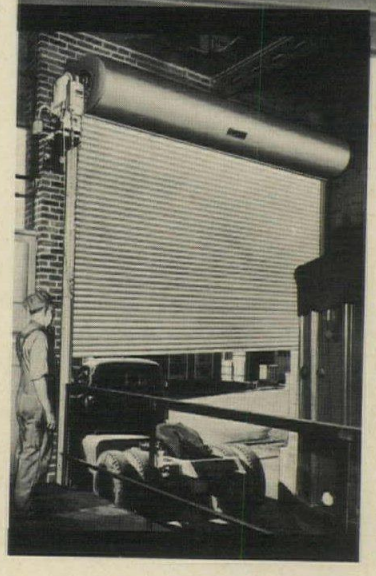
Dennis Sharp's book is an effort provide the newly personal and high plastic tendencies emerging in archite ture since the mid-fifties and the Ro champ crisis (or pseudo-crisis) with respectable genealogy, by polishing u and mounting a tarnished and abuse esthetic like an ancestral coat of arm The work may be considered as part o the familiar cyclical rhythm in art tast of the falling out and phasing in of eve present undercurrents, witnessed mo recently in Neo-Art Nouveau and its ac companying spate of exhibitions and re appraisals. This particular partisanshi gains validity, though, since the Miesia stance (that of Pevsner) in the function alism vs. antirationalism polarity is now adays suspect. In an age where the elec

continued on page 33

KINNEAR

Motor Operated Rolling Doors





features the finest power operator

Specify — power operator shall be designed especially for rolling doors and manufactured by the door manufacturer.

Today's most efficient — MONEY-SAVING — door package! A door that has time-proven its operating advantages combined with the "last word" in an electrical operating device. **Two matched, coordinated units designed, built and backed by one company** recognized for its reliability and door specialization for over 70 years. That's what you're assured when you specify KINNEAR for your service door requirements. But, there's still more!

Among the operator features that make a Kinnear Door your most economical buy are:

- Automatic Clutch Smooth Shock-free operation — eliminates door or motor damage in case of doorway obstruction or motor overload.
- Emergency manual operation in event of power failure.
- Motor easily removed for repair or replacement without affecting emergency manual operation.
- High efficiency gearing — disc type brake — heavy duty motor.
- Flexibility of mounting — bracket or wall.

This, of course, doesn't include all the "money-saving" features embodied in the door itself. In addition to more serviceability per dollar invested, a Kinnear Door is "REGISTERED" for life extension and also further protected by Kinnear's nation-wide service organization. Be sure to have Kinnear's details when you specify doors.

Also manufacturers of Rolling Fire Doors and Shutters, Metal Rolling Grilles, Rolling Counter Shutters and Wood or Metal Overhead Type Doors.

U/L Listed—

Both the Akbar Fire Door and the operator — separately and in combination — are tested and listed by the Underwriters' Laboratories and available for locations calling for an approved automatic closure in the event of fire. The operator is also U/L listed for application on rolling service doors.

KINNEAR CORPORATION & *SUBSIDIARIES*
1876-80 Fields Ave., Columbus, Ohio 43216
Factories:
Columbus, Ohio 43216 • San Francisco, Calif. 94124
Centralia, Wash. 98531 • Toronto, Ont., Canada

Offices & Representatives in All Principal Cities
—listed in Yellow Pages under "Doors." Also see Sweet's!

KINNEAR® ROLLING DOORS

Saving Ways in Doorways Since 1895

For more data, circle 184 on inquiry card

continued from page 328

tronic brain can rationalize the most implausible design; where the impersonal client (in so far as the collectivity is recognized to be the client) is no longer believed to require impersonal architecture; and where industrial production does not necessarily mean rectilinear components, Pevsner's abuse of plastic architecture seems a bit dowdy and prim. Mr. Sharp can be forgiven, in that light, for being a modern architectural historian—that is, a polemicist. Any resemblance between the plasticine "form plays" or the "wild paper fantasies" reproduced in this important volume, and some of today's heady forms, is purely intentional. —*Anne L. Buerger*

José Luis Sert

JOSÉ LUIS SERT, *Architecture, City Planning, Urban Design. By Knud Bastlund. Frederick A. Praeger, 111 Fourth Avenue, New York, N.Y. 10003. 244 pp., illus. $20.00.*

The renowned career of José Luis Sert is recorded in this retrospective of his projects in architecture, city planning and urban design. The author has assemb photographs and drawings of Sert's w from 1927 through 1965 in a straig forward monograph. A friendship w Sert provided background for the thor's commentary, which includes ma excerpts from Sert's lectures.

An introduction by S. Giedion c cusses Sert's role as a member of second generation of modern architec the group which became increasin concerned with the problems of to planning, and the influences on Se work which have produced an archit ture rooted in Mediterranean culture a inseparable from art. Sert's artistic ser tivity, Giedion notes, "has enabled h to put together simple repetitive e ments—workers' houses in the plan Chimbote or apartments in the Harva married-student quarters—in such a w that he achieves a richly varied whc without ever falling into formalistic c namentation." Giedion goes on to sa "Some people find the rough unpaint concrete surfaces of Sert's architectu hard to take. However, as such care h always been taken to integrate the arch tecture with its immediate environme it can be expected that the general pu lic will gradually come to appreciate high quality."

The text is concise, and the phot and drawings are well reproduced.

BOOKS RECEIVED

AND ON THE EIGHTH DAY. *By Fred Bair and Ric ard Hedman. American Society for Planning Officia 1313 East 60 Street, Chicago, Illinois 60637. 64 p illus. Paperbound, $2.50.*

HOUSES OF BOSTON'S BACK BAY. *An Architectu History, 1840-1917. The Belknap Press of Harvard Ur versity Press, Cambridge, Mass. 494 pp., illus. $12.5*

FRANK LLOYD WRIGHT, VISION AND LEGACY. *By t Committee for Architectural Heritage, University Illinois. The Prairie School Press, 117 Fir Street, Pa Forest, Ill. 32 pp., illus. Paperbound, $2.50.*

THE ARCHITECTURAL HERITAGE OF NEWPOR RHODE ISLAND 1640-1915. *By Antoinette F. Downi and Vincent J. Scully, Jr. Clarkson N. Potter, Inc., East 67 Street, New York, N.Y. 10021. 526 pp., illu $22.50.*

THE CORPORATION AND THE ARTS. *By Richa Eells. The Macmillan Company, 866 Third Avenu New York, N.Y. 10022. 365 pp., illus. $7.95.*

ENVIRONMENT FOR MAN, The Next Fifty Year *Edited by William R. Ewald, Jr. The Indiana Unive sity Press, Bloomington, Indiana. 308 pp., illus. $6.9*

THE AUSTRALIAN PUB. *By J. M. Freeland. Cambridg University Press, 32 East 57 Street, New York, N.Y 10022. 229 pp., illus. $13.50.*

COLOUR AND ARCHITECTURE. *By Konrad Gatz an Gerhard Achterberg. Architectural Book Publishin Co., Inc., 151 East Fiftieth Street, New York, N.Y 10022. 279 pp., illus. $22.50.*

BASIC STRUCTURAL DESIGN. *By Kurt H. Gerstle. Mc Graw-Hill Book Company, 330 West 42 Street, Ne York, N.Y. 10036. 405 pp., illus. $12.00.*

STRATEGY FOR LABOR, *A Radical Proposal. By Andr Gorz. Beacon Press, 25 Beacon Street, Boston 8, Mass 199 pp., illus. $5.95.*

WATER COLOR PAINTING STEP-BY-STEP. *By Arthu L. Guptill. Watson-Guptill Publications, 165 West 4 Street, New York, N.Y. 10036. 271 pp., illus. $12.50.*

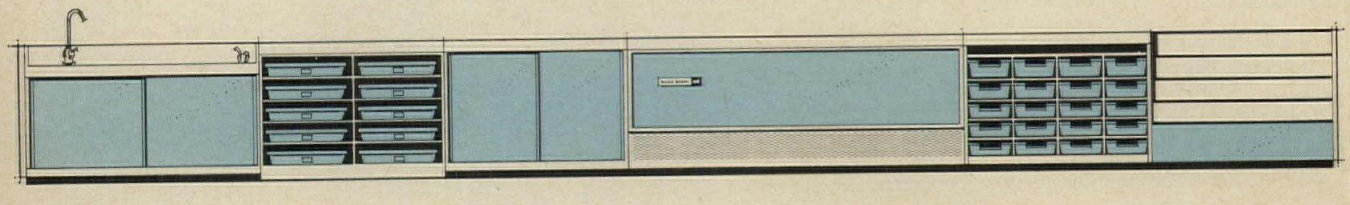
continued on page 33

UNIT VENTILATORS

Circular, trapezoidal, hexagonal schools. We give them the air they need.

There's no end to school design possibilities with AAF/Herman Nelson unit ventilators doing the heating, ventilating and air conditioning. ☐ AAF/Herman Nelson unit ventilators deliver fresh, clean air to schools with low window sills, schools without windows at all, to circular schools, cluster schools and schools with flexible floor plans. Whatever shape today's schools take, we make the ideal thermal environment to fit. ☐ Chances are, we've already got the classroom heating, cooling and ventilating system for the school you've yet to design. ☐ Or, if a school air problem has you cornered now, your Herman Nelson representative could well be a great help. In any event, call or write American Air Filter Company, Inc., 215 Central Avenue, Louisville, Kentucky 40208. By the way, Herman Nelson know-how and products are also available in Canada.

AAF **Herman Nelson**
SCHOOL PRODUCTS DIVISION



For more data, circle 187 on inquiry card

continued from page 330

OBJECTIVE DRAWING TECHNIQUES: *New Approaches to Perspective and Intuitive Space. By Calvin Burnett. Reinhold Publishing Corporation, 430 Park Avenue, New York, N.Y. 10022. 224 pp., illus. $12.00.*

DRAWING AND PAINTING THE CITY. *By Mario Cooper. Reinhold Publishing Corporation, 430 Park Avenue, New York, N.Y. 10022. 127 pp., illus. $9.50.*

C E COST GUIDE 1967. *By Coert Engelsman. Coert Engelsman Associates, Inc., P.O. Box 12, Atlantic Highlands, N.J. 07716. 476 pp., illus. $5.00.*

TOWN DESIGN. *By Frederick Gibberd. Frederick A. Praeger, 111 Fourth Avenue, New York, N.Y. 10003. 372 pp., illus. $22.50.*

UT PICTURA POESIS: THE HUMANISTIC THEORY OF PAINTING. *By Rensselaer W. Lee. W. W. Norton & Company, Inc., 55 Fifth Avenue, New York, N.Y. 10003. 79 pp., illus. Paperbound, $1.85.*

THE URGENT FUTURE. *By Albert Mayer. McGraw-Hill Book Company, 330 West 42 Street, New York, N.Y. 10036. 184 pp., illus. $16.50.*

ICES SYSTEM DESIGN. *By Daniel Roos. The M.I.T. Press, 50 Ames Street, Cambridge, Mass. 308 pp., illus. $10.00.*

STRUCTURAL DESIGN IN ARCHITECTURE. *By Mario Salvadori and Matthys Levy. Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632. 457 pp., illus. $16.65.*

MODERN AMERICAN GARDENS DESIGNED BY JAMES ROSE. *By Marc Snow. Reinhold Publishing Corporation, 430 Park Avenue, New York, N.Y. 10022. 224 pp., illus. $16.50.*

URBAN HOUSING MARKET ANALYSIS. *By the U.S. Dept. of Housing and Urban Development. Consumer Relations, Dept. of Housing and Urban Development, Room 1129, Shoreham Building, Washington, D.C. 20410. 100 pp. Paperbound, $.50.*

CHANGING YOUR ADDRESS?

If you're moving, please let us know five weeks before changing your address. Use form below for new address and attach present mailing label in space provided.

ATTACH
PRESENT MAILING LABEL
HERE

NAME

STREET

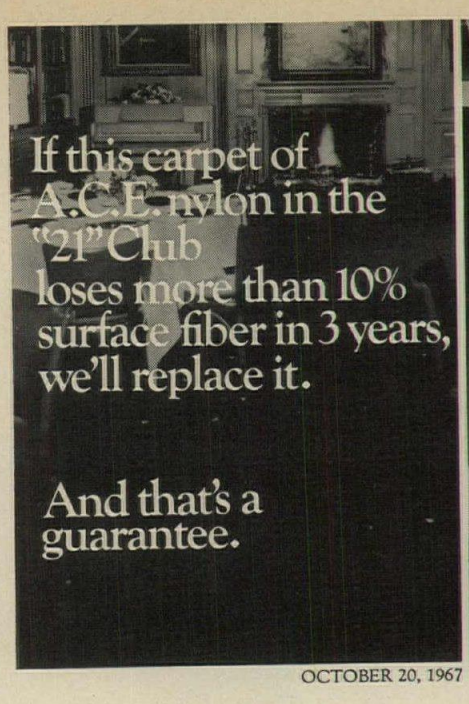
CITY STATE ZIP

FIRM NAME

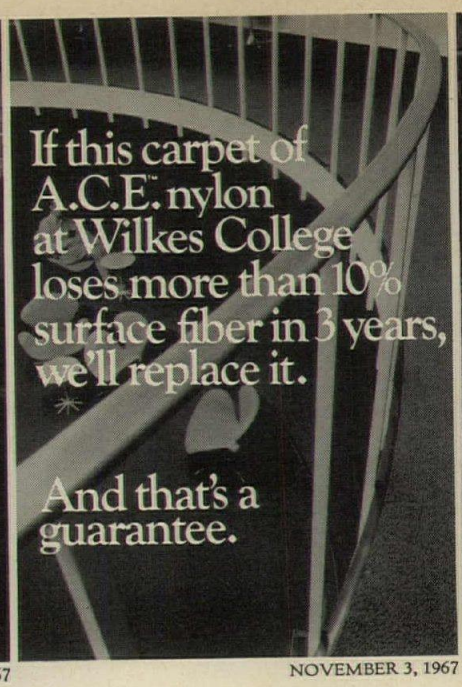
TYPE OF FIRM

TITLE OR OCCUPATION

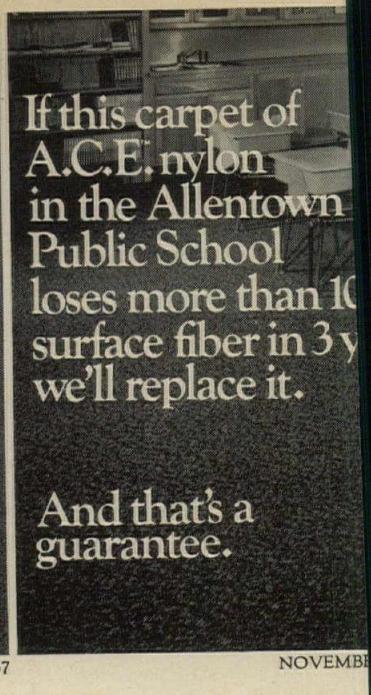
Mail to:
Fulfillment Manager
Architectural Record
P.O. Box 430
Hightstown, N. J. 08520



OCTOBER 20, 1967

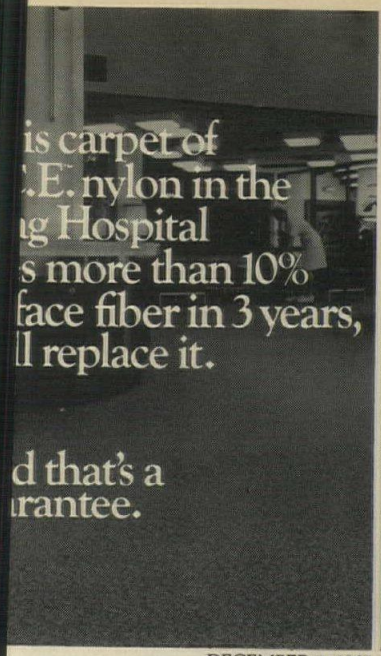


NOVEMBER 3, 1967

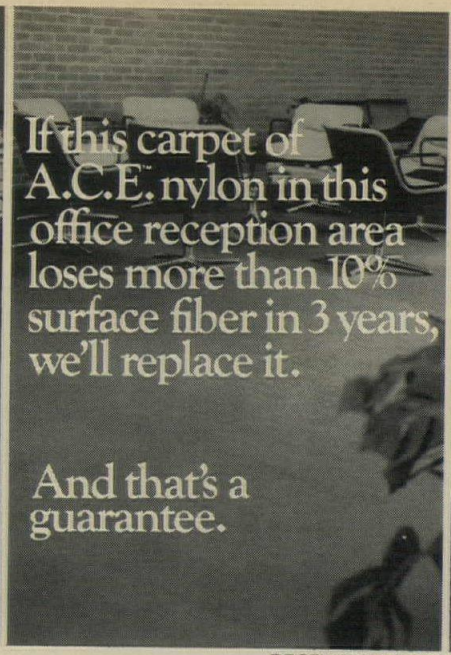


NOVEMB

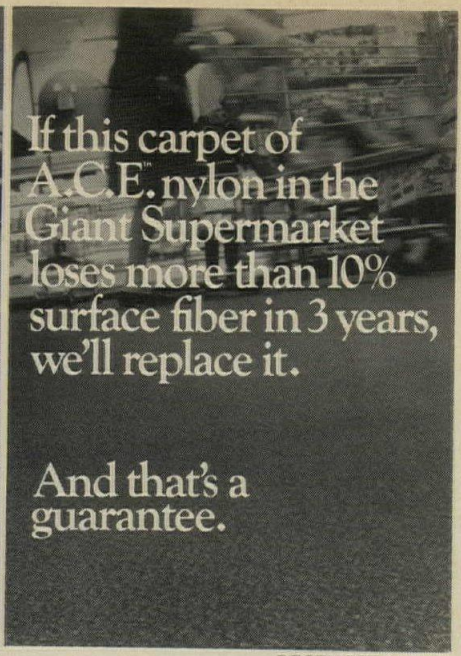
This is all the Time we've take



DECEMBER 1, 1967



DECEMBER 15, 1967



DECEMBER 29, 1967

You're looking at just 6 of the 12 full-color ads that will tell the right ple the right thing: Allied Chemical is the only fiber producer to give a ar guarantee... any carpet of A.C.E.™ nylon is guaranteed against as little 0% pile surface loss. This guarantee covers any commercial installation (all 12 will illustrate actual in-operation application like restaurants, schools, clubs, rmarkets—every, and all, high-traffic areas). We intend to hit the people (your nt) who should know about our A.C.E. 3-year guarantee program. There is no r program like this anywhere.

And we're taking the time to tell you beforehand because we anticipate on from our program. It's that unique; it's that important.

We think you'll want to take the time to send for more information ut ALLIED CHEMICAL A.C.E. PROGRAM. It'll be that important to you.

Carpet is guaranteed by Fibers Division, Allied nical Corporation, against excessive surface wear for years when properly installed and maintained. The antee will cover surface wear to the extent of loss re than 10% (per square yard) of pile fiber. e carpet fails to perform as guaranteed, it e replaced at our expense upon request of customer. The guarantee does not cover , burns, pulls, cuts or damage due to im- er cleaning agents or methods."

A.C.E. ALLIED CHEMICAL ENGINEERED NYLON

™ A.C.C.

To find out more about A.C.E., the specially engineered nylon for commercial carpets, send this coupon to Allied Chemical Corporation, Dept. A.C.E., No. 1 Times Square, N.Y., N.Y. 10036.

Allied Chemical

Name_____

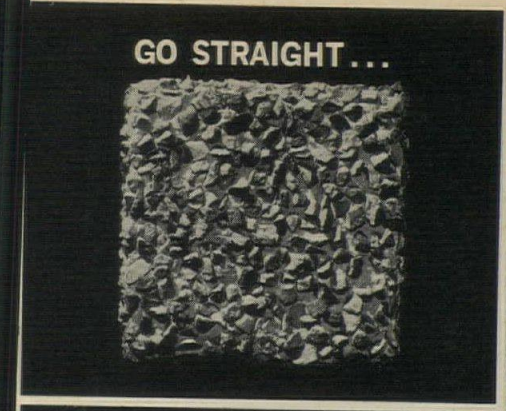
Firm_____

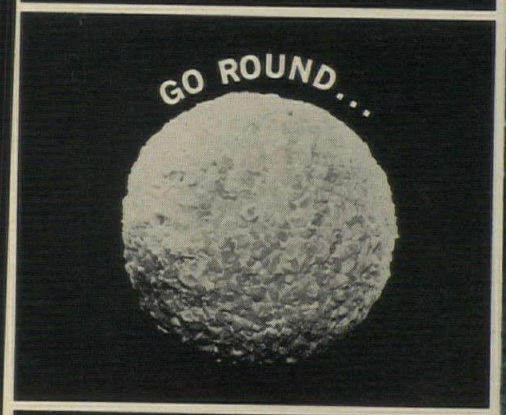
Address_____

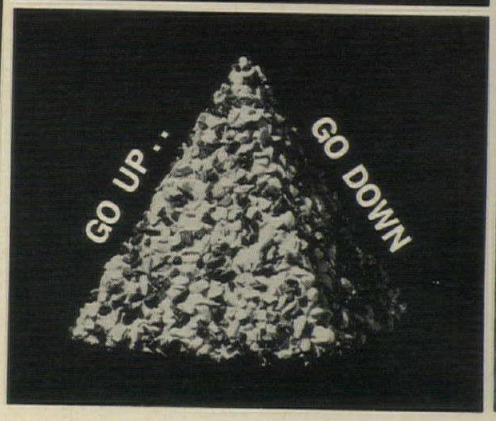
Occupation_____

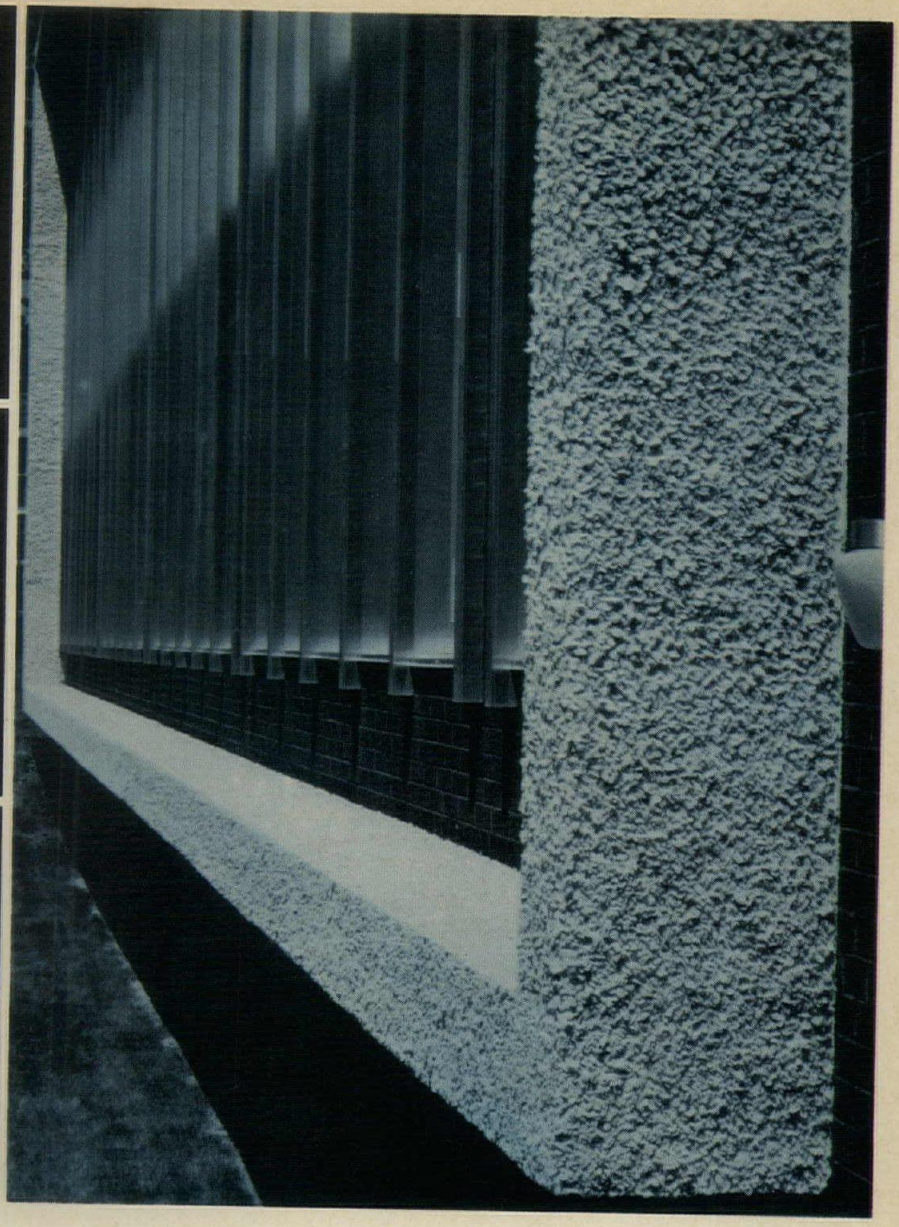
Type of Installation_____

For more data, circle 189 on inquiry card









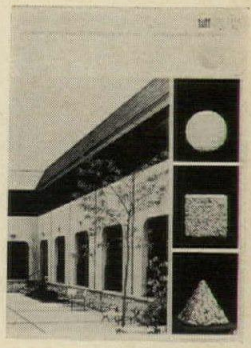
...with Fuller Tuff-Lite® Matrix the design direction is entirely up to you.

Choose Fuller Tuff-Lite® the epoxy-based Wall Matrix specifically formulated for exposed aggregate construction. It's your key to complete freedom of design creativity in new construction or remodeling.

It is the one matrix that can be used for interiors, or exteriors, on flat surfaces (vertical or horizontal), around corners, on concrete, brick, wood or any dry clean substrate.

Fuller Tuff-Lite® is an unusually strong, exceptionally lightweight material designed to be used as a base in exposed aggregate construction... for walls, columns, dimensional design areas. Allows greater exposure of aggregate. Eliminates costly erection. Tuff-Lite® is available in any color. And the color you specify remains uniform for the complete job. Will blend or contrast with any aggregate used. Tuff-Lite® retains its color —and superior bonding strength—through wind, snow, frost and all temperature changes. Will not pit, spall or peel. Will not shrink, chip, crack or craze.

Just a $\frac{3}{8}$" layer is all that's necessary. Can be applied and seeded immediately. Or can be used in making pre-formed, lightweight sections off the job. Cures in less than 24 hours.



Refer to Sweet's Architectural Catalog File 130/Fu or Write for FREE Brochure.

Choose Fuller—a complete line of adhesives for the Construction Industry

Leader in Adhesive Technology

H. B. FULLER COMPANY

1150 Eustis St., St. Paul, Minn. 55108, Dept. 25842

For more data, circle 192 on inquiry card

WHY ARCHITECTS AND ENGINEERS FIND ARCHITECTURAL RECORD 'MOST HELPFUL' IN THEIR WORK

Because the Record continually grows with the profession—improving its 'helpfulness' whenever possible—such as the redesign of the magazine in 1966, the Architectural Business feature introduced last January, and the Architectural Engineering Special Report, unveiled in the July issue.

Because the Record has the largest editorial staff in the architectural field with 15 full-time editors.

Because Record's staff brings to its work over 250 years' background in architecture, journalism, engineering, teaching and the graphic arts.

Because Architectural Record editors take a no-nonsense approach to the profession—stressing 100 per cent editorial concentration on architects and engineers—with every page reflecting their working information needs and interests.

Because the Record staff is imaginative—creating a unique editorial climate that attracts the greatest architectural and engineering authorities of our time.

Because the Record offers architects and engineers the most editorial pages in the field—with most on nonresidential and residential buildings . . . the most photographs, drawings, four-color, the work of the most architects.

These are just some of the reasons why, in three recent independently sponsored readership studies, the margin of preference for Architectural Record widened to over 50 per cent. Here are the results of these studies, in response to the question, "Which architectural magazine do you find most helpful in your work?"

	Wide-Lite Corp.	"Automatic" Sprinkler	Medusa Portland Cement Co.
Record	107	117	73
PA	61	78	46
AF	31	35	25
A&E News	13	14	7
AIA Journal	9	19	18

Why you will find Architectural Record 'most helpful' in your sales efforts.

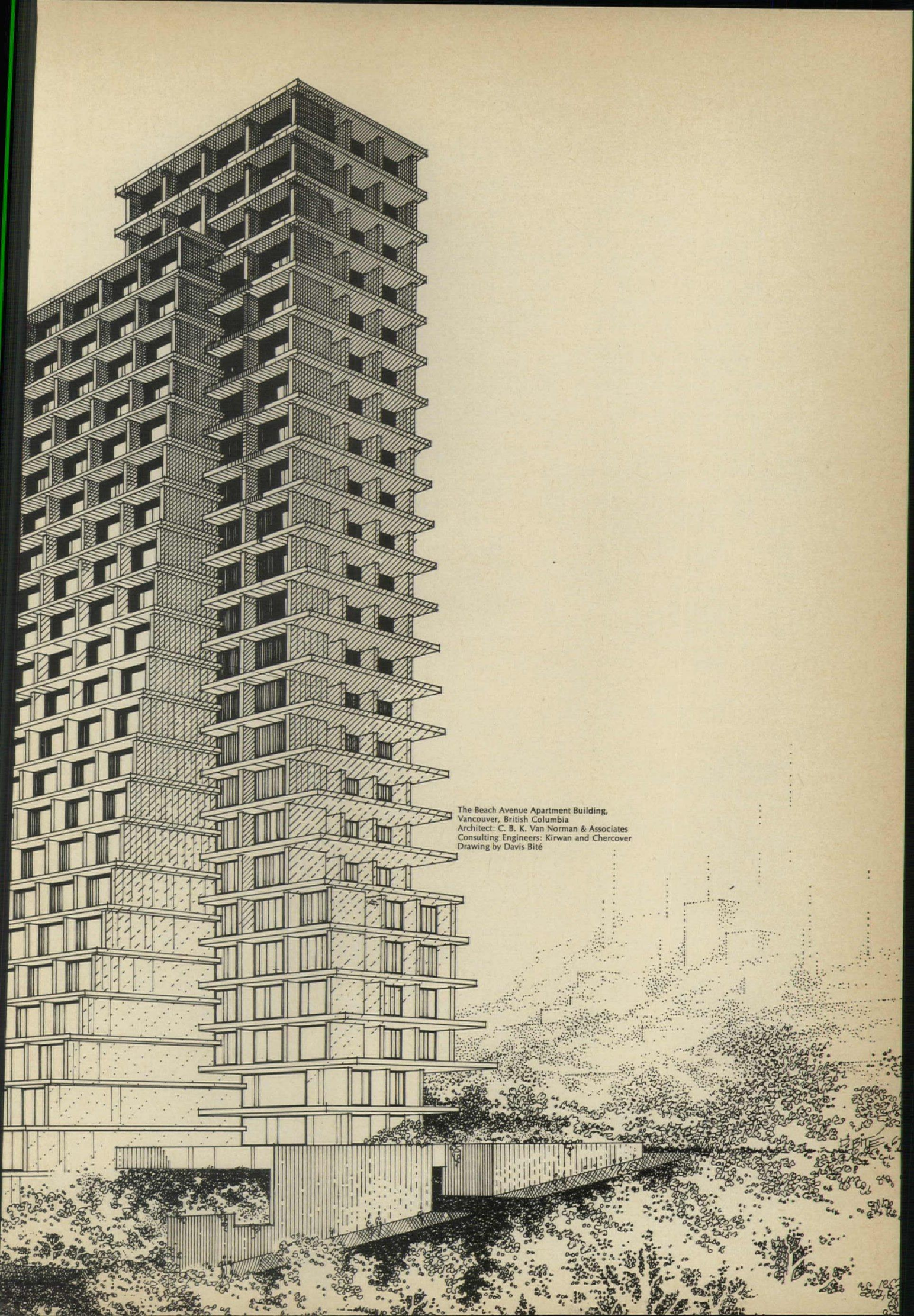
Because architects and engineers find the Record most helpful in their work, they spend more time with the Record, giving you a better climate to tell your advertising story. And they are the **active** architects and engineers. Over 90 percent of all architect-designed nonresidential and large residential building is in the hands of Record subscribers.

Sell your building products to architects and engineers in the magazine they prefer . . . more building product manufacturers do.

ARCHITECTURAL RECORD

330 WEST 42ND STREET
NEW YORK, N.Y. 10036

A McGRAW-HILL PUBLICATION



The Beach Avenue Apartment Building,
Vancouver, British Columbia
Architect: C. B. K. Van Norman & Associates
Consulting Engineers: Kirwan and Chercover
Drawing by Davis Bité

ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1967 Sweet's Catalog File as follows.

A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)

RCHITECTURAL RECORD

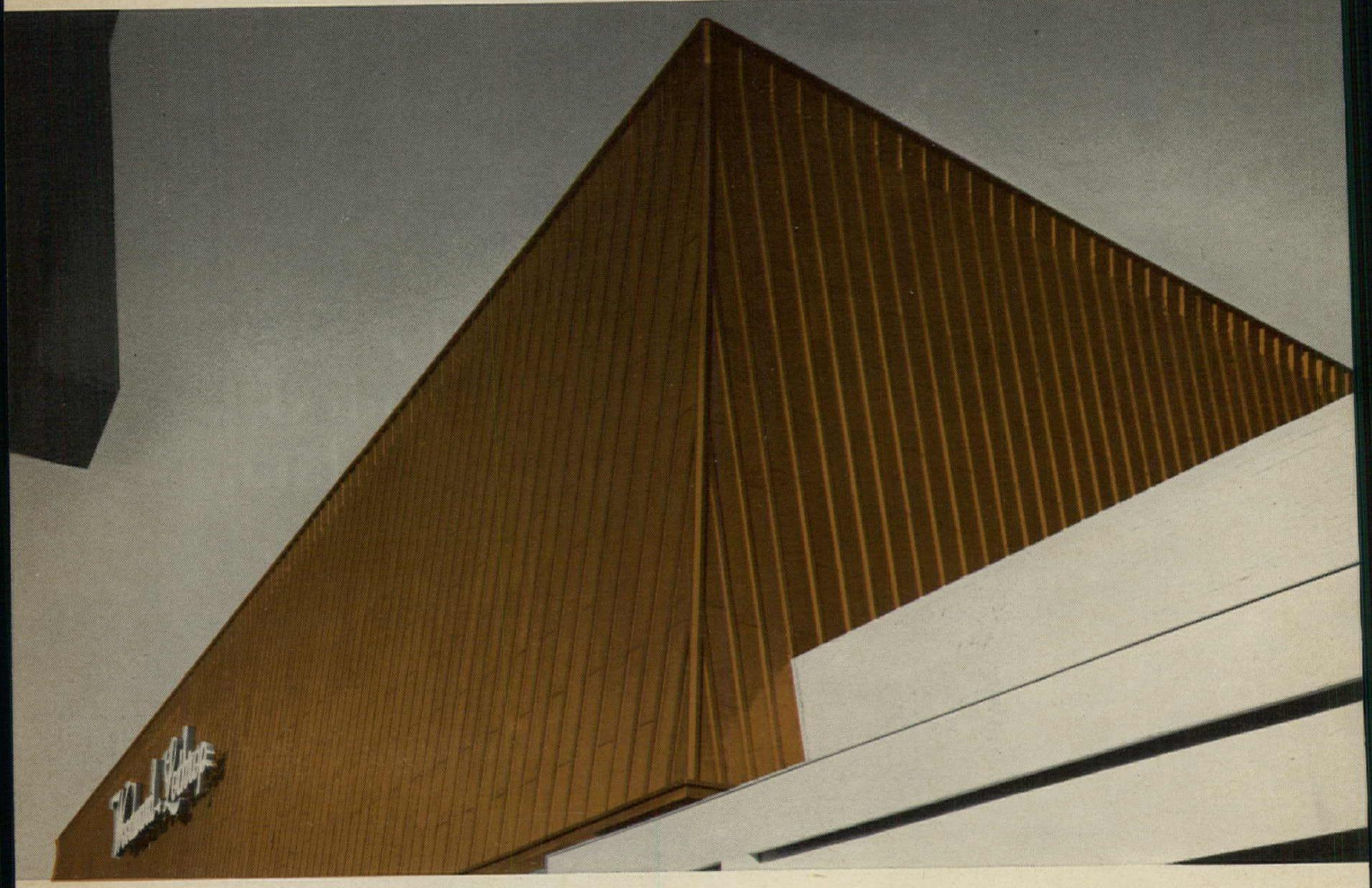
Graw-Hill, Inc., 330 West 42nd Street,
w York, New York 10036
dvertising Sales Mgr.: James E. Boddorf (212) 971-2838
Production Mgr.: Joseph R. Wunk (212) 971-2793
Promotion Mgr.: Sam H. Patterson, Jr. (212) 971-2858

istrict Offices:

lanta 30309 — Edward G. Graves, 1375 Peachtree St., N.E., (404) 875-0523
oston 02116 — Ted Roscoe, 607 Boylston St., (617) 262-1160
hicago 60611 — Robert T. Franden, James A. Anderson, Tom Brown, 645 N. Michigan Ave., (312) 664-5800
leveland 44113 — Louis F. Kutscher, 55 Public Square, (216) 781-7000
allas 75201 — Robert F. Chapala, 1800 Republic National Bank Tower, (214) 747-9721
enver 80202 — Edward C. Weil, 1700 Broadway, (303) 255-5483
etroit 48226 — Richard W. Pohl, 856 Penobscot Bldg., (313) 962-1793
os Angeles 90017 — Robert L. Clark, 1125 W. Sixth St., (213) 482-5450
lew York 10036 — Donald T. Lock, Ted Roscoe, John S. Renouard 500 Fifth Ave. (212) 971-3583
hiladelphia 19103 — Robert G. Kliesch, James D. Richardson, 6 Penn Center Plaza, (215) 568-6161
ittsburgh 15222 — Bradley K. Jones, 4 Gateway Center, (412) 391-1314
t. Louis 63105 — Richard Grater, 7751 Carondelet Ave., (314) 725-7285
an Francisco 94111 — Wayne C. Carter, 255 California St., (415) 362-4600

When you want to be impressive without added cost

REVERE COPPER

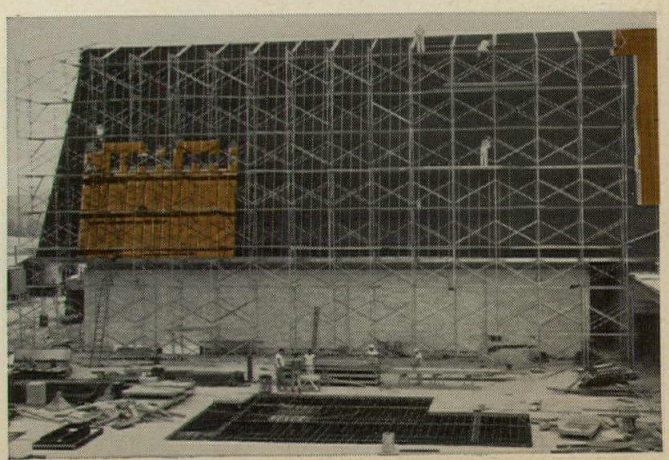


In conceiving the design for the new Woodward & Lothrop Department Store, part of the Landmark Shopping Center, Alexandria, Virginia, the architectural and engineering firm wanted a structure that would dominate . . . a shape that would shout, "Big!" without being blatant. The result was this unique, windowless structure, the only glass being at the two entrances.

Then, after the big shape, what material with which to cover it? Revere Copper, 70,000 lbs. of 20 oz. cold rolled, was selected to cover the facade and roof, using batten seam construction. Other materials were rejected because they did not have the right texture to give the desired effect. In addition, copper is one of the natural materials, with character, that eventually will wear a natural patina.

Also, cost studies revealed copper to be no more expensive than a good masonry wall, and much more effective from a design standpoint. Add to this the versatility and the long life expectancy of copper and you have the reasons why architects who dare, DESIGN WITH COPPER IN MIND . . . Revere Copper, oldest name in the business.

Architects & Engineers—ABBOTT, MERKT & COMPANY; *General Cont's.*—HUMPHREYS & HARDING, Inc., N. Y. & Washington, D.C.; *Sheet Metal Cont.*—THE MATHY COMPANY, Fairfax, Va.; *Distributor*—YORK CORRUGATING COMPANY, Washington, D.C.



REVERE

COPPER AND BRASS INCORPORATED
Founded by Paul Revere in 1801
EXECUTIVE OFFICES:
230 Park Avenue, New York, N. Y. 10017

FIRST AND FINEST IN COPPER AND BRASS—FULLY INTEGRATED IN ALUMINUM