

KNIGHTS OF COLUMBUS BUILDING BY KEVIN ROCHE JOHN DINKELOO AND ASSOCS.  
THE NEW A.I.A. HEADQUARTERS BY TAC  
ARCHITECTURAL INTERIORS: SIX OUTSTANDING NEW DESIGNS  
BUILDING TYPES STUDY: AIRPORTS  
FULL CONTENTS ON PAGES 4 AND 5

# ARCHITECTURAL RECORD

AUGUST 1970 **8** A MCGRAW-HILL PUBLICATION TWO DOLLARS PER COPY



# Centura City, USA

Look what's happened to Centura devices since we introduced them in 1968. In cities and towns all over America, Centura wallswitches and outlets have captured the imagination of architects, interior designers, builders and owners. Centura devices were first to offer elegant styling and a choice of colors . . . a dramatic departure from the ordinary. In addition to distinctive appearance, Centura offers a host of labor-saving features. All devices are top specification grade construction, UL Listed, CSA Approved, and backed by Leviton's unprecedented 25-Year Guarantee of Performance. Write for our latest Centura Catalog, then design with imagination.


America's Largest Manufacturer of Wiring Devices • 236 Greenpoint Avenue, Brooklyn, N.Y. 11222 • (212) 383-4500

**LEVITON**

*For more data, circle 2 on inquiry card*

# Specify laboratory table tops of corrosion resistant Durcolam

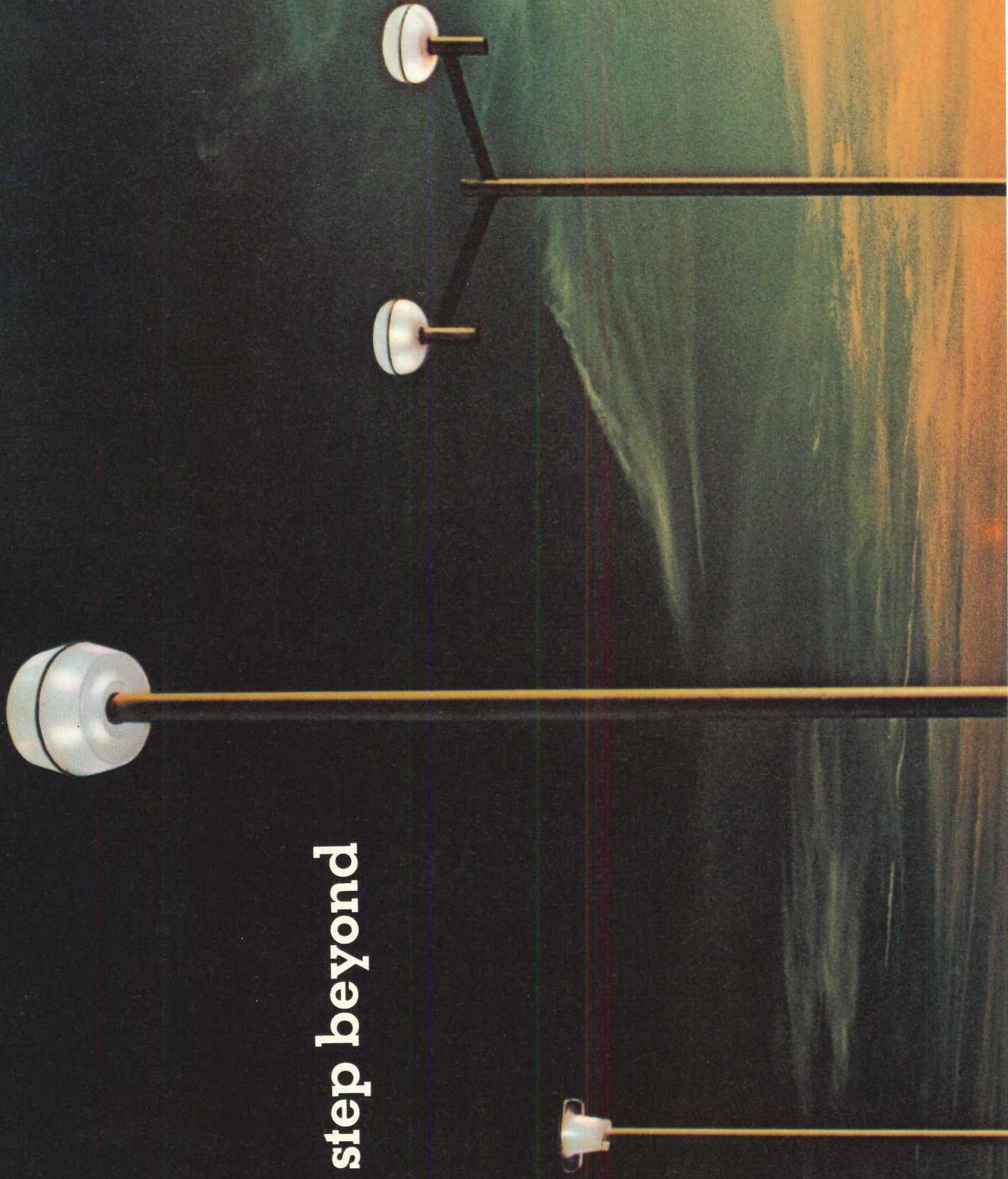
This tough, epoxy-based laminate can be mounted on practically any supporting material. Only one-eighth of an inch thick, it is light in weight, easy to handle, easy to fabricate and available in sheet sizes up to 63" x 96". Highly versatile, convenient means of renewing old, corroded tops. Durcolam is also an inexpensive, convenient means of renewing old, corroded reagent shelves, and many other applications demanding high resistance to corrosion. Send for complete details in Bulletin PF / 8.

THE DURIRON COMPANY, INC., DAYTON, OHIO 

For more data, circle 3 on inquiry card

For more data, circle 4 on inquiry card

**One step beyond**



## The Vista III Postop® Series by Holophane is designed for the day, engineered for the night.

Imagine the kind of outdoor lighting you've wished you could specify. Trim. Clean-lined. Handsomely styled. Designed to be part of architecture.

Imagine the kind of performance you'd expect from such units, performance that puts plenty of comfortable light right where it works hardest.

Now imagine these qualities combined in a versatile family of outdoor luminaires. That's Vista III

Postop Series by Holophane.

There are three basic and beautiful Vista III luminaires. Ellipse. Square. Tapered. Use them singly or in multiples. Pole-mounted or wall-mounted. On arms or poles in aluminum, black, or custom colors.

Each luminaire has a carefully engineered prismatic refractor. This precision refractor spreads the light for maximum comfort...directs the light for maximum efficiency. In fact, Vista III Postop luminaires deliver

more light over a greater area for fewer dollars than any other architecturally styled outdoor luminaire.

Our new full-color booklet contains all the facts on this advanced line of outdoor lighting units. Write for it today. Dept. 1, Holophane Company, 1120 Avenue of the Americas, New York, N.Y. 10036.

VISTA III POSTOP® by  
**HOLOPHANE**  
... one step beyond.



Cover: Knights of Columbus Building,  
New Haven, Connecticut  
Architects: Kevin Roche John Dinkeloo and Associates  
Photographer: Chalmer Alexander

#### EDITOR

WALTER F. WAGNER, JR., A.I.A.

#### MANAGING EDITOR

HERBERT L. SMITH, JR., A.I.A.

#### SENIOR EDITORS

ROBERT E. FISCHER  
WILLIAM B. FOXHALL  
MILDRED F. SCHMERTZ, A.I.A.  
ELISABETH KENDALL THOMPSON, F.A.I.A.

#### WASHINGTON EDITOR

ERNEST MICKEL

#### ASSOCIATE EDITORS

ROBERT JENSEN, A.I.A.  
DONALD-DAVID LOGAN

#### ASSISTANT EDITORS

ANNE LUISE BUERGER  
BARCLAY F. GORDON  
JONATHAN HALE  
ANNETTE K. NETBURN

#### DESIGN

ALEX H. STILLANO, Director  
ALBERTO BUCCHIANERI, Associate  
JUDY GEIER, Assistant  
SIGMAN-WARD, Illustration  
JAN WHITE, Consultant

#### EDITORIAL CONSULTANTS

EDWARD LARRABEE BARNES, F.A.I.A.  
ROBERT F. HASTINGS, F.A.I.A.  
PAUL RUDOLPH, A.I.A.

#### INDUSTRY CONSULTANTS

GEORGE A. CHRISTIE, JR., Economics  
WILLIAM H. EDGERTON, Building Costs

#### McGRAW-HILL WORLD NEWS

WALTER A. STANBURY, Director  
20 domestic and  
international news bureaus

#### PUBLISHER

BLAKE HUGHES

#### SALES MANAGER

LOUIS F. KUTSCHER

#### CIRCULATION MANAGER

HUGH S. DONLAN

## THE RECORD REPORTS

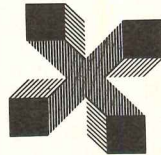
### 9 Editorial

Some random thoughts on and from  
the Boston Convention

### 10 Perspectives

### 35 News Reports

A.I.A. votes major ethics changes,  
supports sweeping registration  
revisions at the Boston  
Convention filled with conflict  
and contrast.



### 43 Buildings in the News

A special report on the new  
A.I.A. Headquarters Building in  
Washington, D.C., by The Architects  
Collaborative.



### 64 Letters

## ARCHITECTURAL BUSINESS

### 59 Economy—ecology— and zero population growth

In new, clean air at ZPG, architects  
will be called upon for innovation  
and amenities. James Carlson, Dodge  
economist, looks into a clouded crystal  
at the year 1990.

### 60 Airport planning and design: a demanding opportunity for architects

With the increasing Federal aid and urgent  
pressures for redevelopment of airports  
throughout this nation and the world,  
architects are finding opportunities  
of all sizes from long-range  
master planning of huge new facilities  
to make-do alterations of terminals and  
interior designs for concessionaires.  
Here are some reports on modes of  
practice in this complex field.

### 63 Indexes and indicators

An estimating aid for building  
construction costs in 33 cities  
—and a forecast of double costs.

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER), August 1970, Vol. 148, No. 2. Title © reg. in U.S. Patent Office © copyright 1970 by McGraw-Hill, Inc. All rights reserved. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science & Technology Index, Engineering Index, and The Architectural Index. Published monthly, except May when semi-monthly, by McGraw-Hill, Inc. Quotations on reprints of articles available. Every effort will be made to return material submitted for possible publication, but editors and corporation will not be responsible for loss or damage.

EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES: 330 West 42nd Street, New York, N.Y. 10036. Other Editorial Offices: 255 California Street, San Francisco, Cal. 94111; 1249 National Press Building, Washington, D.C. 20004. PUBLICATION OFFICE: 1500 Eckington Place, N.E., Washington, D.C. 20002; second-class postage paid at Washington, D.C. OFFICERS OF McGRAW-HILL PUBLICATIONS COMPANY: Joseph H. Allen, president; John R. Emery, J. Elton Tuohig, senior vice presidents; George H. Reppert, group vice president; vice presidents: Ralph Blackburn, circulation; John R. Callahan, editorial; William P. Giglio, administration; David G. Jensen, manufacturing; Jerome

**FEATURES**

**43 A.I.A. National Headquarters**

The Architects Collaborative, Norman Fletcher, partner-in-charge, has come up with a practical and harmonious design, satisfactory at last to both the A.I.A. and the Fine Arts Commission, which will make a solid contribution to its historic site.

**89 Design for interiors**

As part of a continuing coverage of good, architect-designed interiors, a varied portfolio of completed designs samples some of the most recent and most outstanding, ranging from a hospital to a small apartment scheme.

**109 The Knights of Columbus Building by Roche, Dinkeloo**

Four vertical concrete cylinders support this 27-story office building in New Haven, Connecticut. The main structural beams of weathering steel span between these cylinders, and are fully exposed on every floor, yet the construction meets the city's fire code. Several decisions simple to make but difficult to carry out lead to these innovative design solutions.

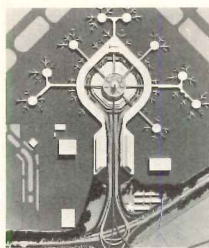
**103 Ontario's Participatory Museum**

To entertain and arouse curiosity in people, as well as educate them, was a major goal for the designers of Ontario's new Science Center. Raymond Moriyama is the architect for this vigorous group of buildings.

**BUILDING TYPES STUDY 413**

**117 Airports and terminals**

The scope of work in this broad field is illustrated under four main headings:



**118 Master planning: the necessary prelude**

Dallas/Fort Worth Regional Airport and Orlando Jetport: highly evolved relatives with plenty of space. San Francisco International: increased capacity on a tight site.

**122 Terminal facilities: complex designs for travel**

Two at Boston's Logan International: South Terminal, Warnecke's multi-line mammoth; and Eastern Airlines' Terminal, a smaller good neighbor by Yamasaki (124). BOAC builds at New York's JFK (126) to ease the jam at International.

**122 Landside/airside traffic: studies in directed motion**

Real people movers on rails and superb graphics by Architectural Graphics Associates are key design elements at Tampa and Jacksonville.

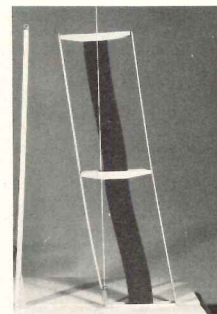
**131 Other design work: a future for everyone**

Structural inventiveness, hangars, additions, people movers, regional analysis, over-water jetports and projections of urgent needs are gaining architects' attention.

**ARCHITECTURAL ENGINEERING**

**133 Optimizing structural design in high-rise structures**

As high-rise buildings grow increasingly taller, the problem of keeping cost of the structure within bounds grows increasingly difficult. A new approach being used by consulting structural engineers Severud, Perrone, Sturm, Conlin, Bandel employs interior trusses engaging exterior columns to utilize the wind-resisting capacity of these columns in tension or compression rather than by bending. This technique is used in the new 51-story I.D.S. Center tower in Minneapolis, and cuts down the steel required by one-half over conventional wind-bent techniques. Further savings are made by plastic design techniques applied to the floor structure, and by the more efficient utilization of structural materials in the core.



**52 Office literature**

**141 Product reports**

**208 Advertising index**

**210 Classified advertisements**

**211 Reader Service Inquiry Card**

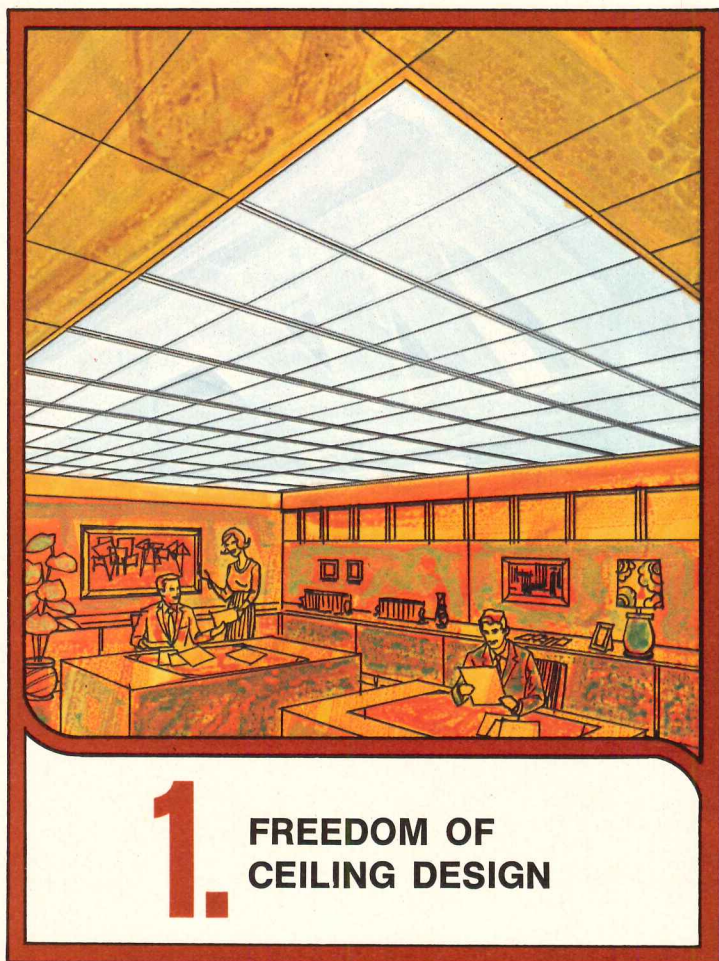
D. Luntz, planning and development; Joseph C. Page, marketing; Robert M. Wilhelmy, finance. CORPORATION OFFICERS: Shelton Fisher, president and chief executive officer; John L. McGraw, chairman; Donald C. McGraw, chairman, executive committee; Robert E. Slaughter, executive vice president; Frederick A. Stahl, chairman, finance committee; Daniel F. Crowley, Donald C. McGraw, Jr., Bayard E. Sawyer, senior vice presidents; John J. Cooke, senior vice president and secretary; Gordon W. McKinley, vice president and treasurer. SUBSCRIPTIONS: Subscriptions solicited only from architects and engineers. Position, firm connection, and type of firm must be indicated on subscription orders; CHANGE

OF ADDRESS or subscription service letters should be forwarded to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520. Provide old and new addresses, zip code or postal zone number. If possible, attach issue address label. Annual subscription prices: U.S., U.S. possessions and Canada: \$6.60 for architects, engineers and other individuals in the fields served, all others \$20.00. Other countries: \$15.00 to architects, engineers; others \$24.00. Single copies \$2.00. UNCONDITIONAL GUARANTEE: Publisher agrees to refund that part of subscription price applying to unfilled part of subscription if service is unsatisfactory. ASSOCIATED MCGRAW-HILL SERVICES: Daily Construc-

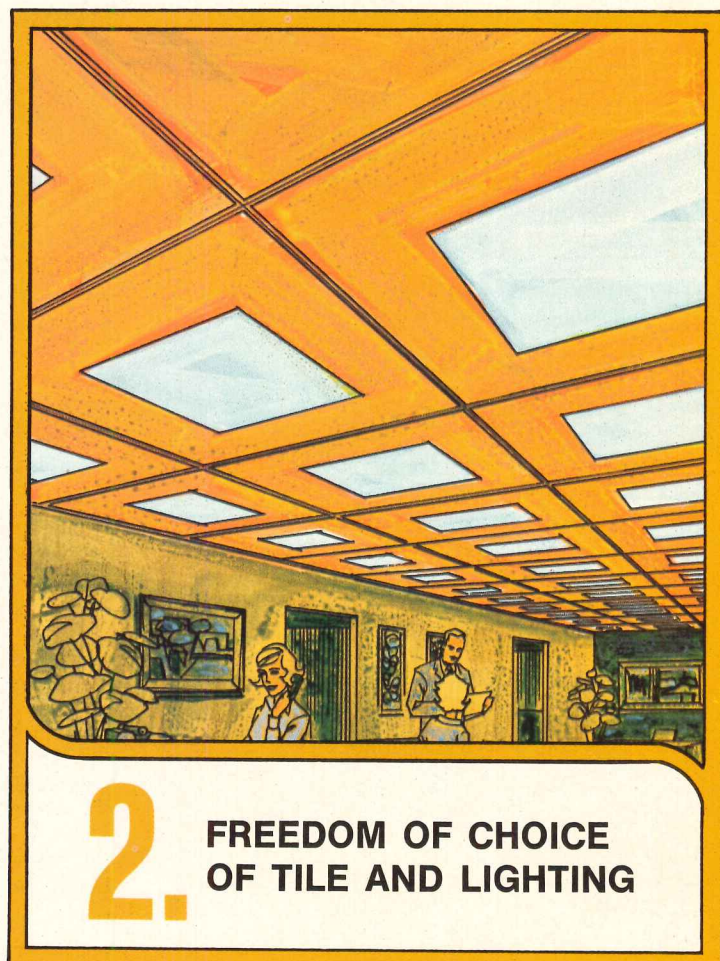
tion Reports (Los Angeles)—Dodge Building Costs Services—Dodge Construction News (Chicago, Denver, San Francisco)—Dodge Construction Statistics—Dodge Reports—Dodge Spec-Fax—Management Control Service—Sweet's Construction Catalog Systems—Sweet's Canadian Construction Catalog Services—Sweet's Information and Library Centers—Sweet's Microfilm Systems. THIS ISSUE is published in national and separate editions. Additional pages of separate edition numbered or allowed for as follows: Western Section 32-1 through 32-8. POSTMASTER: Please send form 3579 to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 430, Hightstown, N.J. 08520.



# enjoy these 4 “architects’ freedoms...”



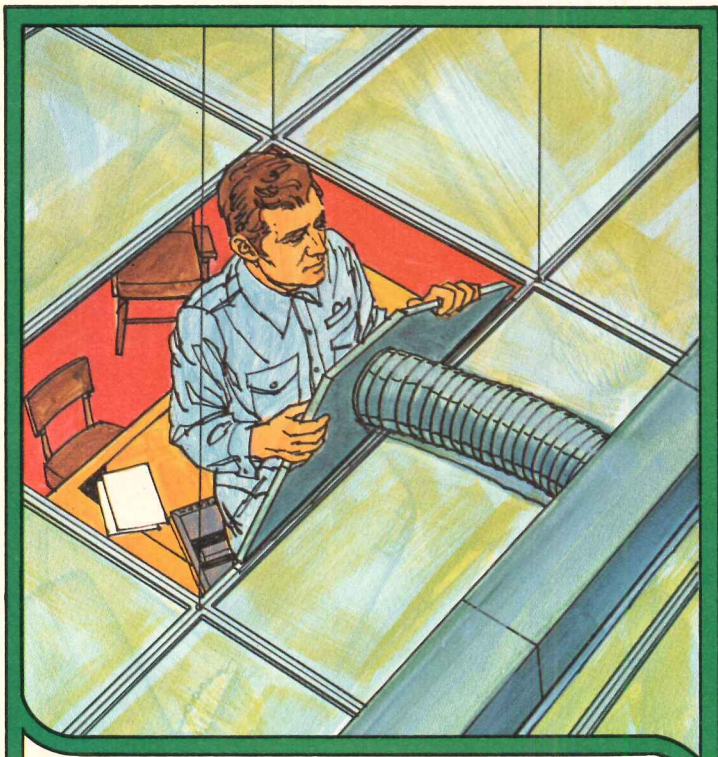
1. No other ceiling system offers so many *architectural* design possibilities! T-Line is available in any size module; linear or modular types for luminous, coffered or tiled ceilings.
2. Your complete freedom to choose any type or brand of ceiling panels, lighting and partitions gives T-Line Ceilings the greatest architectural, environmental and performance possibilities of any ceiling system.
3. Titus manufactures only the air diffusion and



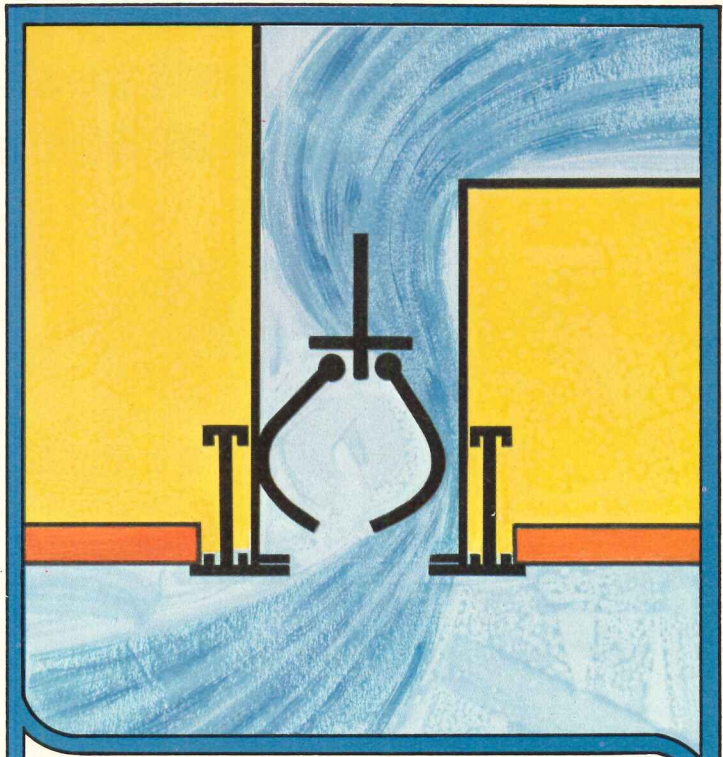
- ceiling suspension components of T-Line. You have complete freedom to specify any type or make of other components. This permits installation in the conventional manner with a clear-cut division of the trades.
4. *Titus knows air distribution*, having manufactured air diffusion products over 24 years. With T-Line, the air pattern is adjustable a full 180° — can provide each modular unit of space with the air distribution to fully satisfy *any present or future* room requirements.



...when you specify TITUS T-LINE  
 Coordinated Air Diffusing Ceiling Systems  
 (only T-Line gives you *all* these freedoms)



**3.** FREEDOM FROM  
 CONFLICT BETWEEN  
 BUILDING TRADES



**4.** FREEDOM FROM  
 AIR DISTRIBUTION  
 PROBLEMS

THE AIR DISTRIBUTION PEOPLE

**TITUS**<sup>®</sup>

Rush new Catalog on Titus T-Line Coordinated Air Diffusing Ceiling Suspension Systems.

Have your Representative call me for appointment.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

MAIL TO: TITUS MANUFACTURING CORPORATION  
 Waterloo, Iowa 50704

For more data, circle 5 on inquiry card



**Sandstrom has a  
basement sealer guarantee  
that holds water.**

The guarantee is the reason their basement sealers stand out on a crowded shelf in a paint store.

It directly states: "When applied according to directions on a properly prepared surface, except when leaks are due to cracking on the surface itself, is guaranteed to provide a water-proofing coating for three (3) years from date of sale, or we will refund the cost of the paint if you send proof of purchase to Sandstrom Products Company, Port Byron, Illinois 61275."

They can offer that kind of guarantee because

their sealers stop moisture as much as five times better than other kinds.

That's a powerful selling edge to have over your competition. And our PLIOLITE® Resins helped them get it.

These tough synthetic compounds do more than just coat masonry. They actually plug the holes in concrete, brick and cinder block. Form a flat, nonporous shield that stops seepage from rain or ground water.

They come in a variety of colors. Go on easily by a variety of methods: brush, roller or spray.

And the first coat is the last almost any surface needs.

Don't you need an advantage like this in today's competitive markets? Talk with us. We're a market-oriented company, with a reputation for turning a chemical breakthrough into a selling edge.

Call Bill Smith, Product Manager, at 216-794-4867, or write Goodyear Chemicals Data Center, Dept. T-84, P.O. Box 9115, Akron, Ohio 44305.

PLIOLITE—

T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

# Get your selling edge from Goodyear Chemicals

For more data, circle 6 on inquiry card

## Some random thoughts on and from the Boston Convention

There's a proper news report on the 102nd Annual Convention of the American Institute of Architects beginning on page 35 of this issue. On this page, some personal impressions—I hope pertinent.

▪ Quotes from convention conversations (heard and overheard): On the use of building systems: "Only the architect can make the boxes palatable to the people." On the role of architectural review boards: "Above a certain level of competency, there should be no criticism." On city renewal: "The attention span of a city is 10 years. If the work isn't done by then, it doesn't get done." Attributed to the Boston vice-mayor: "Those great spaces in the Boston City Hall are really very economical. If all that space were offices think of all the extra city employees we'd have to pay."

▪ There was, properly, considerable debate at several points in the convention as to whether the A.I.A. had met its famous \$15-million commitment toward the alleviation of urban problems. It's my view that, whether or not you can firmly put a price tag of \$15 million on what has been accomplished since last year's convention, the Task Force of Professional Responsibility to Society has come a long, long way (see News).

▪ The passage (by a vote of 867 to 647) of the new Standards of Ethical Practice will be debated long after the convention. Everyone seemed as confused as I was about all of the implications and interpretations—though the intent—"the architect may offer any service he is qualified to render (e.g., the building of his own designs or 'construction management') as long as it is not in conflict with other proposed ethical standards and offers no conflict of interest"—seems sensible and

desirable. The new standards are indeed stated "in terms of guiding principles," not hard and fast rules. And this is as it should be in a time of fast-changing problems.

▪ Approval by the convention of NCARB's proposal to drastically change the requirements for licensing examinations (for instance, in most cases, eliminate the "internship period") and to change the nature of those examinations (to emphasize that "competence in tactical decision making is the first and most important need") will also be much debated by 1) those who feel that the examination is (and Neanderthals who feel the examination should be) a metering device to insure that there's not too much competition for work; and 2) by concerned people inside and outside the profession who simply want to see the best possible evaluation of a candidate's qualifications to practice before he is permitted to do so. And that, of course, is what NCARB is suggesting. Elimination of internship clearly puts enormous pressure on the schools, some of which seem these days particularly unable to withstand it; and I guess I just can't go along myself with the idea that practically anyone who has put in time at school and wishes to call himself an architect should be allowed to do so. But the demands on (and for) architects have changed so drastically that surely the most careful restudy of the procedure for licensing architects is very much in order.

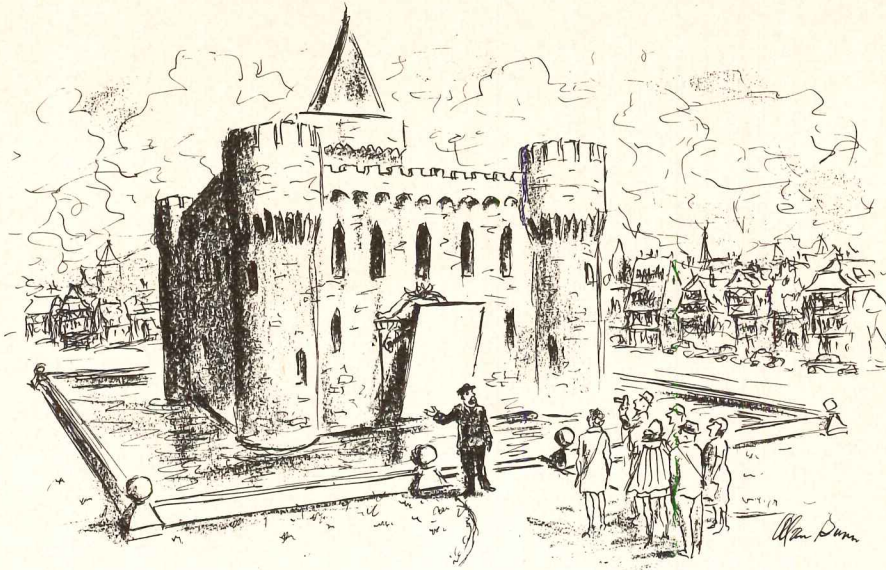
▪ Maybe I missed the right meetings, but I didn't hear enough talk about the housing problem to suit me. Architects (and the A.I.A.) ought to be all over Congress, all over HUD, all over state and local governments to stop talking and Breakingthrough and find ways to get financing for housing and get on with the job. It's an

absolute, measurable, desperate need and nothing is happening.

▪ Everyone ought to cheer for the other work A.I.A. has done in the political area—in putting down attempts to treat architect selection as a commodity to be bought at the lowest bid, in encouraging coherent programs for urban growth, in advising both political parties in formulating legislation in the area of community and environment, in developing model legislation, and just plain raising its voice in Washington. (Who was it, at last year's convention, who—when asked "What can the A.I.A. do in Washington"—replied: "Make 20,000 times as much noise as Ralph Nader.")

▪ Hooray that a black man can be elected to the board of the A.I.A., and hooray that Robert Nash comes to his office (as one of three vice presidents) with the experience both of an active practice and in A.I.A. and civic affairs.

▪ I hope the fuss and feathers over the famous (infamous) Wednesday morning student program dies down. The "sensitivity session" or "be-in" (see photos in News) that rocked the convention was, I think, a valid experiment—an attempt by the students to make the convention "see" the need they see for a new kind of environmental awareness. All it did was fail—which a lot of experiments do. For some, it was offensive, a "freakout." For others—including some distinguished gray-haired architects—it was the new kind of experience the students planned. For many it failed because of what preceded it—an absurd and shocking interruption of the student-named feature speaker, physicist and ecologist S.P.R. Charter, and an almost simultaneous take-over of the microphone by a militant group of young architects proposing to form a "new organization." These two interruptions were not related, were not made by students, and certainly were not, as many assumed, planned as part of the presentation. The failure of those on the platform to sort out and identify to the convention this cast of characters put an air of near-violence and hostility over the morning that nothing could overcome. It will be tragic if the still-new, carefully



"Now this was built in the days when people were afraid to walk the streets at night . . ."

nurtured, and critically important relationship between practitioners and students is damaged by something that happened quite beyond the control of the students and through, I think, no fault of theirs.

▪ Finally, one can only hope that being in Boston set some new goals for the architects assembled. Boston is a city that honors its architectural heritage . . . yet supports the most vigorous modern architecture. Everyone was there (at the Dodge party) but did everyone "see" Faneuil Hall (built 1805) living proudly beside the New Boston City Hall? Imagine a city where the Boston City Hall—a competition-winner at that—actually gets built. Imagine saving the 19th-century Sears Crescent across the street—not as a monument, but lovingly remade to serve modern needs (including a great bar by Charles P. Parker in the basement under the arches of the coal bins). On that Wednesday night, I had the experience of walking (without worrying) through the Public Gardens to Louisburg Square, to attend an elegant party in an elegant townhouse built in the 1830's; and later taking a clean, quiet subway to Harvard Square to attend a slide show at the bright, bold Design Research Building. What's Boston got? Maybe class—and part of that is a real regard for architecture and for people.

—Walter F. Wagner, Jr.

### Environmental control: does industry really care?

Until recently, a conference entitled "Industry and the Environment" would have aroused scant interest among either the public or the giants of industry. Courtesy representation might have been the rule and polite indifference the result. Last month, however, as the public's interest in ecology continued to soar, McGraw-Hill hosted just such a conference at the Hotel Americana in New York City and drew together leaders from the highest ranks of

business and industry.

Noting in his welcoming address that pollution carries with it the threat of ultimate extinction, Shelton Fisher, president of McGraw-Hill, declared that "the force that brings us all together at this conference is fear." Governor Rockefeller, delivering the keynote address, judged that the voters are ready to support the large public expenditures necessary to reclaim their environment. He called for a new economic ethic; a "new contract between economy and ecology."

The precise terms of this contract are still fuzzy, but the intention is unmistakable. Eco-catastrophists from the scientific community have raised many a shrill warning. To fail in our efforts to halt environmental decay, they tell us, is to invite calamity. While the exact nature of this calamity is still uncertain, a rapidly swelling number of scientists is convinced that this generation is at the threshold. We must slow down the rate at which we deplete our natural resources or we must perish.

Does this mean we must give up our industrialized society and return to a Walden Pond level of existence? Is such an option even open? "Certainly not," says Robert O. Anderson, board chairman of Atlantic Richfield Oil Company. "We need more technology to attack these problems." He outlined industry's role in spearheading the attack on pollution:

1. Identify the causes of environmental deterioration and define the limits of human tolerance.
2. Identify specific sources of pollution.
3. Take the lead in developing equipment for detecting, measuring and monitoring pollution and assist in establishing international standards.
4. Take immediate steps to rectify any condition unnecessarily hazardous to our environment.
5. Implement a continuing program to train personnel in pollution abatement procedures.

Dwight Metzler, Deputy Commissioner New York State Department of Health, pointed out that government has an equally important role in environmental reclamation. Prodded by an aroused public, the Federal government has created a whole welter of new regulatory agencies—and granted them the power to take action against hard-core polluters. Most states have sharply raised their fines against air and water pollution. While the rates of increase vary widely from state to state, the trend everywhere is upward. Token regulation is just not in the cards and token response—a filter here, a precipitator there—is no longer acceptable.

In our efforts to reclaim our environment we must not look for scapegoats. To find industry the culprit is to forget that industry is only the creature we have created to satisfy our insatiable appetite for goods. If a single thread ran through the whole conference, perhaps it is best expressed in Pogo's now famous phrase: "We have met the enemy and he is us!"

One man's conclusion after the conference: the industrial side of our economy is—at last—as concerned as the professional community has long been. Now we can look for action.

—B. G.

### Coming in the RECORD

Next month's Building Types Study, apartments, examines the bright spot on an otherwise gloomy housing market. Also in September will be a comprehensive planning study for the transformation of a large section of the Bronx, Weiner and Gran, architects; and the First National Bank of Chicago, C. F. Murphy Assocs.; The Perkins & Will Partnership, architects—Chicago's new 60-floor tower.

Submissions for RECORD INTERIORS 1971 (awards to be presented in the RECORD, January) are due October 1st. Entries must be completed, architect-designed.



## *Flexible*

Matching Three tier – Two tier – One tier pendants or One tier ceiling surface fixtures all in the same contemporary, yet classically simple design. Polished brass finish. With choice of 6 glass styles. Ask your Prescolite representative for a copy of our new, colorful Architectural Decorative Catalog No. AR-1.

Illustrated at left: Three tier (6, 9 and 12 arm) chandelier w/Smoke glass.

SMOKE RIBBED  
OPTIC



AMBER RIBBED  
OPTIC



CRACKED  
CRYSTAL



AMBER  
RAINDROP



CRACKED  
CRYSTAL



# PRESCOLITE

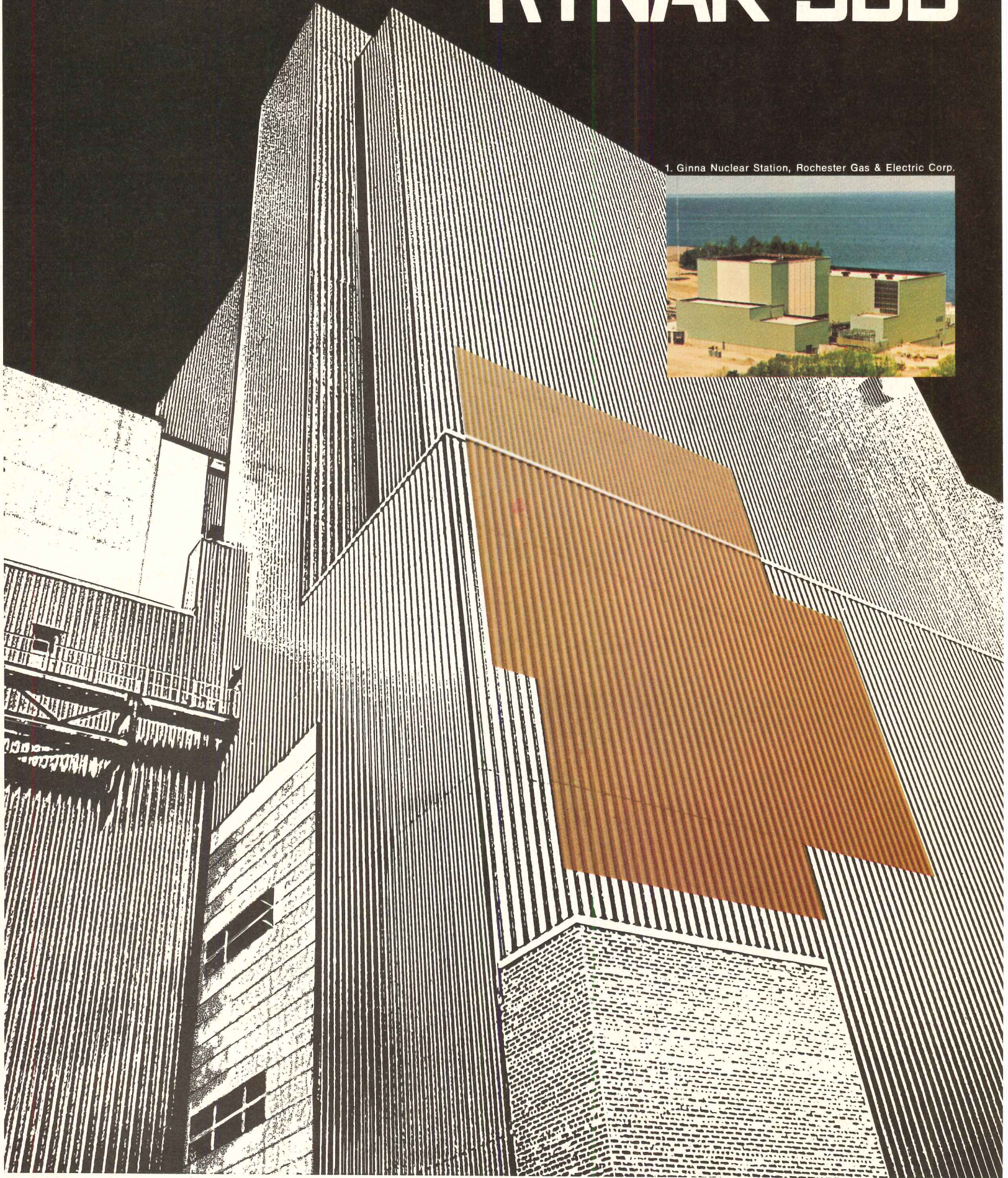
A DIVISION OF U. S. INDUSTRIES, INC.

1251 DOOLITTLE DRIVE ■ SAN LEANDRO ■ CALIFORNIA 94577 ■ TELEPHONE (415) 562-3500

For more data, circle 7 on inquiry card

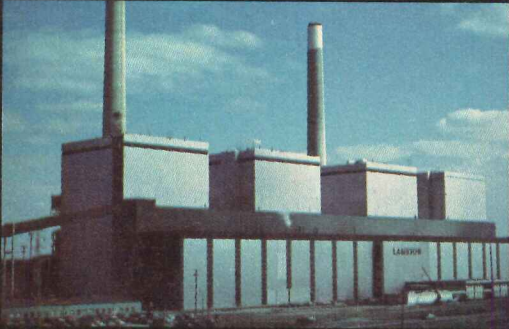
# KYNAR 500®

1. Ginna Nuclear Station, Rochester Gas & Electric Corp.



# for a colorscape that lasts and lasts.

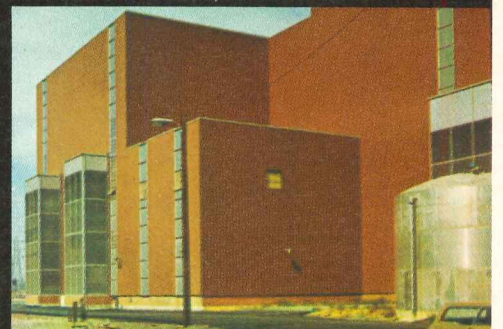
2. Lambton Station, Ontario Hydro Electric Power Commission.



3. Point Beach Nuclear Plant, Wisconsin Electric Power Co.



4. Trenton Channel Plant, Detroit Edison.



The color-coated panels on these metal-walled power plants are made to stay fresh . . . even after years of exposure to attack by weather and sun.

Only long-lasting finishes containing Kynar 500 . . . the best of the color coatings . . . are good enough to protect your next metal-walled building.

You can choose from dozens of colors, ranging from bright pastels to subdued bronzes. And match your color, exactly, panel after panel.

Coatings made with our fluorocarbon base, Kynar 500, are as durable as they are impressive. They resist chemicals, corrosive atmospheres and mortar stains; won't crack or craze; and take abrasion in stride. In fact, accelerated tests by Pennwalt project 30 years of maintenance-free life.

Banish the dull and ordinary. Build a colorscape, with finishes containing Kynar 500. Contact Pennwalt Corporation, Pennwalt Building, Three Parkway, Philadelphia, Pa. 19102.

1. Ginna Nuclear Station, Rochester Gas & Electric Corp.  
Design engineers: Gilbert Associates.  
Panel manufacturer and erector:  
Elwin G. Smith & Co., Inc.  
Finish: Nubelar® (Glidden-Durkee).

2. Lambton Station, Ontario Hydro Electric Power Commission.  
Architect: Ontario Hydro.  
Finish: Nubelar® (Glidden-Durkee).  
Panels: Robertson-Irwin Ltd.

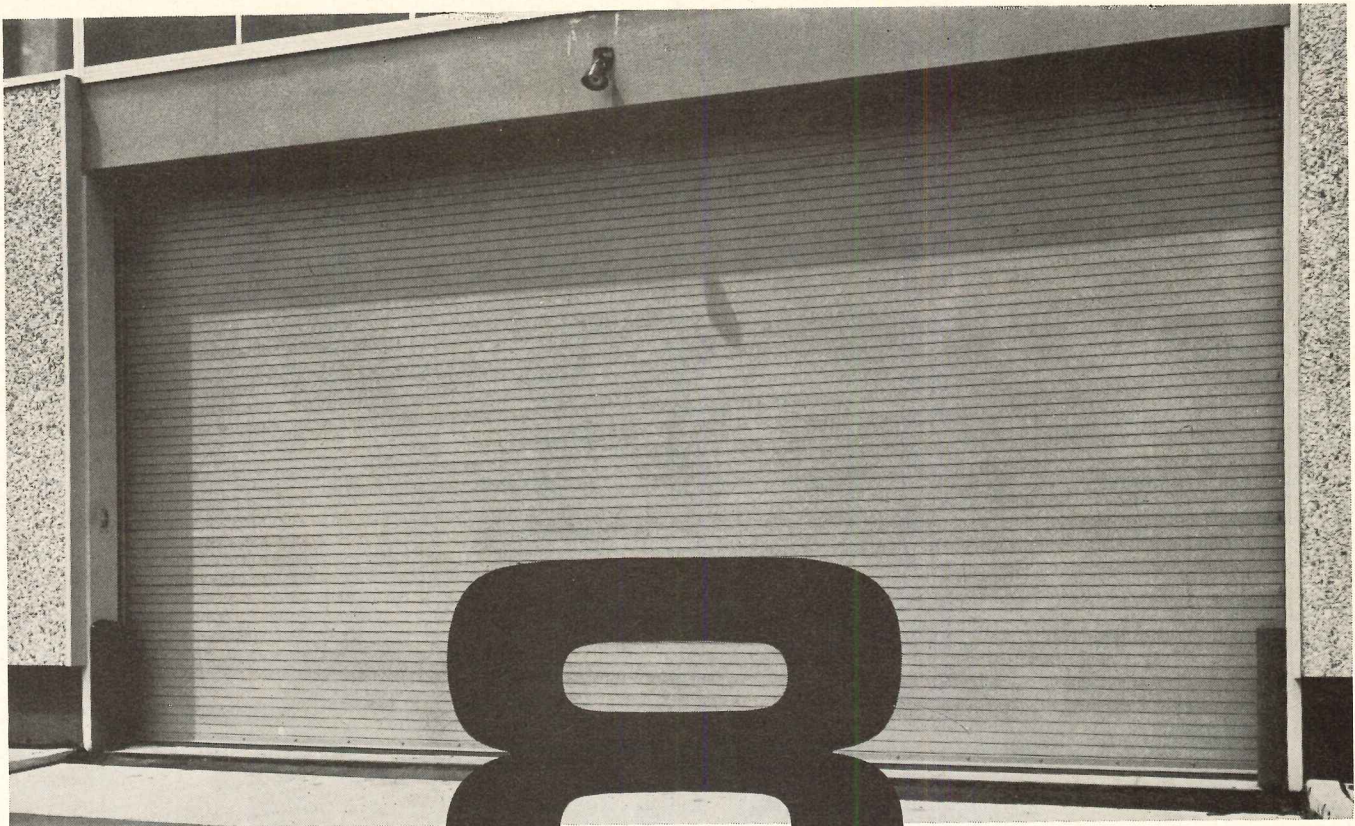
3. Point Beach Nuclear Plant, Wisconsin Electric Power Co.  
Designer and Builder: Bechtel Corp.  
Finish: Fluoropon® (DeSoto)  
Panels: Inland-Ryerson.

4. Trenton Channel Plant, Detroit Edison.  
Architect: Detroit Edison.  
Finish: Fluoropon® (DeSoto).  
Panels: Walcon Corporation.

®Kynar 500 is Pennwalt's registered trademark for its vinylidene fluoride resin.

Make your base specification **KYNAR 500®**

**PENWALT**  
ARCHITECTURAL COATINGS



# 8

## WAYS KINNEAR ROLLING DOORS

provide unmatched protection-combination for service doorways.

- **OVERALL ECONOMY** — Prevents waste of time, labor and money from the day they're installed—and for the many following years of efficient operation.
- **WITHSTANDS HARDEST DAILY SERVICE** — Upward coiling operation combined with the steel interlocking slat curtain and exceptionally rugged overall design insures more years of carefree usage—evidenced by 70-year service records.
- **DEPENDABLE BARRIER AGAINST WEATHER** — They are designed to withstand minimum wind velocity of 88 m.p.h. . . . and also available for higher wind velocities and with various Extra-TITE features.
- **EXTRA RESISTANT TO ELEMENTS** — The triple-protection of the steel curtain . . . 1¼ oz. per sq. ft. of zinc, plus Kinnear Paint Bond and primer . . . is extra armor against the ravages of time and elements.
- **SPACE-SAVING** — Coiling compactly above the opening, no usable floor, wall or ceiling space inside or outside of the building is lost.
- **FIREPROOF AND FIRE REPELLENT** — Built of steel, they will not burn and when closed will help prevent spread of fire. (If fire is a primary consideration, ask for details on Kinnear U/L Labeled Automatic Fire Doors.)
- **SAFE-GUARD AGAINST "BREAKING AND ENTERING"** — Time-proven—and today more important than ever—to be one of the toughest barricades offered for industrial and commercial use.
- **NEVER ORPHANED AT SERVICE TIME** — With a nationwide service organization backed up by Kinnear "Registered" Life-Extension Plan, a damaged Kinnear door—regardless of age—can always be readily put back into reliable service.

Also manufacturers of Rolling Fire Doors, Rolling Grilles, Counter Shutters, Power Operators and Kinnear Overhead Doors.

Send TODAY for complete details

**KINNEAR CORPORATION  
and Subsidiaries**

1860 Fields Ave., Columbus, Ohio 43216

Factories:

Columbus, Ohio 43216 • San Francisco, Calif. 94124  
Centralia, Wash. 98531 • Toronto, Ont., Canada



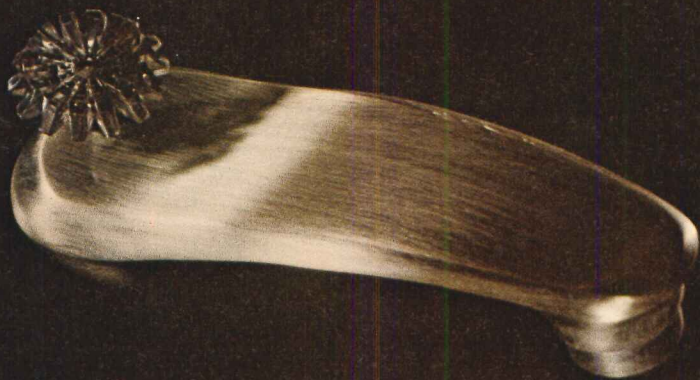
Saving Ways in Doorways Since 1895

Offices & Representatives in All Principal Cities — listed in Yellow Pages under "Doors." Also see Sweet's!

For more data, circle 9 on inquiry card



# made for each other



Flow-Matic and Marquis were conceived and designed together. This unique blending of single and dual handle water controlling devices, with complementary styling, provides the utmost flexibility for imaginative, decorative effects in the bath. Our Flow-Matic and Marquis lines share the warmth of the same special finishes. Antique Bronze. Antique Chrome. Satin Chrome. And Polished Chrome. All set off with color coordinated crystal-like acrylic handles and medallions. A Marquis widespread or

4" dual handle lavatory set performs in perfect visual harmony with a Flow-Matic single handle shower valve. Any combination works. Flow-Matic and Marquis belong together in the bath. They were made for each other. Use them that way.



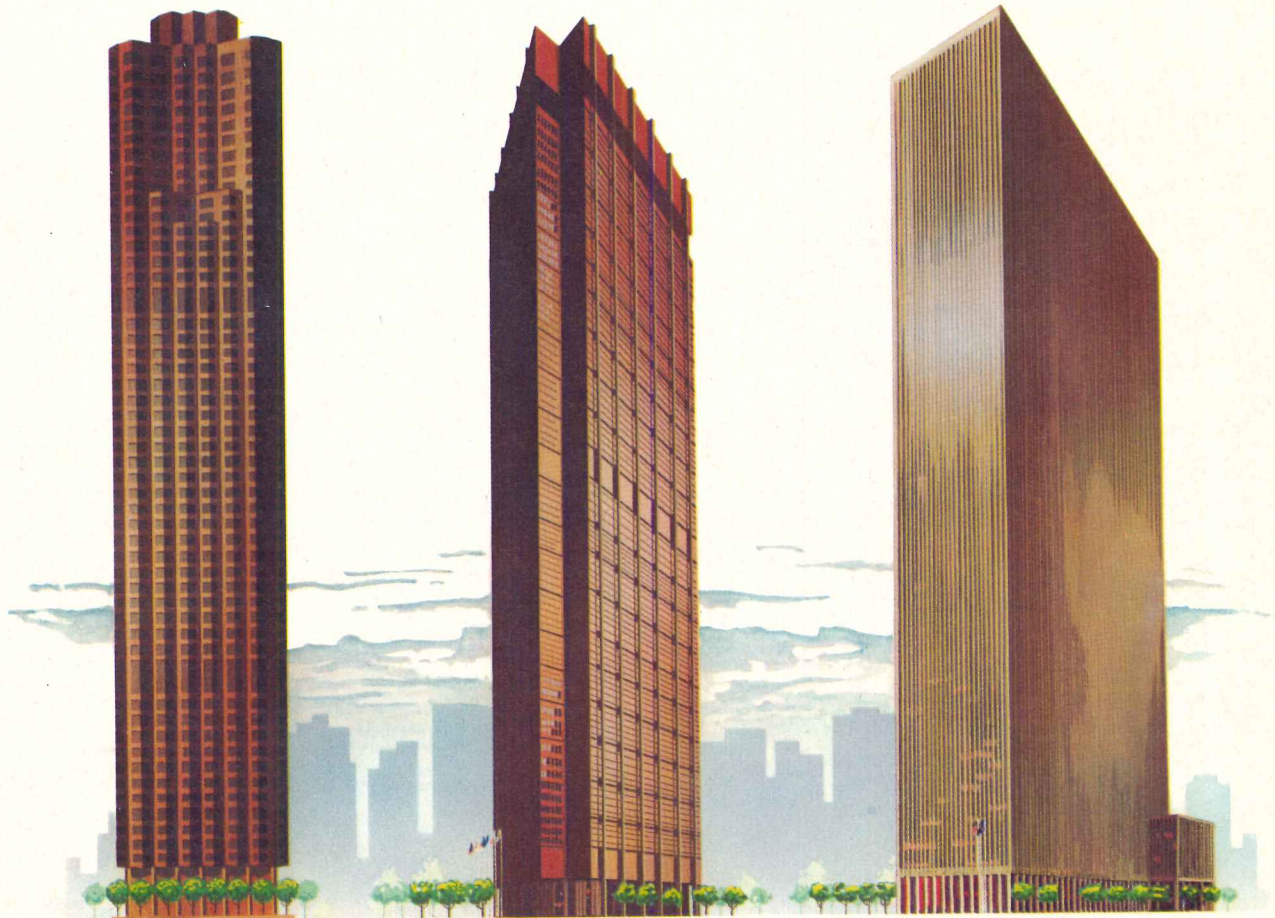
**PRICE PFISTER**

Manufacturers of Plumbing Brass/13500 Paxton Street, Pacoima, California 91331

# Together at the TOP

**VMP's** association with these "world's largest" companies highlights the fact that VMP is now the one manufacturer in the movable steel partition industry making installations of this magnitude entirely with its own integrated organization—a position gained thru our ability to meet the dramatic new requirements of America's most progressive companies for innovative office flexibility combined with low cost maintenance and relocation.

VMP would appreciate the opportunity to share this technical know-how with you—and to explain the financial factors that "insure your building against higher costs for only pennies". Phone a nearby VMP sales office.



## World's Largest Banking Company

### Bank of America

World Headquarters Building,  
San Francisco, Cal.  
Offices feature VMP Corporate type.  
52 stories—779 feet high.  
Architect: Wurster Bernardi & Emmons and  
Skidmore, Owings & Merrill  
San Francisco, Cal.  
Architectural Consultant: Pietro Belluschi.  
Genl. Contractor: Dinwiddie-Fuller-Cahill  
San Francisco, Cal.  
Occupancy—1969.

## World's Largest Steel Company

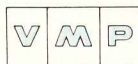
### United States Steel Building

Pittsburgh, Pa.  
VMP will furnish Tinline Type in what will  
be one of the largest installations of  
movable steel partition.  
64 stories—841 feet high.  
Architect: Harrison and Abramovitz, and  
Abbe, New York, N.Y.  
General Contractor: Turner Construction  
Company, New York, N.Y.  
Occupancy—1970.

## World's Largest Oil Company

### Standard Oil of New Jersey

Rockefeller Center Building, New York, N.Y.  
VMP will install over 20 miles of  
Corporate type movable steel partition.  
54 stories—750 feet high.  
Architects: Harrison & Abramovitz & Harris  
Consulting Architects: Welton Becket and  
Associates, New York, N.Y.  
General Contractor: George A. Fuller  
Company, Inc., New York, N.Y.  
Occupancy—1971.



**VIRGINIA METAL PRODUCTS**, Orange, Va.  
Division of The GRAY Manufacturing Co.

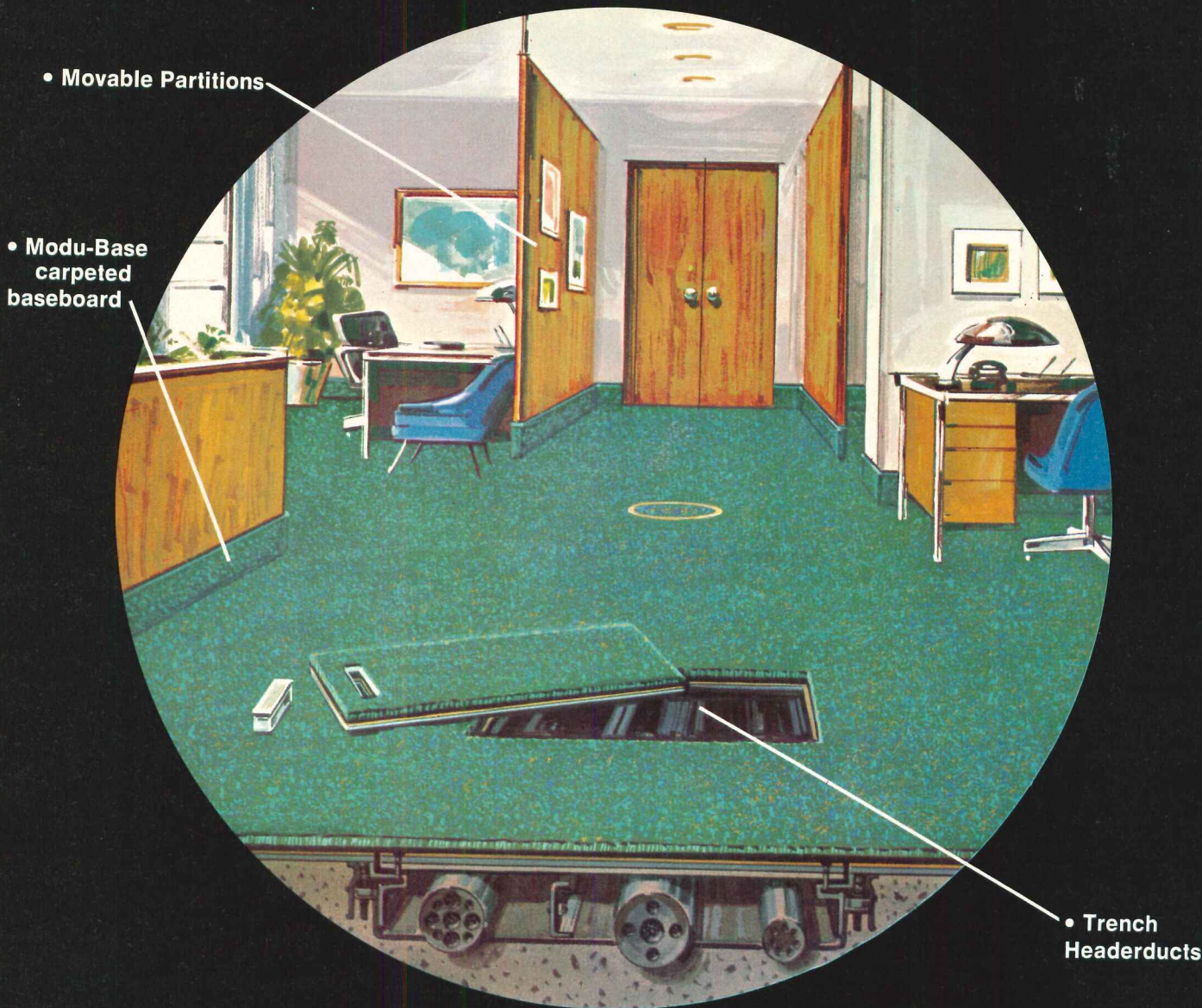


Movable steel partitions • Steel doors and frames • Steel library bookstacks

For more data, circle 11 on inquiry card

# All systems are go

## Carpet Systems from CCC with Acrylic 73... engineered to integrate with all architectural systems.



Carpeting is no longer a simple matter of beautiful floors. The challenge today is to integrate carpet with the total architectural environment.

CCC has this very complex problem down to a precise system—the unique Acrylic 73 Carpet System. We analyze every element involved—right from the blueprints. Recommendations are based on design, function and maintenance factors.

The result of this planning: a carpet system that lets you move partitions, gives you easy access to sub-floor systems and includes built-in static control to end the annoyance of shock.

Acrylic 73 is a total performance carpet. CCC's exclusive blend of 70% long-staple Creslan® acrylic and 30% long-staple commercial nylon combines unequalled stamina with design versatility and appearance retention.

CCC is the world's largest manufacturer of commer-

cial and institutional carpet systems. We would like to tell you more about what we can do for you. Why not send in the coupon today.

**Creslan**<sup>®</sup>  
LUXURY ACRYLIC FIBER

Creslan is a product of American Cyanamid Company, Wayne, N.J.



Commercial Carpet Corporation  
Dept. AR-8/70  
10 West 33rd Street  
New York, New York 10001

Attention: Mr. Walter Brooks

Please send me a copy of the booklet, "Office Carpet Systems, with Acrylic 73".  Please have a CCC consultant contact me.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

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

For more data, circle 12 on inquiry card



**It took a lot more than electricity to get from this to...**

**this.**

It took the "electric sky".  
A luminous ceiling of Bakelite®  
rigid vinyl sheeting.

The light diffuser that's almost  
as perfect as the sky.

For light that's uniformly even  
from corner to corner.

Like this blank page.

We pioneered it for architects  
who are determined to move beyond

light *fixtures* . . . to light *itself*.

And now you can have Bakelite  
rigid vinyl sheeting in any color,  
shape, form, or degree of translucency  
you want.

You can even install it beneath  
fire sprinklers. It falls out at 165  
degrees to expose sprinkler heads.  
Before the heads get hot enough to  
turn on.

Get up-to-date, full information  
on luminous ceilings.

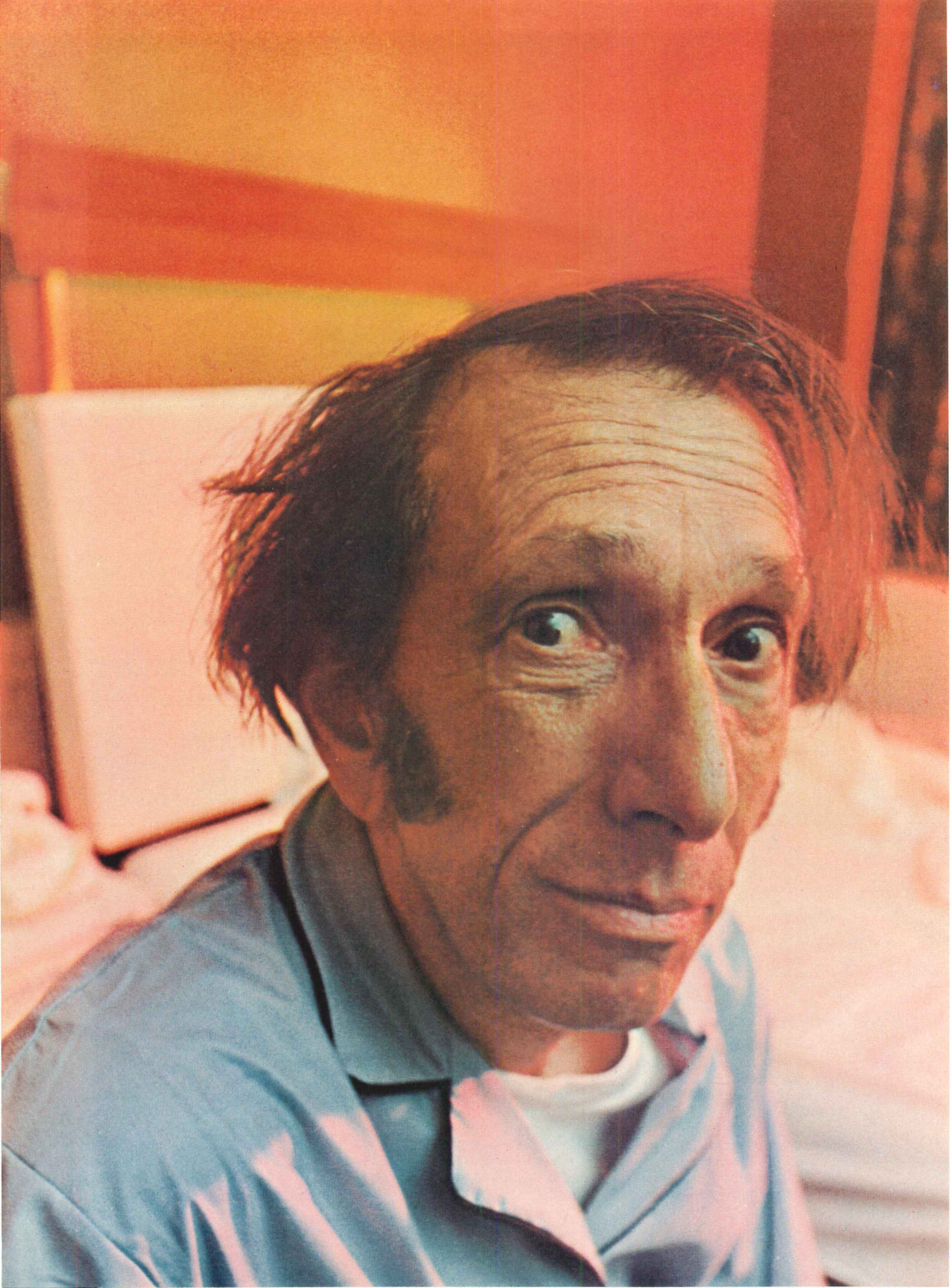
We're the only ones that have it.  
UNION CARBIDE CORPORATION,  
FILMS\*PACKAGING DIVISION,  
6733 West 65th Street, Chicago,  
Illinois 60638.

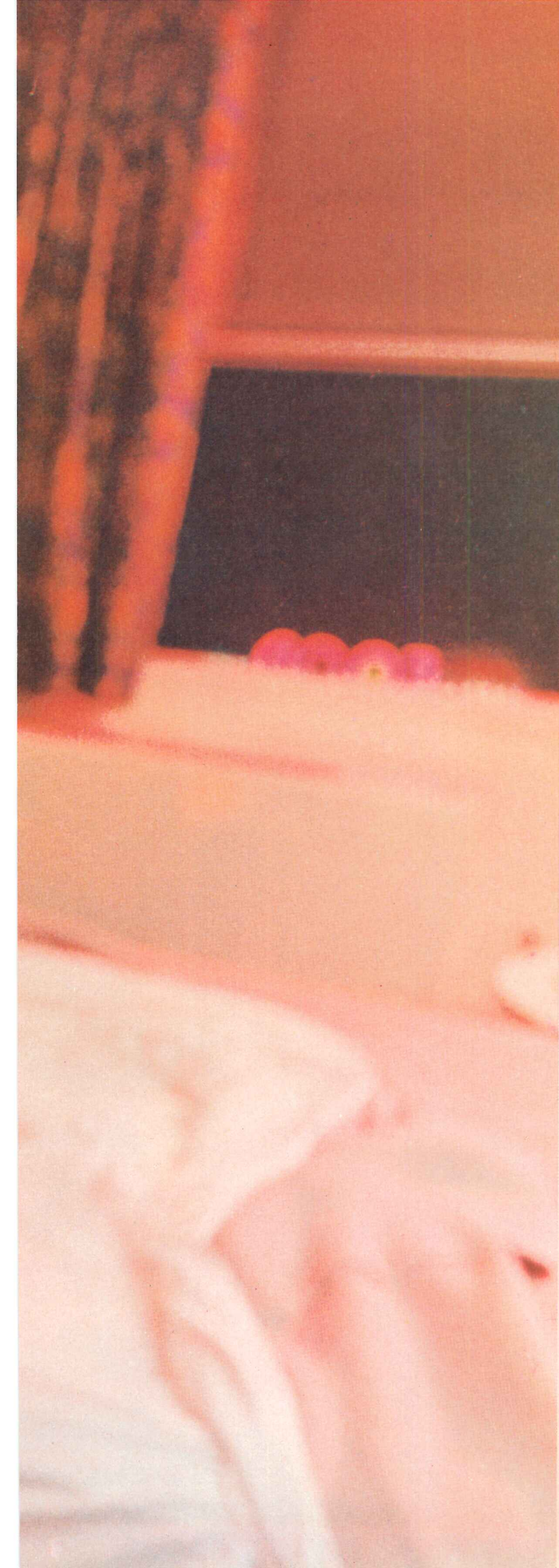


THE DISCOVERY COMPANY

**We can do more for you than anybody**

For more data, circle 13 on inquiry card





# Noise today is enough to drive you mad.

Literally. Studies are showing that high decibel levels in modern cities can cause mental imbalance—as well as loss of hearing acuity.

Keene hasn't figured out what to do about pneumatic drills and taxi horns, but we are doing a lot inside commercial buildings. We make an instant-access acoustical ceiling system that provides a tight wall-to-wall noise barrier. To keep noise from coming through registers and ductwork, we design baffles, fan-silencers and air-conditioner plenums. We also engineer sound-absorbing systems to cut the din in swimming pools and bowling alleys.

Why is Keene, a major manufacturer of innovative building products, working so hard to fight noise pollution? We think somebody better before we all go nuts.

**KEENE**  
CORPORATION

**We've just begun to grow.**

*Do you need to control noise in commercial and industrial structures? Keene can help. Write to our Sound Control Division, Princeton Service Center, U.S. Route #1, Princeton, N.J. 08540*

*For more data, circle 14 on inquiry card*





# The economy car that's in a class by itself.

It has a luxury look.

It has a "big-car" ride.

It comes in two models, with room to hold ten or twelve passengers comfortably.

But it still qualifies as an economy car because it's an elevator that's pre-engineered to save you money.

It's the Otis hydraulic elevator.

Models HP-1500 and HPA-2000. Designed to simplify elevator planning and installation.

Fully automatic. Built for short trips, 3 to 5 floors. In stores, office buildings, apartment houses.

Check out the low-priced, off-the-shelf elevator made to rigorous Otis standards. Write on your letterhead to Dept. 18, 260 Eleventh Avenue, New York, N. Y. 10001.

**Otis**<sup>®</sup>  
The Elevator Company



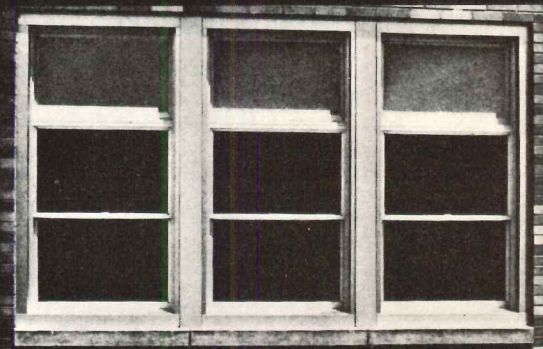
Let's say you need a replacement window that can be installed in minutes...from the inside. And let's say you want this window modified to meet building requirements. A problem? Not at all. (Unless you skipped this page)

The perfect solution to any replacement-window problem is the Nuprime<sup>®</sup> aluminum replacement window—the window designed and engineered with all the features of top-quality prime windows. Nuprime windows can be installed in minutes, from the inside. They come in different colors and designs, and can be modified to meet any building requirement. What's more, Nuprime windows virtually eliminate future maintenance costs and actually reduce heating and cooling costs. Their clean lines enhance the appearance of any building—regardless of architectural style.

No wonder you don't have a window problem.

Season-all engineers will be glad to consult with you and make a demonstration installation. Detailed information and specification data are in

Sweet's Architectural File <sup>19a</sup>/<sub>Se</sub>. For additional information, simply mail the coupon or call (412) 463-3531.



Nuprime Aluminum Replacement Windows

Gentlemen:

- Please send me complete product information on Nuprime replacement windows.
- I am interested in a free window survey and a free sample installation for my building.

Name \_\_\_\_\_

Address \_\_\_\_\_

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

Telephone \_\_\_\_\_

(area code)

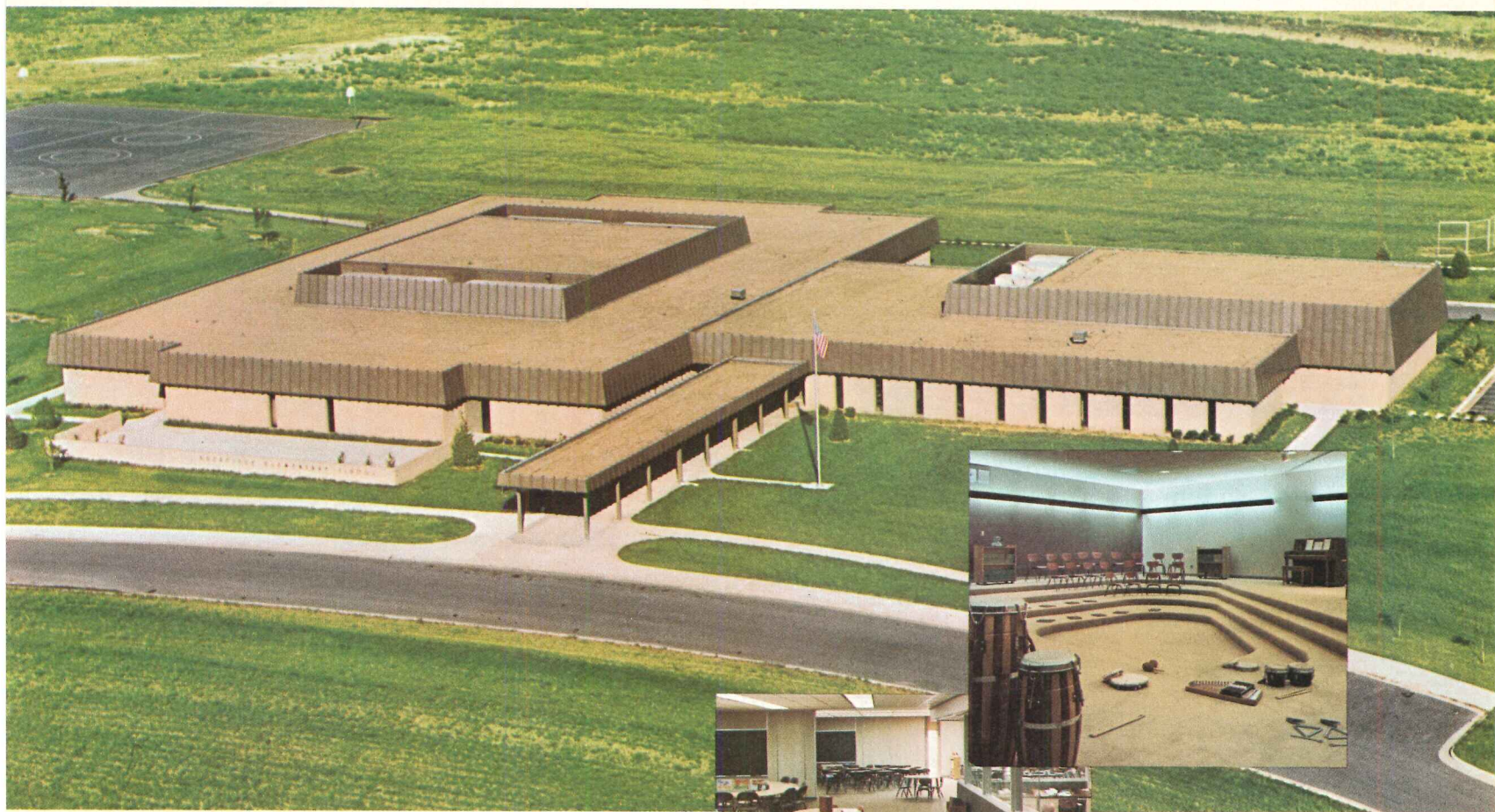
(number)

**season-all.**  
Season-All Industries, Inc. Indiana, Pa. 15701

Patent numbers: 3,449,862; 209,812; 213,676

For more data, circle 15 on inquiry card

# Educational change: moving target for school designers



DEERFIELD SCHOOL: Deerfield, a Lawrence, Kansas, elementary school follows modern, open-space concepts to permit team teaching, high student mobility, and easy change in the size of groups. The entire school is carpeted. Four Lennox DMS rooftop units, each providing individual control for six separate zones, heat and air condition the 29,900 square foot building.

## Lennox opens more options

Tomorrow's school. A place to teach? Or to learn? A place of discipline? Or demonstration? Or democracy? Education, as it re-examines its missions, poses shifting challenges to school planners. Architects seek to shape environments firm enough to help mold the process yet fluid enough to be shaped by future unknown change.

*continued overleaf . . .*



WEATHERFORD: Parker County Junior College ranges over 35 rolling Texas acres, shaping quiet views, reflecting the mingled heritage of Spanish and Old South. Buildings presently completed cover 95,316 square feet, and are designed to serve 2,500 full time students. The Lennox rooftop modular HVAC units are equipped with POWER SAVER™ to cool the building free on days when outside temperature drops below 57°F.

## educational change ... continued

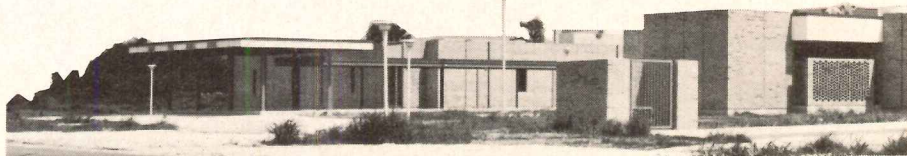
Lennox cooling-heating-ventilating systems not only expand the architect's design options but offer maximum opportunity for future change. Acoustics, space division, space changes, color, fenestration, orientation, security, privacy, all offer greater choice, and opportunities for economy, when the decision to air condition is made early in the design process.

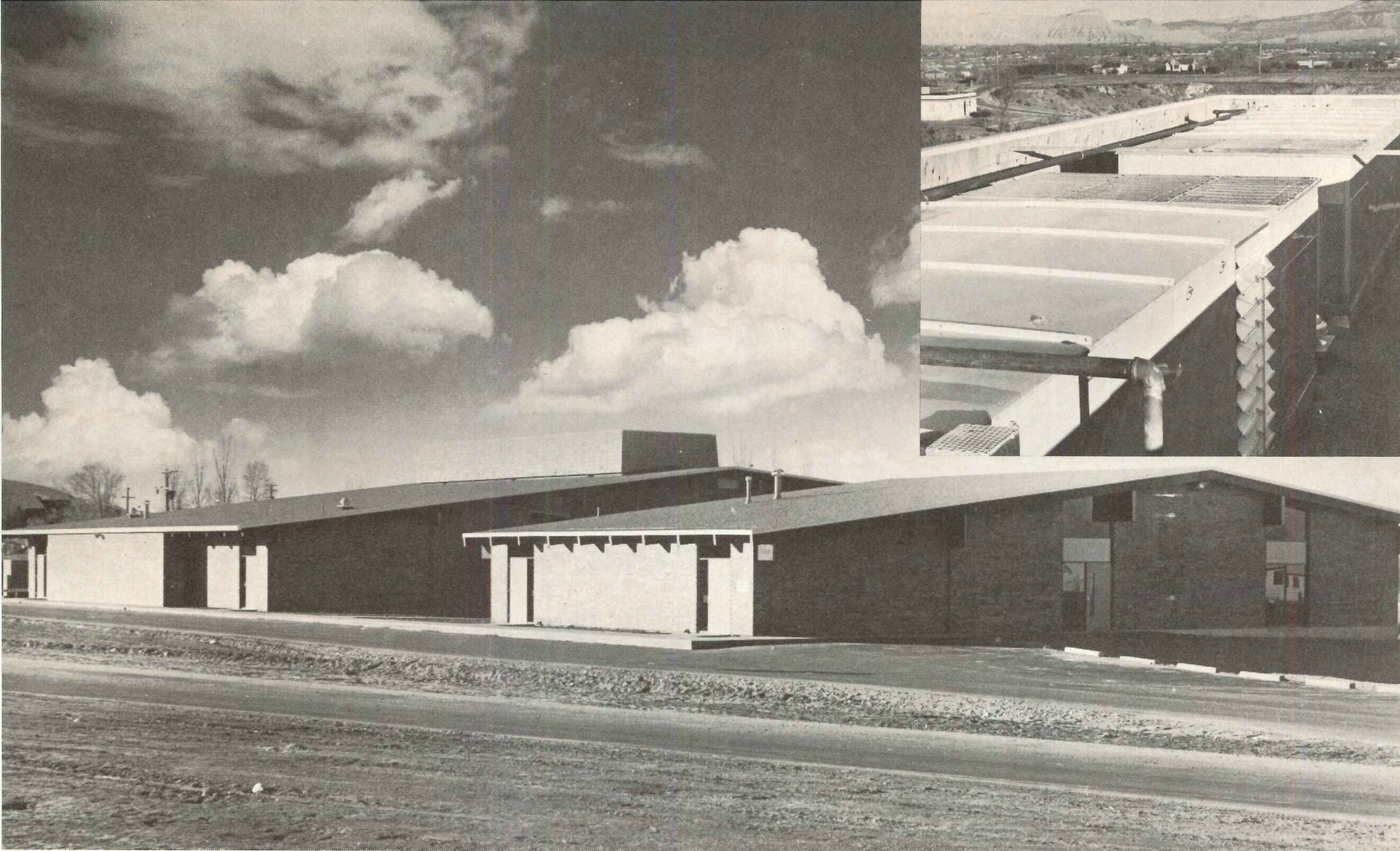
Lennox offers special opportunities. Units are roof mounted. Flexible ducts allow walls to be



Uncommon. In the Arabi Park Middle School, St. Bernard Parish, La., this spacious planetarium reflects education's response to man's new and intensified awareness of space.

ARABI SCHOOL: Open, uncrowded spaces, excellent illumination, continuous-flow carpeting, soft coloring compensate for lack of window views in this Arabi, La., school where high humidity and high temperatures dictated a minimum of glass exposure. 315 tons of Lennox air conditioning serve 62,960 square feet of conditioned space. POWER SAVER™ unit cools free when outside temperatures drop below 57°F.





SCENIC ELEMENTARY: Scenic Elementary, a K-6 split level for 600 students, nests into the side of a canyon outside Grand Junction, Colorado. Lennox DMS rooftop units, dual-ducted, with mixing dampers provide heating, cooling, ventilation to a score of different zones on three levels.

added, moved or eliminated, and still provide space-by-space control. As a school grows, you simply add units. And because equipment is factory assembled and wired, including controls, we offer you single-source responsibility for performance. And your costs are fully predictable. First costs. Cost of owning. Comprehensive service contracts are available.

Planning a school? Write us. We have representatives specially trained to talk schools with you. Lennox Industries, Inc., 805 S. 12th Avenue, Marshalltown, Iowa 50158.

**LENNOX**  
AIR CONDITIONING • HEATING

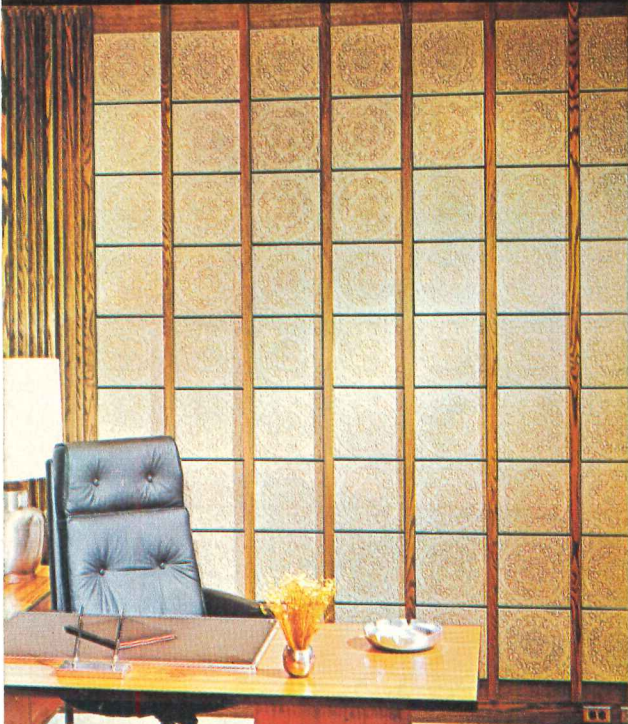
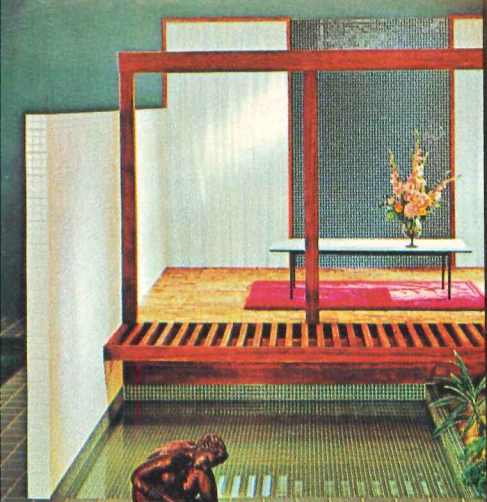
See Sweet's 29a/Le, or write Lennox Industries Inc.,  
 805 S. 12th Avenue, Marshalltown, Iowa 50158.

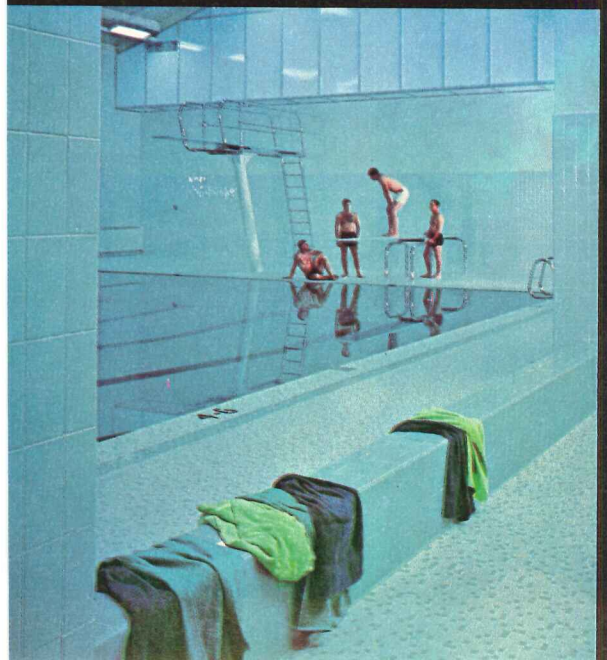
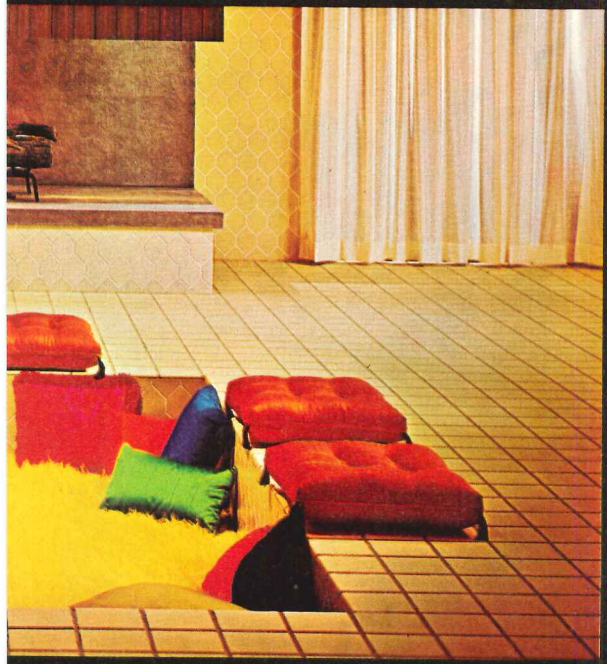
For more data, circle 16 on inquiry card

ARCHITECTURAL & ENGINEERING  
 CREDITS:

*Deerfield*: Architects and Engineers:  
 Robertson, Peters, Ericson & Williams.  
*Arabi*: Architect: M. Wayne Stoffle & Assoc.  
 Engineers: J. E. Leininger & Assoc.  
*Weatherford*: Architect: Albert S. Komatsu  
 & Assoc. Engineers: Adams Reid & Assoc.  
*Grand Junction*: Architect: Robert A.  
 VanDeusen & Assoc.  
 Engineers: James Burke & Assoc., Inc.







# You can do more, creatively, with ceramic tile.

Will tomorrow's architects and interior designers find themselves stuck with merely selecting modules? Merely choosing between one standard unit and another?

While there may be a possibility of such a trend developing, the ceramic tile industry is counting on *both* creative drive and the growing *need* for individuality to sustain the increasing demand for ceramic tile. It offers a literally unlimited variety of treatments in terms of size, color, area of use (both interior and exterior), texture, pattern, curvature. Not to mention new, improved grouts and faster installation techniques.

As the most imitated building material, ceramic tile remains as the symbol of quality. Unlike many of its imitators, it won't burn, scratch or peel. And, it doesn't need replacement over the useful life of a building. Tile Council certified tile doesn't add to cost, it lowers long-term cost and helps to maintain a high resale value.

Another intriguing aspect of ceramic tile is its ability to add a measure of sales appeal far beyond its actual cost. Once a tile contractor is on the site, the cost of each additional square foot of tile just isn't that great . . . but the effect is.

We've looked at some recent efforts to create convenient little boxes as substitutes for ceramic tile and other high quality building products. Despite our bias as manufacturers of ceramic tile, we feel that boxes are great . . . for products . . . but not for people.

Tile Council of America Inc., 360 Lexington Ave., N.Y., N.Y. 10017



TILE COUNCIL MEMBER COMPANIES: Allied Tile Corporation • American Olean Tile Company, Inc. • Aztec Ceramics Company • Cambridge Tile Manufacturing Company • Continental Ceramic Corporation • Florida Tile Industries, Inc. • Interpace Corporation • Keystone Ridgeway Company, Inc. • Lone Star Ceramics Company • Ludowici-Celadon Company • Mid-State Tile Company • Misceramic Tile, Inc. • Monarch Tile Manufacturing, Inc. • Mosaic Tile Company, a Div. of Stylon Corporation • Olympic Ceramic Tile Corporation • Robertson-American Corporation • Royal Tile Manufacturing Company, a Subsidiary of Tandy Corporation • Summitville Tiles, Inc. • Texeramics Inc. • United States Ceramic Tile Company • Wenzel Tile Company • Winburn Tile Manufacturing Co.

## Ceramic tile – as new as your next idea

For more data, circle 17 on inquiry card

Simon's Rock School,  
Great Barrington, Massachusetts  
Architects: Morehouse, Chesley and Thomas,  
Lexington, Mass.

# How Simon's Rock School got its stock Andersen Windows.



nce there was an architect who was commissioned to design a one-of-a-kind campus which was to be the home of a whole new concept in secondary education.

So he carefully studied the future needs of the school, the wooded, 350-acre site, the beautiful Berkshires in the background, and decided to frame the views with stock Andersen Windows.

Why *stock* windows in such a unique design? With **six types and hundreds of sizes**, our architect had complete design freedom. He knew he could get them fast from **local warehouse stock** to meet his construction schedules. (He liked the **local service backup**, too.)

Then, of course, he wanted the natural look and warmth of the best wood windows so as to avoid condensation problems and insulate against the frosty New England falls and winters. He knew that the welded, insulating glass and close Andersen tolerances might mean as much as a **15% fuel saving** in some of the buildings.

Finally, his experience told him the Andersen windows would **operate beautifully** for ever after.

And that's the story of how—and why—Simon's Rock School got its Andersen windows. May we help supply the happy ending in your next design?

For more information, see Sweet's Architectural or Light Construction File. Or, call your nearest Andersen Distributor.



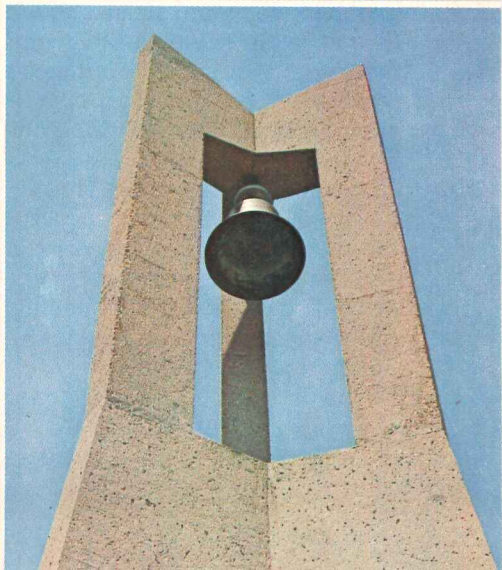
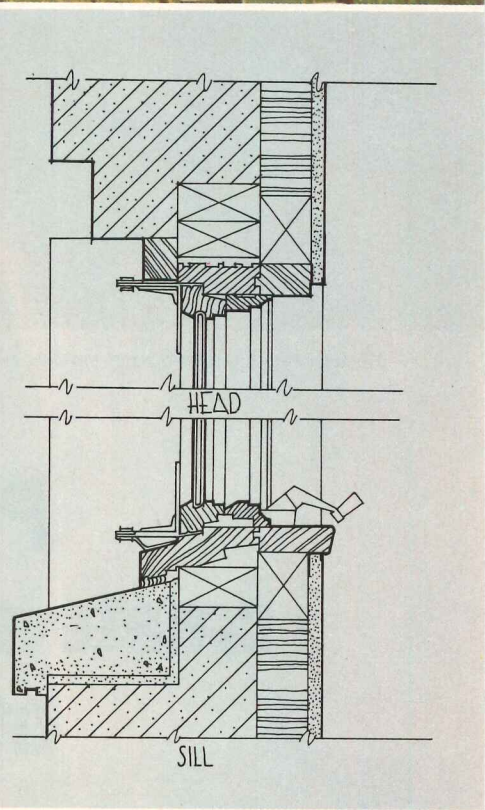
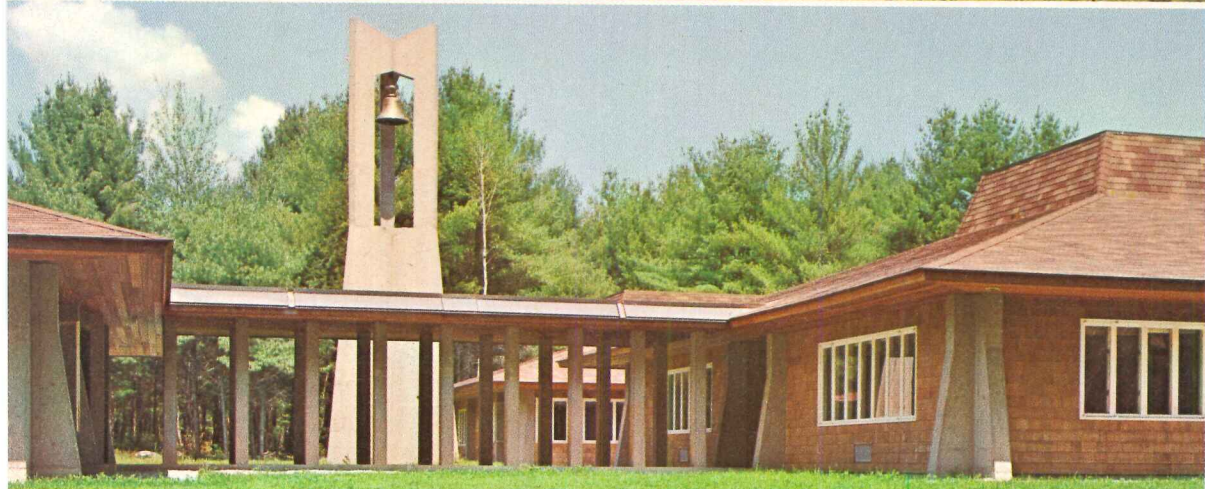
## Andersen Windowalls™

ANDERSEN CORPORATION • BAYPORT, MINNESOTA 55003

*Window Beauty is Andersen*

For more data, circle 18 on inquiry card







NUMBER TWO CHARLES CENTER, Baltimore. Architect, Whittlesey & Conklin, New York, N.Y.; Window Fabricator, W. T. Industries, Baltimore, Md.; Coated Extrusions, Aluminum Shapes, Inc., Delair, N.J.

# PPG Extrusion Coatings create a dramatic, enduring finish... at surprisingly low cost

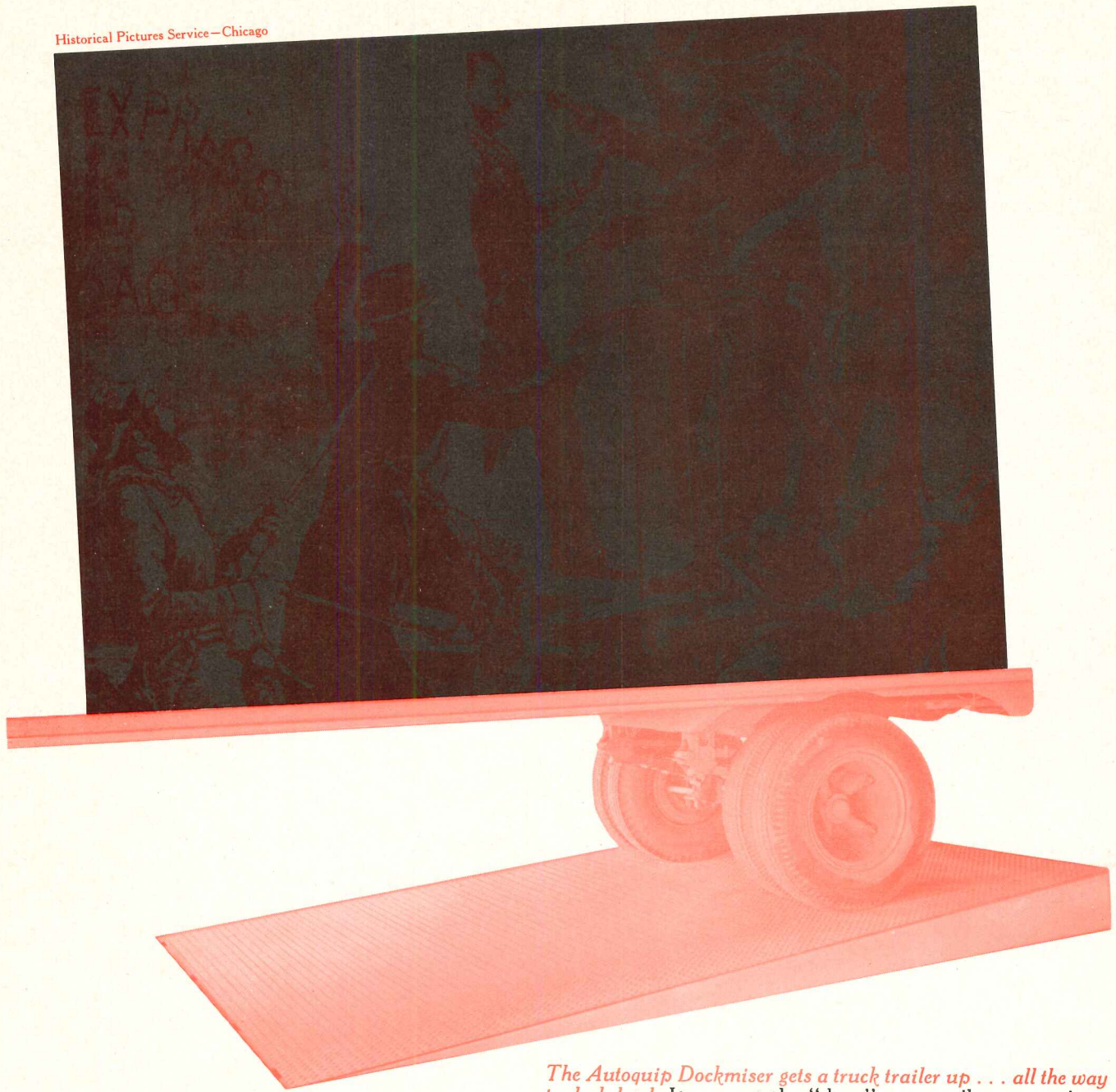
Extruded aluminum shapes now can be finished in rich new PPG color coatings, allowing you complete color freedom . . . but at far less cost than other finishing systems. Color uniformity and stability of these PPG coatings are outstanding. These finishes are now available in DURACRON® thermosetting acrylic enamels and DURANAR™ fluoropolymer finishes to achieve the desired film durability on windows, mullions and other extruded shapes.

Take advantage of all of the architectural benefits of these new PPG color coatings—and pass the savings on to your clients. Check your latest Sweet's Architectural File, or write Market Manager, Extrusion Coatings, PPG INDUSTRIES, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

**PPG is Chemicals,  
Minerals, Fiber Glass,  
Paint, and Glass. So far.**

Extrusion  
Coatings   
INDUSTRIES

*For more data, circle 19 on inquiry card*



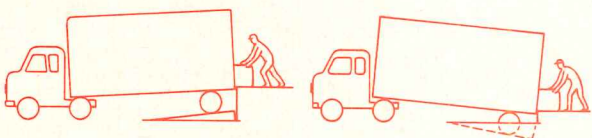
## Get 'Em Up!

*The Autoquip Dockmiser gets a truck trailer up . . . all the way to dock level. It can get the "drop" on a trailer, or get it to reach for the sky. This is a leveller that cuts down the angle of incline for both loading and unloading . . . providing up to 36 inches of adjustment. And with the Dockmiser, you head off any unnecessary obstructions at the pass. It is installed in front of a dock, with the power unit located under the platform.*

The compact design and independent hydraulic power of the rams guarantee uninterrupted operation. They pivot at both ends to avoid any unusual stress on the bearings. A wheel locator gets the trailer positioned over the Dockmiser before you can clear leather.

For dock levelling that's faster, safer, and with the lowest initial and operating costs in the industry, insist on the "near perfect level plane between dock and trailer."

Stand and deliver, varmints! *With the Autoquip Dockmiser Truck Leveller, you'll be the charge of the freight brigade.*



*Write for description, literature and price.*

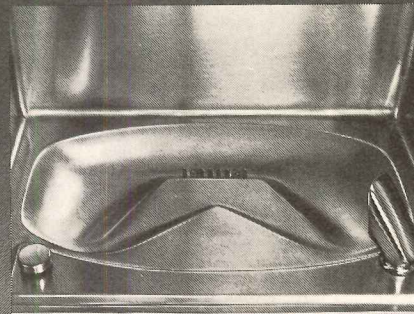
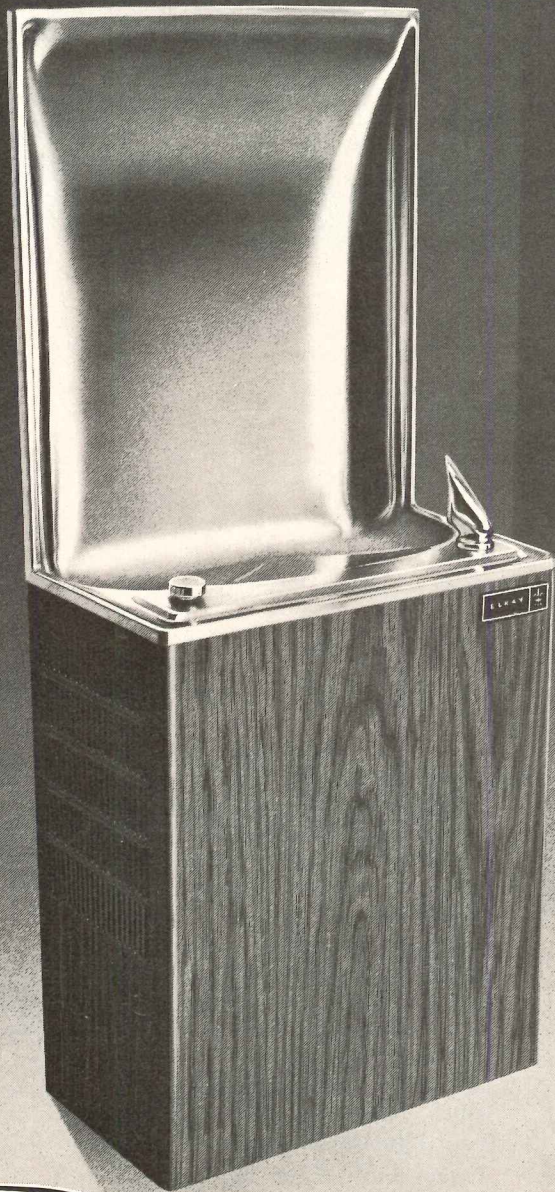
***Autoquip*** CORPORATION

1140 S. WASHTENAW AVE./CHICAGO, ILL. 60612

*For more data, circle 24 on inquiry card*

This gracefully designed, semi-recessed, wall-mounted water cooler projects only 8½" from the wall, minimizes interference with corridor traffic. The no-splash cascade design stainless steel basin, with remote controlled hooded stream projector, blends beautifully with decorative panels in nine colors of laminated vinyl, two colors in baked enamel, all from stock and at no extra charge. (Lustrous stainless steel panels also available at a slight extra cost.) Plumbing and electrical connections are accessible for easiest installation because of new chassis design. Roughing in wall box furnished as standard equipment. Model ESR-8.


*from the **ELKAY**® family of firsts*



Cascade design anti-splash basin with hidden drain. Hooded sanitary stream projector with remote control button.



For complete information write for Catalog No. DFC-4 or call Customer Service Dept., Area Code 312-681-1880. ELKAY MANUFACTURING COMPANY, 2700 S. Seventeenth Ave., Broadview, Ill. 60153

see our catalog in Sweet's 

For more data, circle 25 on inquiry card

## A.I.A. revamps professional ethics, stresses ecology at uneasy Boston convention



At its 102nd annual convention, the American Institute of Architects, burdened by the anxiety and conflicts which afflict the U.S.A. in 1970, continued nevertheless to liberalize old attitudes and to expand its involvement in world affairs. While the A.M.A. convened behind a police barricade in Chicago, the A.I.A. met in safety but with the fear that some calamity might occur. When a small disruption did take place, some members, including officers, over-reacted. It was in the air.

But there was also much successful intermixing of the "old" and the "new". Staid Senator Muskie urged in his Keynote

Address many of the same environment-saving measures and regional and urban planning methods students demanded in a manifesto. Architects sat in big circles on the floor and held hands for "sensory awareness." Gold Medalist Buckminster Fuller presented former Student Chapters President Taylor Culver with an award for leadership from the Student Chapters during a meeting to draft a resolution denouncing the A.I.A. for slowness in meeting its responsibility to minorities. Many pro-minority resolutions were passed, however, and a militant black, Robert Nash, was elected a vice-president. There were solid conservative voices, but no conservative "backlash." At the final event, the Gold Medalists' Ball, a foxtrot band on one side of the room alternated with a hard rock group on the other.



### New ethics standards narrowly voted

A.I.A. members now are operating under new standards of ethical practice as a result of action taken at the 102nd annual convention in Boston. Not all of them, by any means, are happy with the outcome—the approval on a vote (computer weighted) of 867 for and 647 against. The fairly narrow margin of 220 reflects a bitterness that has surrounded the ethics debate for many years.

The convention floor argument, developing in a late business session when tempers were shortened, illustrated the strong feelings of the small office interests, largely opposed to briefing down the 1967 revision to the form now approved. The vote was not called until 6:30 P.M. on the last day of the convention.

There are those who feel the revision endorsed at Boston for one thing permits firms that have been violating the older standards (re certain conflicts of interest) now to continue those practices with impunity. Example: the members' obligations were more specifically stated in the older standards which dealt with public and client relations at considerably greater

length. Where an architect specifically was forbidden to engage in building contracting in the earlier version, the new rules read: "An architect shall not undertake any activity, have any significant financial or other interest, or accept any contribution that either compromises his professional judgment or prevents him for serving the best interests of his client or employer."

Does the change in standards carry the architect into the decade of the 70's with a needed flexibility for meeting new challenges posed by a progressively industrializing industry? Supporters of the revision argue passionately that it does. The Institute's outgoing president, Rex Whitaker Allen, F.A.I.A., San Francisco, feels the new document will encourage members to experiment and to innovate with new building methods and materials. This one change in direction, he notes, could help remove the nation's housing shortage and produce better designs in the urban environment.

The simpler and shorter standards under which the Institute now operates were prepared by a task force under the chairmanship of Jack D. Train, F.A.I.A., Chicago. They passed through repeated A.I.A. board of directors discussions before presentation to delegates at Boston this year. Train's

force, in its revision work, found itself hampered by word interpretations and turned to seeking out and stating the reason or principle behind each rule and regulation. It submitted to the board, and the board brought to the convention, a document concerned with principles more than problems, a document that accommodates "an expanding spectrum of services and responsibilities that people trained as architects provide in enhancing man's environment."

All efforts to rewrite terms of the new standards as presented to the Boston meeting on the convention floor were defeated. Debate was prolonged, but at the very late hour, A.I.A. Secretary Bolton moved the question on approving or disapproving the standards as submitted by the task force. A standing vote on this was ruled by President Allen (presiding) as favoring adoption, but Arch R. Winter, F.A.I.A., Gulf States Region director, who had led strong opposition to the proposal on grounds of ambiguous interpretation, called for a record vote. The computer tally resulted.

A National Judicial Board named by the A.I.A.'s president and directors and the secretary of the Institute will receive charges of ethical standards violation and interpret the new rules in handling these.

## N.C.A.R.B. proposes big changes

The National Council of Architectural Registration Boards held its meeting June 18th through the 20th in Boston, three days prior to the A.I.A. The N.C.A.R.B. convention, of course, is a gathering of representatives of the registration boards of each individual state. Only these separate registration boards are legally empowered to set standards regulating the practice of architecture in each state. The N.C.A.R.B. can only recommend and set guidelines which, if followed, make the practice and licensing procedures of each state consistent with each other. Nonetheless, N.C.A.R.B. recommendations have been followed rather closely in the last few years.

N.C.A.R.B. Examination Committee was authorized to create a new licensing test this year which, if accepted, would be a revision to their existing examination now used by all 50 states, and would be placed in use by June of 1972. The exam would be as short as possible (perhaps one day), probably machine graded, and would test a candidate's ability to "synthesize basic general knowledge of the field . . . and make strategic decisions . . ." regarding broad, environmental issues. "Although technical decisions are important and many take pleasure in detail, competence in tactical decision making is the first and most important need. The new exam must emphasize this fact." In conjunction with the new exam, the prerequisite qualifications for taking the exam would be changed. A professional degree from an accredited school of architecture is re-emphasized as the principal prerequisite, but if the degree is from a six year school, no additional field experience will be needed. If the degree is from a five year curriculum, only one year's experience in the field will be required, instead of the three years needed now. For people who ". . . do not hold an accredited architectural degree but who possess equivalent experience or education . . ." there will be a new "qualifying examination" created, which they will have to pass in order to take the professional examination. It was not determined how much work experience or non-architectural education such candidates would need to become an architect. The Examination Committee was originally in favor of excluding completely those people who held no diploma above that of high school but who had worked for architects for, say, twelve years. This exclusion was deleted by the convention as a whole, however.

A new series of legislative guidelines was accepted. The guidelines in general broaden the definition of the word architect and place fewer restrictions on the kind of services he may perform. They would both permit practice in partnership and allow architectural firms to incorporate for the purpose of architectural practice.



## Buckminster Fuller receives the Gold Medal

A.I.A. President Rex Allen presented the Gold Medal, the A.I.A.'s highest honor, to Buckminster Fuller at a banquet and ball in his honor, the final event of the convention. As it was almost Mr. Fuller's 75th birthday, the banquet was also a celebration (above, right). It was Executive Vice-President Slayton who, a few days before, had said, quoting the Fuller-inspired "Whole Earth Catalogue," "We are as gods and might as well get used to it," and this was a central theme of Mr. Fuller's speech (see also February, page 41).

Mr. Fuller described the relation of genius to cumulative technological advance and standards of wealth, leading, without conceit or false modesty, to his own contributions and present world needs. All people are born with genius, he argued, but most



are rapidly "degeniused" by their backward-looking society. The few survivors, he said, have made possible society's near-steady technological advance from the era of the pyramids, when death and poverty were the norm, through ages when progressively larger numbers enjoyed wealth, to the present, when universal prosperity is technologically possible, and when the young and the deprived, realizing this, find themselves in conflict with the rich, rigid groups who are unaware of the advance. Such groups fight to preserve their truly unlimited wealth, while squandering and dangerously misusing their very limited natural resources. The next five years, says Mr. Fuller, will determine whether these resources are to be exhausted or turned into worldwide prosperity.

## Liberals win in resolution voting

A progressive, but far-from-radical, picture emerged from votes on resolutions, continuing the A.I.A. pattern of recent years and ending rumors of a conservative "backlash." Beyond endorsement of the new ethical standards and N.C.A.R.B. registration procedures, resolutions also:

- called for reduction of military involvements abroad "to an absolute minimum consistent with our nation's security," but omitted amendments to endorse specific withdrawals,
- asked for a re-ordering of national priorities to emphasize solving housing and environmental problems,
- urged new taxation concepts to improve planning, and new zoning, new building codes, and labor support to allow mixed land use and encourage new technologies,
- gave support to the Community Design Centers, calling for a national fund-raiser,
- withdrew endorsement of the fallout shelter program.

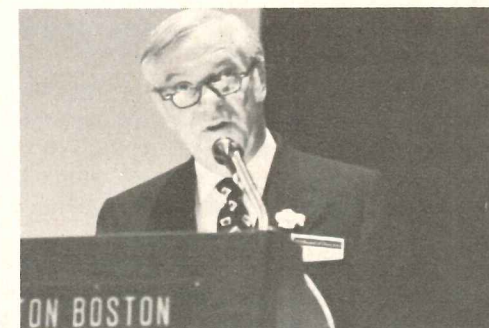
Defeated measures included:

- a proposal to give half of any dues increase to Professional Responsibility programs and halt new headquarters building plans until the Chicago commitment of aid to minorities "to which the A.I.A. has not addressed itself" is met (written by former Student Chapters President Taylor Culver with students and minority group members, submitted by Charles Kahn of Kansas),

- national membership votes on all policy decisions made by the A.I.A. board (opponents successfully argued this would hamstring A.I.A. lobbying efforts; California members submitted the proposal),
- a Wisconsin Chapter proposal to abolish the Fellowship program "in favor of more meaningful activities,"
- condemnation of the supersonic transport as presently designed (February, p. 36).



Executive Vice-President William Slayton reports on A.I.A. business (above) and First Vice President-elect Max Urbahn, F.A.I.A. (below) leads discussion on the new A.I.A. building (page 43).



## The Day of Awareness bombs out

It had its good moments, but the Day of Awareness left a lot of people with a lot of bad feelings. The purpose of the student-organized program, which was called "Environment: Awareness and Action" and put together under the leadership of Arthur Hacker, was to open the minds of A.I.A. members to the urgency of pollution problems, to point out their connection to other social attitudes, and to give an indication of the new "in-depth" sensibility necessary to survival. "If people understand, in part, what is meant by interrelationships of ecosystems, they will also understand, in part, why we have an urban crisis," said Mr. Hacker in his introduction to the booklet written for the day.

It took only one small, though spec-



Ecologist Dr. S. P. R. Charter and admirer; A.S.C./A.I.A. President Michael Interbartolo, rear.

taclar, incident early in the day to sour the atmosphere for much of the program. Dr. S. P. R. Charter, a physicist and ecologist, editor of "Man on Earth," had gotten part way into his speech when he was interrupted by a piercing scream from a member of the audience wearing an enormous yellow parachute. Up to this point, this figure had been assumed to be a part of the next event, a "multi-media, issue-oriented environmental experience," planned by Cosmic Labs, of New Haven. However, he ran up to the stage, grabbed the microphone, shouted, and, among other things, sang some of the "Star-spangled Banner" before leaving. He was later tentatively identified as an architect from Houston, and called himself Radar. Dr. Charter refused to continue, and a group unconnected with the first interruption chose the moment to announce they were setting up their own socially-



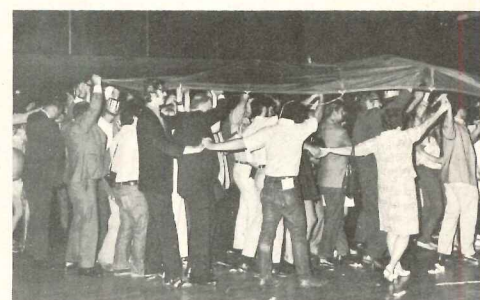
"Serve the People," new community-oriented professional group, led by architect Troy West (right).

oriented architects' organization. President-elect Hastings mistakenly identified the screamer as Troy West, a Pittsburgh architect and teacher and leader of the new socially-oriented group, which, it later developed, did not contain a single A.I.A. member. Mr. Hastings was not alone in his confusion.

The multi-media show, which included dancing under and around canvas tarpaulins and hand-holding sensory awareness circles, followed.

In the afternoon, Ian McHarg, head of the Department of Landscape Architecture and Regional Planning at the University of Pennsylvania, spoke to a large audience on interrelationships in the life cycle.

Workshops on environment followed, including Esalen Institute-type awareness sessions on the floor in the Grand Ballroom. The workshops were sparsely attended.



Architects, students, and members of Cosmic Labs dance under canvas amidst beachballs and rock.

## Responsibility to Society: A.I.A. keeps moving

Last year, action to help minorities, especially blacks, was the sleeper issue of the Chicago A.I.A. convention, when Student Chapters President Taylor Culver talked the members into a promise of action worth \$15 million. Taylor Culver left the Boston convention early, having drafted a resolution which accused the A.I.A. of breaking that promise. He's not angry, he says, but he thinks architects will never be able to bring about the changes he thinks necessary, even if they do live up to their promise.

But the spirit of the convention was more optimistic. A resolution was passed strongly in favor of the Community Development (changed from "Design") Centers,

and backing the work of the task force on Professional Responsibility to Society. Task force chairman George Rockrise, F.A.I.A., reporting to the convention, was noncommittal about whether the \$15-million figure had been reached, saying it depended on how one did the arithmetic. He did complain the task force was not given enough funds for its programs, but he made it clear the A.I.A. had accomplished a lot in the last year. Achievements included: the six-year A.I.A./Ford Foundation scholarship program; successful efforts to help gain accreditation for three black schools of architecture, Hampton, Tuskegee, and Southern.

Community Development Centers were the main topic at the task force workshop, with the need for community control at every stage a major point.



Members of the Task Force on Professional Responsibility lead a workshop. Former A.S.C./A.I.A. President Taylor Culver, left; Task Force head George Rockrise, center; newly-elected Vice-presi-

dent Robert Nash, who is expected to take over the Task Force this year, next from far right; Associated Student Chapters President Michael Interbartolo, far right.

## Honor Awards

The awards presentations began with the induction of Honorary Members Samuel Chamberlain, Thomas Griffith, R. S. Reynolds, Jr., Samuel Spencer, and Walter Muir Whitehill.

Mr. Allen presented the following A.I.A. Medals: Fine Arts to Richard Lippold, Locust Valley, N.Y.; Craftsmanship to Trude Guermontprez, San Francisco; Industrial Arts to Barbara Stauffacher Solomon, San Francisco; Allied Professions to Robert L. Van Nice, Bethesda, Md.; Architecture Critics to Henry-Russell Hitchcock, New York City.

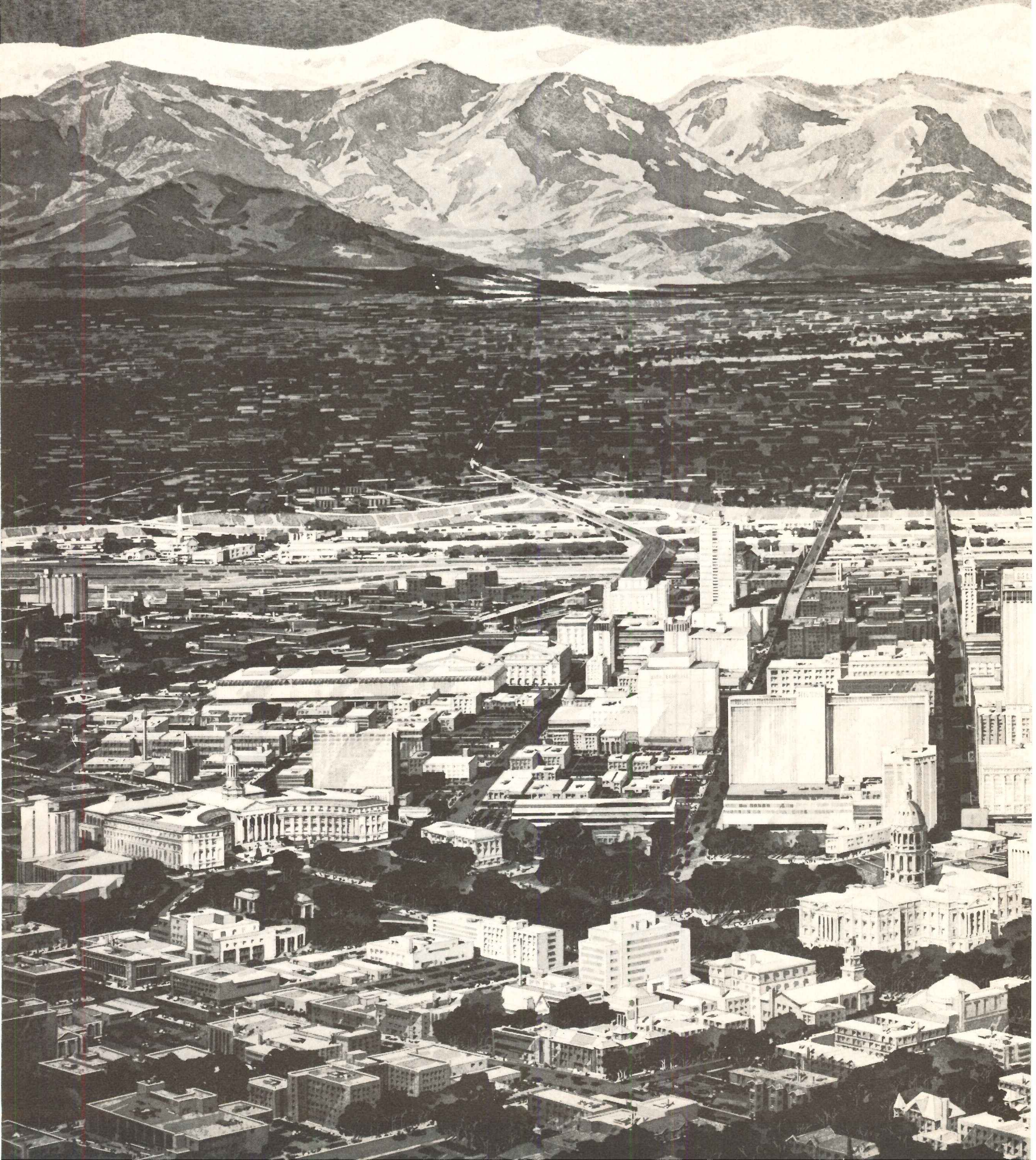
The Architecture Critics' Citation was awarded to the American Broadcasting Companies, Inc., for its show "Cosmopolis," and was accepted by ABC Vice President Thomas H. Wolf. George B. Hartzog, Jr., Director of the U.S. National Park Service, and former Director Conrad L. Wirth was given the Citation of an Organization for NPS's "Mission 66."

Ernest J. Kump, F.A.I.A., Palo Alto, Calif., received the Architectural Firm Award for Ernest J. Kump Associates, and the Edward C. Kemper Award went to Ulysses Floyd Rible, F.A.I.A., Los Angeles.

Other awards included the second R. S. Reynolds Memorial Award for Community Architecture, and a Distinguished Service Award was presented to the Potomac Valley Chapter, A.I.A.

continued on page 40

# Denver builds for







# its new pioneers. Permalite® helps.

The Denver area... historically famous for miners and cattlemen... is now bustling with scientists and engineers. Federal bureaus and institutes... many of the nation's leading research laboratories and electronic equipment manufacturers... even the Air Force Academy at Colorado Springs... now call this area home. Top-side protection of expensive electronic gear, laboratory devices and sophisticated manufacturing equipment is vital. That is why so many architects specify non-combustible rated, dimensionally-stable Permalite Sealskin rigid roof insulation. Permalite meets Denver's tough building code... is nationally approved for FM Engineering Division Insulated Steel Deck Class 1 construction (fire and wind uplift); Underwriters' Laboratories, Inc., Metal Deck Assemblies Nos. 1 and 2 and others. GREFCO, Inc., Chicago, Los Angeles.

A subsidiary of General Refractories Company. 

**Permalite®**  
RIGID ROOF INSULATION

For more data, circle 26 on inquiry card

No. 3 in a series of illustrations of major American cities. For a reprint of the original rendering by John R. Hollingsworth, suitable for framing, write: GREFCO, Inc., Building Products Division, Dept. A-3, 333 N. Michigan Ave., Chicago, Illinois 60601.



The McGraw-Hill (F. W. Dodge) Party (top) was held in the new Boston City Hall, designed by Kallmann, McKinnell & Knowles (February, 1969, page 133). The building's varied spaces turned out to be ideal for the several bands and nearly 3,000 guests.

The Host Chapter Party (middle) was held on George's Island in Boston Harbor. While the lobster and entertainment were all the 4,000 guests could have wished for, the event was a transportation disaster. Guests waited as much as three hours for the nautical relics which ferried them to and from the island. It is said the Chapter is suing the boat company.

The Gold Medalist's Birthday Ball (below), in honor of Buckminster Fuller, brought the convention to a happy conclusion.



## New A.I.A. officers include first black board member

Robert Nash, of Washington, D.C., one of three vice-presidents elected at the convention, will be the first black to serve on the A.I.A. board. Max O. Urbahn, F.A.I.A., of New York City, was elected first vice-president (president-elect for 1972). New officers not shown below are: Directors Carl L.

Bradley, A.I.A., East Central States; Hugh McK. Jones, F.A.I.A., New England; Darrel D. Rippeteau, A.I.A., New York; James J. Foley, A.I.A., Ohio; Louis R. Lundgren, A.I.A., North Central States; and Max Flatow, F.A.I.A., Western Mountain Region. Preston M. Bolton, F.A.I.A., of Houston, was reelected secretary, and Rex L. Becker, F.A.I.A., of St. Louis, will continue to serve as treasurer.



President-elect Robert Hastings, F.A.I.A., first vice-president (president-elect for 1972) Max O. Urbahn,

F.A.I.A., vice-presidents Richard M. Bennett, F.A.I.A., Robert Nash, and George M. White.

## Sixty-four new Fellows invested at museum

Investiture of new Fellows was held at the Museum of Fine Arts. Sixty-four members were elected to the College of Fellows and eight foreign architects were elected Honorary Fellows. The new Fellows of the American Institute of Architects are: Bissell Alderman, W. Springfield, Massachusetts; Stuart Oliver Baesel, Charlotte, North Carolina; Howard Raymond Barr, Austin, Texas; Gunnar Birkerts, Bloomfield Hills, Mich.; Peter Blake, New York; Carl R. Blanchard, Jr., New Haven, Connecticut; Prentice Bradley, Pittsfield, Massachusetts; George B. Brigham, Ann Arbor; Thomas A. Bullock, Houston; Bailey M. Cadman, Troy, New York; Dan C. Cowling, Jr., Little Rock, Arkansas; B. W. Crain, Jr., Houston; Clayton B. Dekle, Nashville; J. Everette Fauber, Jr., Lynchburg, Va.; Ulrich J. Franzen, New York.

Also Sanford R. Greenfield, Boston; Dean L. Gustavson, Salt Lake City; Cabell Gwathmey, San Francisco; Harry W. Harmon, Sherman Oaks, California; Richard Levan Howland, W. Hartford, Connecticut; Donald E. Jarvis, Dallas; Floyd Elmer Johnson, Charlottesville, Virginia; Robert Lawton Jones, Tulsa, Oklahoma; Harry Kale, Philadelphia; Gertrude Lempp Kerbis, Chicago; Joseph B. King, Asheville, N.C.

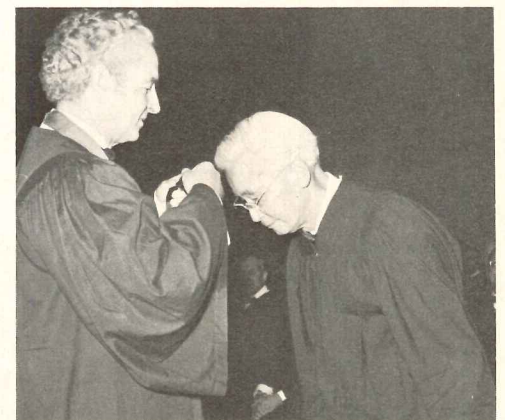
And Gerhardt T. Kramer, St. Louis; Samuel M. Kurtz, New York; Lawrence Bailis Lackey, Jr., San Rafael, California; John E. Lautner, Los Angeles; Alan C. Liddle, Tacoma, Washington; Mark P. Lowrey, New Orleans; Carter H. Manny, Jr., Chicago; Robert B. Marquis, San Francisco; Harry Roll McLaughlin, Carmel, Indiana; Joseph Miller, Washington, D.C.; Charles W. Moore, New Haven, Connecticut; J. Robert Mosher, La Jolla, California.

Also John R. Myer, Cambridge, Massachusetts; William B. O'Neal, Charlottesville, Virginia; Donald E. Olsen, Berkeley, California; S. Glen Paulsen, Bloomfield Hills, Mich-

igan; David L. Perkins, Lafayette, Louisiana; Robert Joseph Platt, San Diego; David A. Pugh, Lake Oswego, Oregon; John Rea, Altoona, Pennsylvania; William Vernon Reed, Hato Rey, Puerto Rico; Paul M. Rudolph, New York; A. Bayley Ryan, Louisville, Kentucky; Frank Schlesinger, Philadelphia.

And Richard S. Sharpe, Norwich, Connecticut; Neill Smith, San Francisco; Hilliard T. Smith, Jr., Lake Worth, Florida; James A. Swackhamer, Somerville, New Jersey; Arch B. Swank, Jr., Dallas; Joseph F. Thomas, Pasadena, California; Emanuel N. Turano, New York; Burnett C. Turner, Los Angeles; Philip Shirley Wadsworth, Portland, Maine; Robertson Ward, Jr., Chicago; Robert Charles Weinbert, New York; Richard H. Wheeler, Cincinnati; H. Robert Wilmsen, Portland, Oregon; William Woollett, Glendale, California.

Honorary Fellows are: Te Lin Chang, Taiwan; William G. Leithead, Canada; Lord Richard Llewelyn-Davis, England; Jorge L. Medellin, Mexico; Togo Murano, Japan; Arieh Sharon, Israel; Edouard Utudjian, France, and Jorn Utzon, Denmark. Only 147 other architects hold the title of Honorary Fellow of the A.I.A.; the honor recognizes outstanding architects who are not citizens of the United States and "do not practice within the domain of the Institute."



Togo Murano, of Japan, is made an Honorary Fellow by A.I.A. president Rex Allen.

# Dover delivers two stage lifts for the Milwaukee Performing Arts Center

(Plus five elevators,  
an organ lift  
and a pallet lift)

MILWAUKEE PERFORMING ARTS CENTER—Architects: Harry Weese & Associates. Theater Consultants: George C. Izenour Associates. General Contractor: Klug & Smith Co. Dover Oildraulic stage lifts, special lifts and elevators installed by Northwestern Elevator Co., Inc.

Another major performing arts complex uses Dover stage lifts for more flexible and adaptable space.

Uihlein Hall, dominant element in the Milwaukee Performing Arts Center, was planned to give equal staging facility to theater, symphony or opera. Two Dover lifts at stage front are used to extend the stage, orchestra pit or seating area as required by the type of performance. A third, with a lifting capacity of 26,400 lbs., supports a huge pipe organ at stage level, or lowers it out of sight in a pit at the rear of the stage area.

These special lifts, like the five elevators also installed here, are moved and support-

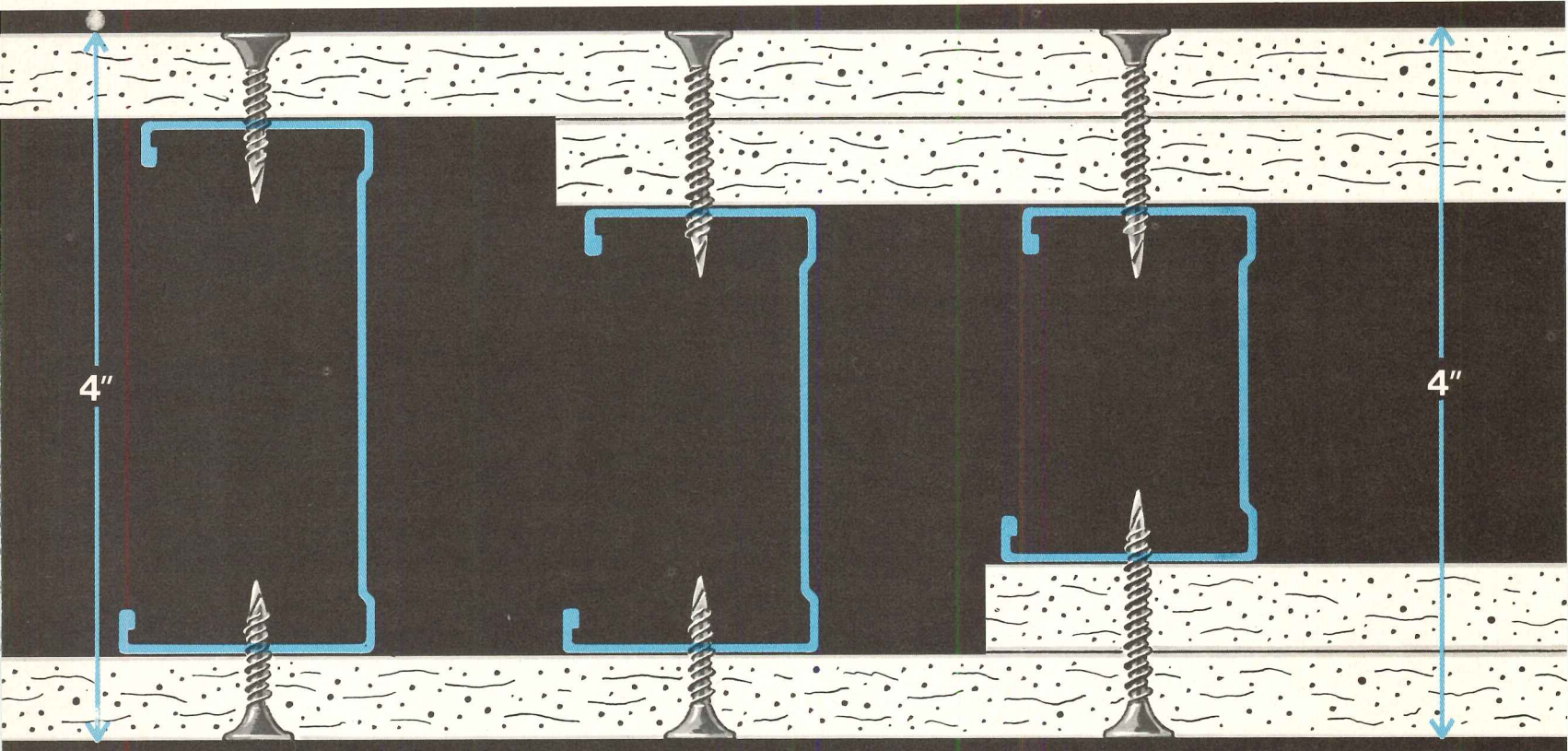
ed by Dover Oildraulic® cylinders, power units and controllers. Essential requirements of dependable operation and precise leveling are met by the sophisticated use of hydraulic power developed and refined by Dover over the past 40 years.

In planning any theatrical arts building, consult Dover for suggestions on use of Oildraulic lifts for maximum utility and versatility of available space. Our wide experience in stage lift design and construction can be most helpful. Dover Corporation, Elevator Division, Dept. A-8, P. O. Box 2177, Memphis, Tenn. 38102. In Canada: Dover/Turnbull.



# Series "4"

## the four-inch wall that does it all.



**NEW USG® METAL STUD DRYWALL PARTITION SYSTEMS,** with one constant 4-inch out-to-out dimension, simplify design, speed layout, materials handling, installation. For all non-load bearing interior walls, you specify lightweight Series "4" with studs in three widths, 24" o.c. Single or multiple layers of ½-inch SHEETROCK® SW FIRECODE® "C" Gypsum Wallboard complete the systems. Add 1½-inch THERMAFIBER® Sound Attenuation Blankets for higher STC. Systems save floor space. Cut material costs. Provide all fire and sound ratings commonly required. One throat size for all door frames. Openings in studs provide plumbing and electrical chaseways. SHEETROCK SW keeps walls virtually free of joint imperfections.

\*Reg. U. S. Pat. Off. U. S. Patent No. 3,435,582 for SHEETROCK SW

PARTITION THICKNESS	STUD SIZE	½" WALLBOARD LAYERS	1½" SOUND BLANKET	FIRE RATING**	SOUND RATING STC	COST INDEX
4"	3"	2	—	—	37	51
4"	3"	2	Yes	1 hr.	43	65
4"	2½"	3	—	—	41	68
4"	2½"	3	Yes	1 hr.	49	82
4"	2"	4	—	2 hr.	45	86
4"	2"	4	Yes	2 hr.	52	100

\*\* Estimate based on engineering analysis of tested assemblies with similar construction.

# UNITED STATES GYPSUM

Ask your U.S.G. Architect Service man for details, or write us at 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AR-08.

For more data, circle 28 on inquiry card

Robert D. Harvey Studio



## A.I.A. NATIONAL HEADQUARTERS BUILDING BY TAC

The American Institute of Architects was asking for trouble when it decided, in the early '60's, to build itself a new Washington, D. C. headquarters. A situation in which architects were building for architects was bound to be highly charged; and the presence of the architect-dominated Fine Arts Commission, whose stamp of approval was necessary, made the project appear (to some) even more difficult. The A.I.A. got more trouble than it expected, having been forced to abandon two excellent earlier designs (architects Mitchell Giurgola Associates resigned), but its new building is worth the struggle.

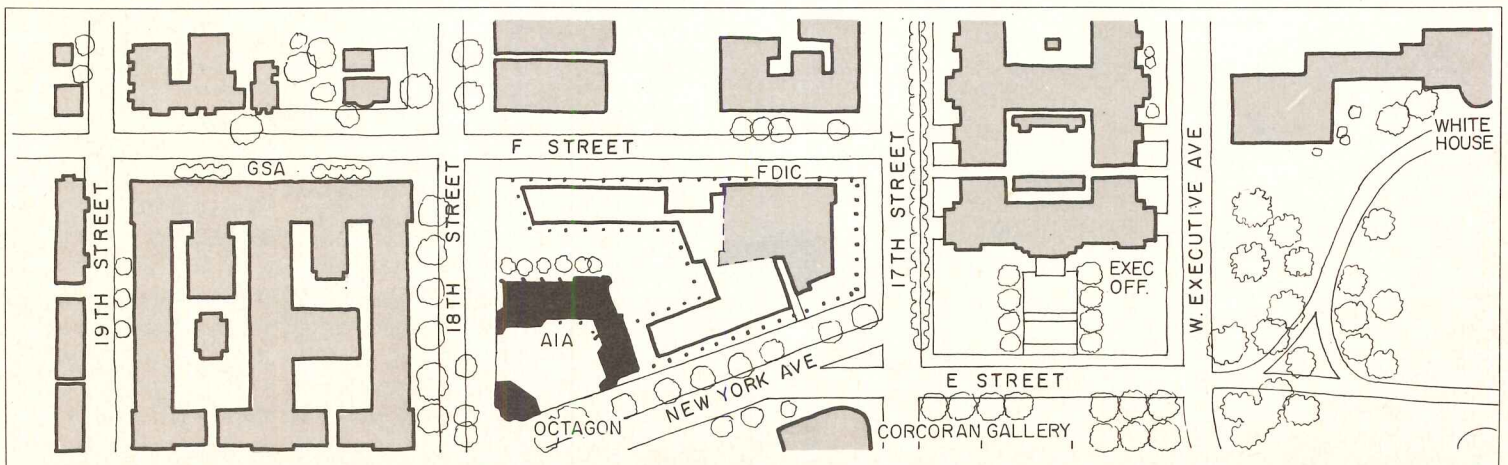
It is to the credit of the A.I.A. and The

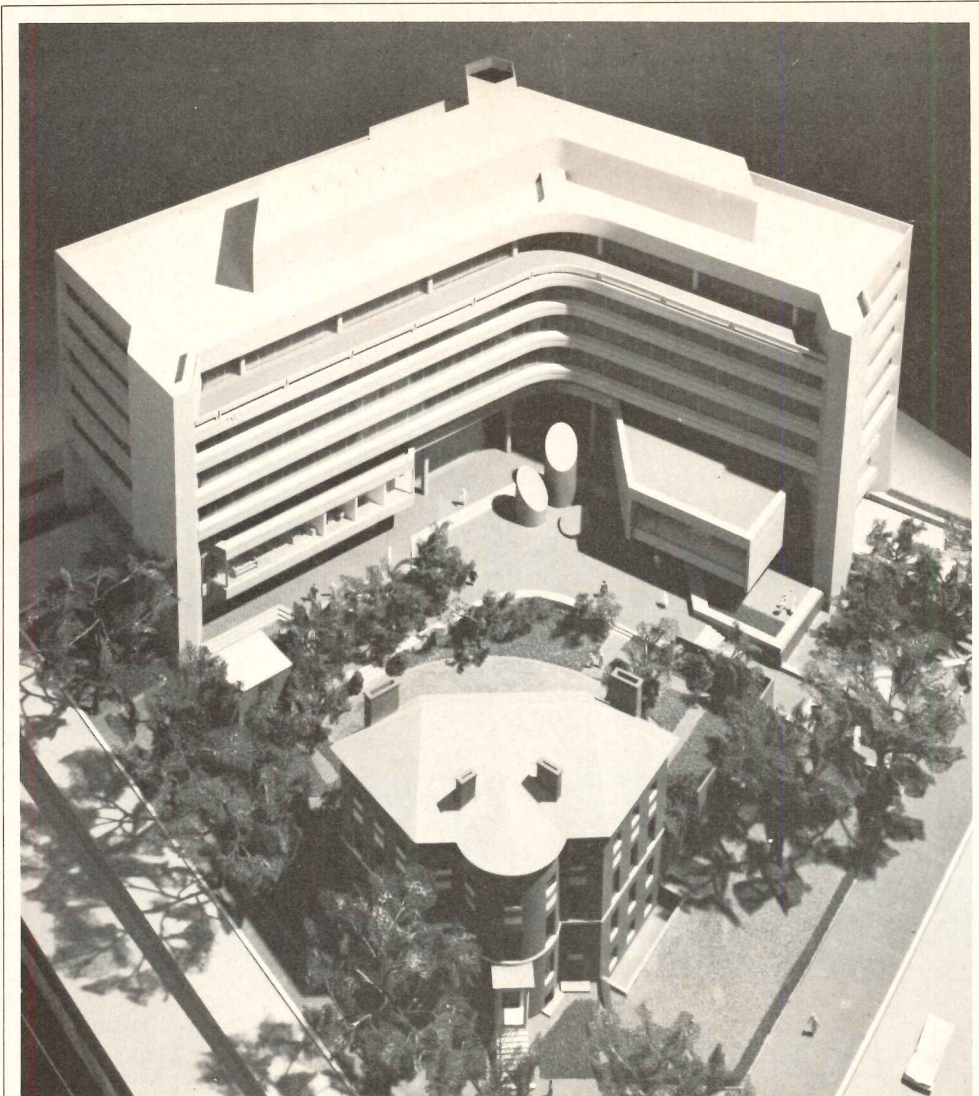
Architects Collaborative (Cambridge, Mass.) that the new design meets, with assurance and distinction, the many, sometimes conflicting, demands placed upon it.

### Purposes

The new building has several purposes: to provide badly needed office and meeting space; to continue and expand the A.I.A.'s responsibility towards its neighborhood (the site is two blocks from the White House); to set an example of new design made compatible with a famous old monument, the 18th century Octagon House; to provide a national focus and meeting place for A.I.A. members; and, not least, to create

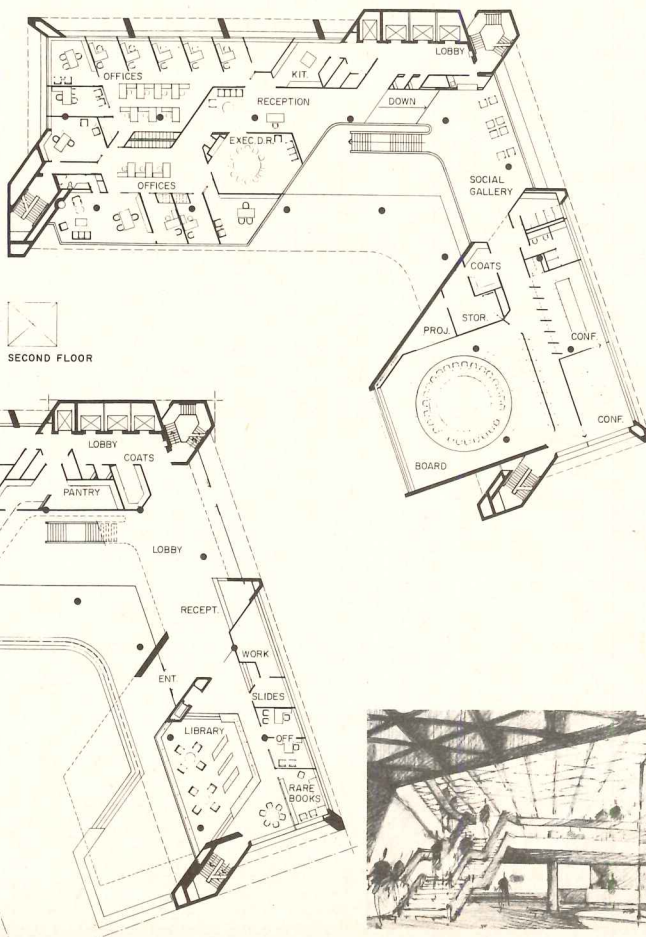
a bigger A.I.A. "image" in a city where it counts. TAC's solution includes a master plan for rebuilding the rest of the block (below), one of the very few in its area which is still not developed to capacity. The center of the block, between the A.I.A. and the lavish new Federal Deposit Insurance Company building, would contain open arcades under new office structures and a plaza behind the A.I.A. The large rear windows of the lobby and gallery (next page) will overlook the proposed plaza. This master plan is not only an act of civic responsibility on the part of the A.I.A., but it is also an attempt to set a public example for good planning.





Robert D. Harvey Studio

Windows and doors focus on the Octagon House. Main entrance is at center. Board room projects, stair and ventilation towers define the structure and visually enclose the garden and the Octagon. Large rear windows of lobby create a flow-through of space between the garden and the proposed rear plaza. Ground floor is given over to public spaces, tied to the second floor of offices by an open staircase leading to a balcony social gallery. Octagon's smoke house (plan, right) is preserved.



**History**

The history of earlier design rejections makes the whole project appear at first to have been a public example of bad planning, although the A.I.A.'s policies actually had been responsible, consistent and well-thought-out. Three designs (page 45; February 1965, page 10; and June 1967, page 46) by Mitchell/Giurgola preceded the present TAC plan (this time, it's for real: the Commission approves, funds have been voted, and the mortgage has been arranged).

The first design won a national competition, to which there were 221 submissions. It was entirely revised, however, when the A.I.A. bought the adjoining property, increasing the building's floor space from 90,000 to 130,000 square feet and the budget from \$1.45 million to \$4 million. The A.I.A. was all set to build the second design, which won high praise from nearly all critics, but the Fine Arts Commission rejected it saying that, among other drawbacks, it was out of scale. Mitchell/Giurgola designed a much-toned-down version to suit the Commission's request for a "background building." Few architects will settle for designing a background building, and the third design contained some of the vigorous elements of the second, especially at the entrance and in a central "notch." The Commission accepted the building—all but the notch—so Mitchell and Giurgola resigned, refusing to compromise again.

Max O. Urbahn, F.A.I.A., took over leadership of the building committee from Willis N. Mills, F.A.I.A. and began the search for a new architect. Romaldo Giurgola was on the new building committee, as were I. M. Pei and Philip Will, who placed second and third in the original competition. The committee narrowed the field down to nine, from whom it heard presentations. They voted for Norman Fletcher, of TAC, who began working on the project with associate Howard Elkus. TAC and the committee spent three months re-writing the program, enlarged now to 190,000 square feet (budget: \$7 million).

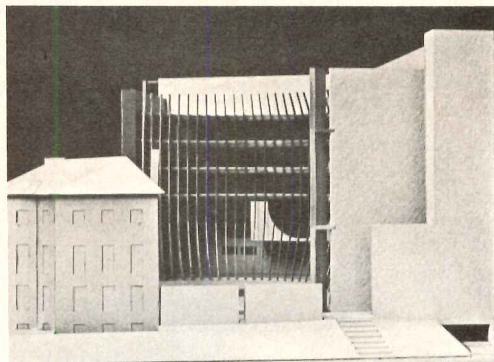
The A.I.A. had other alternatives. It could have attempted (with probable success) to overrule the Fine Arts Commission's decisions on the Mitchell/Giurgola designs. However, this would have been a heavy blow to the Commission, which the

A.I.A. was instrumental in establishing and considers a generally beneficial influence on Washington planning. The A.I.A. could have rented additional space, but this would not have represented much (if any) saving, and would have passed up a golden opportunity to show what the A.I.A. could do. The A.I.A. could have moved out of Washington (an idea which was briefly considered) but this city is the best location for any organization which hopes to influence the Federal government. The A.I.A. could have built on another site, free of the Fine Arts Commission influence because outside the historic Octagon property, but this would have meant abandoning the Octagon, which the A.I.A. has owned for 71 years, and which it recently restored at a cost of \$300,000. Some complain the headquarter's money should be spent on social needs (see page 36, lower right), but Max Urbahn points out the mortgage cannot be used for any other purpose, and that building fund donations (\$1.5 million) are committed by law to that purpose.

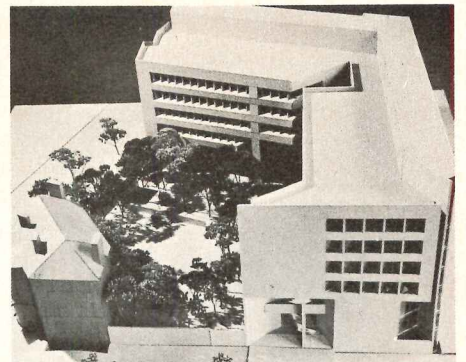
### The building

Norman Fletcher has said that his design will create "an active environment rather than establishing an aggressive architectural form." Those who read this as "background building" equals "boredom" are mistaken. The comparison between the Mitchell/Giurgola and TAC solutions is the comparison between the former as a highly unified sculptural shape, meant to catch the eye as a whole on the exterior, and to excite on the interior, and the latter as a well integrated collection of well programmed spaces, tied together by unifying devices, such as the ceiling grid (right) and the focus on the Octagon.

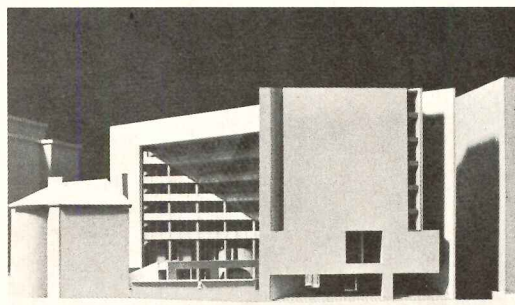
TAC's design puts heavy emphasis on use and on effects on a small scale, such as the use of brick near the ground to tie in with the Octagon and with the earth. The TAC building will be made of reinforced concrete, which will be exposed inside and out. Bands of dark-tinted glass will run across the garden side, from each end of which stair and ventilation towers will project, defining the garden area, and visually enclosing the Octagon. A large second-story projection will contain the board room. A two-level basement will provide parking for about 60 cars on the first level



1



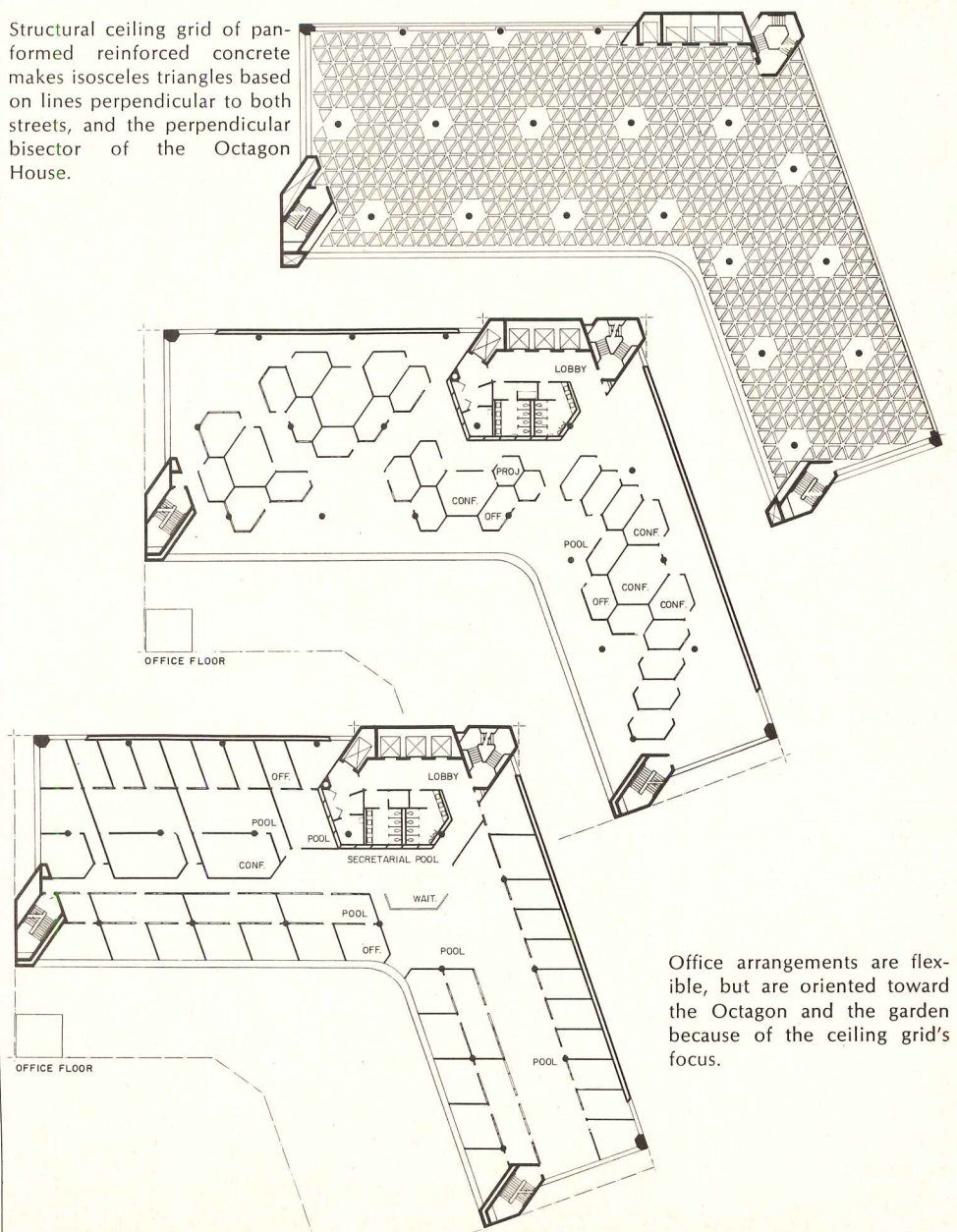
3



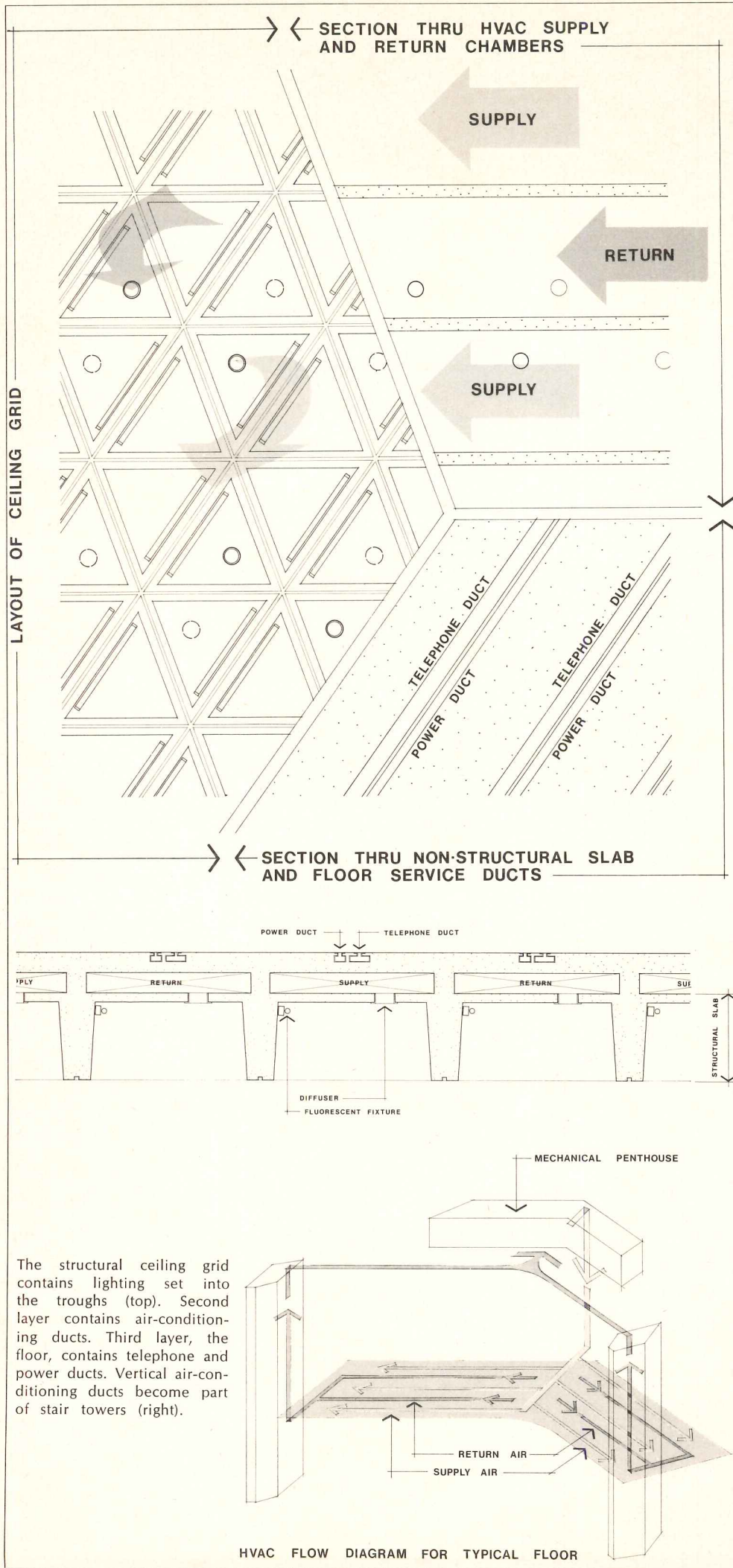
2

Mitchell Giurgola designs: 1—competition-winner of brick, with glass screen facing Octagon; 2—second design, for enlarged program, steps floors out toward the garden, diagonally across it, skylighting rear; 3—third design, the second rejected by the Fine Arts Commission.

Structural ceiling grid of perforated reinforced concrete makes isosceles triangles based on lines perpendicular to both streets, and the perpendicular bisector of the Octagon House.



Office arrangements are flexible, but are oriented toward the Octagon and the garden because of the ceiling grid's focus.



and a service area, including mail and computer rooms, on the second. The main entrance will be from the garden (page 44) to a lobby and exhibition area; the first floor will also contain a library. An open stairway will lead from the lobby to the social gallery, which will form a balcony. A.I.A. offices and meeting rooms will be on the second floor. For the next few years, until income makes expansion possible, the other five of the building's seven floors will be rented out.

The ground level will be very open, in a both symbolic and real gesture of invitation. The large rear windows of the lobby will create a flow-through of space between the proposed rear plaza and the Octagon. The Octagon will be directly linked with the mid-block, but at the same time enclosed by the new building's wings, while the headquarters' inviting entrance will be within the enclosed garden. The entrance will be reached from New York Avenue rather ceremoniously: a broad stair will funnel down to a relatively narrow walk between brick walls, and it in turn will lead up a few steps to the panorama of the garden. This entrance arrangement is meant to produce an effect of calm, while avoiding any sense of isolation.

**Structure**

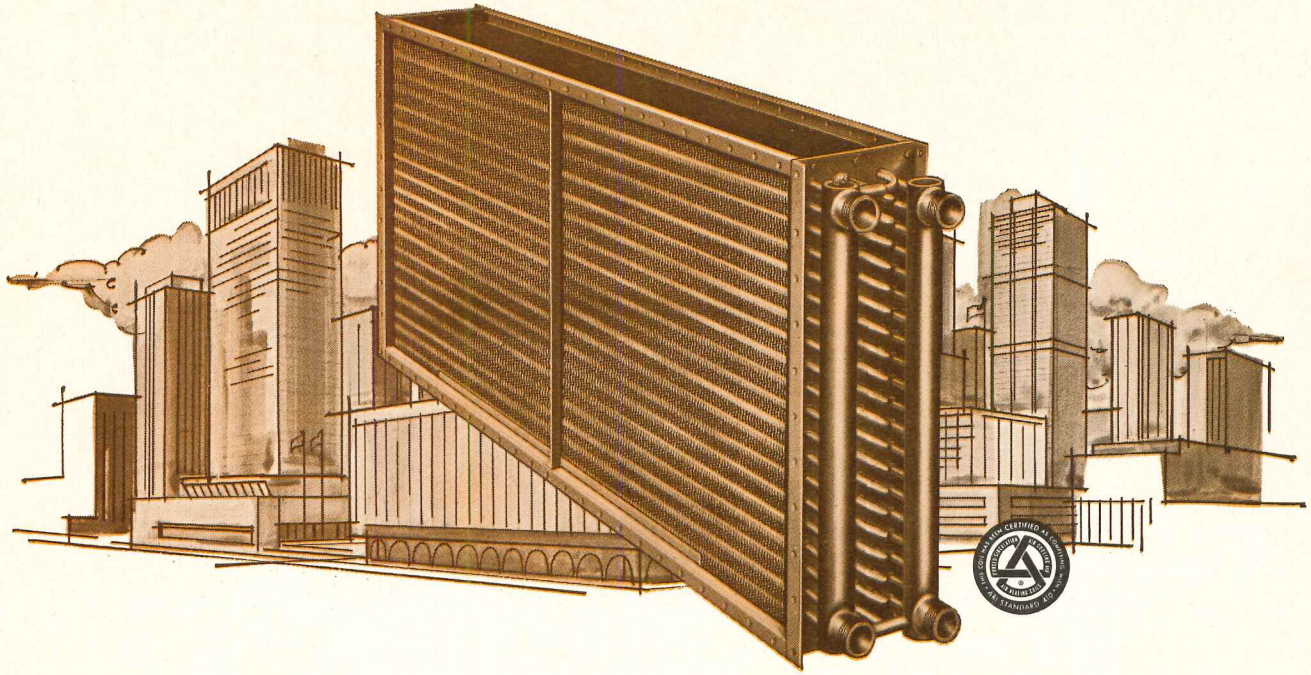
The headquarters' structural ceiling grid (left, and previous page) of pan-formed reinforced concrete, is a triangular system based on a line perpendicular to New York Avenue, a line perpendicular to 18th St. and the perpendicular bisector of the Octagon. This system of isosceles triangles not only focuses most sight lines on the Octagon, but creates a ceiling pattern that 1) makes the difficult transition at the obtuse angle between the wings without interruption, and 2) makes interior planning flexible.

The ceiling grid is exposed, and contains lighting set into the troughs. Air conditioning and electrical ducts run in a space between the ceiling grid and the floor slab (drawing, above, left). Vertical air conditioning ducts (left) become major design elements on the front of the building, where they are used in combination with stairways to form towers which define the building and enclose the Octagon (page 44). The structural engineer is William LeMessurier.

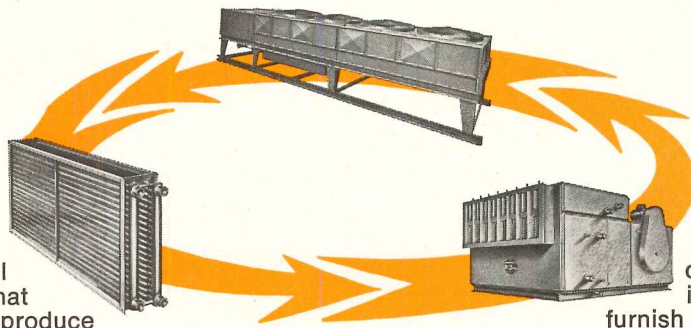
The structural ceiling grid contains lighting set into the troughs (top). Second layer contains air-conditioning ducts. Third layer, the floor, contains telephone and power ducts. Vertical air-conditioning ducts become part of stair towers (right).

HVAC FLOW DIAGRAM FOR TYPICAL FLOOR





# New from McQuay: highest capacity ARI certified Water Cooling Coils.



Compare new McQuay Hi-F® water cooling coils, Type 5, with any other ARI certified coil. And here's what you'll find — McQuay coils produce the highest capacity per square foot of surface for unsurpassed performance and efficiency.

The difference is McQuay's fusion of two advance design features: (1) the turbulence-creating *rippled fin* which reduces boundary air insulation for maximum heat transfer and (2) the *staggered tube* placement which provides maximum tube-air contact to increase heat transfer

rates still further.

The McQuay line of water cooling coils offers unsurpassed flexibility. There are five different types of serpentine circuiting to cover all conditions of water availability and pressure. Standard fin lengths range from 12" to 120", heights from 12" to 42"—both in 3" increments. There are standard coil depths of 3, 4, 5,

6, 8 and 10 rows with other depths available upon request. In fact, as the leader in the coil field, McQuay can furnish coils of virtually any size. All McQuay water cooling coils have vents and drains for total drainability and are counterflow circuited for maximum performance.

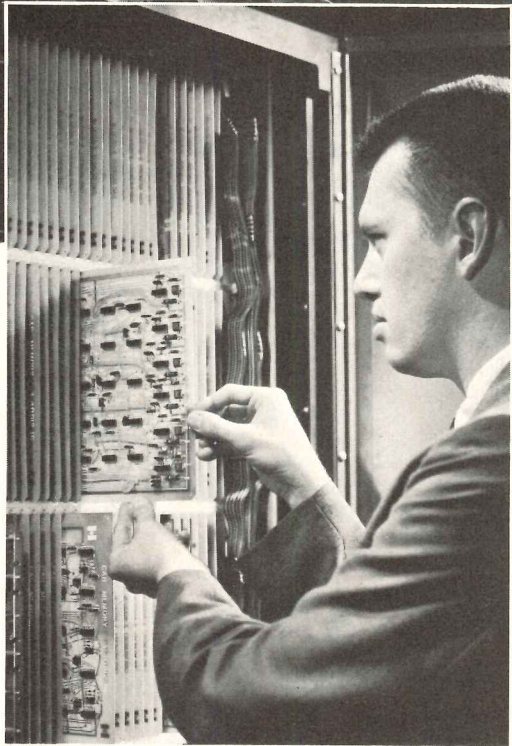
For assured capacity, specify ARI Certified coils. Ask your McQuay representative for new Hi-F® water cooling coils Type 5 Catalog #406-4. Or write: McQuay, Inc., Box 1551, 13600 Industrial Park Blvd., Minneapolis, Minnesota 55440.

Look to the systems leader . . .



McQuay®

For more data, circle 29 on inquiry card



**Exclusive new space age integrated circuit control system... first to home in on DESTINATION TIME as a vital dimension of quality elevator service.**

*Micro-miniature carded integrated circuits, used exclusively in Haughton 1092-IC, afford input-output capacity and speed surpassing any other system. This compact system exceeds the capability of a penthouse full of conventional relays and other bulky hardware.*

# We're announcing the end of "milk run" elevator service

## Haughton 1092-IC is here

Day after day, millions of people hurrying to get from floor to floor wait—then step into an elevator for a "milk-run."

Stop and go... stop and go... stop and go...

It's the total time—from pressing the hall call button to stepping out at the destination floor—that counts. And only Haughton 1092-IC, employing sophisticated MSI integrated circuits, can really shorten this interval. Elevators, freed from outmoded zoned assignments, now work as a team. Monitoring all fac-

tors in milliseconds, calls are constantly allotted and re-allotted to cars as they rapidly change positions, directions, loads and destinations.

Now, by serving the important dimension of DESTINATION TIME, Haughton 1092-IC gives *all* passengers their fair share of service—gets them where they want to go quicker than ever before.

We've named our new system 1092-IC because it retains all of the advancements of Haughton's famous 1090 controls. Then it goes beyond to the unlimited capacity and

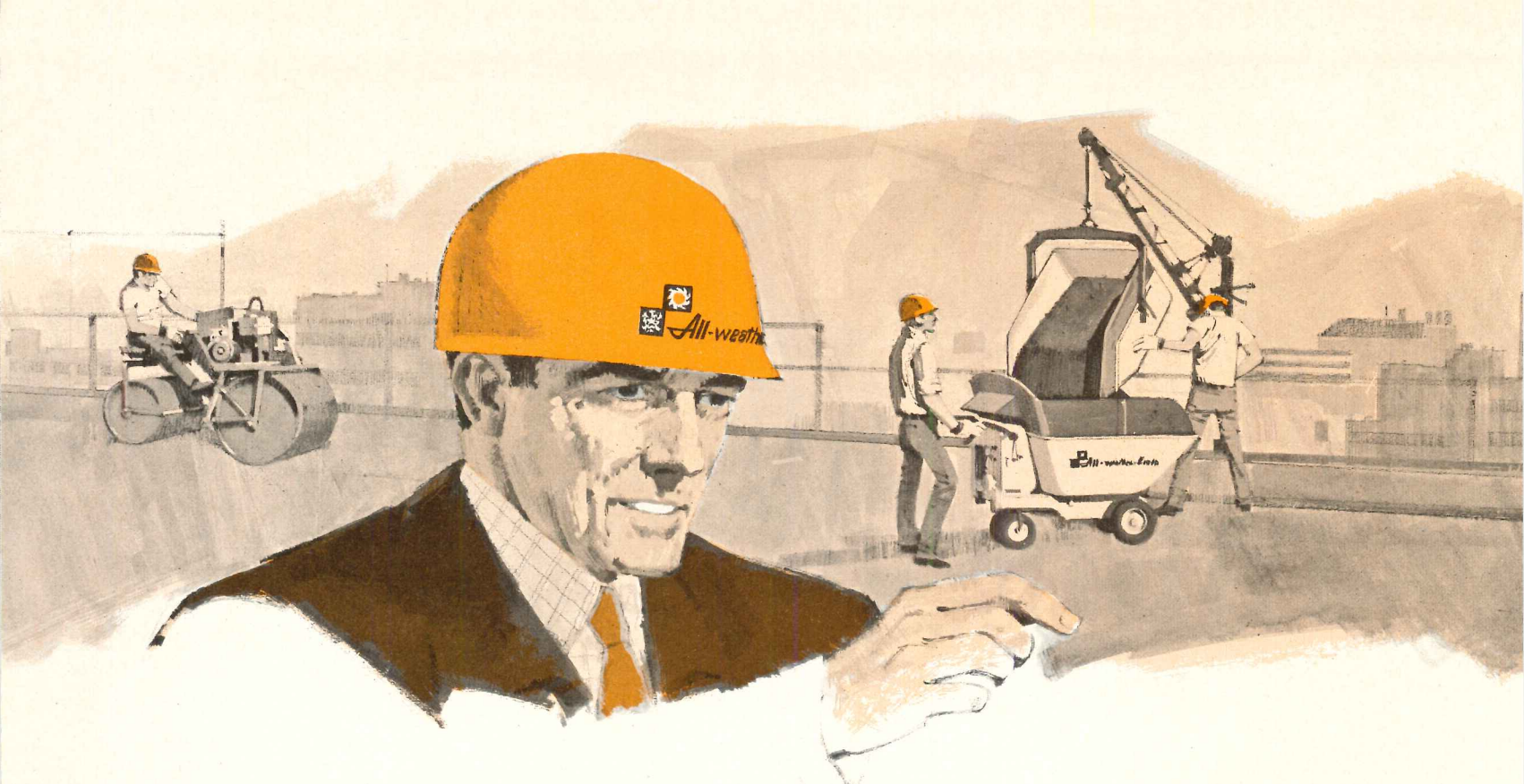
unsurpassed reliability of space-age integrated circuitry—does away with "milk-run" elevating—achieves the fastest destination time in history.

Moreover, the reliability of new Haughton 1092-IC is unmatched. Human error is ruled out by automatic tape-controlled machine assembly. And its plug-in circuit modules make testing and servicing as simple as filing a letter.

**WRITE US FOR MORE ABOUT  
THE FASTEST DESTINATION TIME  
—THE NEW HAUGHTON 1092-IC  
ELEVATOR CONTROL SYSTEM.**

**RELIANCE**  **HAUGHTON ELEVATORS**  
ELECTRIC COMPANY  
P.O. BOX 780, TOLEDO, OHIO 43601

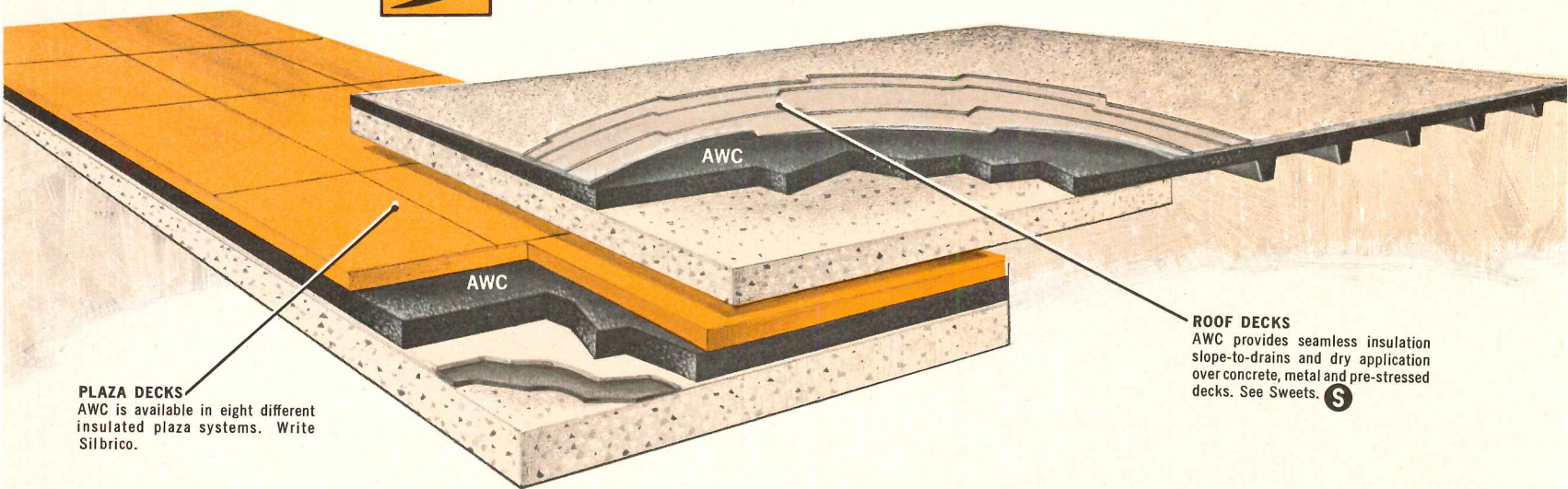
For more data, circle 30 on inquiry card



## Why is this the only man allowed to apply *All-weather Crete* insulation?

Because he's a specialist! Only he, in your area, has the experience and the specialized equipment necessary to install this multi-functional insulation on roof decks as well as plaza systems. He is a highly specialized contractor trained and licensed by Silbrico Corporation to apply All-weather Crete insulation under strictest quality control. This skill and selective licensing protects designers and owners alike.

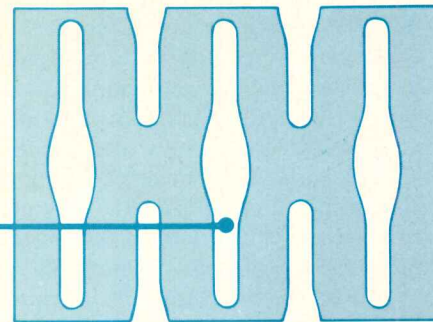
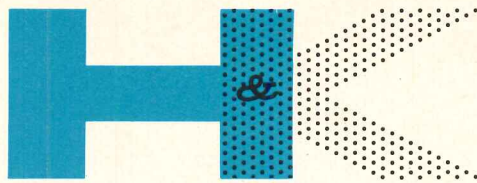
Contact your local AWC specialist. He can supply you with detail drawings illustrating different membrane systems, wearing surfaces and drainage patterns. If you don't know his name, write us — we'll send it to you along with illustrated literature of roof deck types and plaza systems used by many of the nation's most successful architectural firms. (No obligation.) Just write Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525 . . . . . or call (312) 735-3322.



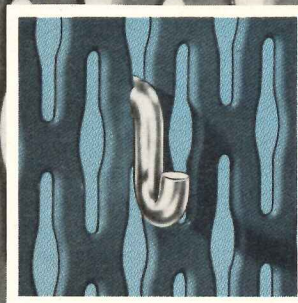
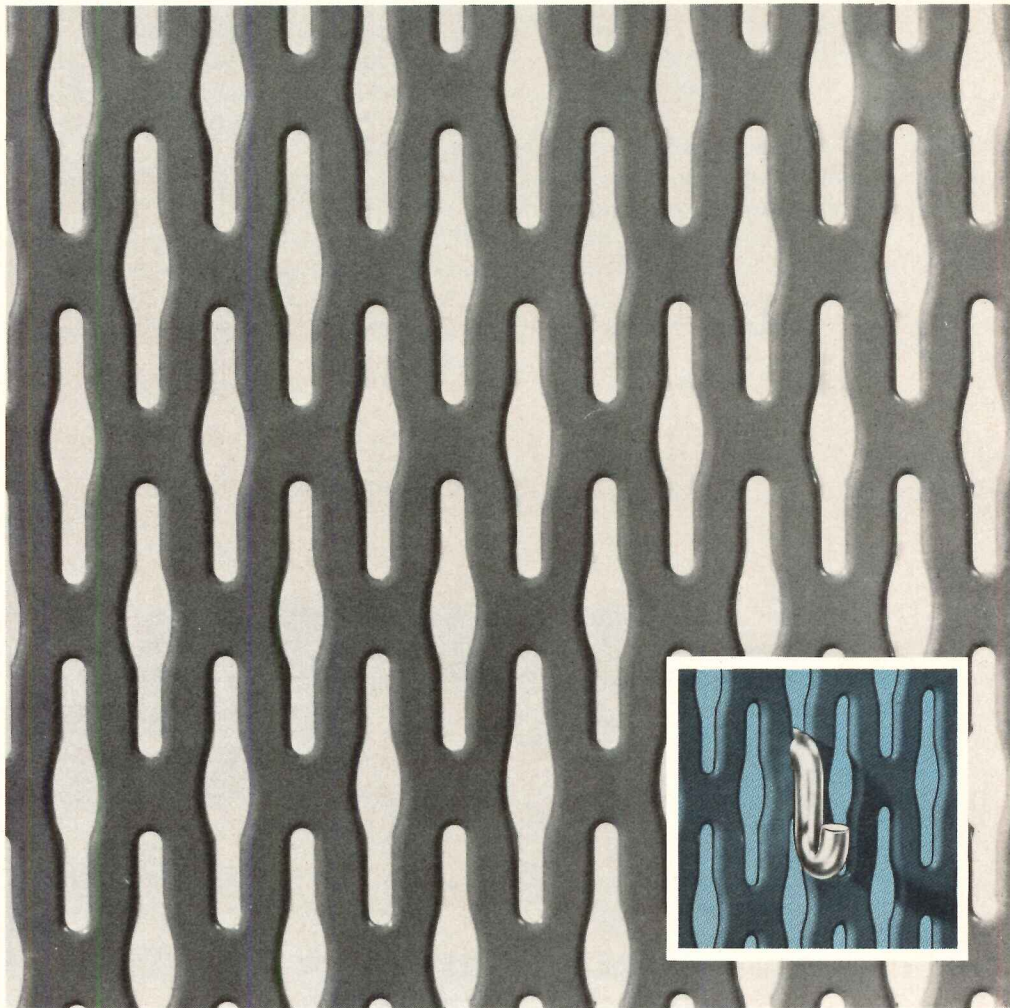
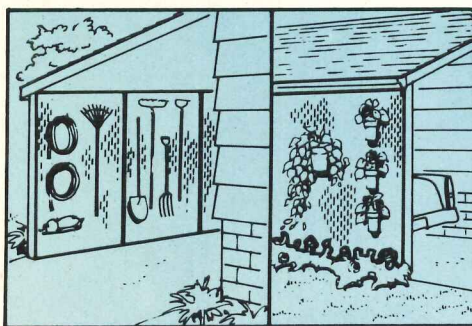
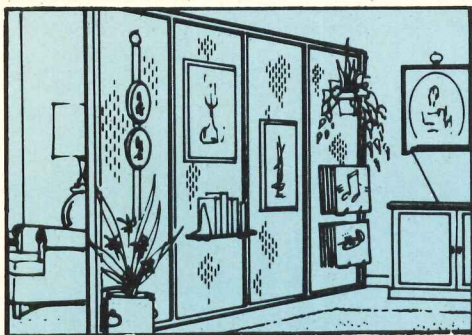
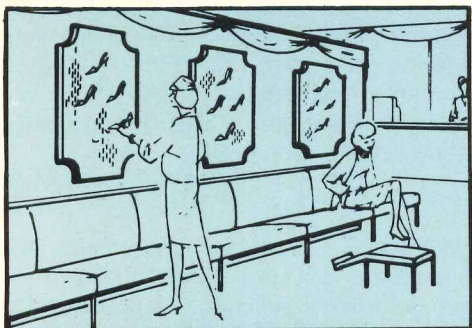
**PLAZA DECKS**  
AWC is available in eight different insulated plaza systems. Write Silbrico.

**ROOF DECKS**  
AWC provides seamless insulation slope-to-drains and dry application over concrete, metal and pre-stressed decks. See Sweets. **S**

For more data, circle 31 on inquiry card



# POSI-LOCK METAL DISPLAY PANELS




MAIN ILLUSTRATION ACTUAL SIZE

DESIGN PATENT NO. 189402

Here is a refreshing departure from the commonplace—a display panel with a distinctive pattern, featuring eye-catching beauty as well as versatile utility. H & K POSI-LOCK metal display panels are light . . . bright . . . strong . . . colorful. They lend a decorative touch, while providing useful display space. Write for catalog sheet including complete information on available metals, colors and sizes.

## HARRINGTON & KING PERFORATING CO., INC.

5624 FILLMORE ST., CHICAGO, ILL. 60644 / 90 PARK AVE., N.Y., N.Y. 10016

 . . . since 1883, the symbol of quality, service and dependability in the perforating industry.

\*TRADEMARK

For more data, circle 32 on inquiry card

## OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Card, pages 211-212

**POTTERY** / Three catalogs describe various kinds of architectural pottery. Catalog 64 plus a supplementary addition show a wide variety of high-fired planters, sand urns and accessories. Most pottery models are available in Duraclay, a material composed of clay and reinforced plastics. This material is described in detail in the third catalog. A price list is available covering all models shown in the brochures. ■ Architectural Pottery, Los Angeles.

Circle 400 on inquiry card

**SEWAGE TREATMENT PLANTS** / "Siting & Design of Municipal Treatment Plants" is a 16-page guide to site design and selection, and design of plant structures. The guide emphasizes the importance of esthetic and environmental considerations in the design of sewage treatment facilities. ■ Hudson River Valley Commission, Tarrytown, N.Y.

Circle 401 on inquiry card

**FURNITURE** / A 56-page brochure illustrates a line of contract furniture and modular systems including lounge chairs, sofas, conference and occasional tables, desks and coordinating cabinets, and a variety of desk and secretarial chairs. A group of import collections is featured. ■ Dunbar/Dux, New York City.

Circle 402 on inquiry card

**CEILING SYSTEM** / A 16-page brochure describes an integrated ceiling, *Luminaire "C,"* combining the functions of air conditioning, lighting, acoustical control, and fire protection. Specifications are included. ■ Armstrong Cork Co., Lancaster, Pa.\*

Circle 403 on inquiry card

**VAPOR BARRIER** / A roof deck vapor barrier information kit designed to simplify selection and application of vapor barriers on UL and FM-rated decks, as well as non-rated decks, contains specification data, an application guide and an adhesive selection chart. The kit features *Vapor-stop 298*, a vapor barrier for use on all types of roof decks to protect insulation against condensation damage. The kit specifies the types and amounts of adhesives to use with major types and brands of insulation materials, on both decks requiring no vapor barrier and on those metal decks requiring the barrier protection. ■ St. Regis Paper Company, Attleboro, Mass.

Circle 404 on inquiry card

**JOINT SEALERS** / A line of joint sealers is featured in a catalog giving product data and application instructions for five joint-sealing compounds. ■ W. R. Meadows, Inc., Elgin, Ill.\*

Circle 405 on inquiry card

**POLLUTION** / A system for the disposal of combustible liquid waste without contamination of water, air, or ground is described in a 4-page brochure. The system, utilizing principles of dissociation, oxidation, and ionization, is reported to be capable of disposing 80 per cent of municipal, industrial and manufacturing liquid wastes, as well as a variety of sludges and organic material. The system is supplied as a complete package, is adaptable to at-source or central-site installations, and is available in a range of sizes. ■ Mechtron-Genco Corp., Norfolk, Va.

Circle 406 on inquiry card

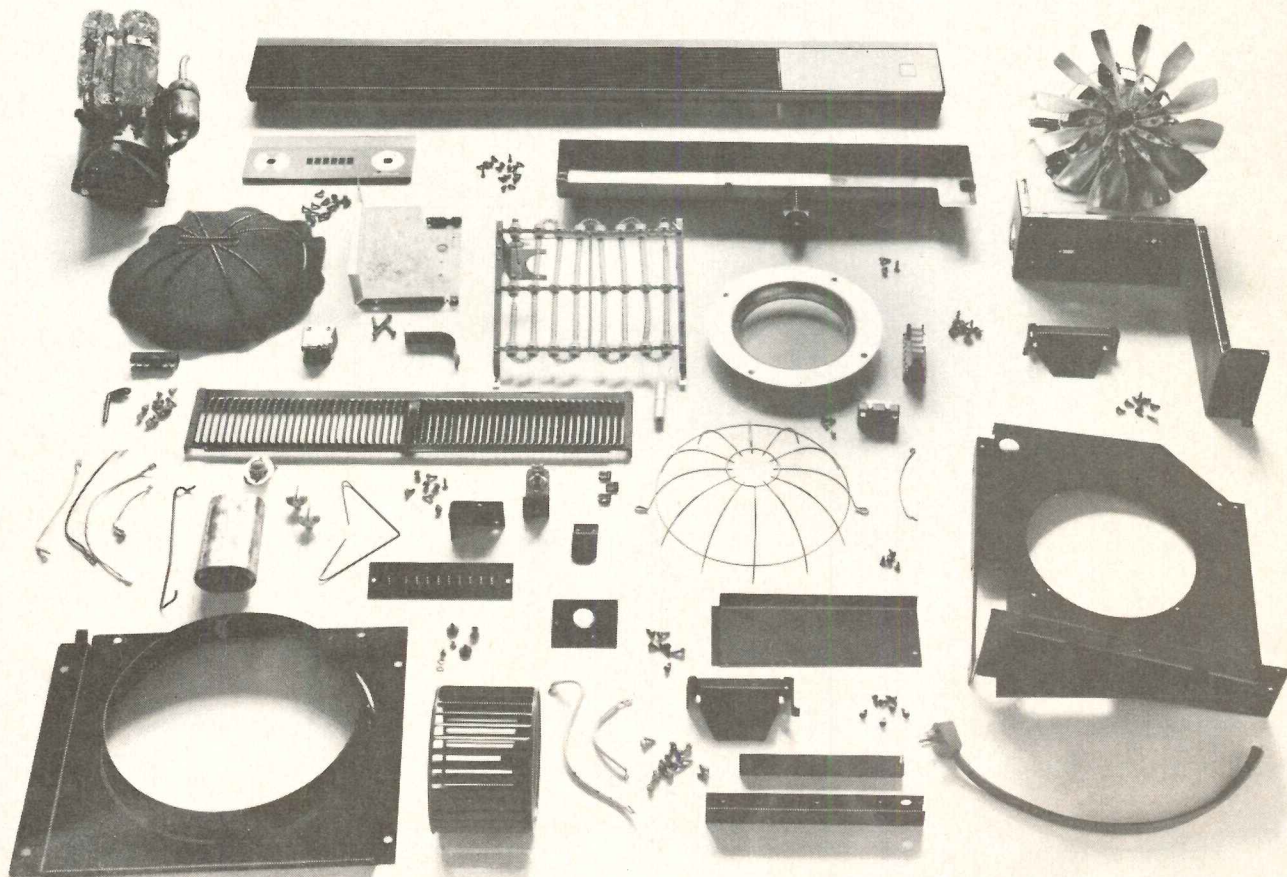
**LIGHTING** / A 68-page catalog presents several series in a line of commercial lighting. Included is a family of miniature fixtures in line-voltage and low-voltage versions, an integrated, electrified ceiling system and a complete series of mercury vapor fixtures for interior use. ■ McGraw-Edison Co., Rosemont, Ill.\*

Circle 407 on inquiry card

**HARDWARE** / A brochure describes a line of entrances for store fronts, banks, high rises and schools. All entrances feature mortised corner construction and tension rod mechanical joinery. ■ Amarlite, Atlanta.

Circle 408 on inquiry card

## We made a few changes



**ADHESIVE** / A 4-page catalog shows the uses of a wood adhesive. Some applications included are plywood roof sheathing, bonding of plywood to joists in single-layer field-glued floor systems and bonding exterior siding, plywood decks, box beams and pre-fabricated windows and doors. Three tables illustrate how field-glued floor systems permit longer spans, use lower stress grade lumber and increase distance between joists. ■ 3M Company, St. Paul.\*

*Circle 409 on inquiry card*

**CLEAN ROOM SYSTEMS** / A 12-page bulletin presents a complete clean room system designed for applications requiring a contamination-free atmosphere or precise humidity and temperature control. The manufacturer provides the panels, ceilings, floors and all components and controls for clean room enclosures of all sizes. ■ American Air Filter Co., Inc., Louisville, Ky.

*Circle 410 on inquiry card*

**GYMNASIUM LIGHTING** / A brochure describes a line of lighting fixtures designed for use in gymnasiums and other indoor sports facilities. The fixtures feature a shallow over-all depth. The brochure gives photometric data and lists available sizes. ■ Keene Corp., Denver.\*

*Circle 411 on inquiry card*

**ALUMINUM** / "Aluminum Standards & Data," a 204-page reference manual on aluminum and its alloy products, is divided into three sections. General information is presented in the first part, including data on alloy and temper designations, nominal alloy composition and typical properties and characteristics. The second section is a glossary of over 300 standard definitions and terms widely used in the aluminum industry. The standards section presents tables listing chemical composition and mechanical property limits. An addendum to the book is issued every six months until the next edition is published. Single copies are free. ■ The Aluminum Association, 750 Third Avenue, New York City, 10017.

**WATER COOLERS** / A comparison chart folder providing information on 264 water cooler models manufactured by 11 firms offers cooled water capacity rating information on 12 types of coolers. The types included are fully recessed, semi-recessed, regular on-a-wall, compact on-a-wall, against-a-wall, free-standing, water cooled on-a-wall and free-standing, explosion-proof, remote, kiddie-size and refrigerated compartment type. The manufacturer's line of water coolers is featured. ■ Ebco Manufacturing Co., Columbus, Ohio.\*

*Circle 412 on inquiry card*

**OUTDOOR LIGHTING** / "Guide to Outdoor Lighting Design," a 70-page booklet, presents basic design criteria for most outdoor lighting applications. Part one of the booklet gives standard applications and shows tables of recommended equipment for desired illuminations. Part two lists types of equipment available from the manufacturer with individual specifications and applications. ■ Westinghouse Electric Corp., Cleveland.\*

*Circle 413 on inquiry card*

**METAL WALLS** / An 8-page brochure features a line of lightweight metal walls shown on site in office and commercial buildings. Illustrations show canted walls and fascia in both functional and decorative uses. Typical panel sections are shown in cutaway view. ■ Elwin G. Smith & Company, Inc., Pittsburgh.\*

*Circle 414 on inquiry card*

**SEALANTS** / "Structural Sealants . . . Sewer and Caulking Compounds" gives product data and application instructions for a line of structural sealants, sewer joint compounds, asphalt crack fillers and sealers, and caulking compounds. ■ W. R. Meadows, Inc., Elgin, Ill.\*

*Circle 415 on inquiry card*

\* Additional product information in Sweet's Architectural File

## in our new Zonline heating/cooling unit.

We've made changes. Over 90 of them. Not just for the sake of change. To be better.

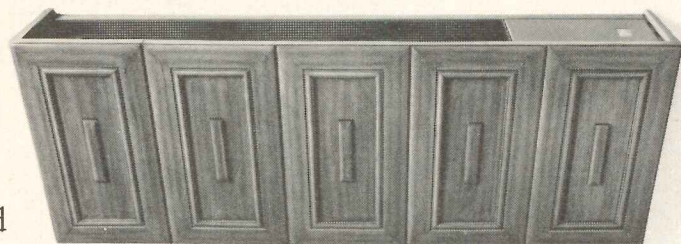
The new Zonline is quieter! We redesigned the air flow system and added a new two-motor fan system that automatically modulates air flow to cooling and heating requirements. We built a stronger room cabinet and gave it a urethane foam acoustical treatment for greater quietness.

The new Zonline is more rugged!  
We're using heavier gauge metal in the outer case. The air/water seal has been laboratory tested in winds up to 75 miles per hour and the equivalent of 8 inches of rain per hour. This is rugged, heavy-duty commercial equipment built to withstand constant year-round usage.

And the new Zonline is beautiful!

Inside and out. From an exterior grille that can be integrated into the building design to the new optional simulated molded wood-grain finish of the interior cabinet, Zonline is new and good-looking. All controls are concealed under a door on top where they are easily reached.

If you're looking for terminal thru-the-wall heating/cooling units, see the new Zonline for office, hotel/motel, apartment, school or hospital. Available in deluxe and standard models for 208 V., 230 V., and 277 V., and a variety of installations. See your General Electric Central Air Conditioning distributor right away. Or write the Air Conditioning Dept., Commercial & Industrial Sales Section, Louisville, Kentucky 40225.

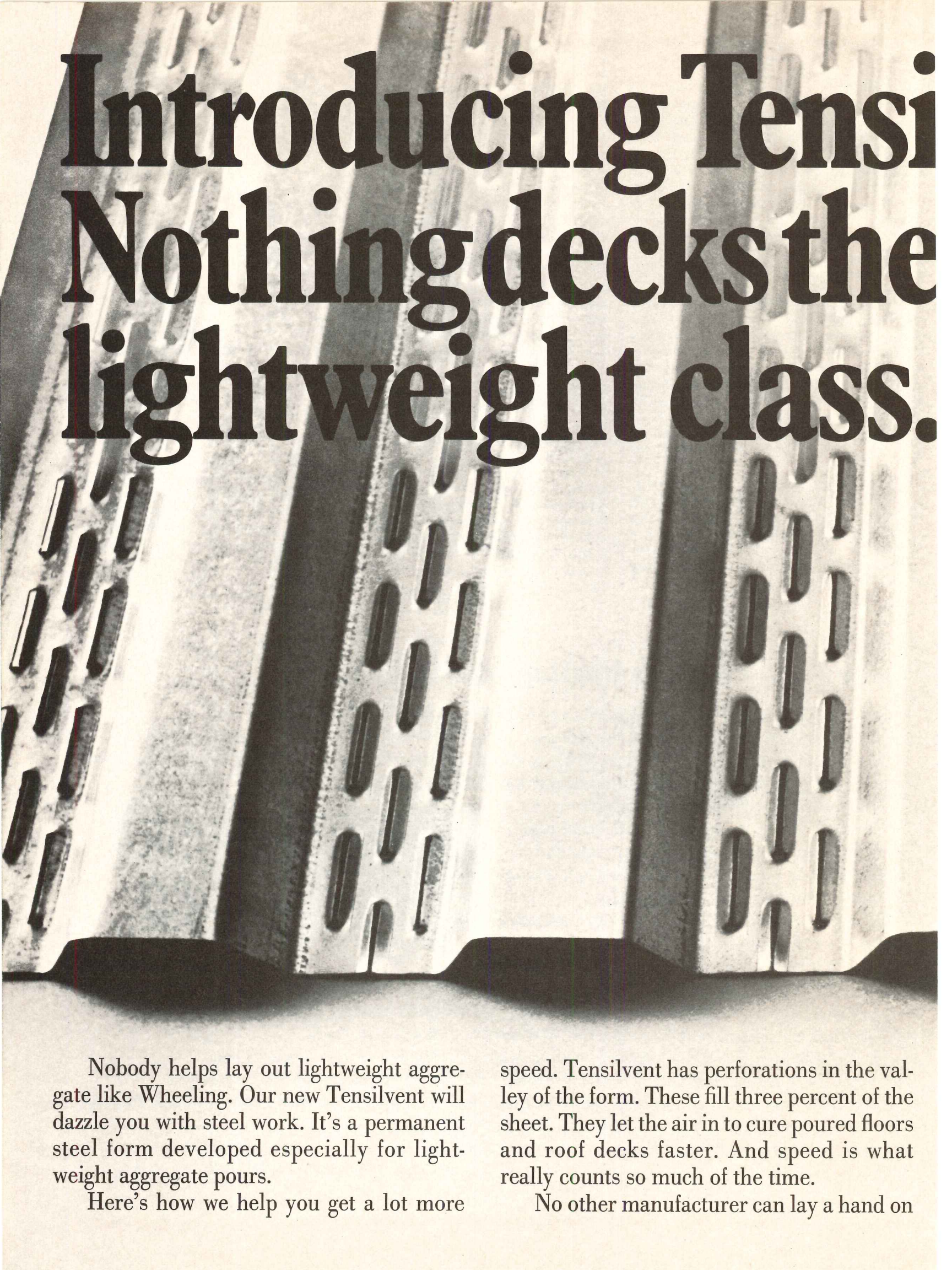


Our new GE Zonline heating/cooling unit.

For more data, circle 33 on inquiry card

Progress Is Our Most Important Product

GENERAL  ELECTRIC



# Introducing Tensilvent Nothing decks the lightweight class.

Nobody helps lay out lightweight aggregate like Wheeling. Our new Tensilvent will dazzle you with steel work. It's a permanent steel form developed especially for lightweight aggregate pours.

Here's how we help you get a lot more

speed. Tensilvent has perforations in the valley of the form. These fill three percent of the sheet. They let the air in to cure poured floors and roof decks faster. And speed is what really counts so much of the time.

No other manufacturer can lay a hand on





# lvent. m quicker in the

Tensilvent. It's exclusive with Wheeling. And it's going to have a nice long career because it's thoroughly galvanized.

So join the lightweight aggregate producers and the architects and engineers who are cheering Tensilvent. It's going to win by a

decision. A very intelligent decision on your part. Make it now.

Don't get counted out. Write for our bulletin WC-436.

**Wheeling Tensilvent<sup>®</sup>**

Wheeling Corrugating Co., Div., Wheeling-Pittsburgh Steel Corp., Wheeling, W.Va.

*For more data, circle 34 on inquiry card*

In October, Architectural Record will devote its entire issue to just one subject—a topic of such pressing importance that Record editors will break precedent and suspend all regular features in order to have the space and the time to devote to it:

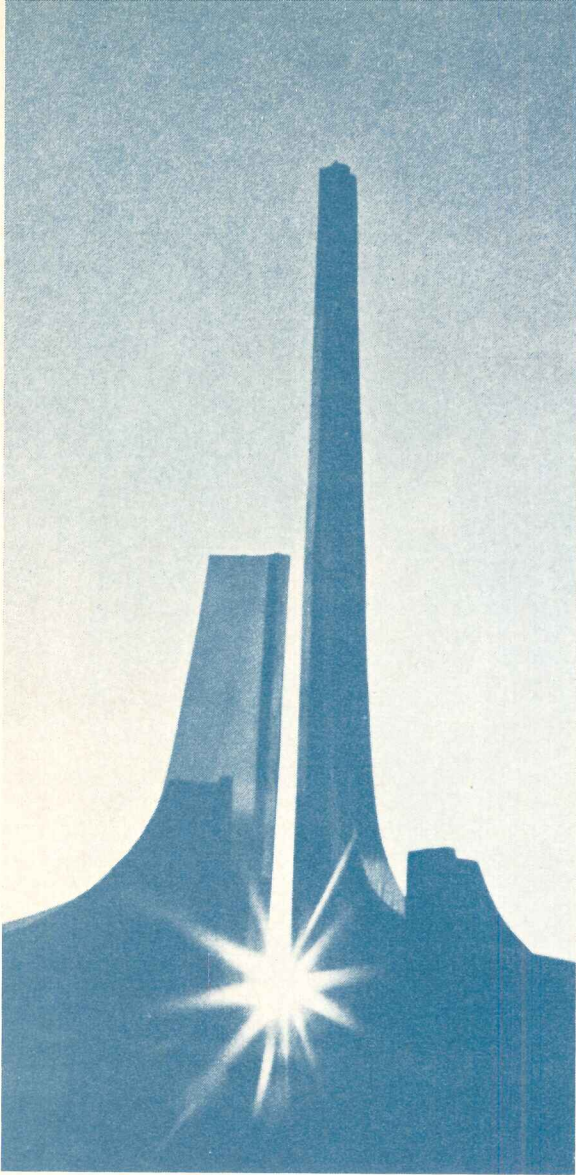
## ARCHITECTURE IN THE '70's: GEARING PERFORMANCE TO MEET THE NEEDS

The building needs of the '70's are going to be tremendous. A trillion dollars worth of building will go up between 1971 and 1980 and architects and engineers will design most of it. There will be a greater need than ever before for the unique skills, knowledge and professional commitment of architects and engineers.

Architectural Record's October issue will be dedicated to helping architects and engineers bring their skills to bear most effectively on the problems that lie ahead of them—to take maximum advantage of the expertise that they alone can bring to the building industry.

The issue will put into perspective for them:

- *The needs*—What the client really wants and really needs
- *The means*—A clear explanation of what the professional architect and engineer alone has to offer a building client
- *The constraints*—An analysis of the cost, sociological, regulatory and technological problems that face the entire building industry



Among the titles of some of the provocative chapters are...

*"What Makes A Great Architect Great?"*

*"The New Management Tools: The Computer, Information Retrieval Systems, Automated Specifications, The 'Systems' Approach"*

*"Clients. How Have Their Attitudes and Requirements Changed?"*

*"How Are Architects and Engineers Already Responding and Organizing to Meet the New Attitudes of Clients and Increasing Work Loads?"*

*"Is Labor Really the Villain it's Made out to Be?"*

The October issue will present a wealth of information and, more importantly, *ideas*—ideas that architects and engineers can put to work in their practice, ideas that can help them realize the full potential of their profession.

Architects and engineers will read and re-read this issue, devoted in its entirety to a subject uppermost in their minds. It will work hard for them for a long time to come.

The October issue of Architectural Record will also work hard at selling your building products. It will gain the thoughtful attention of the people most vital to your building product sales—the men who design buildings and specify the products that go into them. It will reach more of these important prospects than have ever been available before...over 40,000 paid architect and engineer subscribers...the same people who, F. W. Dodge verifies, are planning over 90 per cent of the total dollar volume of all architect-designed building in the U.S.

Architects and engineers will be in a mood receptive to new ideas when they read the October issue. They will be looking to the advertising pages for product information and ideas they can put to use. Your advertising will have intensive readership and a long selling life. Ask your Architectural Record representative to tell you more about "ARCHITECTURE IN THE '70's." It could be your best advertising buy of the year.

**ARCHITECTURAL  
RECORD** 330 WEST 42ND STREET  
NEW YORK, N.Y. 10036  
A MCGRAW-HILL MARKET-DIRECTED PUBLICATION



## The Seal of Security ON GUARD!



*Tested and Approved Sealants based on Thiokol LP® polysulfide polymer for steel-grip bonding—Rubbery flexibility—Highest resistance to weather, wear and aging. Total waterproofing . . . on a long term basis.*

These are the qualifications of products wearing the Thiokol Seal of Security. The "Seal" symbolizes a standard of performance excellence for joint sealants maintained through a program of testing of production runs and "on-job" sampling of sealants based on Thiokol LP® Polymers.

The FIRST and only full service, quality assurance program in the sealant industry. The Seal of Security is awarded to only Thiokol LP® Polysulfide Polymer based compounds meeting all the product standards established by Thiokol. Compounds must maintain these high performance standards throughout the continuing program of testing OR forfeit the seal.

**Thiokol**  
**CHEMICALS**

*Need more facts or a special viewing of Thiokol's new film "ON GUARD"? Write Thiokol. Touché.*

THIOKOL CHEMICAL CORPORATION □ CHEMICAL DIVISION  
780 N. CLINTON AVENUE, TRENTON, N.J. 08607

*Allied Chemical Tower, N.Y.C. Architect: Haines Lundberg & Waehler, N.Y.C. Two-part LP® polysulfide based sealant in all joints of marble panels.*



*For more data, circle 35 on inquiry card*

## Economy — ecology — and zero population growth

By James E. Carlson, Manager, Economic Research, McGraw-Hill Information Systems Company

*What happens to architects when the air is clean and the people don't need new schools just for more and more kids?*

You're a brilliant young architect, poised and ready for your first client. . . . But, you're going to have a long wait, because the year is 1990, and they just aren't building as many buildings as they used to. The country heeded the warnings of the doomsayers of the 1970's, and voluntarily set out on a course of zero population growth (ZPG). The population leveled off at about 210 to 215 million a decade or so ago, and hasn't grown since. They're only building structures to meet replacement demand these days, and all the old, established architectural firms are getting these contracts. The environment's a lot cleaner now, but your business couldn't be worse.

Possible? Let's see.

There's a lot of substance to all the current talk about the effects of pollution—air, water, trash, noise—on man's general well being. Whether it's the alarming rise in the incidence of emphysema, the dead fish washing up on our beaches, or the garbage cluttering the sides of our highways; they're all casualty statistics from the same battlefield. These, plus the more long run ecological problems of adequate living space for a growing population, and the availability of sufficient economic resources (technology and raw materials) to sustain it are going to have to be met head on during the 1970's. They'll become more and more critical as our neighbors become more plentiful, and the waste products we spew off become more numerous and more complex.

Our initial concern for these types of things took the form, in the late Sixties, of a lot of Federal enabling legislation (and some Federal money) to develop more sophisticated means for dealing with pollution, and to build things like sewage treatment plants. A lot needs to be done in this area—upwards of \$50 billion *could* be spent on the water pollution problem alone, just to get us back within acceptable levels. But, as far as the more basic ecological questions are concerned, incinerators, sewage treatment plants, and more recently, smog control devices, represent, really, not

much more than holding actions—time-buying devices—to keep us from falling off the edge while long run solutions are being sought.

Any long term solution to our problems must key in on things like:

1. The recycling of waste material.
2. Shifting from a goods-oriented to a service-oriented economy; i.e. placing less emphasis on the production of things that deplete resources.
3. Curbing the rate of population growth.

Of these three approaches, the one that would appear to have the most direct bearing on the construction industry would be a sharp reduction in the rate of population growth.

When we look at the trend of the past twenty years, it's already a fact that the population of the country has been increasing at a progressively slower rate. But, this is true of most advanced industrial societies. It's traceable to such things as the greater accessibility of birth control methods, the decreased economic need for children to help support the family unit, and the fact that because more time is spent in school, people in industrialized societies tend to marry later.

But people in industrialized societies pose more of an ecological threat. It has been estimated, for instance, that the demands—in terms of resources and services required—placed on the environment by the average American are 25 to 50 times greater than those of an average Indian or African. So, the more militant environmentalists argue, this tendency for slower rates of population growth in industrialized nations is not enough. It must be helped along. Each individual must act to limit his procreative habits, and act now.

The merits of this argument strike me as being a little alarmist, and in need of a great deal of refinement and consideration from the point of view of eugenics. But ideas like this have a way of gaining considerable momentum from time to time, so it may be a worthwhile exercise to consider

what the future would be like under ZPG, or near ZPG conditions.

Let's assume that we reach a state of zero population growth by 1975: The population of the U.S. stops dead at 210 million, and inches up to about 215 million by 1990, due entirely to foreign migration. We'll be a much older nation (only one-fourth of the population would be under 21, against 42 per cent in 1970) and there'll be a lot less of us around than there would have been under "normal" conditions (40 million less, when we compare the ZPG assumption with the lowest Commerce Department projection for 1990). Our economy will be much more service-oriented because an older population naturally requires more services; things like health and medical care, and recreational facilities. (So ZPG would complement, to some extent, any efforts to shift to a more service-oriented economy.)

Will we be better off than we would have been under "normal" population growth conditions? The ZPG advocates will say, "yes," but this really depends on the relationship between the pollution level and our national productive capacity. The question really boils down to this: What will yield the highest level of "well-being" per person when combined with the nation's existing economic resources, the stagnant ZPG population, or a growing population? ("Well-being" here has to be a measure of the relative abundance of all scarce goods, from Cadillacs to clean air.) Obviously, during the early part of our history, large population increases were responsible for most of the fantastic gains in productivity and growth of markets. A stagnant population during the 1880's and 1890's, say, would certainly have been to our detriment from any per capita well-being standpoint. But, great industries can rise and fall regardless of demography. The decline of the railroad industry in this century was by no means the result of shifting population patterns. And, conversely, the spectacular growth of the computer industry after World War II owes little to increases in population. Whether or not we've passed the point in

our relationship with our economic resources where an additional person no longer contributes more to the general well-being than it takes to sustain him has not been resolved to anyone's satisfaction.

We can make some general statements about the construction industry under stagnant population conditions, though.

The services demanded by an older population will mean relatively more in the way of medical facilities and recreational structures. And, to the extent that the economy continues to shift toward a service-oriented base, there should still be plenty of demand for office buildings and other structures related to the service industries. Obviously, school construction would be

the first hit, and hit hard. And once we've worked off the backlog of existing needs, housing will probably be in trouble. But, there's plenty of room for upgrading quality in both these areas. (We're seeing this now, in fact. As education enrollments drop off, more and more "extras" are being built into elementary schools.) The kinds and types of industrial buildings they'll be building in the 1990's will, of course, be a function of technological advances of the time.

Perhaps, though, the best perspective on the level of construction activity under conditions of little or no population growth can be gotten by looking at some of our more densely populated European neighbors. Population growth in the United

Kingdom, for instance, has averaged around *one-third* that in the U.S. (0.5% per year vs. 1.6%) for the past 20 years. But, construction in real terms *outpaced* the U.S. rate over this period.

There are, of course, other factors in the economy of the United Kingdom that make its construction industry somewhat different from our own. The essential point here is that, while the level of a nation's population puts some ultimate constraint on how far its economy can grow, and affects the ordering of economic priorities to some degree, the limits to which a particular industry can grow are really more a function of that industry's capacity for innovation and its business acumen.

## Forces for change in airport planning and design

The climate of architectural practice for airport planning and facilities design is changing in three major ways. First, the rate of increase in numbers of passengers served at major city airports is beginning to flatten. The increase for February 1970 was 1.2 per cent as against 2.9 per cent for February 1969. Some of the medium-sized airports are increasing at undiminished rates as they reap some benefit from the congestion at major ports, but the rate of increase is slower on a national basis. This, coupled with declines in profitability to a point where 11 of the 12 major airlines reported a net loss for the first quarter of 1970 of \$50.4 million, has a limiting effect on airlines' construction programs.

The second major force for change is in the increasing attention of public authorities to the effects of airports themselves upon the ecology of regions in which they are proposed. Not only noise and air pollution, but other aspects of the natural balance of the region are considered. The cancellation of the Everglades airport project was a milestone in the continuing test of strength between the Federal agencies responsible for site approval and those Federal and local groups who make regional ecology their primary consideration.

The third major effect on airport planning and design is the persistent consideration of mass transit linkage to airports. Few cities have actual rail rapid transit to begin with, and fewer still have actually run rail lines to airports. Nevertheless, there is a virtually universal lip service to the idea on the part of city planners so that while actual transit is unreal in most cities, the false hope of providing such transit to airports remains difficult to deal with in airport planning.

Even where mass rail transit exists, there is a continuing debate on how to integrate

the system with airport needs. Arnold Thompson, airport architect and consultant, who talked about the above ideas in a recent interview, favors the idea of bringing rail transit to a single point in the airport complex at which passengers will transfer to a smaller multi-stop system within the airport. Inside an airport, Mr. Thompson points out, the greatest constraints on planning are the airport tenants. Planning is subject to the pressures of the competitive aims of airlines, motels, concessionaires, rental car agencies, etc. So airport authorities may be understandably reluctant to bring municipal rapid transit into the airport as still another operational jurisdiction.

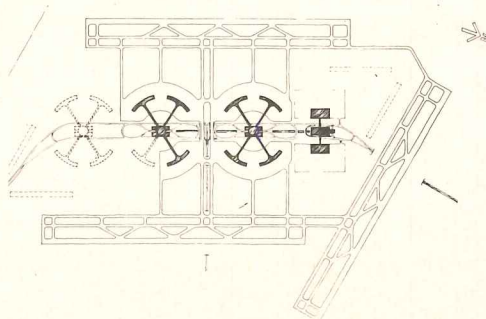
The automobile is now and probably will remain the major ground transport to and from the airport. This puts a premium on the amount of curb space for the transfer of passengers and on the amount of parking space for automobiles within practical walking distances to air terminals. The various modes of solving these problems are shown in the Building Types Study beginning page 117. One of the outstanding examples of planning is at Dallas/Ft. Worth (page 118) where the concept of the spine road to near-gate parking has been developed to a high degree. Mr. Thompson points out, however, that the idea of driv-

ing to parking space near gates is not extensible indefinitely because of limited curb length per gate. One of the proposals by Arnold Thompson Associates for developing ultimate capacities in these areas was a spine-through cartwheel concept (shown here) that appears to be on the same evolutionary stream as Dallas/Ft. Worth and Tampa (page 128).

The relationships of parking capacities to airport design are complicated by the client structure at airports. Low-cost, ground level, remote parking requires secondary transit for people and baggage to terminal facilities. A fully efficient mode of automatic baggage handling, even though technologically feasible, would cross the lines of individual airlines' priorities and liabilities. Mr. Thompson speculates that if the parking concessions could be set up in such a way as to finance the over-all baggage system, some of these technical and administrative problems might be solved.

Still another element of change in airport planning derives from new F.A.A. criteria increasing the spacing between runways and taxiways by some 200 ft and also increasing the allowable distance from the center of the runway to the nearest parked airplane. This has the effect of reducing the land available for terminal buildings and puts an even higher premium on near-gate parking. It almost forces the investment in vertically decked parking over terminals where available land is fixed.

The idea of vertical and short take-off and landing planes as an adjunct to inter-airport and in-city service is gaining in consideration. Al Stafford of Arnold Thompson Associates points out that full development of the potential of the V/Stol industries will make use of new hundred-passenger short-haul planes and ground-based inertial guid-



Arnold Thompson's cartwheel concept: circa 1967

ance systems so that payloads can be increased and vulnerability to weather diminished. These developments and the availability of close-in small airports are under serious consideration in many cities.

### Long-term effects of science and economics

The advent of the Boeing 747, the Lockheed 1011 and the Douglas DC 10 has had profound effects on the kinds of architectural commissions likely to develop in the coming decade. First the obvious adjustments of terminal facilities to handle the size of the new planes and the numbers of passengers they carry has gained immediate and urgent attention. But while the new planes do appear to be turning the curves of profit upward, the capital investment required for some 250 such giant planes now on order has depleted the cash reserves of many airlines and added force to the tendency to make-do with terminal facilities on a relatively short-term basis rather than invest in the giant permanent facilities that will undoubtedly be called for in the future.

The recently passed Airport Users Bill creating a trust fund is expected to gross over \$5.5 billion in the first year. The fund is to be used for airport improvement and air navigation and safety equipment. As Ronald Adams, associated research consultant to Lord & Den Hartog/Parsons, Brinckerhoff, Quade and Douglas, points out in a research report on projected facilities for the metropolitan New York area, the trust fund money will be best spent only if creative long-range technological planning is used. Mr. Adams' report analyzes approaches to in-city and off-shore airports and noise abatement configurations for runways and airport facilities including such futuristic concepts as an elliptical banked runway, air-cushion landing gear, and over-city trestle ramps.

For the present, architects are increasingly involved in airport planning to bridge the gap between the stringent financial conditions that now prevail (see page 117) and the ultimate implementation of technical and architectural resources that must ultimately be applied to a permanent and effective system of air transport.

In their approaches to the complexities of large-scale planning, architects will make use of an increasing array of technical supports. Some of these will be simple checklists of information required for the solution of traffic systems problems. The computer will be enlisted not only in such problems but in advanced applications of airport simulation such as were applied in the analyses for the Orlando Jetport described on page 120. See illustration above right.

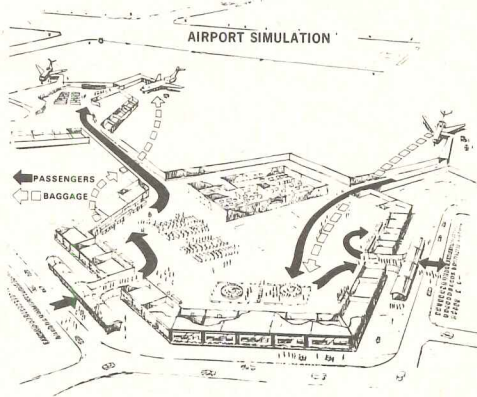
### A future role for the planning team

Simon V. Waitzman, formerly director of facilities planning and research for American Airlines and now vice president of airport systems planning and design at John

Carl Warnecke & Associates, makes the following observations about air transportation, planning, design and the future.

"The architectural, planning and related professions must now respond with inventiveness and innovation in providing sound solutions to the airport problems generated by the remarkable growth of the air transport industry. Although an increasing amount of dialogue has been established between the architect and the airframe manufacturer (notably during the design development of the DC-10 and L-1011) in order to make every effort to enhance the economies and efficiencies of the aircraft/terminal interface, it can reasonably be assumed that the projected aircraft purchase costs cannot be appreciably affected by the direct involvement of the architectural profession.

"This is not the case, however, with airfield and airport facility planning and design. The profession can make significant contributions toward airport construction cost control, as well as toward reducing the numbers and manning costs of ground service equipment.



Visualized scope of Martin Marietta's computers

"The airport planning team, including the architect, cannot propose parochial solutions, but must be cognizant of the needs of commercial and general aviation, of the severity of the noise problem, of the demographic, ecological and pollution problems, of the airspace/airport aircraft congestion problem, of the highway access problem, and of the overriding problems associated with the premature obsolescence of facilities. Although these problems are just the beginning, and it would necessitate much more than a simple paragraph to delineate them, those mentioned nevertheless seem to imply the need to advance the state of the art of specific technologies. But the over-all common denominator to all these problems is financial, not technical.

"Premature obsolescence costs money. Aircraft geometries and capacities will be in a constant change, with major innovations occurring about every decade. Facility and ramp configurations must be flexible to economically accommodate these changes.

Baggage handling and claim systems will change as more sophisticated concepts are adopted. Claim areas will definitely be dispersed. The airport master plan and structures must be designed to accommodate these new systems, rapidly and inexpensively. Ticketing procedures will become more sophisticated and automated, and these operations must also be integrated into a terminal complex without major changes or lengthy inconvenience to the traveling public.

"The airport master plan must not only provide for the expansion of access roads, but of greater importance, make provision for inter/intra airport transit systems when they become economically available.

"Inefficient or insufficient runway and taxiway planning cost money, not only because the aircraft must be stacked in the air to await a slot for landing, or because they are lined up on the ground awaiting take-off clearance, but also because of their geometrical disposition and relationship to the gates located at the terminal. American Airlines, for example, estimates that its aircraft taxi over a million miles annually, with a fuel and engine wear penalty cost of \$6 million per year.

"Similarly, inadequately planned ramps for maneuvering ground service equipment result in the need for either duplicating the equipment or in inefficient utilization of equipment and personnel. Comprehensive facility planning can incorporate many of the functions of the ground service equipment into the architecture itself, thereby reducing the numbers of vehicles on the ramp.

"Airport planning and design, within these contexts, is one of the most formidable and responsible challenges that confront the architect and the many other interrelated disciplines. They must plan, innovate and integrate the various components and sub-systems to fulfill a variety of increasingly complex airline, airport and urban requirements. The new half-billion dollar hub airports can no longer be planned separately and alone. Rather they must be purposefully and skillfully woven into the urban fabric of the cities they serve.

"Historically, many persons representing many disciplines have exerted great effort in examining fragmentary concepts and procedures. This is no longer a luxury we as a profession, or the airlines as an industry can enjoy. The airport planner should seek out and establish consortium research efforts with other airport planners, involved agencies and the carriers themselves, with the goal of minimizing duplication of effort and maximizing the dissemination of acquired knowledge. The name of the game is to plan and design and build economical and efficient airports, acceptable to surrounding environs, readily accessible and convenient to the traveling public, with inherent flexibility to expand or be reconfigured as newer passenger and cargo services develop."



# How to buy contract carpeting

Practically every important carpet mill in the country is in the contract business. As a result, the contract buyer has enormous leeway in choice of carpeting for his particular needs. But one of the most important factors to consider when specifying carpeting destined for contract installation is the type of fiber.

## How to Choose Between Fibers

There are different kinds of fibers being used successfully in contract carpeting: nylon, acrylic, polyester, wool, polypropylene. Although each one has inherent "properties," polyester provides these four essentials:

1. Wear Life
2. Easy maintenance
3. Aesthetics
4. Price/Value

Polyester has better abrasion resistance than wool or acrylic, and it has less static than wool or nylon. It combines strength with beauty. Covers better than nylon. Has a better hand than nylon, acrylic, or polypropylene. It is non-allergenic, mildew-resistant, and mothproof. Resists fuzzing or matting. It is easy to clean. And polyester gives you more value for your dollars.

## How to Choose Between Polyesters

Each fiber maker maintains standards for producing carpet polyester; each manufacturer has his own set of

standards for carpet construction. When you see the brand name "Fortrel," you can be assured that this is the polyester which has been tested by Celanese before it was released for manufacture and tested in the carpet itself.

Our testing program also includes comparative testing against other carpets of identical construction, made of other fibers.

The following evaluations, summarized from actual tests, should be of significance to contract specifiers:

### Wear Life:

Test: National Bureau of Standards abrasion test.

Wool: wore through to back at 108,000 cycles.

Acrylic: showed similar wear at 128,000 cycles.

**Fortrel: More than half of the pile remaining after 256,000 cycles.**

### Aesthetic Life:

Test: Five shampoos by commercial maintenance firm using standard rotary shampoo machines.

Wool: Showed badly distorted surface.

Acrylic: Holds up better than wool.

**Fortrel: Had the least surface distortion.**

### Cleanability:

Test: The most common or most difficult stains encountered in restaurants, hospitals, motels and schools were applied and removed, using NIRC specified chemicals and procedure.

**Fortrel proved dramatically superior to nylon (in a comparable construction and weight) both in stain removal and actual stain resistance.**

### Static Generation:

Test: Service test involving people in a commercial office installation. (No standardized accepted industry test has been developed.)

Nylon: Cold day complaints about static so severe, anti-stat spray had to be applied. (This finish wore off after a short period of time.)

**Fortrel: No complaints about static build-up.**

### Cela-System

Cela-System is a service-oriented concept incorporating and coordinating all products destined for the contract field. To know more about Cela-System, contact:

Celanese Fibers Marketing Company  
522 Fifth Avenue  
New York, N.Y. 10036  
Attn: Cela-System



**ELA-SYSTEM**  
The total contract service from Celanese

Fortrel® is a trademark of Fiber Industries, Inc.

Celanese®

For more data, circle 36 on inquiry card



INDEXES AND INDICATORS

William H. Edgerton  
Dodge Building Cost Services  
McGraw-Hill Information Systems Company

**BUILDING COSTS TO DOUBLE IN EIGHT YEARS**

Building costs have increased by six to 14 per cent (depending on the city) during the past year, with the average for the country at about nine per cent. Multi-year wage contracts will continue to cause sharp advances in wages over the next few years, and we can already see that union negotiators in industry are pushing for increases in excess of traditional amounts to come closer to the amounts won by their construction brothers. Thus construction materials' prices must go higher. If the current rate of annual increase is sustained, building costs will double in eight years or less. Today's multiple-story office building that costs \$30.00 per square foot was \$10.00 per foot in 1941 and will be \$60.00 per foot in 1978. The same arithmetic applies across the board: today's costs are three times the 1941 level, and will be six times that level by 1978 unless the rate of increase is curbed.

**Building cost indexes**

The information presented in the tables indicates trends of building construction costs in 35 leading cities and their suburban areas (within a 25-mile radius). Information is included on past and present costs, and future costs can be projected by analysis of cost trends.

The indexes are computed on a basis of 40 per cent labor rate and 60 per cent materials price. Wage rates for nine skilled trades, together with common labor, and prices of four basic building materials are included in the index for each listed city.

Differences in costs between two cities can be compared by dividing the cost differential figure of one city by that of a second.

1941 average for each city = 100.00

Metropolitan area	Cost differential	Current Index		% change year ago res. & non-res.
		residential	non-res.	
<b>AUGUST 1970</b>				
U.S. Average	8.5	304.0	323.8	+ 7.74
Atlanta	7.5	383.8	407.1	+ 9.69
Baltimore	7.6	311.3	331.1	+ 3.76
Birmingham	7.2	287.7	309.4	+ 5.10
Boston	8.4	289.5	306.4	+ 7.89
Buffalo	9.2	336.2	358.1	+ 9.06
Chicago	8.8	351.4	369.7	+ 6.27
Cincinnati	9.0	319.1	339.2	+ 7.18
Cleveland	9.8	345.5	367.2	+ 7.26
Columbus, Ohio	9.0	325.1	346.2	+ 7.33
Dallas	7.7	305.2	315.2	+ 7.95
Denver	8.3	328.7	349.4	+ 8.24
Detroit	9.5	342.5	359.6	+ 7.96
Houston	8.1	297.4	316.8	+11.22
Indianapolis	8.8	288.8	307.6	+ 6.42
Kansas City, Mo.	8.3	290.7	307.7	+ 7.32
Los Angeles	8.3	325.7	356.3	+ 6.87
Louisville, Ky.	8.1	300.4	319.9	+ 8.20
Memphis	7.6	290.8	309.8	+ 5.57
Miami	8.6	328.3	344.6	+ 9.14
Milwaukee	9.2	359.1	382.4	+ 8.34
Minneapolis	8.9	327.0	347.6	+ 9.88
Newark	8.9	299.4	318.9	+ 7.79
New Orleans	7.9	293.8	311.4	+ 6.78
New York	10.0	335.3	360.6	+ 7.57
Philadelphia	8.6	319.0	334.9	+ 7.89
Phoenix	8.2	169.5	180.6	+ 6.59
Pittsburgh	9.1	303.3	322.4	+ 6.52
St. Louis	9.2	322.6	341.8	+ 9.16
San Antonio	8.1	123.6	131.6	+ 7.72
San Diego	8.2	124.0	132.0	+ 7.52
San Francisco	8.9	427.5	467.7	+ 9.27
Seattle	8.6	300.7	336.0	+ 9.80
Washington, D.C.	7.9	279.3	297.5	+ 8.15

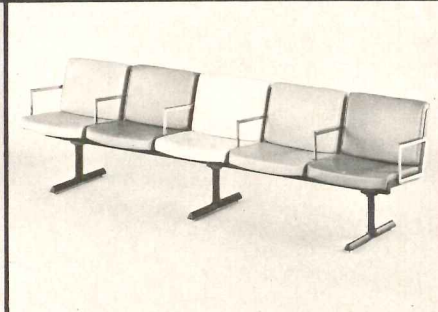
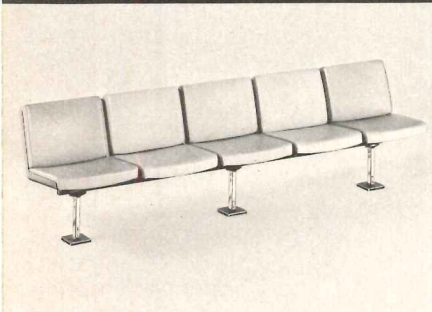
Cost differentials compare current local costs, not indexes.

1941 average for each city = 100.00

Metropolitan area	HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES														
	1969 (Quarterly)														
	1962	1963	1964	1965	1966	1967	1968	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	364.2	365.9	382.8	384.0	399.9	406.2		
Baltimore	271.8	275.5	280.6	285.7	290.9	295.8	308.7	311.4	313.0	321.8	322.8	323.7	330.3		
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	288.4	289.9	302.4	303.4	303.5	308.6		
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	278.2	279.6	294.0	295.0	300.5	305.6		
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	340.4	342.1	354.9	356.1	362.2	368.6		
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	309.8	311.5	324.8	325.8	332.8	338.4		
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	334.9	336.7	357.1	358.3	359.7	366.1		
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	287.2	288.7	307.6	308.6	310.4	314.4		
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	317.9	318.5	337.9	339.0	343.4	348.4		
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	326.8	328.5	351.8	352.9	355.2	360.5		
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	281.0	282.3	294.5	295.5	301.8	306.8		
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	323.7	325.4	343.0	344.1	346.4	355.3		
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	309.6	311.2	328.3	329.3	338.2	343.5		
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	310.6	312.2	330.1	331.2	341.6	346.6		
New Orleans	245.1	248.3	249.9	256.3	259.8	267.6	274.2	285.5	287.1	296.6	297.5	305.4	310.6		
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	324.9	326.6	343.4	344.5	351.1	360.5		
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	304.6	306.2	320.0	321.0	328.9	337.7		
Pittsburgh	251.8	258.2	263.8	267.0	271.7	275.0	293.8	297.0	298.6	310.0	311.0	316.9	321.6		
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	306.8	308.3	323.7	324.7	335.2	340.8		
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	415.6	417.5	439.9	441.1	455.4	466.9		
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	296.1	297.5	316.8	317.8	325.4	335.1		

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in

the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.



# KRUEGER AFKA

Odds-on choice of many airlines  
for gate-area modular seating

AFKA Modular seating meets the heavy traffic of airline terminals "head on." Wrap around, heavy-duty fiberglass shells thwart bumps and bruises and provide protection for the soft, thick, comfortable cushions which "lock-into" shells for easy replacement. □ Ideal for color intermix and decor changes—One simple action does it all. □ The option feature of two heavy-duty moveable bases or floor mounted pedestals; plus 4 shell colors, 12 fabric colors, and all colors of Decor '64 add up to why AFKA has become the seating choice of airlines 'round the world. □ New brochure shows our *complete line of airport seating*.

For more data, circle 37 on inquiry card

## KRUEGER

METAL PRODUCTS, INC. • GREEN BAY, WISCONSIN • 54306

## LETTERS

### Land-use plan?

Good for you! Your introduction in the May issue ("Why not a nationwide plan for recreation?", Building Types Study, page 131) is excellent. I shall see that copies of it are circulated in the immediate vicinity of the office of the Park Service Director.

As a matter of fact, a Nationwide Recreation Plan is a part of and should be preceded by a Nationwide Land-Use Plan. That has been my private bug for a long time. The nation's oil and mineral resources are pretty well mapped and their depletion carefully planned; the same is true of timber and other natural resources. But the land is still up for grabs—anybody can use any piece of it pretty much any way he wants, which includes laying it waste and moving on the next piece, just the way it's been since frontier days. We need a revival of the National Resources Council of the 1930's, which should develop a physical and ecological inventory of the natural assets and liabilities of the whole nation. With this information computerized, a land-use plan could be developed for all the land, each natural area in a large-scale and general way, which could then be planned in more detail on a regional basis as the need developed. Only with such an approach can the locations of new cities, dams, and other "improvements" be identified, the limitable expansion of existing urban areas planned, and the God-given resources protected.

Joseph Watterson, F.A.I.A.  
Chief, Division of Historic Architecture  
United States Department of the Interior  
Washington, D.C.

### Registration reform

Your March 1970 issue (News Reports, page 36) carries a brief article dealing with the efforts of a Cambridge group to reform the registration procedure for architects. In fairness to their efforts and to your reporting, this article should be expanded.

The comparative "first-time passing" statistics of state registration examinations in other professions are meaningless. Medical over 90 per cent; dental 95 per cent; law 67 per cent . . . these professions are filled exclusively by graduates of concentrated post-graduate programs in their respective fields. Conversely, a cross section of those involved in architecture and ultimately interested in gaining registration, covers a complete range of educations, qualifications and abilities. When 100 per cent of those seeking architectural registration are as qualified as those involved in seeking registration in other professions, then I suspect the figures will be quite similar.

Charles B. Stephenson, Architect  
West Hartford, Connecticut

We thought our report on the activities of the Committee for Registration Reform of Cambridge, Mass., quite in context with the two-part report on current efforts of NCARB which appeared in our August and September 1969 issues. The point, we thought, was not that more unqualified graduates took the exams so much as it was that the exams themselves are increasingly unrelated to both school curricula and professional practice. —WF

### Addendum

Our renewed appreciation for your splendid coverage of Community Colleges in the June issue. As regards two CRS projects shown, with captions, on page 152, the following credits to associate architects were omitted: Delaware Technical & Community College, Wilmington, Delaware: *Whiteside, Moeckel & Carbonell, Associate Architects*; Northampton County Community College, Bethlehem, Pennsylvania: *Coston Wallace, Associate Architects*.

Stephen A. Klimont, A.I.A., Associate Partner  
Caudill Rowlett Scott  
New York City



# CASTELLI/KRUEGER

One good chair leads to another —

First, Castelli/Krueger 106...now **AXIS 3000** modular

For more than a year we have known the Castelli/Krueger chair was a great one. Its comfort, beauty and durable strength have long been installation proven. □ Now, the popular 106 has a handsome companion modular unit . . . **AXIS 3000**. This new Castelli/Krueger innovation reflects the same aesthetic European design influence as the 106. Available in two to six-place units, in movable or floor mounted models, **AXIS 3000** offers the flexibility of add-on cushioned armrests and plastic surfaced table tops. Leg standards and mounting hardware are gleaming die-cast polished aluminum that contrast with the sturdy, white enameled steel support beam. □ The model 106 individual stacking chair also incorporates such add-on features as armrests, tablet arms, bookracks, ganging clips and ashtrays. □ Both the 106 and **AXIS 3000** feature identical seat/backrest selections, which include an exciting choice of luxurious, texturized fabric in 8 decorator colors; 6 colors of business-like vinyl; or satin finished molded plywoods of Oak, Walnut or Rosewood. Write for special full color specification brochures.

**KRUEGER**

METAL PRODUCTS, INC. • GREEN BAY, WISCONSIN • 54306

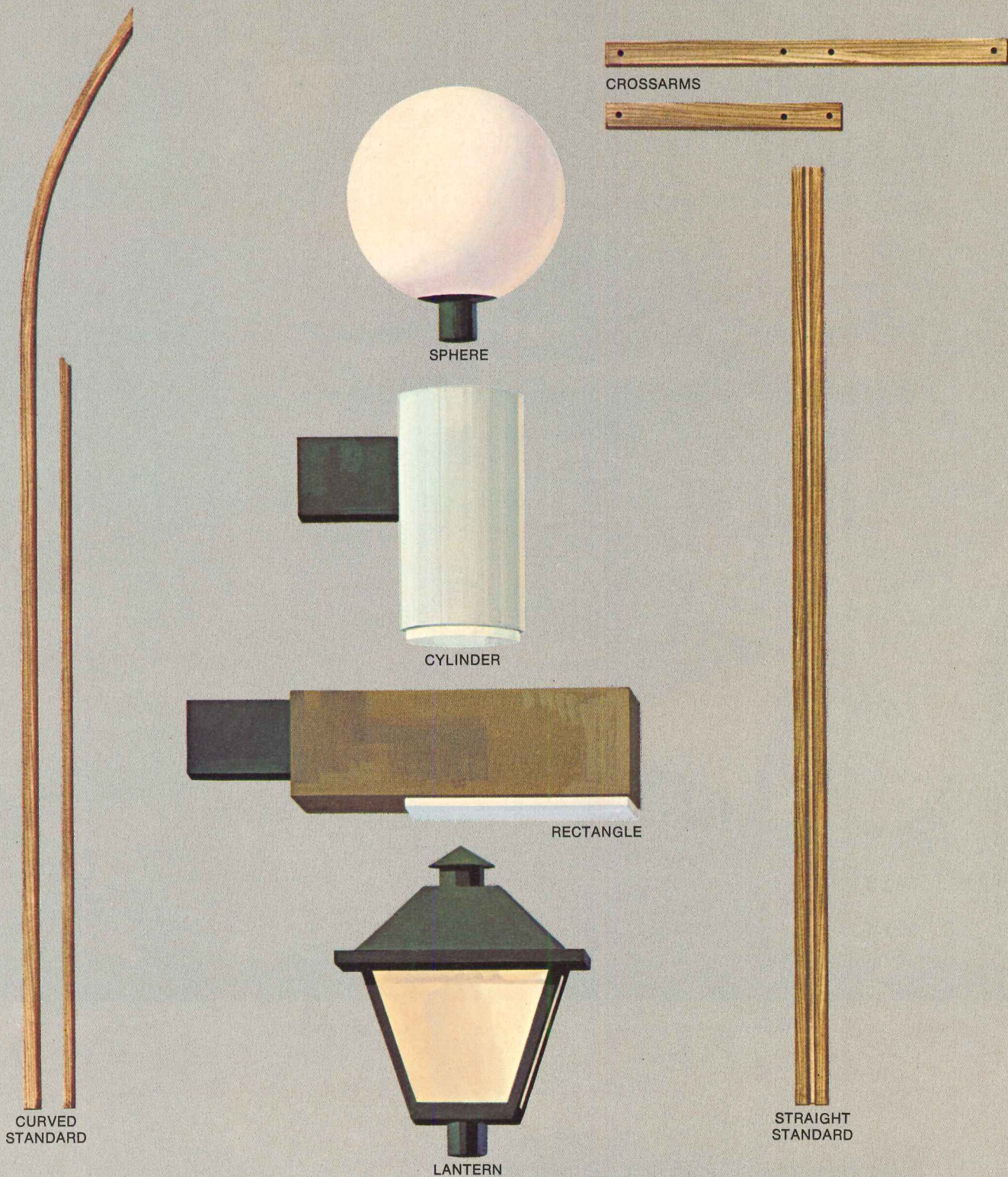
Showrooms: NEW YORK: 20 E. 46th Street

CHICAGO: 1184 Merchandise Mart • LOS ANGELES: 8899 Beverly Blvd.

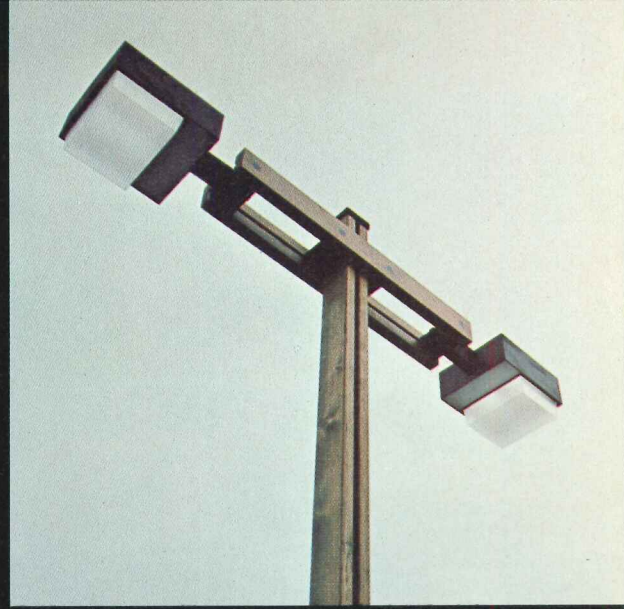
Boston • Indianapolis • Dallas • Houston

Designed by G. C. Pirretti. Produced by Castelli;  
assembled and solely distributed by Krueger Metal Products, Inc.

For more data, circle 37 on inquiry card



**Weyerhaeuser Woodscape™ Lighting.**  
**We designed the parts.**



## Now you design the system.

New Weyerhaeuser Woodscape Lighting is a systems approach to illumination with over 500 combinations for residential areas, campuses, malls and highways.

There are four luminaire styles and two shapes of laminated wood standards: the curved and the straight, from 8 to 30 feet. Plus one- and two-way crossarms.

To install you simply dig a hole and drop in the standard, so installation costs less than steel or concrete. The Weyerhaeuser stand-

ards are treated for long life. No maintenance required. Ever. And you can stain the standards or leave them natural.

Above all, Woodscape Lighting relates with its surroundings in a non-striving way. It's an environmental product of Weyerhaeuser Company in cooperation with McPhilben Lighting, a division of Emerson Electric Company.

We designed the parts. Now it's up to you.

Send the coupon for full details.

To: Weyerhaeuser Company, Box B-6901  
Tacoma, Washington 98401

- Please send me your brochure on Weyerhaeuser Woodscape Lighting.  
 I'd like to talk to a representative.

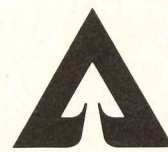
Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

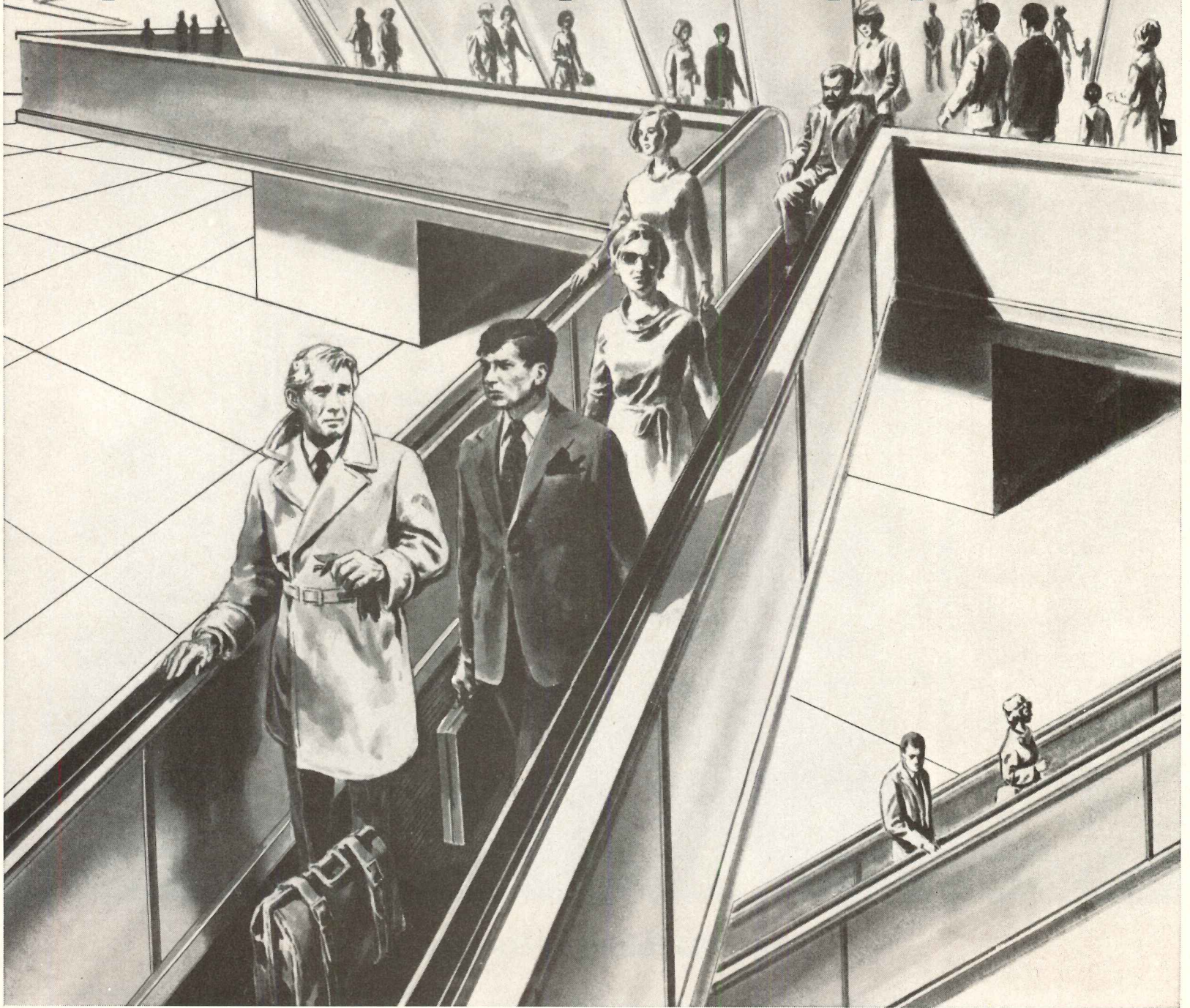
City \_\_\_\_\_

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



**Weyerhaeuser**

# Stop passenger traffic jams before they start with Goodyear Speedwalk® and Speedramp® Systems



Speedwalk and Speedramp passenger-conveyor systems end pedestrian traffic jams. People and luggage move smoothly to and from gate and parking lot.

Speedwalk horizontal belt conveying systems and Speedramp incline belt conveying systems have been proven in air terminal installations around the country as practical methods for handling volume airport foot-traffic. Speedramp passenger carrying belts eliminate the need for escalators and elevators, because they perform the functions of both. There's no waiting to get on or off as with other systems.

Passengers arrive at the gate (or ground transportation) in comfort...with no "long walk." Carry-on luggage goes right

along on the belt. Wheelchairs, baby carriages, strollers, move along with the normal traffic.

For a new brochure on Speedwalk and Speedramp systems, write Goodyear, Transport Systems, Akron, Ohio 44316.

**You get a solution, not just a product, with  
Goodyear Rubber Engineering.**

# GOODYEAR



## à la mod

Dominant design accents the modern mood.

Simple cylinder core substitution  
for fast, foolproof relocking.

Tune in on today.

Unmistakably Russwin.

Russwin, Berlin, Connecticut 06037.

In Canada — Russwin,  
Division of International Hardware.

**R**  
RUSSWIN  
Carson Design

For more data, circle 40 on inquiry card

# Automation: the fourth generation.





## New! Delta 2000 by Honeywell delivers more building automation for the same dollar.

It happens once in a blue moon. A technological thrust that leaps years ahead in a single stroke.

Such a moment is *now* . . . in building automation. Where Honeywell did it in two words: *Delta 2000!*

A *fourth-generation* system that will make your client's building control center a show-case.

And give him new levels of performance that accelerate automation's traditional one to three-year payoff in manpower savings alone.

### **Puts more into controls, less into installation.**

Imagine. Delta 2000 operates on just *two wires* instead of the usual 40 to 80 wires.

Puts *more* of your client's dollar into productive hardware . . . performance and capacity. *Less* into complicated wiring. Total *installed* cost is no more than ordinary systems! Probably less.

### **Born in computer technology.**

Delta is different. It's *digital*. New to building automation. But old hat as far as satellites are concerned. Or computers. *Digital* is the way computers talk.

And Delta is *all* digital . . . designed from scratch to provide a "timeless" system. Solves the problem of obsolescence by anticipating it from the very beginning.

### **Starts small. Can grow all the way.**

*Only* Delta lets you meet today's needs. *Exactly*. And then protects



your client's investment as his building or operating needs grow.

More capacity, more functions can be added . . . *when* needed, as needed. And *never* scrap a single piece of original system hardware!

Basic start/stop system controls up to 3900 remote equipment points. And it can grow in capacity all the way to 39,000 points.

Plug in modules any time to monitor and control more environmental functions. Even monitor fire and security systems.

Add peripheral hardware such as systems graphics. Pilot lights. Intercoms. One or more printers for hard-copy records.

Grow all the way to full computer control!

Computer capability is already built in by Honeywell . . . "the other computer company".

Adding our inexpensive mini-computer is as simple as adding any other system-matched module.

### **Low-cost reach building-to-building.**

With Delta it costs *less* to automate several office buildings, stores, plants from one central point.

It reaches building-to-building via leased telephone lines . . . at only *one-fifth* of what leased-line connecting equipment used to cost!

### **Unheard-of speed, accuracy, simplicity.**

Delta automatically sends every message *twice* . . . for unprecedented accuracy. Yet, even with this double-check, Delta does it *100 times* faster than ever before possible.



And it displays everything in *one* place . . . at the single keyboard. Displays it in numerical form . . . with units (degrees, kilowatts, etc.) spelled out *in English*.

Simple. Logical. So easy to understand, a secretary could operate it.

### **One responsible source.**

What could be more perfect for your client's building? Or more convenient for you.

Honeywell will work with you and your consulting engineer from start to finish. Will help lay out the system . . . little by little, as needed. Install it *on time*. Check it out. Service it. Train your customer's staff.

Will help keep his investment paying off in more performance for the money.

So look at Delta 2000 . . . on an *installed* basis.

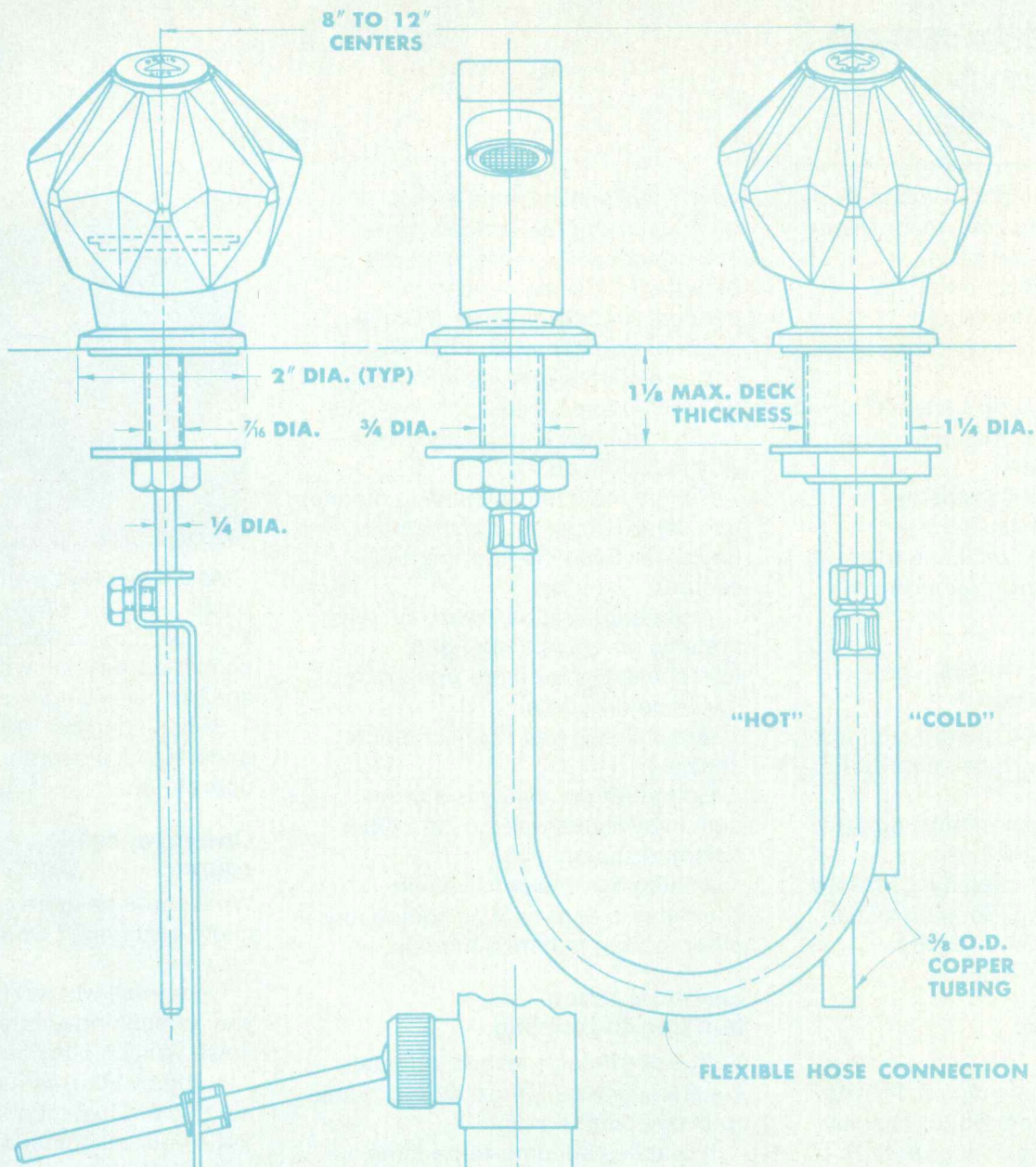
From Honeywell . . . the *systems* house . . . the *one* house that did it with two simple wires . . . and a restless reach for the ultimate in building automation.

The full story is told in a new brochure. Write us for it. Honeywell, Commercial Division, G2118, Minneapolis, Minnesota 55408.

## **Honeywell**

*...reaching for the perfect building.*

*For more data, circle 41 on inquiry card*



**The new Delta Fjord two-handled single handle valve is so easy to install, you could almost do it single handed.**

What more could a profit-minded businessman ask for?

We've designed the Delta Fjord with a flexible attachment for easy installation. And you can spread our widespread anywhere from 6 to 16 inches. Making the Delta Fjord versatile enough to fit virtually any lavatory.

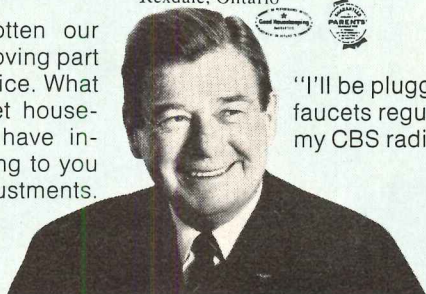
But don't ignore our new valve's looks. We've designed the Delta Fjord with today's fashion-con-

scious housewife in mind. In decorator finishes of chrome, brushed chrome, bright gold or satin gold. In models for the tub, shower and lavatory.

And we haven't forgotten our original concept of one moving part for maintenance-free service. What could be better? A faucet housewives will be crying to have installed . . . and not sobbing to you about return calls for adjustments.

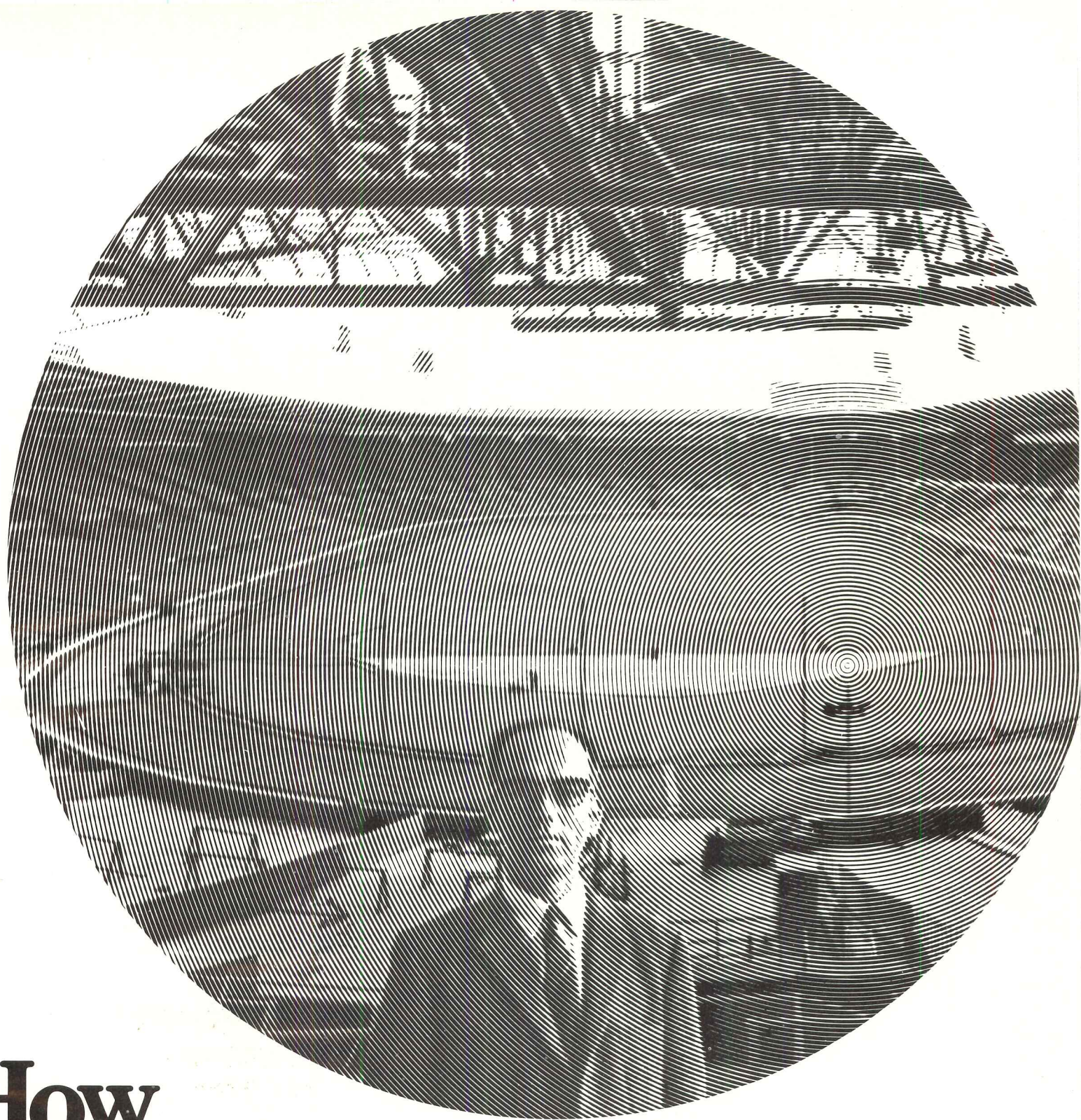
**DELTA**

Div. of Masco Corp., Greensburg, Ind.  
In Canada:  
Delta Faucet of Canada, Ltd.,  
Rexdale, Ontario



"I'll be plugging Delta faucets regularly on my CBS radio show."

For more data, circle 42 on inquiry card



# How to sound good in a stadium.

Soon this stadium will be a Babel of Sound; a scene charged with tension and excitement as the cheers and counter-cheers of rival groups split the air.

To get a message through such a din, calls for an exceptional public address system.

We have the equipment, the experts and the experience of tackling such projects.

You heard us at the last Olympic Games.

If you have been asked to specify the right Sound System for an open air stadium or large building, think first of Philips

Electro-acoustics Division of Philips Industries,



N.V. Philips' Gloeilampenfabrieken,  
Eindhoven, the Netherlands.

# PHILIPS

NOW AVAILABLE

A STUDY OF  
ARCHITECTURAL RECORD'S  
SUBSCRIBERS  
IN  
EUROPE

PART I—STATISTICAL SUMMARY  
(For Comments—See Part II)

PART II—COMMENTS  
(For Statistical Summary—See Part I)

FOR YOUR COPIES, WRITE ON YOUR LETTERHEAD TO:

**BRUSSELS:** Galerie Porte de Namur, 22-26, Chaussee de Wavre, 1050 Brussels, Belgium

**FRANKFURT:** Elsa-Brandstroem Str. 2, Frankfurt/Main, Germany

**LONDON:** 34 Dover Street, London W. 1, England

**MILAN:** Via Baracchini No. 1, Milan, Italy

**PARIS:** 17, Rue Georges Bizet, 75 Paris 16<sup>e</sup>, France

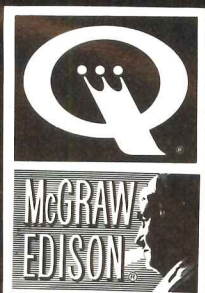
**TOKYO:** McGraw Hill Publications Overseas Corp., 2-5, 3-chome, Kasumigaseki, Chiyoda-Ku, Tokyo, Japan



Speed Queen can assist you in planning  
a coin-operated laundry room.

**NO OBLIGATION**

**For dormitories, low and high rise apartments.**



# **SPEED QUEEN**

DIVISION OF McGRAW-EDISON COMPANY



Send the coupon for a free brochure which can help you plan a laundry facility. Room layouts, equipment sizes, wiring, venting are discussed.

Mr. E. W. Jess Manager, Commercial Department  
**SPEED QUEEN**, Ripon, Wisconsin 54971

Mr. Jess, please forward your laundry room design brochure.

I would like a Speed Queen representative to call. AR

Name and title

Firm name

Address

City

State

Zip Code

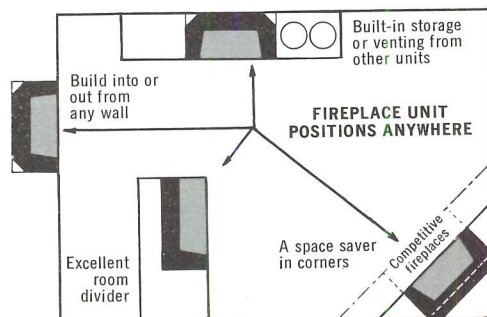


# This Heatilator fireplace turns people on...and sets you free

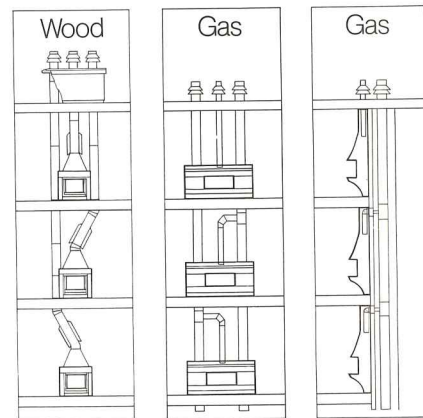
**Meet the Mark 123**—an exciting Heatilator fireplacing simplified concept. To people, a great way to find relaxing escape. To you, freedom to factor in real fireplacing customized to any architectural plan.

**Forget any set ideas about fireplaces.** The representative diagrams shown detail the versatility, adaptability and stacking features. Support and surround the Mark 123 with combustible materials. Heatilator Mark 123 systems (fireplace, flue and roof termination) arrive jobsite for as low as \$297. Twist-lock feature secures components in literally seconds. Full-pack insulation eliminates condensation and noise transmission.

**Renters willingly spend up to \$15 more per month to enjoy a Mark 123.** That means more cash flow, rental profit, loan and sales value for builders and investors.

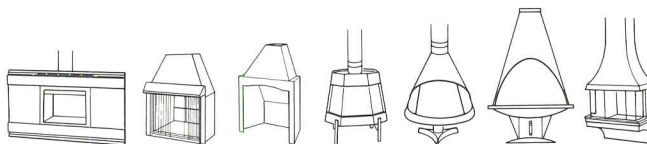


**Send for the Heatilator Architectural File.** Wood- and gas-fireplace systems are detailed in full color catalogs and representative architectural drawings. Write: Vega Industries, Inc., 3380 E. Brighton Ave., Syracuse, N. Y. 13205.



Multi-level venting for Wood or Gas systems. Choice of manufactured or job-built roof termination.

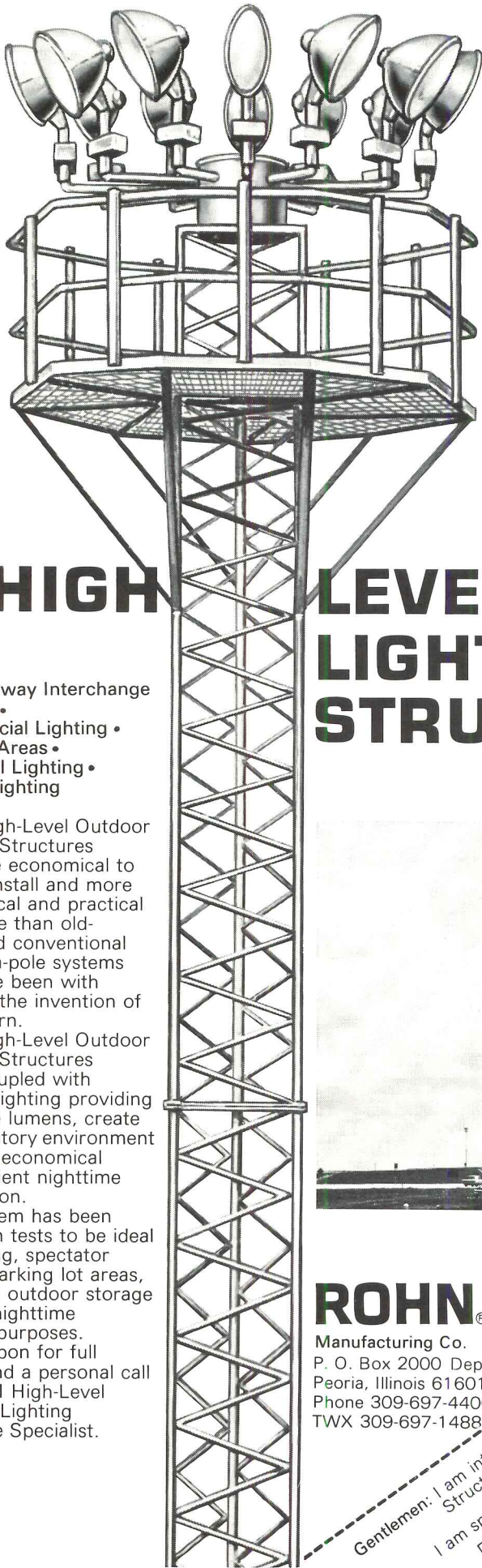
**heatilator**  
America's Leading Fireplace Systems



Built-in/Free-standing/Wall-hung

For more data, circle 45 on inquiry card

◆ For more data, circle 44 on inquiry card



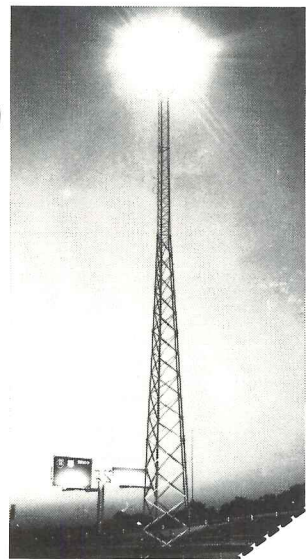
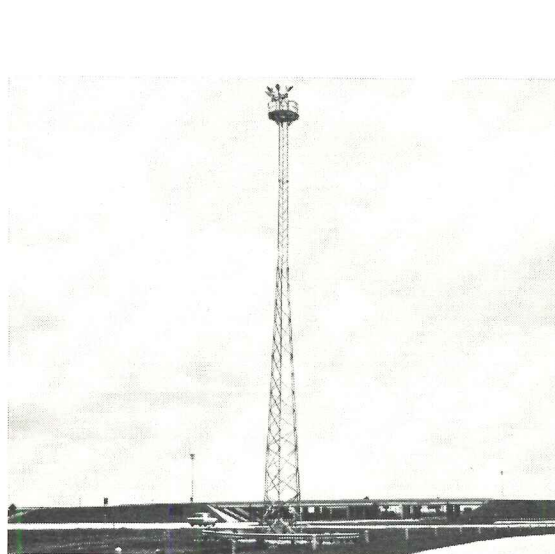
FOR SAFETY,  
ECONOMY  
AND EFFICIENCY

**New!**  
**ROHN®**

**HIGH LEVEL OUTDOOR LIGHTING STRUCTURES**

For Highway Interchange Lighting • Commercial Lighting • Parking Areas • Industrial Lighting • Sports Lighting

Rohn High-Level Outdoor Lighting Structures are more economical to initially install and more economical and practical to service than old-fashioned conventional light-on-a-pole systems that have been with us since the invention of the lantern. Rohn High-Level Outdoor Lighting Structures when coupled with modern lighting providing adequate lumens, create a satisfactory environment for safe, economical and efficient nighttime illumination. This system has been proven in tests to be ideal for driving, spectator sports, parking lot areas, industrial outdoor storage and for nighttime security purposes. Mail coupon for full details and a personal call by ROHN High-Level Outdoor Lighting Structure Specialist.



**ROHN®**

Manufacturing Co.  
P. O. Box 2000 Dept. LT  
Peoria, Illinois 61601  
Phone 309-697-4400  
TWX 309-697-1488

Gentlemen: I am interested in obtaining the full facts on Rohn High-Level Outdoor Lighting Structures.  Please have your representative contact me.

I am specifically interested in:  Parking Lot Lighting  Highway Interchange Lighting  Sports Lighting  Commercial Lighting  Industrial Lighting  Recreational Lighting

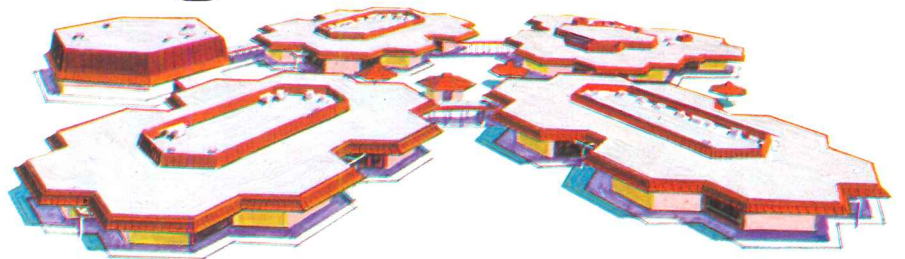
Name \_\_\_\_\_ Title \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Zip \_\_\_\_\_  
Phone \_\_\_\_\_

For more data, circle 46 on inquiry card



Architects: Steinhart, Theriault, and Anderson, Seattle. General Contractor: Absher Construction Co., Puyallup, Wash. Fascia panels fabricated and erected by Crow Roofing and Sheet Metal, Seattle.

Big school for little people  
crowned with  
Weathering Steel







For the Benson Hill School, a sizeable primary school in Renton, Washington, the architects sought to create a scaled-down design appropriate to the size of the pupils.

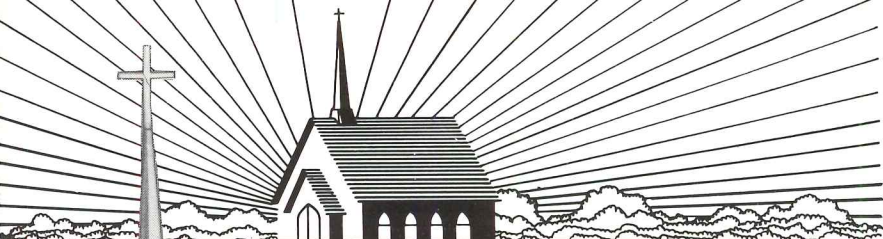
Veering away from boxy masses, they succeeded in developing a warm, informal environment through clusters of hexagonal forms. The rambling design is pulled together visually by a peripheral fascia of Mayari R Weathering Steel Sheets.

In this project, Mayari R Weathering Steel's original installation cost was substantially less than that of other materials considered. And minimal maintenance costs through the years will bring additional savings.

This is because of Weathering Steel's unique, deep-brown oxide coating. Close-grained and tightly adherent, the coating builds up into a protective layer which bars further atmospheric corrosion. If damaged, it heals itself.

**BETHLEHEM STEEL**



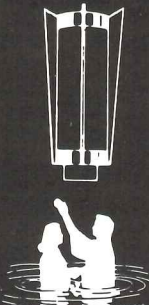
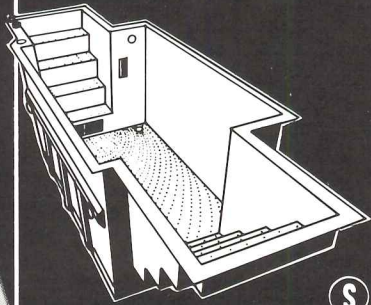


## BAPTISTRIES, SPIRES, LIGHTING by *Wiedemann*

**BAPTISTRIES** Originator of the fiberglass baptistry and leading baptistry specialist. Over 150 shapes and sizes of baptistries available.

**SPIRES** In unit-molded fiberglass for extra strength and durability.

**LIGHTING** In five styles to complement any style of architecture. Available in natural aluminum or anodized in gold, brass or coppertone.



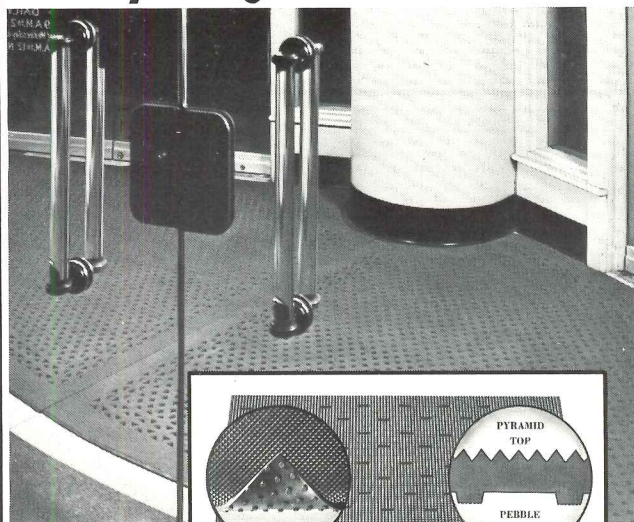
Write for free information kit. See Sweet's Architectural File.

**Wiedemann Industries, Inc.**

Box 672, Muscatine, Iowa 52761 Ph.: 319-263-6642

For more data, circle 47 on inquiry card

## Safety Designed Entrance Mats



### PERFORATED RUBBER MATS, INLAID OR PLAIN

Lower prices of Musson Mats, due to great popularity, makes them more in demand for entrances, lobbies, vestibules. Beautiful, durable. Easy to handle and clean. PYRAMID surface design in heavy "live" rubber gives safest foot traction. PEBBLE BASE allows drainage and air circulation under mat. All shapes, in sizes up to 72" x 18'6" and 3/8" or 1/2" thick. Colors: Black, Brown, Red, Green, Gray or Sand.

Write for Catalog, Samples, Prices

**THE R. C. MUSSON RUBBER CO.**  
1320 Archwood Ave. Akron, Ohio 44306

For more data, circle 48 on inquiry card

## Versatile AEROFIN Heat Transfer Technology . . . really gets around

Aerofin extended surface coils are the first source for optimum fan system custom climate. That reputation extends over a broad spectrum of heat transfer application. Special coils to heat and cool air/gas . . . condense water vapors from air, chemical vapors from air or gases and recover solvents . . . coils to absorb contraction and expansion variables . . . coils to heat or reheat.

Specify standard or customs coils—in many sizes, rows, and high thermal conductivity metals to handle your special application requirement—whether industrial, commercial, institutional, mobile or energy system design. Count on Aerofin for technical assistance to secure the highest, balanced thermal efficiency. And that's a promise characteristic of a coil leader for over 46 years.



**Type C Coil**

Aerofin Coils come in many types, many configurations. Ask us for planning help.



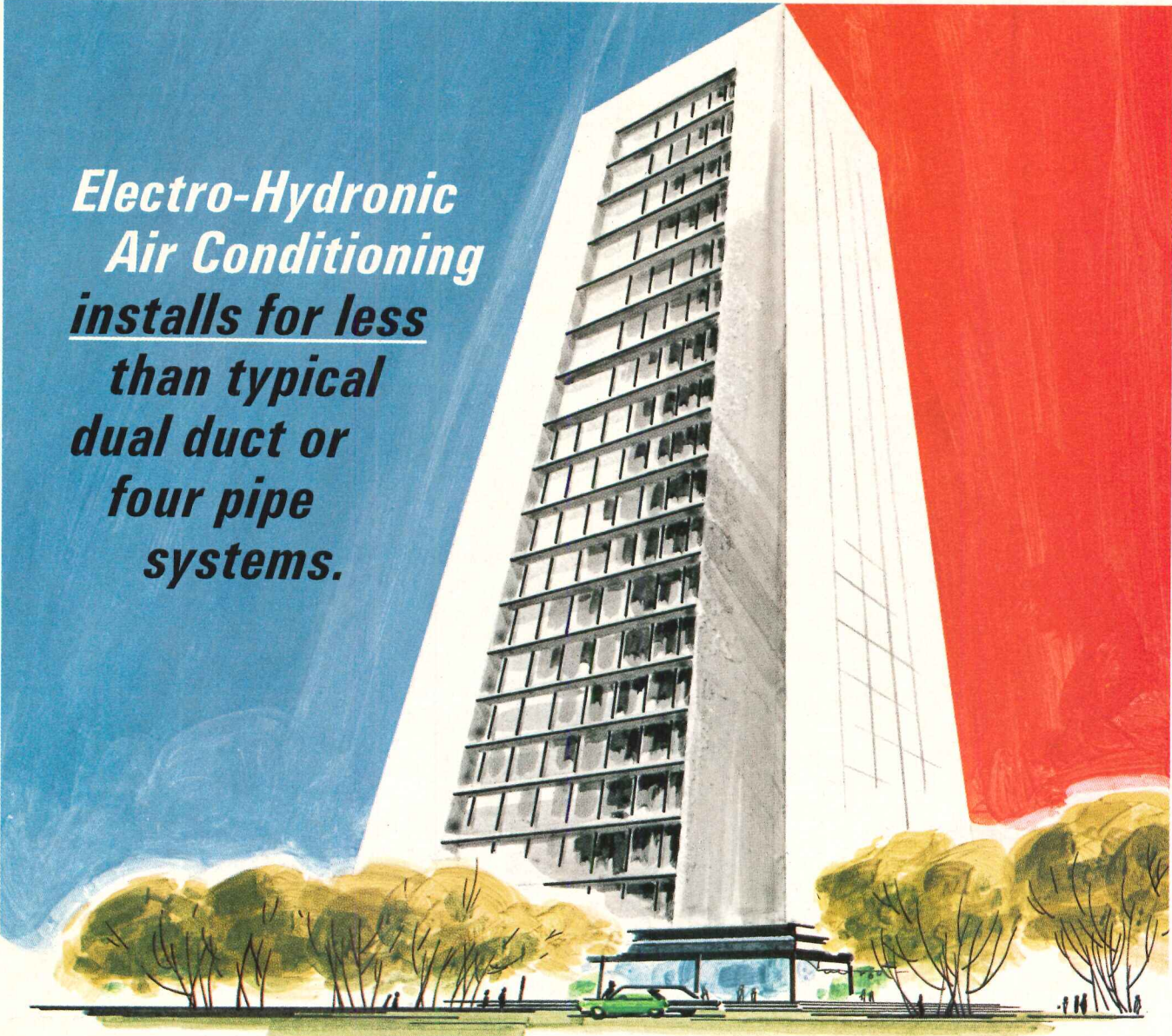
# AEROFIN

CORPORATION • LYNCHBURG, VIRGINIA 24505

Aerofin is sold only by manufacturers of fan system apparatus. List on request.

**AEROFIN OFFICES:** Atlanta • Boston • Chicago • Cleveland • Dallas • New York • Philadelphia • San Francisco • Toronto • Montreal  
**AEROFIN CORPORATION (CANADA) LTD.,** Gananoque, Ontario

For more data, circle 49 on inquiry card



***Electro-Hydronic  
Air Conditioning  
installs for less  
than typical  
dual duct or  
four pipe  
systems.***

One reason is uninsulated piping. Electro-Hydronic uses a two-pipe, closed-loop water circuit. Water in this circuit is supplied year 'round at 60° to 90° Fahrenheit. Hence, no condensate on pipes and no need for insulation.

A second reason is the flexibility of modular design. The 3 types of room conditioners—console, horizontal and vertical models—occupy little or no usable floor space. They can be installed in the ceiling, in a closet or recessed in the wall . . . requiring little or no ductwork.

There are other reasons, too. Reduced boiler size, no central chiller, no complex controls, no large, power-hungry central fans, no attenuating or mixing boxes, and no automatic water valves at each room terminal are a few. Electro-Hydronic air conditioning also costs less to operate than most conventional systems available today.

Contact your local American-Standard Sales Representative for an estimate on that next building—new or renovation. You'll be pleased with what he'll show you. If you want more information and professional sales assistance, write for Bulletin EH 1-1 to:

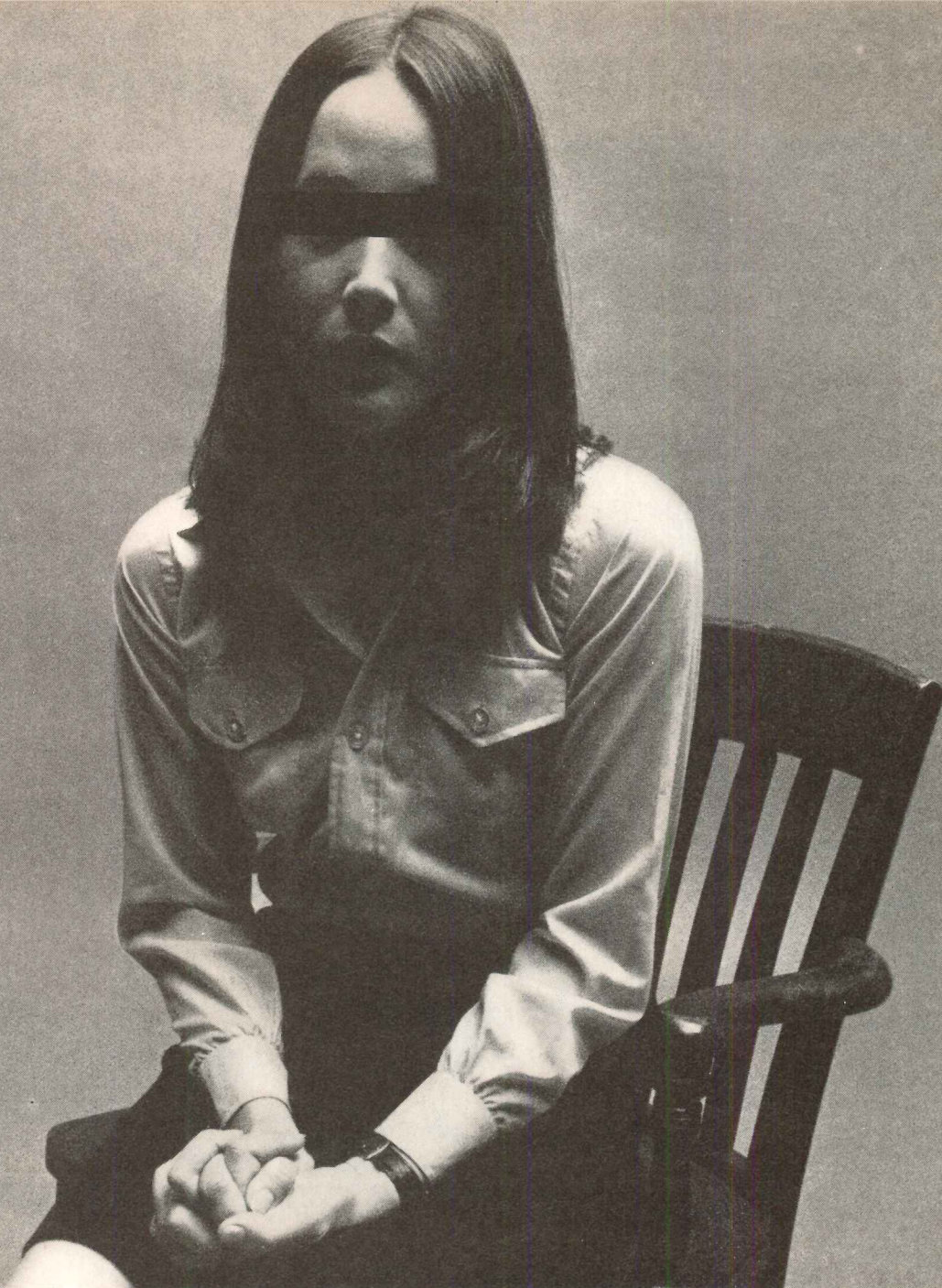
***Working with air to keep people comfortable.***



**AMERICAN  
STANDARD**

COMMERCIAL AIR CONDITIONING DIV.  
1300 Federal Blvd., Carteret, N.J. 07008.

*For more data, circle 50 on inquiry card*



## Miss Sarah A. will now testify on behalf of Life-Gard.

*"I was coming home from work—teaching—at about 4:30 in the afternoon. My apartment is on the ground floor, though that doesn't really matter.*

*"Anyway, I didn't look behind me. I didn't hear anything. I just got the key out of my purse, put it in the lock and opened the door.*

*"The instant I did, a man—he must have walked up while I was getting my key—grabbed me from behind. Then he forced me into the apartment and closed the door.*

*I... I'd rather not say what happened then... But if I'd had some*

*kind of alarm on the door, I don't think it would have happened."*

The preceding, unfortunately, is a true story.

The alarm Miss A should have had is Life-Gard™—a compact, carefully engineered alarm system that can be attached to the surface of any door and frame. (Battery-run, with solid-state circuitry, in anodized aluminum or gold, 12" x 1¾" x 2½".)

Life-Gard is activated by its own key and offers three distinct (and very useful) settings. The first is for situations like the above. A 10-second

delay gives the occupant time to turn off the alarm when returning. If this isn't done, the alarm goes off automatically.

The second allows the occupant to answer the door and operate the alarm manually.

The third is for use when all authorized persons are within—when anyone entering would be an intruder. The alarm goes off instantly when the door is opened.

Goodbye intruder.

Now then. One of the reasons we're in this business is to prevent terrifying occurrences like that experienced by Miss A.

They should be prevented. Let's get together and do it.



Life-Gard™ by

**Continental Instruments Corporation**

3327 Royal Avenue, Oceanside, New York 11572

For more data, circle 51 on inquiry card

For more data, circle 52 on inquiry card



Put a Bally Prefab Walk-In Cooler-Freezer in the kitchen. It helps when happy vacationers, relaxed by sun, surf, or fun, seek fast service.

With plenty of space it's a breeze to pre-prepare house specialties. If there's an expansion program ahead, it's easy to increase Walk-In size with extra panels. Equally easy to relocate. Write for 32-page booklet and 4 inch thick urethane wall sample.

There's an evolution in the kitchen



© 1970, ALL RIGHTS RESERVED.

BALLY PREFAB PANELS . . . FIRST TO PASS UNDERWRITERS' LABORATORIES (UL) FIRE TEST!

**From the radical  
and the daring  
comes the  
revolutionary.**

They're here to revolutionize treatment of walls and ceilings. To give interiors a radically different look. To break traditional paneling barriers.

**Element I™** from U.S. Plywood. Five exclusive concepts in which veneers of a wide variety of wood species are used as they've never been used before.

Panels of mismatched or random-matched veneers. Panels which retain the rough natural textural beauty of wood. Panels joined in new ways with plastic or built-in reveals. Panels or battens that are available in many widths to vary surface treatment.

For a breakthrough in the use of wood for interior design, U.S. Plywood's Element I includes:

**Butcherbloc™**—a paneling of dramatic impact inspired by the counter of the neighborhood



butcher shop. Cedar veneers are laid end-to-end in vertical rows to reproduce the handsome look of heavy board inlay. Veneers are random length, in a variety of natural color tones and grainings. The overall effect is solid and audacious—in keeping with the paneling's namesake.

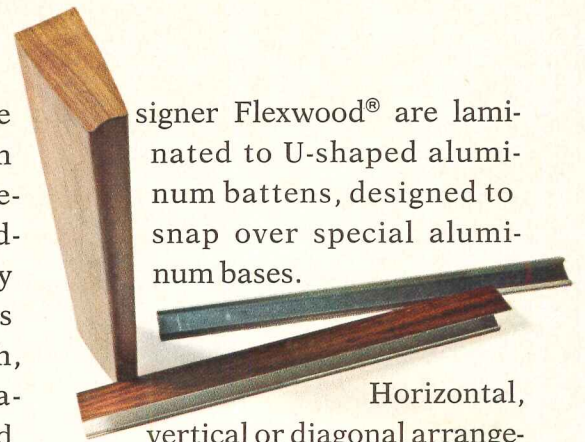
**Collage™**—choice wood veneers of birch, elm, oak, walnut, pecan, teak and rosewood are over-

lapped in random arrangements across each panel face to form a syncopated pattern of wood grains and color shadings. Veneers vary in length and width, texturing the surface of each panel in bold three-dimensional relief. A special bonding process has been devised to retain this unique and strikingly beautiful sculptured appearance.

**Ionic®**—a matchless architectural paneling in which smooth wood veneers alternate with "black olive" vertical reveals of plastic. This arrangement creates a pattern of classic simplicity. The effect is reminiscent of the slender, fluted columns of ancient Greece. A masterpiece of graceful paneling.

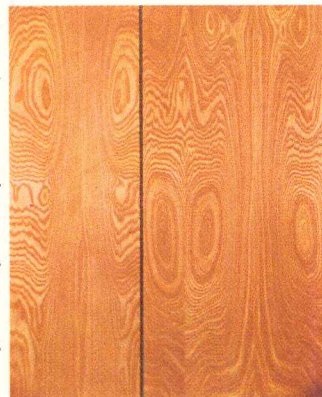
**Palisade™** batten & trim—an unconventional decorating material in which veneers of De-

signer Flexwood® are laminated to U-shaped aluminum battens, designed to snap over special aluminum bases.



Horizontal, vertical or diagonal arrangements produce a limitless range of arresting visual effects. A novel, versatile, unique decorating material.

**Concept 32™**—a stark, beautifully basic interior paneling in which natural grain patterns of walnut, ash, teak and rosewood swirl unfettered across 32-inch wide panel faces, accented by charcoal black or deep chestnut

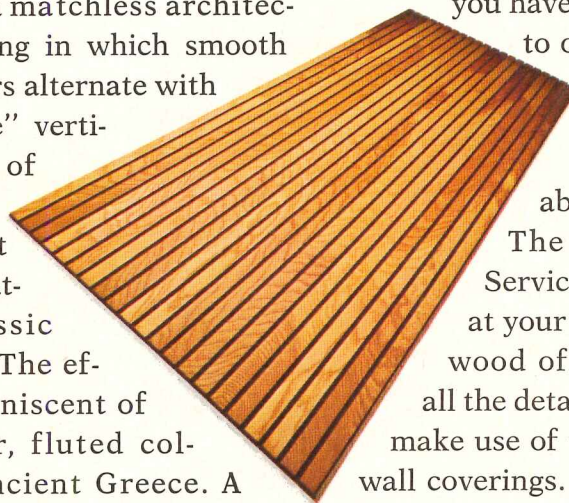


brown reveals. Faces are mismatched and flush. The look is modern, symmetrical, fundamental.

**Element I.** Because of its radical departure from tradition, it may be the

kind of wholly different wall or ceiling treatment you've always wanted to specify, but one that you have never been able to obtain until now.

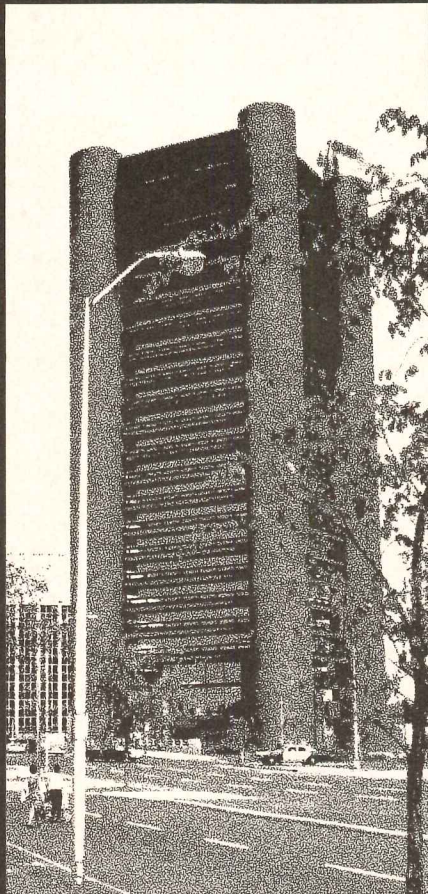
So why not get more complete information about Element I? The Architectural Service Representative at your nearest U.S. Plywood office can supply all the details you'll need to make use of these innovative wall coverings. Or, if you'd prefer, simply write to U.S. Plywood, 777 Third Ave., N.Y., N.Y. 10017.



**U.S. Plywood**

A Division of U.S. Plywood-Champion Papers Inc.  
777 Third Avenue, New York, New York 10017

The Knights of Columbus National Headquarters. A masterpiece of architectural innovation designed by Kevin Roche John Dinkeloo and Associates.



Our role: Fabrication and erection of the Cor-Ten steel curtain wall system. The Cor-Ten steel exterior railing. The steel deck on connecting bridges. The louvered sunshades. The glass. The glazing.

Let us put our resources to work on your next project.

# EPIC

ARCHITECTURAL SYSTEMS, INC.

Engineered Products, Inc.

Epic Metals Corporation

1844 Ardmore Boulevard

Pittsburgh, Pennsylvania 15221

(412) 242-6900

## Unatap uses its head to get your hands hygienically clean.



## And saves hot water in the process.

Unatap was scientifically designed to wash hands with a hygienic spray of water. A spray that is steady, concentrated. Yet Unatap does something else—it conserves water. In one test, it actually reduced hot water usage by 60%.

Unatap is a single tap which mixes hot and cold water and delivers a constant spray at the temperature you select. Result: more efficient hand washing. No waste of hot water.

Unatap is operated with the flick of a wrist. Its single control knob permits the user to operate the faucet and set the temperature simultaneously.

Don't leave the faucets to chance. Make a point of specifying Unatap. Made by Richard Fife, Inc. The company that's made a big business out of controlling water beautifully.

**Also specify Rada thermostatic mixing valves—  
another way to control water beautifully.**

## Richard Fife, Inc.

1140 Broadway, New York, N.Y. 10001  
Phone: (212) 683-0745

*For more data, circle 55 on inquiry card*

◆ *For more data, circle 54 on inquiry card*

*For more data, circle 56 on inquiry card* ◆





*A complete line of advanced architectural hardware, including the Sargent Maximum Security System  
New Haven, Connecticut • Ontario, Canada*



## A chair that works, for people who work

If you're like most of us, you and your clients spend about a third of your lives sitting behind desks, working.

So, each of you needs a chair that is comfortable, good looking and well priced, yet is built to help get your job done.

Our new Double-Shell chair is that kind of chair.

It helps you work better.

It's good looking, very comfortable, well priced, and has some terrific engineering fea-

tures that no other chair has.

For example, the Double-Shell construction lets us fasten cushions and covers so they can't come loose or bunch up.

This helps you work better.

The Double-Shell idea also gives an incredibly strong and stable fastening point for the chair base. It won't wobble.

This also helps you work better.

And, a unique trim channel on the outer shell protects both

chair and desk from getting all nicked up, and saves you from aggravation.

This has to help you work better.

It has many other good ideas, all built into eight models that swivel, tilt, roll or telescope according to your particular needs.

See them now at your Steelcase showrooms. Steelcase Double-Shell chairs, the general office chairs of the 70's.

Showrooms and Offices:  
 New York - Chicago - Grand Rapids  
 San Francisco - Philadelphia  
 Boston - Cleveland - Dallas  
 St. Louis - Atlanta - Detroit  
 Los Angeles - Portland, Oregon  
 Toronto - Montreal.

# Steelcase

Furniture That Works  
 For People Who Work.

With the burgeoning interest and involvement of architects and hosts of varied specialists and consultants in the interior design field, added to the obvious concerns of manufacturers, dealers, installers and the like, the need for a strong forum for the exchange of ideas and information has become increasingly apparent. A serious effort to provide such a focus for the sprawling contract furnishings "industry" was launched last year under the sponsorship of Chicago's Merchandise Mart as Neocon I, the National Exposition of Contract Interior Furnishings. Its initial success as a combination of conferences and market display was followed this June 17-19 at the Mart by Neocon II, which drew a reported 6000 registered participants. In spite of (or because of?) the enormous variety of interests represented, the three day convention had a constructive, business-like atmosphere unusual for these volatile times; sessions and exhibits were well attended and intently followed. The only students noted doing their "thing" were several groups silently and dedicatedly carving away at huge blocks of plastic foam to create "environmental sculptures" in the Mart's entrance lobby.

#### A spirit of change

But the spirit of change was strongly in evidence, from sessions with such titles as "ergonomics" and "enviromic design: recreology and thalatecture" (which explored varying facets of the usual perils and possibilities for our environment), to some dashingly inventive, and sometimes puzzling, new items of furniture. The new "market" showing was, of course, the main feature, and frequent parties and receptions helped assure attendance and viewing of the 10 floors of exhibits; in most all of them one sensed an upsurge in design quality and concern, with a lot of good, clean-lined American items predominating, spiked by generous dollops of polyurethane and Italian and Scandinavian pieces.

#### Useful sessions

Most of the 24 sessions, however provocatively titled, covered work-a-day problems (trends in codes, carpet flammability, airport influence on food and lodging industries), and planning and furnishing conferences on specific building types (schools, universities, hotels, hospitals, offices, stores and shops). The panel members of each session represented a range of interests (clients, designers and architects, manufacturers, consultants), with each presenting the current changes afoot from his point of view. Among the other sessions were "lighting, life and health" (are we getting bad rays from artificial light?), "the instant city" (represented by Columbia, Maryland and Tapiola, Finland), and "designing the office building for the 21st century" (a genial account by Ed Stone and Philip Will, Jr., of the scheme for the new Standard Oil building for Chicago).

# THE DESIGN OF INTERIORS

#### A time for collaborative action

Probably the most stimulating, and controversial, session of Neocon II was a jam-packed meeting entitled "the contract market—who's winning: manufacturer, architect, dealer, consumer?" Moderated by Fred A. Bell, of Steelcase, Inc., with some apparent caution, the panel consisted of two young doctors, Charles W. King and Doyle L. Weiss, of the Krannert Graduate School of Industrial Administration, Purdue University. After a fast-paced review of their own qualifications in market analysis, and what the "contract" market really is, the pair launched into a dialogue with "Laugh-In" pace and bite which obviously sought to effect a meeting of minds by putting each of the interests concerned in his place; the strength, weaknesses, vanities and ambitions of manufacturer, dealer, architect and client were pin-pricked in turn, leading to the panelists' conclusion that each exerted undue pressures up and down, trying to optimize his portion. After a largely defensive question and answer period, the panelists found that, with such different and conflicting stake holders, the problems "will always exist", and that it is a "time for collaborative action" by all concerned to "dissect problems" and "recognize that furniture sale function has many facets."

Though perhaps over-dramatized, the session did bring to light some of the frictions inherent in the processes of designing, costing, purchasing, delivery and servicing furniture and interiors; what was not said, but obviously underlay the whole affair, was intense interest in a huge market area. In a recent analysis of the commercial (or contract) interior design market, Sweet's Interior Design File reports that in 1969 there were 52,228 active projects, at a valuation of \$15,830,995,000, and that there is an upsurge in optimism and activity throughout the market this year.

Neocon II is to be congratulated in its efforts to bring together all constituents in this sizable "industry" for all these types of problem solving, and for opening lines of communication between them that hardly existed before. It also had the perhaps not

unexpected side effect of stimulating discussions and analysis of their own current problems among each of the groups represented.

#### Professional problems

Our own discussion, design-oriented of course, started soon after the "who's winning" session described, at a Neocon-related reception held by Perkins and Will's interior design section, ISD Incorporated. And the problems brought up had a slightly different cast: organization and staffing, client relations, product information, fee arrangements, specifications and coordination of details. Kenneth E. Johnson, ISD President, proffered some these useful thoughts on that firm's reactions to these professional problems:

#### ISD's organization and staffing

Probably the best and most effective organization for the interior design firm offering a wide range of services is "as little as possible." In order to design for many types of buildings and their interior spaces, it is necessary to maintain the greatest amount of organization flexibility—avoiding the temptation to use individuals as specialists in one or two "types" of projects. Gone are the days when interior design meant merely the hanging of pictures, placement of furniture, and choice of wall colors. Instead, the design firm of today must offer a full range of abilities—from space planning and programming to supervision of installation and approval of the finished job.

There aren't—or shouldn't be—routine solutions to interior design problems. For that reason, we include architects, interior designers, space-programming specialists, draftsmen, administrative personnel—all with a generalist orientation—to provide flexibility to handle every job.

This kind of flexible organization is also a stimulus to creativity. The designer who must think through a solution from beginning to end without preconceived ideas is essential to a creative design and space planning firm. By keeping a full-time staff of over 80 people in two offices—New York and Chicago—we can achieve maximum flexibility in scheduling projects to avoid "staffing up" for a particular job. This staff continuity also has the benefit of sound working relationships between employees.

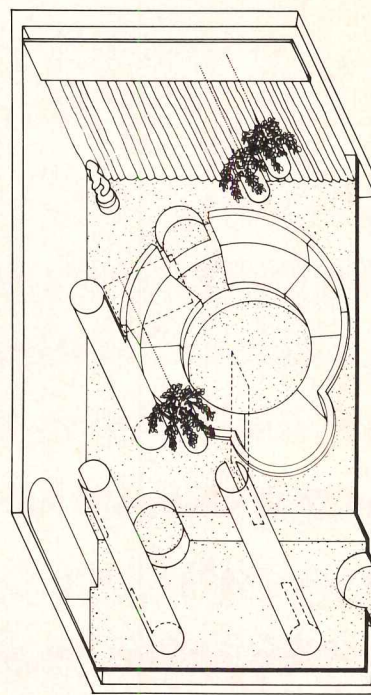
We have found several specialists not always part of interior design offices to be of value, however. One of them is a Manager of Specifications who oversees the complexities of writing specs and anticipating the problems that can arise—especially in interior design—when these major documents are poorly prepared. Having such a specialist, we feel, is especially valuable when highly complex government contracts are involved. Both client, architect and interior designer benefit from the protection

*Text continued on page 102*

ARCHITECT'S APARTMENT,  
NEW YORK CITY  
DER SCUTT, ARCHITECT



Norman McGrath photos



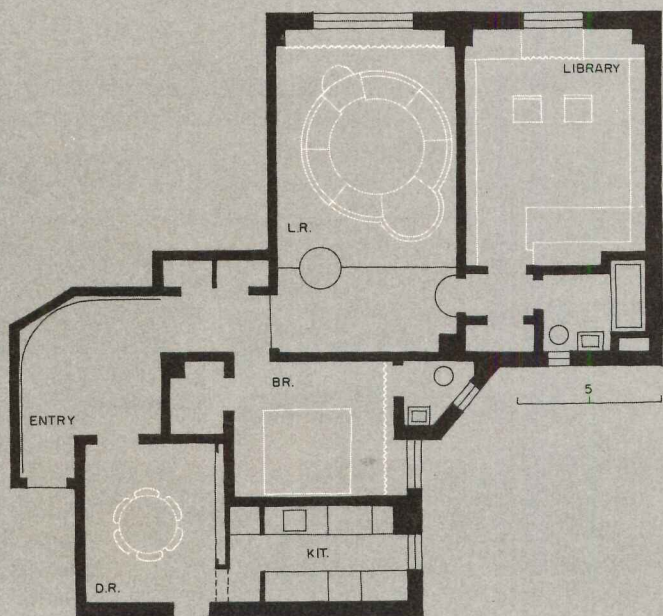
John T. Hill, courtesy of House Beautiful



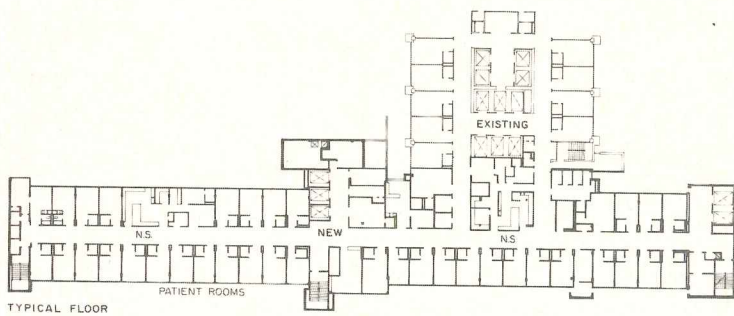
John T. Hill

A typical Manhattan apartment posed some typically severe space problems for the owner and architect, Der Scutt, who, when not designing for himself, is chief designer for Kahn & Jacobs, the prominent New York architectural firm. Spaces were a bore and viewless windows offered no prospect of relief. Standard floor areas were thus turned into a totally interior environment and visually enlarged through purely architectural means, with visually expanded space for entry and standard 12 by 21-foot livingroom achieved using a consistent cylindrical geometry and color scheme (color photo, axonometric drawing and photo, left above). Wall-to-wall carpeting and upholstery, related in texture and beige color, unify seating with walking levels, thus banishing standard furniture with its attendant clutter and standard scale. Tubes, enameled orange and yellow, were employed with similar ingenuity to heighten visually a low ceiling, placed to direct circulation from entry to living area (see plan) and house stereo speakers and accent lights. Like built-in furnishings, the movable circular acrylic tables were designed by the architect. A small dining room (photo, middle) similarly gained space through the elimination of clutter and use of light (reflected off white laminated plastic, acrylic, black vinyl and chrome) and was designed to provide museum-like conditions for a collection of artifacts displayed on fluorescent-lit acrylic plastic shelves, adding another important view to a windowless space.

The small library (left) is blue-carpeted, with a built-in lime green couch and is formed of squares, offering a cool contrast to the warm colors and cylindrical geometry characteristic of the living room. Lighting, for which the architect has received several awards, is inventively used to add character here as throughout.



TEXAS CHILDREN'S HOSPITAL  
HOUSTON, TEXAS  
CAUDILL ROWLETT SCOTT  
INTERIORS/GRAPHICS DIVISION



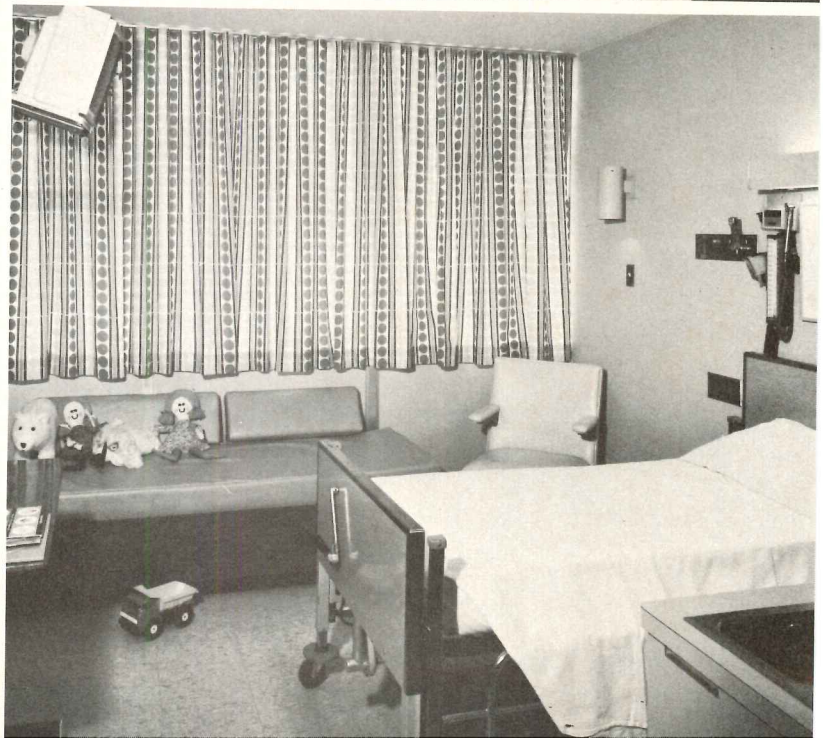
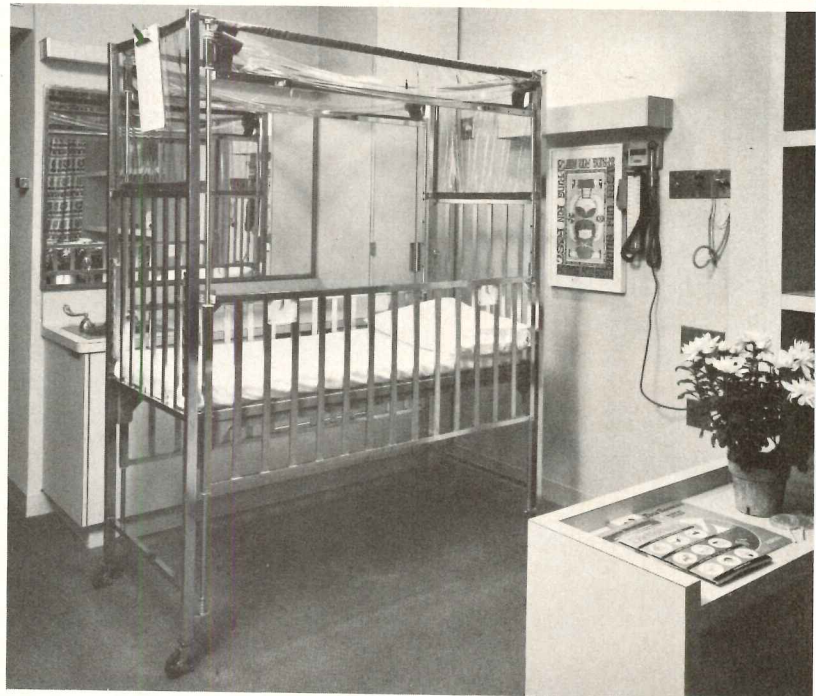
The interiors for the addition to Texas Children's Hospital reflect an increased concern for the emotional needs of both sick children and anxious parents. The designers proceeded from the premise that if the surroundings put the parent at ease, the parent will put the child at ease. This assumption suggested that Lilliputian furnishings in a scaled-down environment were not enough. "Parents of sick children," says hospital administrator Newell France, "need an environment that is not drab and depressing, but not flippant either. The whole thing must look hopeful."

To achieve these goals, the CRS Interiors/Graphics Division banished the usual hospital palette. The unifying color throughout is a warm beige grey. But instead of the familiar, tired, bleached pastels, the designers substituted powerful doses of red, orange and green to color code the hospital's major areas. Wall hangings and bright prints accent the hospital's corridors.

Patient rooms are carried out in the same cheerful spirit. Avoiding the mawkish, CRS designers developed their own patterns for curtains and graphic accessories. Across from each patient's bed is a large bulletin board. At the top is a perky animal motif—an elephant, a lion, a turtle or a duck—and at the bottom there is space for get-well cards and notes from friends. Most rooms are equipped with a day bed that can be made up at night for parents' use.

But in spite of the color and the whimsy, no serious effort has been made to conceal or even camouflage the building's true function. Take away the moppets, teddy bears and toy trucks: a fully equipped hospital remains.

The contractor was Manhattan Construction Company.

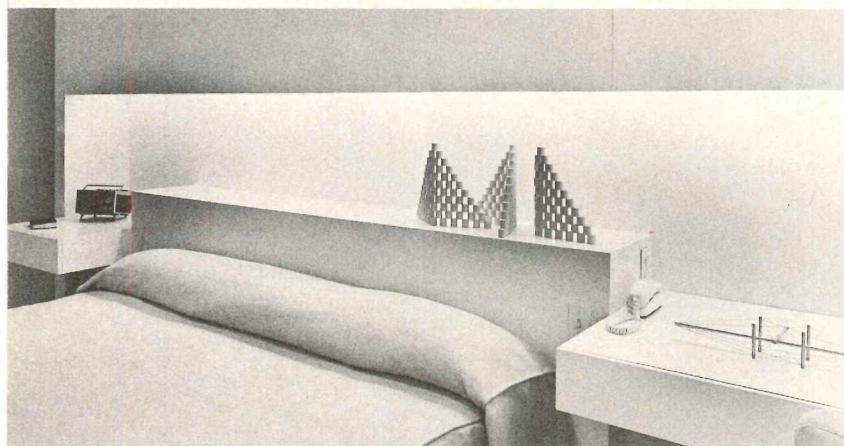
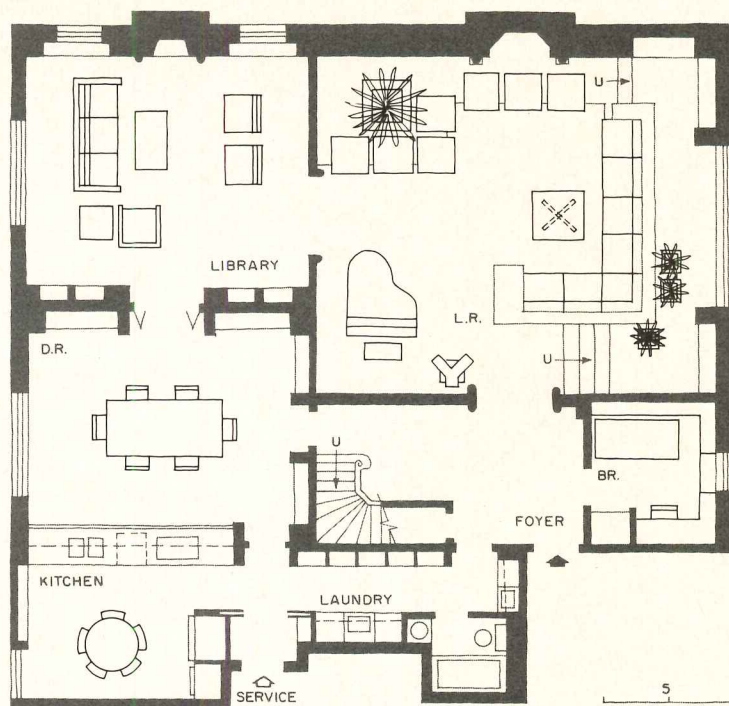
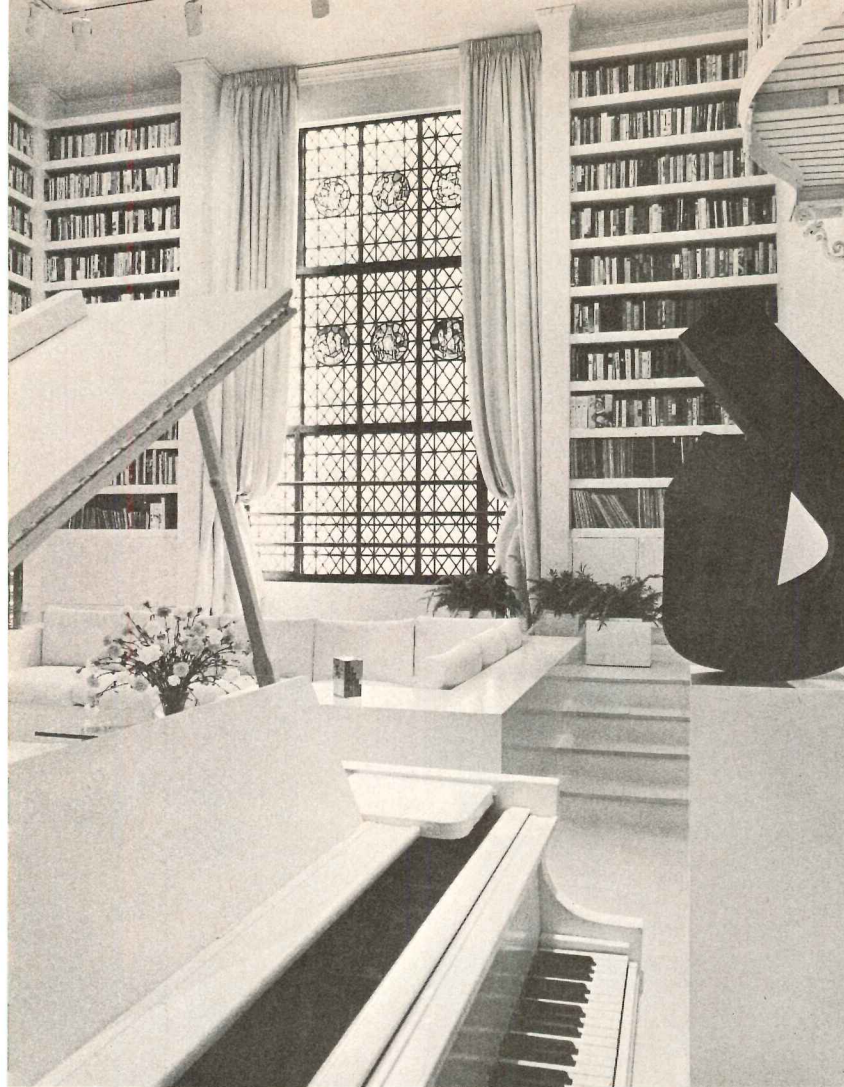




Alexandre Georges photos



ARCHITECT'S APARTMENT,  
NEW YORK CITY  
DAVID BEER, ARCHITECT

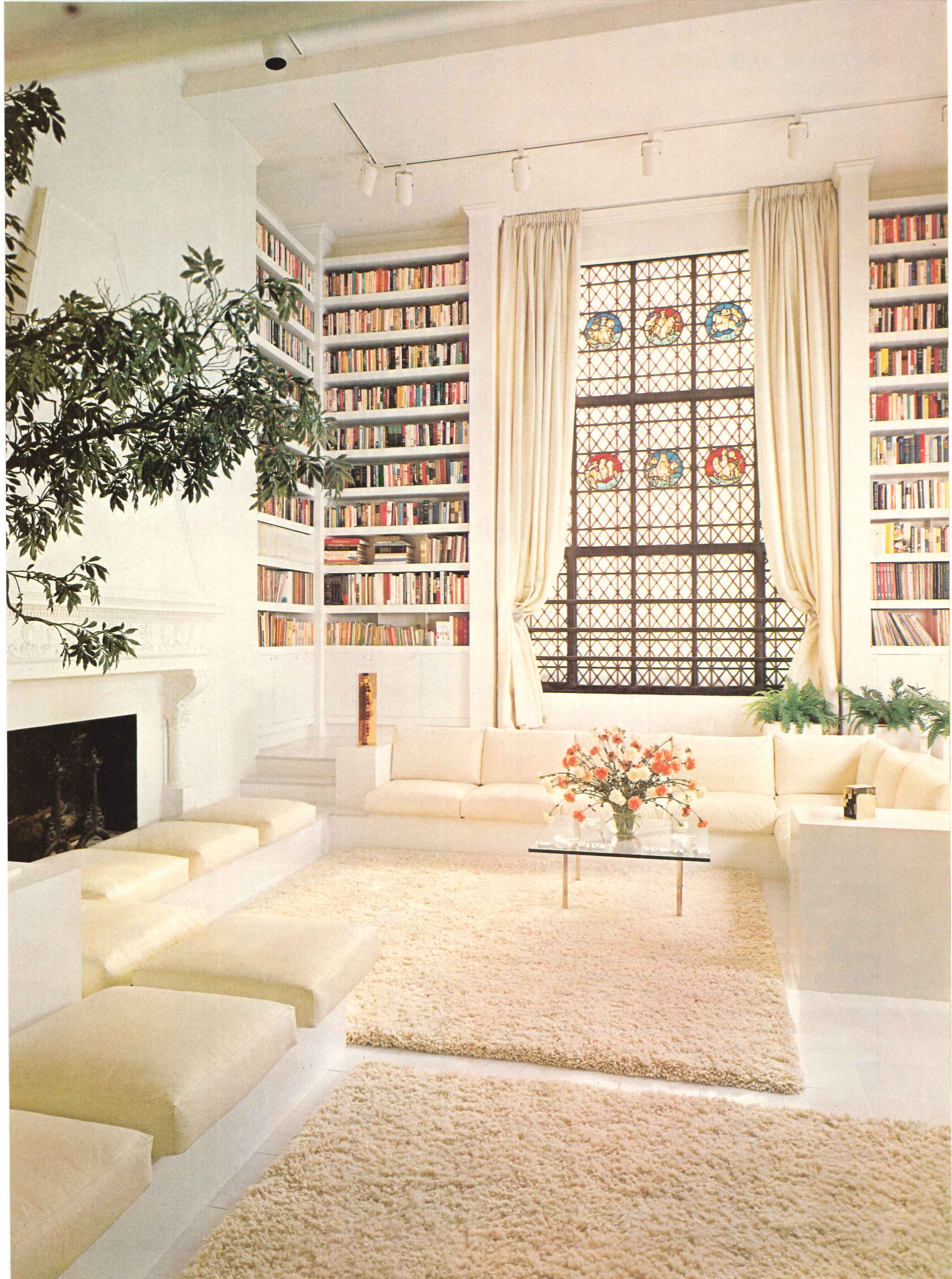


David Beer, director of design for the Welton Becket New York office known for its predominantly large-scale buildings and master plans, put his hand to renovating—on a domestic scale—and the result is surely one of the most unusual apartments to be seen in Manhattan today. Relative to most of today's standard apartments, it is large, located in a turn-of-the-century building by the architect Charles Platt, published in the *RECORD*, 1908. In recognition of the architectural merit of the original plan and the marvelous two-story living room, luxurious for New York even in 1905 (the building was designed as an artist's cooperative, where double height studios could be justified), both were left substantially unchanged. With due respect likewise to an old-fashioned curving staircase, the original lacy moldings, filigree window, balcony and ornamental eccentricities of the living room, changes were made rather to dramatize existing spaces, the apartment transformed with white paint, tile, acrylics and plastics, and rooms reclaimed from the dark, if lovely, Edwardian age and visually enlarged. A cool spacious shell of white walls (most apartments are painted every two or three years in Manhattan), white plush scatter rugs, clear acrylic tables and stainless steel for sparkle make a continuous backdrop for black-tie parties, flowers, books, art (the minimal sculpture is by C. Meadmore)—and children's toys. The apartment was designed to reflect a living style, and as a bright haven from the continual assault and battery of air pollution, noise and soot rampant in New York today. Plastics and synthetics throughout, with pyroceramic counters, vinyl cushions and tile floors, the elegant white-on-white spaces are childproof, stay in pristine condition and can practically be hosed down. Conventional Miesian furniture, formerly in the livingroom, was placed in the library and replaced by a wrap-around platform to provide uncluttered seating, focus and scale for the 20-foot high room and to put to best advantage bookcases, and a major opening—fireplace, window or door—centered on each wall. Contractor was Marshall Construction Co.

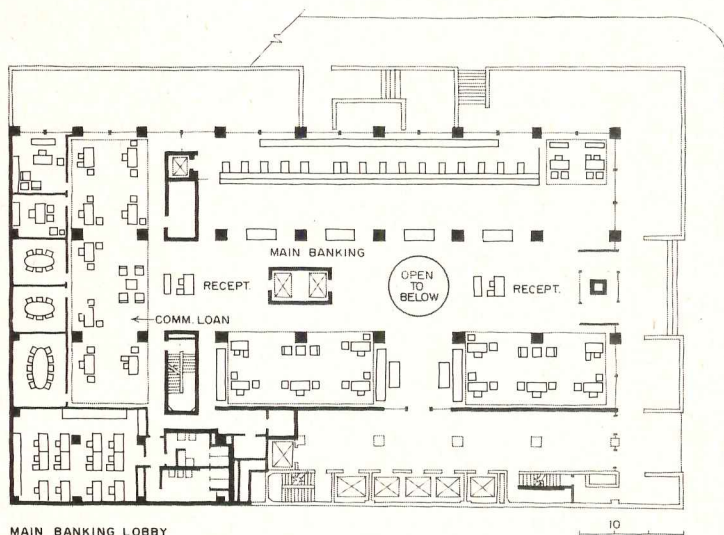
Gil Amiaga photos

Howard Graf, courtesy of House Beautiful





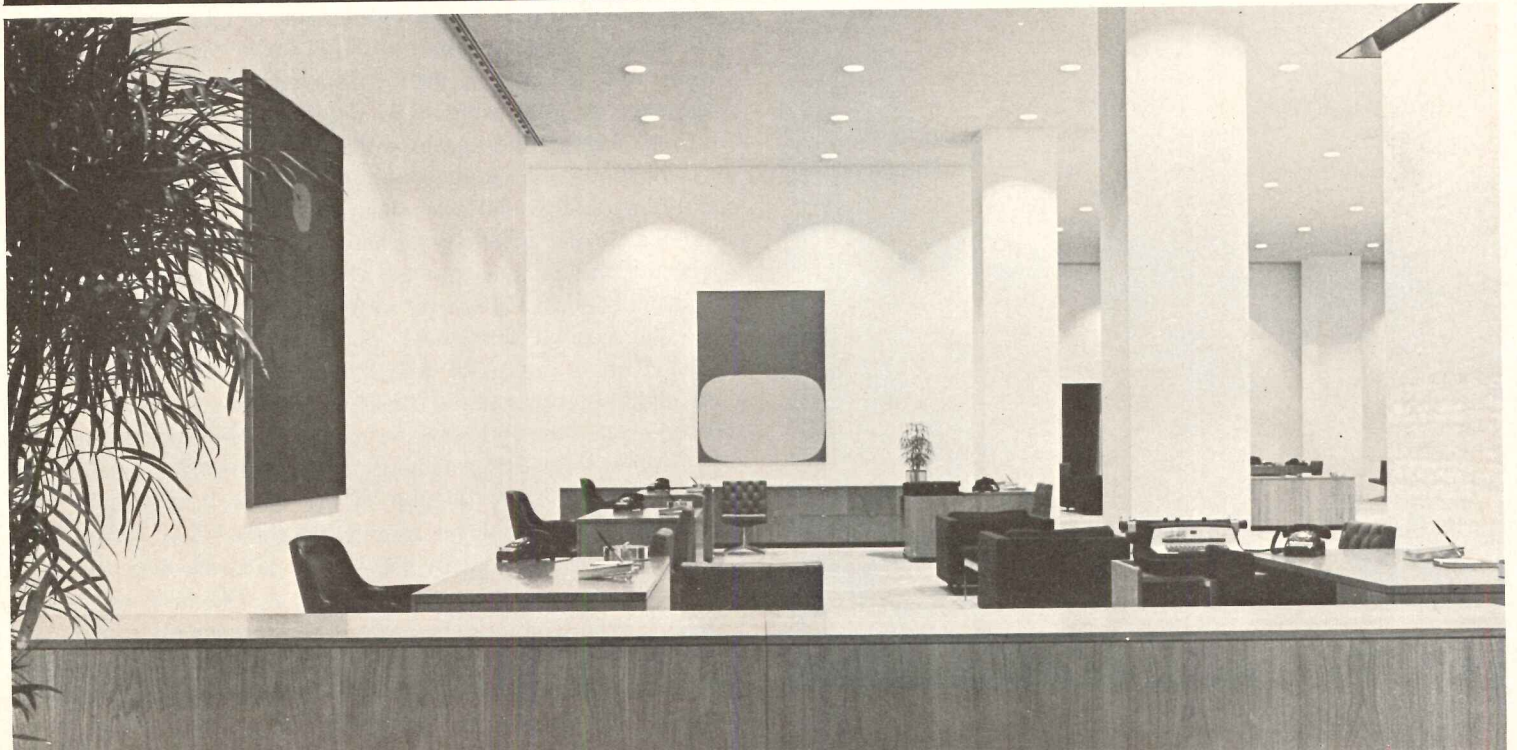
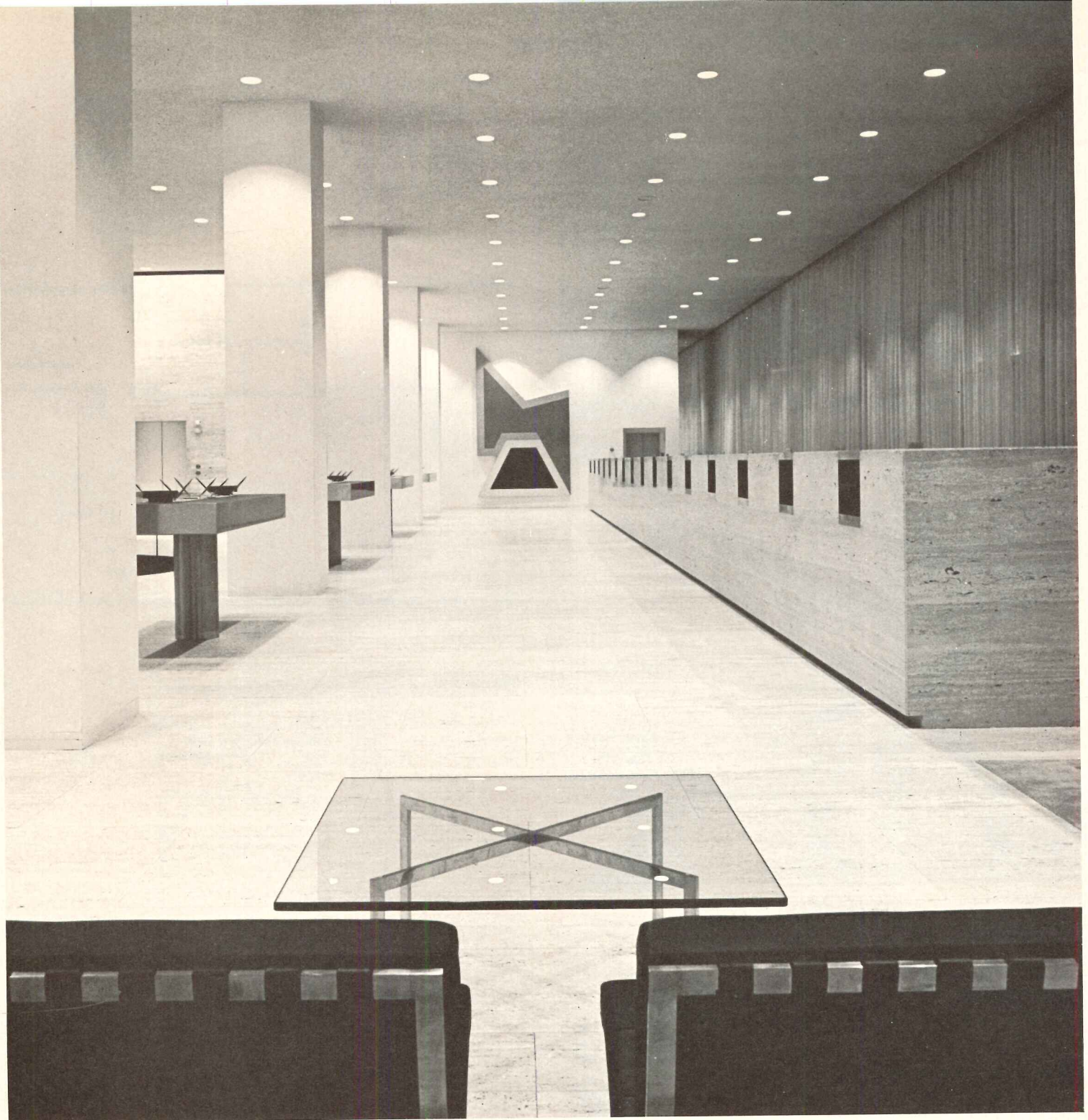
PROVIDENT BANK,  
CINCINNATI  
GRANZOW AND GUSS, ARCHITECTS



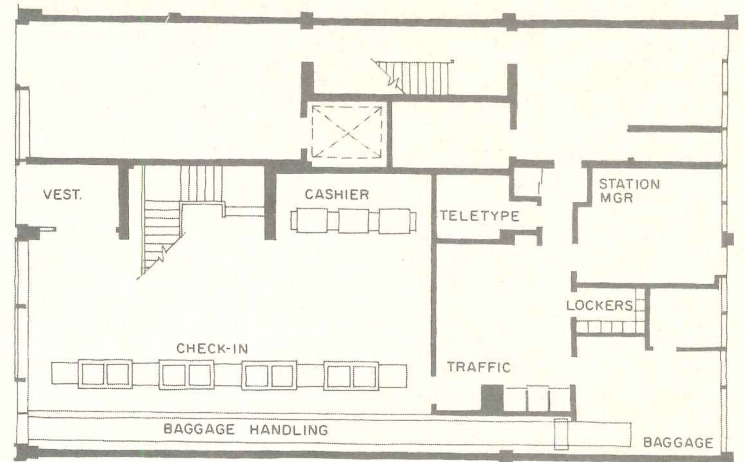
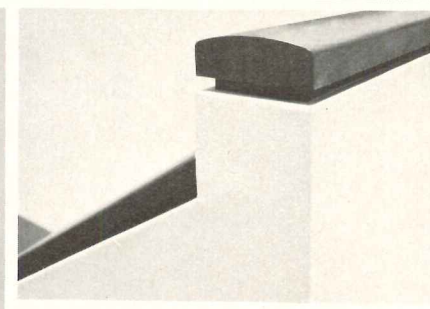
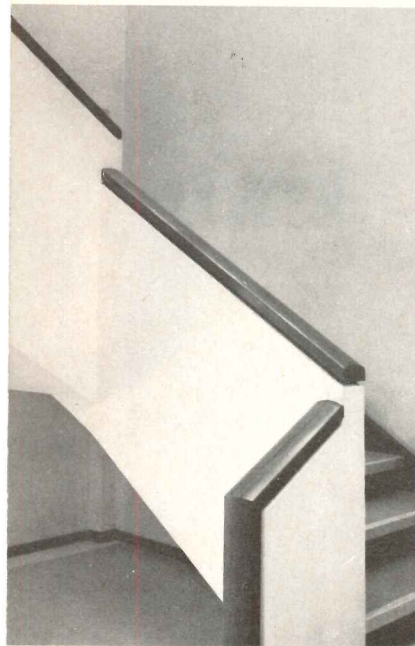
Granzow and Guss, Architects, is a seven-year-old firm that has gained a reputation for the quality of its interior design. The client, owners of one of Cincinnati's largest and oldest banks, charged the architects with the design of its home offices, the first six floors of its new tower, a handsome office building designed by Harold A. Berry & Associates, and Hixson, Tarter & Merkel. While involved from the early design stages of the tower itself, as well as in lease negotiations with the bank, the Granzow and Guss office was wholly responsible for the bank planning from the building shell through the artwork that became an integral part of the design. The manner in which floor areas and bay spacing were turned into handsome interior architecture not incidentally reflected the clients' desire to project a dignified, yet forward-looking image. The main banking lobby (opposite page, plan and photo, right top) and the safe deposit lobby below, punctuated by a Noguchi sculpture, "Bird E-Square Bird" (photo, right middle; plan not shown) contrast with such intimate and small-scaled, but equally warm and elegant, interiors as the second-floor executive reception area (photo right below). By opening the two major lobby spaces with a light well dramatic variety is provided without compromise to an over-all functional layout and uncluttered circulation space. Colors are subdued, but the effect is dramatic, the intention being to assemble a suitable backdrop for people and art using a rather monochromatic scheme of natural materials: wool, German Spessart oak paneling, Roman travertine, and leather, glass and chrome. The elevator bank is architect designed, as are checkwriting desks, tellers' counters and black leather and stainless benches on the main floor. Architect-selected paintings, shown in the main lobby photos are by Stella, Gottlieb and Ellsworth Kelly; with an Olitski painting in the lobby below. J. A. Jones Construction Company was contractor for the bank space as well as for the building as a whole.



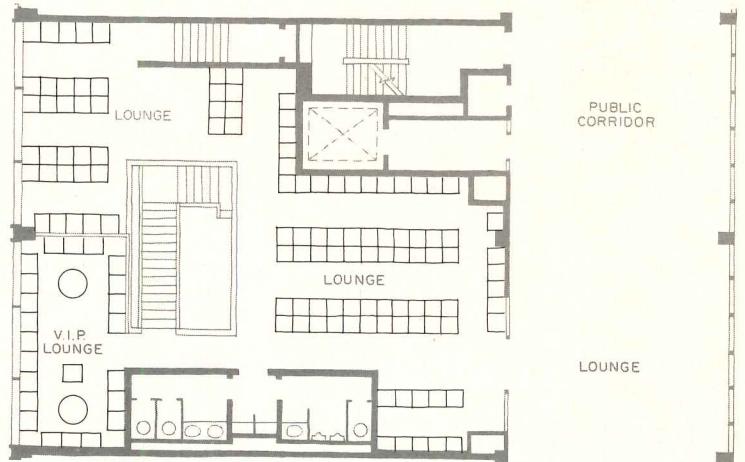
Jack Sterling photos



AEROLINEAS ARGENTINAS  
 DEPARTURE TERMINAL  
 JOHN F. KENNEDY AIRPORT, NEW YORK  
 DAVID K. SPECTER, ARCHITECT



FIRST FLOOR



SECOND FLOOR

Much of the drama so evident in this interior results from the imaginative use of various graphic devices. The wall behind the ticketing counter, for instance, is designed as a series of tall louvers fixed at right angles to the plane of the wall. One side of the louvers bears the name of the client in bold letters. The reverse side, employing the firm's corporate symbol, shows a sequence of giant condors in flight. Mirrors, set between the louvers, fracture the images with great visual impact.

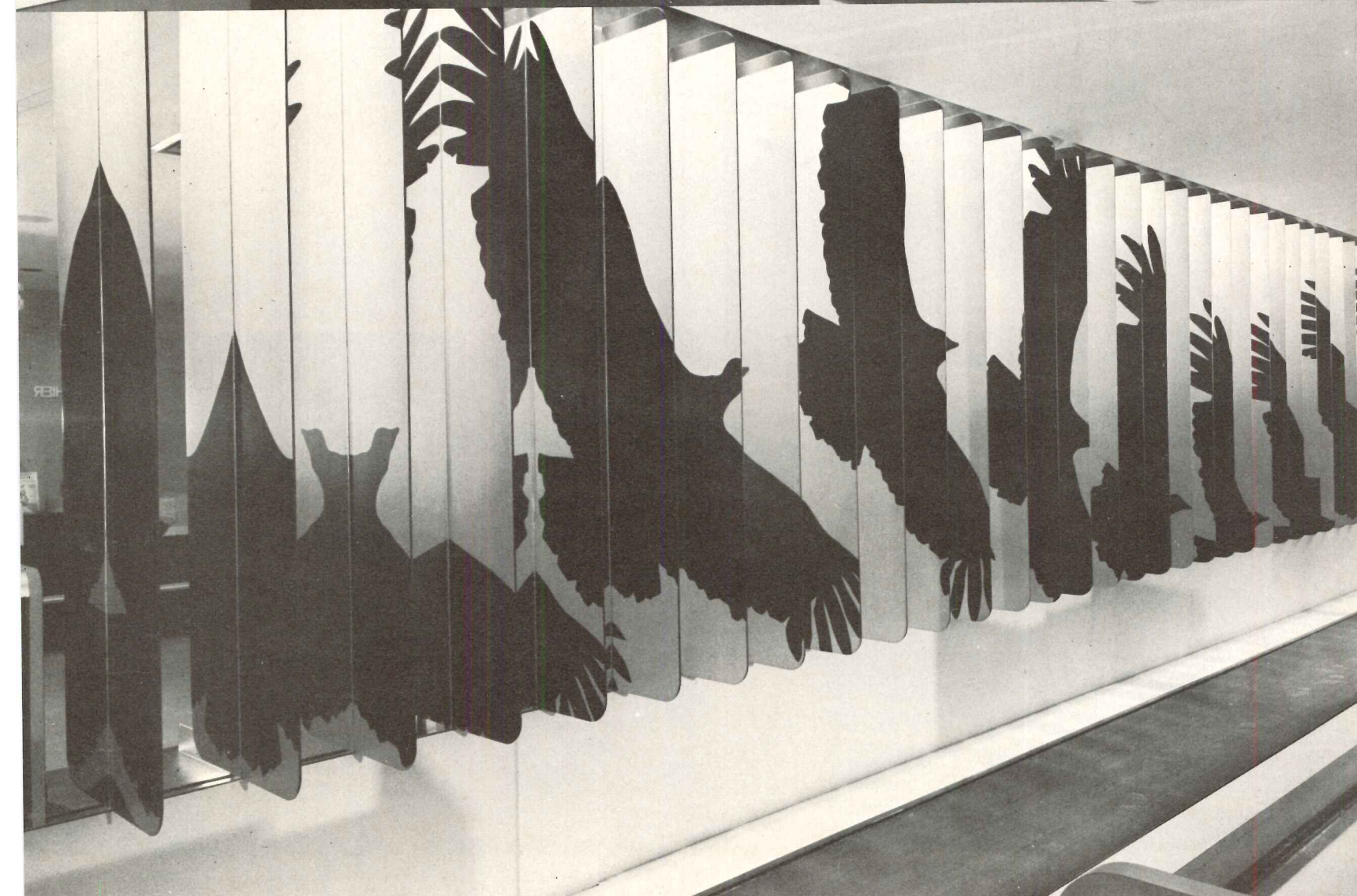
In the waiting lounge upstairs, passengers are treated to a grouping of large photo murals with subjects drawn from Argentine life. Taking advantage of dramatic changes in scale and subject, the photographs gain added interest by turning corners unexpectedly and spilling over onto adjacent wall surfaces.

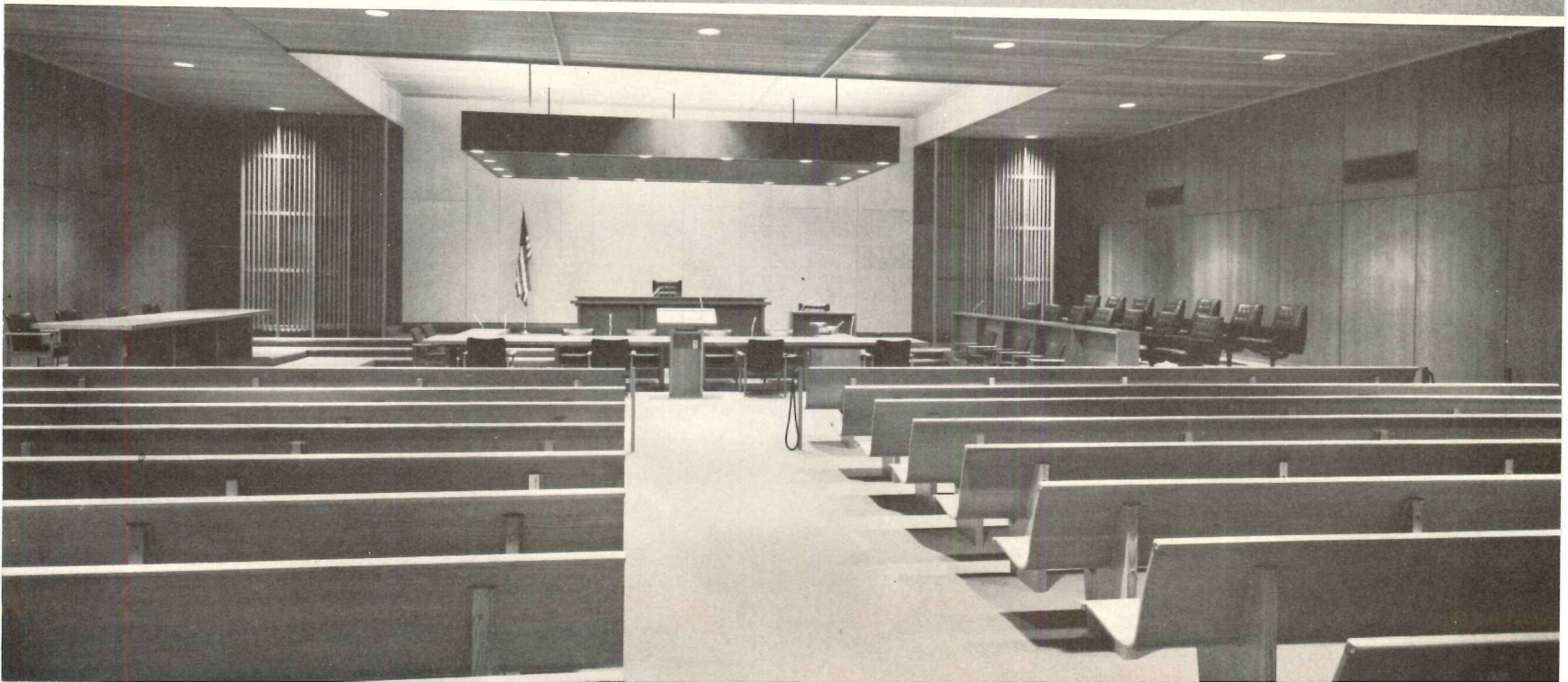
But beyond this visual excitement stands a solid design achievement. The space functions easily and the architectural detailing is consistent and sensitive. Walls are covered in an off-white, rough-textured vinyl, floors in vinyl asbestos tile. Lighting is handled simply in a tight pattern of downlights on dimmers.

As the esthetic function of the space is to heighten the passenger's interest in his destination and inspire in him some of the excitement of flight, this design succeeds admirably.

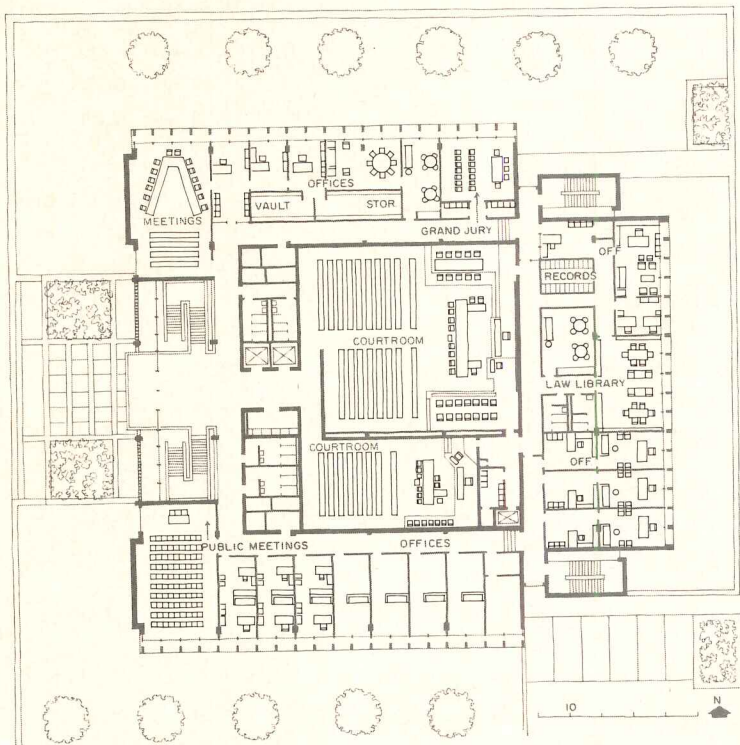
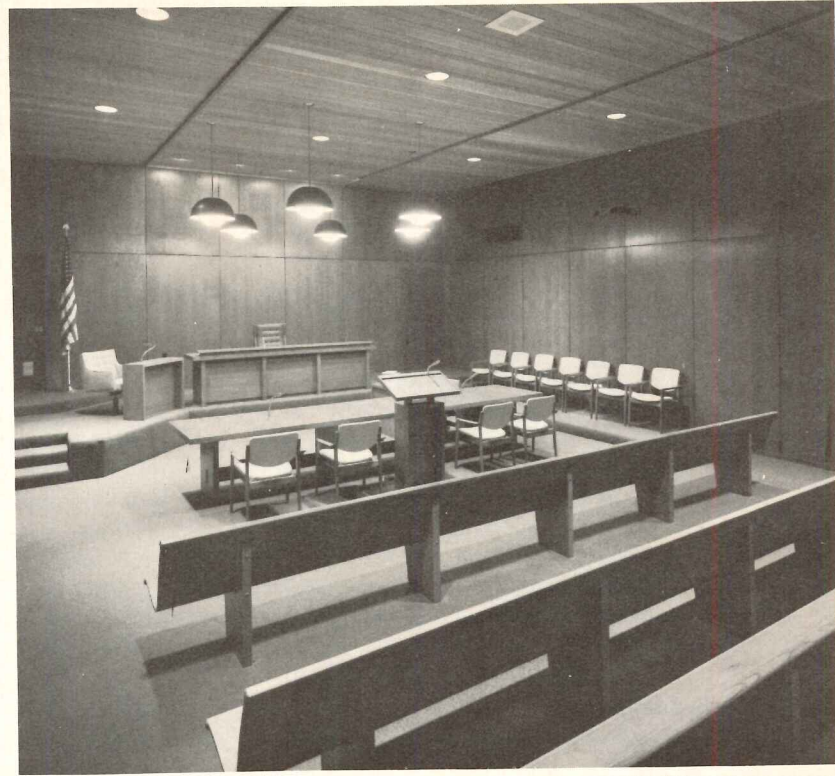
The associate architect was Jorge A. Meoli; graphics consultant: Wyman-Murdoch; engineers: Wayman C. Wing (structural); Flack & Kurtz (mechanical); contractor: Koren-DiResta, Inc.

John Ashworth photos





TANGIPAHOA PARISH COURTHOUSE  
AMITE, LOUISIANA  
DESMOND-MIREMONT-BURKS, ARCHITECTS



To those who associate courtrooms with scarred wainscoting and chipped terrazzo, these interiors provide a welcome contrast. Part of a contract that included interiors, the two courtrooms, which double as fallout shelters, are set side by side and acoustically isolated on the building's second floor.

Both spaces are panelled in white oak, with silverwood ceilings, and each has white oak furnishings and brown wool carpeting. Ceilings are relatively low in both spaces. In the large courtroom, however, a section of the ceiling has been raised to provide a visual release while sharpening the focus on the area of the bench. Finish materials are generally smooth except for slatted wood screens (shielding entrances at either side of the bench) which offer a textured counterpoint. Both courtrooms are windowless but avoid any sensation of entombment by skillful use of artificial light.

Courtroom furnishings are detailed with an exemplary consistency that helps to give these spaces a clarity, unity and dignity too often absent from courthouse design.

Engineers: J. C. Kerstans & Associates (structural); Ingram-Barbay, Inc. (mechanical and electrical); contractor: Polk Construction Company; fallout shelter analyst: L. E. Miremont.

of well-written specs. This specifications manager also handles approval of invoices and issuing of certificates of payment.

A Manager of Programming is a second specialist relatively new to interior design offices. His supervision of the process of determining client space needs combines a generalist's view of business operations with a specialist's knowledge of the critical areas of space planning for developing programs that accurately reflect space needs and organization of the client.

The complexities of managing today's interior design require an organization to handle a myriad of business details. Virtually all of our clients are businesses, and we must function in a businesslike manner. For that reason, our staff includes administrative managers in each office to manage the inner workings of the firm, to compensate for any business management weaknesses in the creative staff.

### Scheduling

As the practice of interior design grows in complexity, so does the problem of scheduling projects to meet the needs of both client and architect.

Probably the most important consideration in scheduling is to encourage the client to plan interior spaces as soon as possible after the decision to go ahead with a building. The tendency to put off the interior planning and furnishing of the spaces until after the building has begun to take shape can only harm the end result. Despite the urging of the architect to determine space needs as early as possible in order to help plan building configuration, this often turns out to be a secondary consideration to many clients.

Early coordination with the architect is one of the most important scheduling considerations. By entering the project early enough, we are able to determine client needs and preferences and coordinate those interests with the architect's concept of the building. Early involvement means that many of the features of the interior design can be properly incorporated into drawings at the beginning—cabinetwork, special lighting, audio-visual needs, and electrical and mechanical item finishes and locations.

And once into the programming and design of interiors, the design firm must do everything possible to eliminate last minute decisions and changes in specifications. Such changes cause both interior designer and architect problems in scheduling, revision charges, extras from the contractor—and client relations. Here is where increased emphasis on planning and presentation methods can help. Helping the client to visualize the proposed solutions as completely as possible—color renderings, floor plans, models, and even full-scale furnished mock-ups—is one answer. Another is to spell out carefully—and rigidly adhere to—decision points and deadlines on the part of the client, interior designer

and architect. When these define scope of services, schedules, deliveries, etc., potential last minute changes can be cut.

### Product knowledge

Keeping up with the massive amounts of product information—sizes, colors, finishes, etc.—poses a real problem. As products are introduced, modified, and/or discontinued, the design firm's staff must constantly update source files and maintain detailed product information files and catalogs. Because of the firm's large specifying volume, the quantity of information received from manufacturers, catalog up-dating and storage of samples is a full-time job.

Verifying that information is another responsibility, and we thus make frequent inspection trips to sources to observe fabrication and construction processes, obtain product samples for testing, and follow up on products after they are installed. By conducting, in effect, our own product testing and research, we can provide clients with products that are all that was promised.

### Timing

Timing can often be a problem in interior space design when planning is not begun in time to benefit the architect in overall design.

Where an entire building is involved, most architects are aware of the importance of space planning at the earliest possible moment. Individual clients, however, have a tendency to leave this important function until after structural, esthetic and budgetary decisions have been made. By showing the client examples of past installations, helping him realize the savings in space that can be accomplished through effective space organization, and developing plans and projections on space requirements, we can show the value of interior space planning begun at the earliest possible moment.

### Fees

Setting fees is another problem area for the interior design firm. How do we charge for our services in the most equitable way?

A stipulated percentage of costs is not the answer. First, it immediately places the designer in a position that is suspect for his choice of materials on the basis of their relative cost. Secondly, cost of furniture and furnishings fails accurately to reflect the detail that can be involved in interiors work and, in effect, penalizes the firm for close attention to job details.

Instead, we feel it is fairer and more accurate to base compensation on a time basis for those persons completing the work—the number of hours needed to achieve the most effective end result. That number is not without limit, however, for once the extent of our services is determined, then we establish a maximum "not-to-exceed" limit. Not only is this method fairest in the professional sense, it also acts as an encouragement to the client to be decisive

and avoid frequent changes through the course of the project.

### Conflict of interest

One characteristic of the "new professionalism" in interior design is complete freedom from outside influences in buying, Louis Beal, executive vice president of ISD, added. "No manufacturer, we feel, should offer interior design service—his objectivity cannot help but suffer. Maintaining complete freedom from any such ties, we feel, keeps open the option of drawing from all possible sources, and that is the way to achieve the best end result—both esthetically and functionally. We operate without ties to any manufacturer or supplier."

### Knowledge of client

Developing a complete understanding of the client's needs and objectives is perhaps one of the most difficult aspects in the interior design firm's work; yet it is essential to developing interior spaces that reflect the organization or individual.

As much client research and inquiry into his needs and preferences as possible is the only real solution. The computer is one answer—but only a partial answer, at best. It is a valuable tool for compiling, storing, and retrieving data, but it can't supplant the personalized approach to developing a truly personalized client profile with which to design an interior space that is representative of the client. Instead, we use personalized interviews as our major tool—person-to-person interviews.

Essential to this—and all phases—of the interior planning and design project is the interest and concern of client top management, for it is they who ultimately approve the resulting space. A day-to-day contact with the client liaison is a necessity, but without the approval of executive management, the interior designer's function is ineffectual, at best. It is this programming and information research of the entire company that really sets the important groundwork for the preliminary design that follows. If initial research is wrong, then the design will be, too.

### Project observation

In completing the job, we rely heavily on the effectiveness of the contractor and his subs. Working from properly prepared contract documents, it is the sub-contractor's responsibility to complete the procurement of specific placement, installation and clean-up phases of the project. We, the design firm, act in a supervisory capacity to insure that contract documents are adhered to so that the design concept is fulfilled as originally conceived.

By careful scrutiny of this installation phase—as well as all of the detailed steps along the way—we fulfill our responsibility of achieving an end result for the client that is a creative architectural expression of his image and needs, while being consistent with building architecture at the same time.



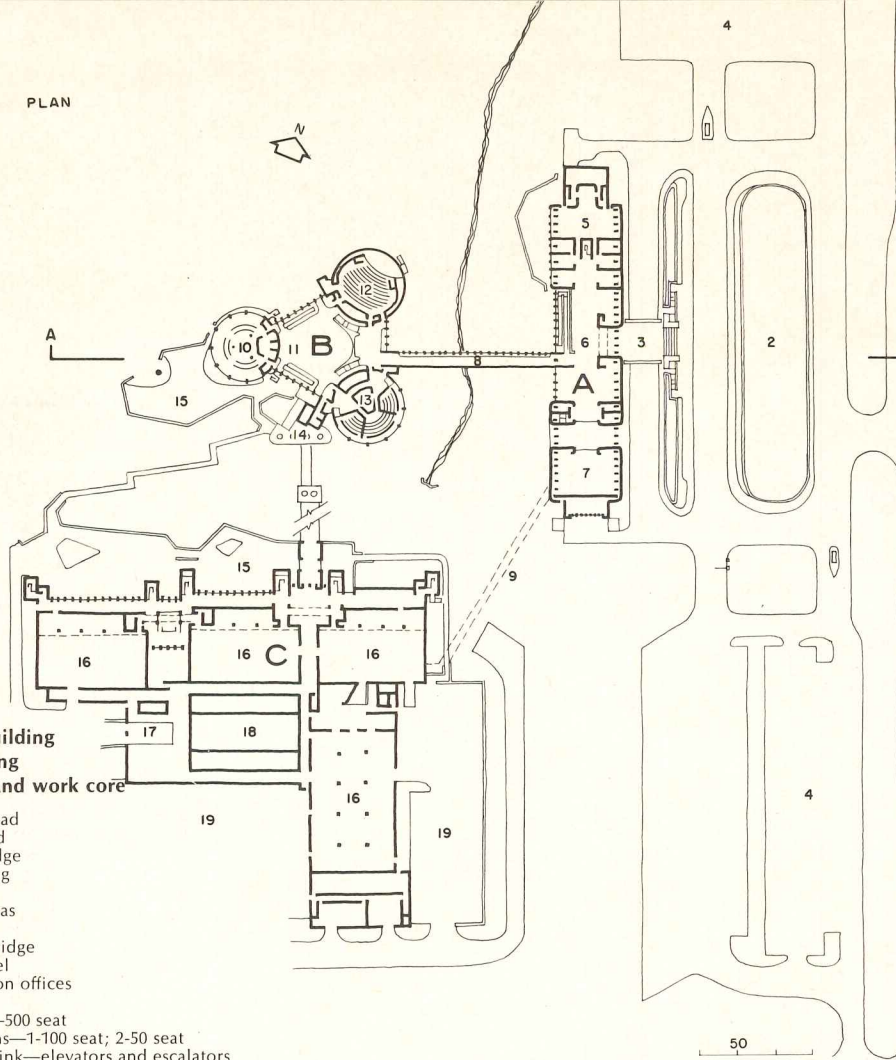
Michel Proulx photos



## ONTARIO'S PARTICIPATORY MUSEUM

The Ontario Science Center, designed by Raymond Moriyama, is a museum of popular science and technology, with emphasis on the popular; a place where visitors may become involved in steering a spaceship, making electronic music, or creating the theatrical lighting for a scene from *Macbeth*. The function of the Center is like that of a museum in many ways—it houses identifiable exhibits of man's scientific world, it is meant to teach the visitor, the visitor moves from exhibit to exhibit—but it is not like a museum in its attempt to involve the visitors physically in each display, make him "operate" that display, and in its attempt at entertainment as well as teaching. To entertain and arouse curiosity in people, as well as educate them, was a major goal of the new museum from the time it was first conceived in 1964. In the next five years, there were several changes in the museum's proposed staff and some changes in program, but the goal of a participatory, innovative learning center remained. In notes made during design development, Moriyama wrote: "The center must be a place for everyone . . . It must arouse curiosity. It must be a place of wonder . . . It must fuse the visitor with ideas through active participation. It must be an emotional experience with intellectual satisfaction." This architectural goal has been translated into three buildings which do different things, as the Center itself is meant to do different things. The first structure is the Entrance Building (above) which introduces the visitors to the Center. The second structure—the Core Building—is the ceremonial and symbolic center of the complex. The third structure is the Exhibition Building, where the majority of the exhibits are displayed.

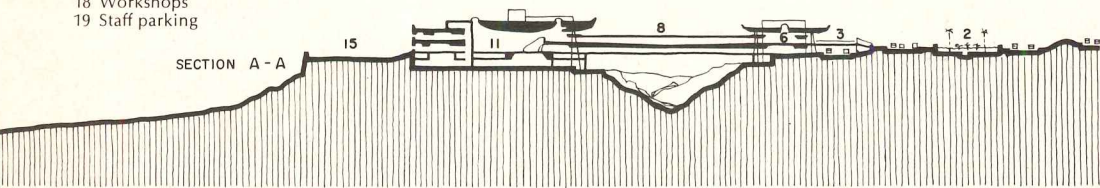
PLAN



**A Entrance building**  
**B Core building**  
**C Exhibition and work core**

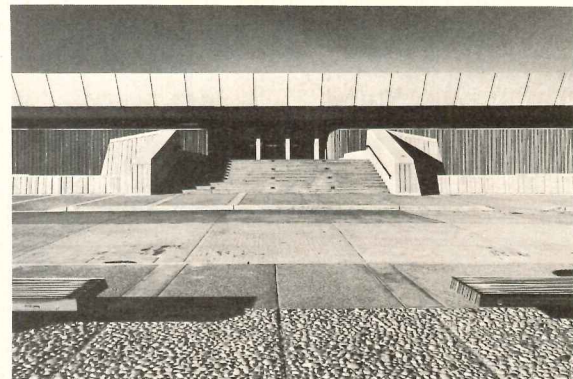
- 1 Don Mills Road
- 2 Cooling pond
- 3 Entrance bridge
- 4 Public parking
- 5 Restaurant
- 6 Assembly areas
- 7 Boiler plant
- 8 Pedestrian bridge
- 9 Service tunnel
- 10 Administration offices
- 11 Great Hall
- 12 Auditorium—500 seat
- 13 Lecture rooms—1-100 seat; 2-50 seat
- 14 Connecting link—elevators and escalators
- 15 Terrace
- 16 Exhibits
- 17 Shipping and receiving
- 18 Workshops
- 19 Staff parking

SECTION A - A

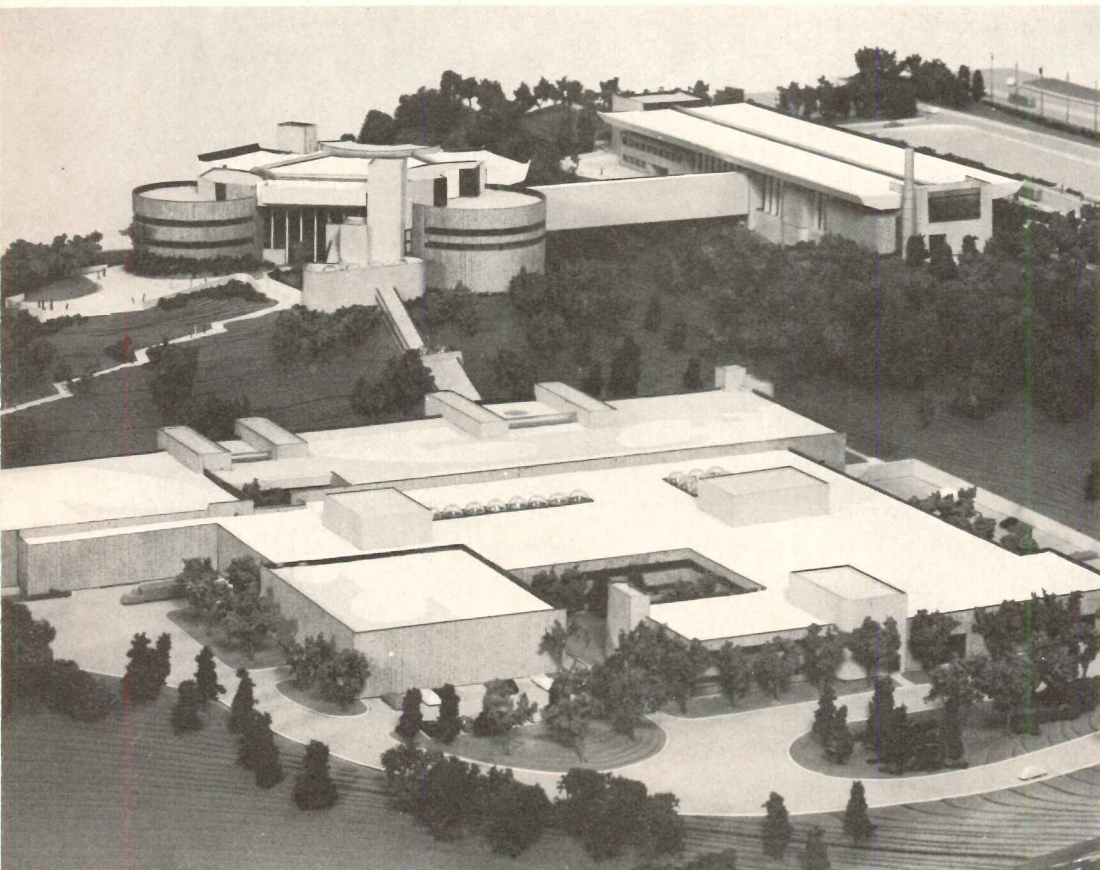


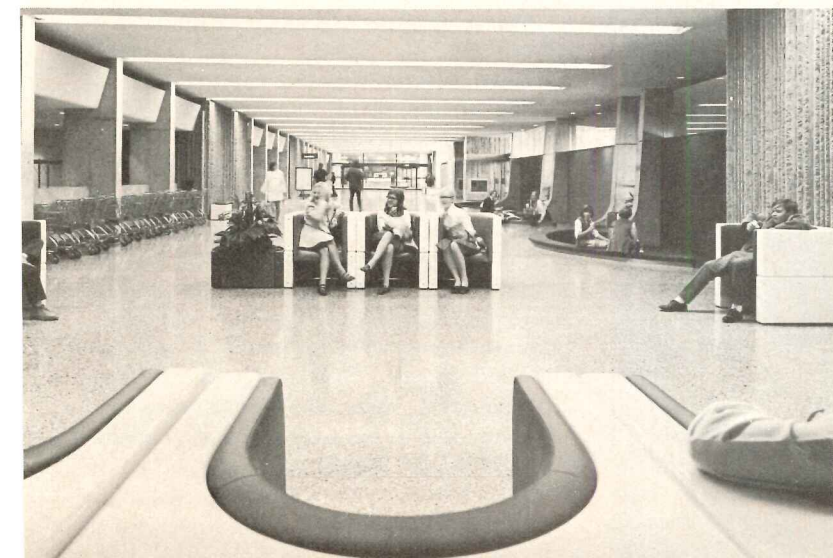
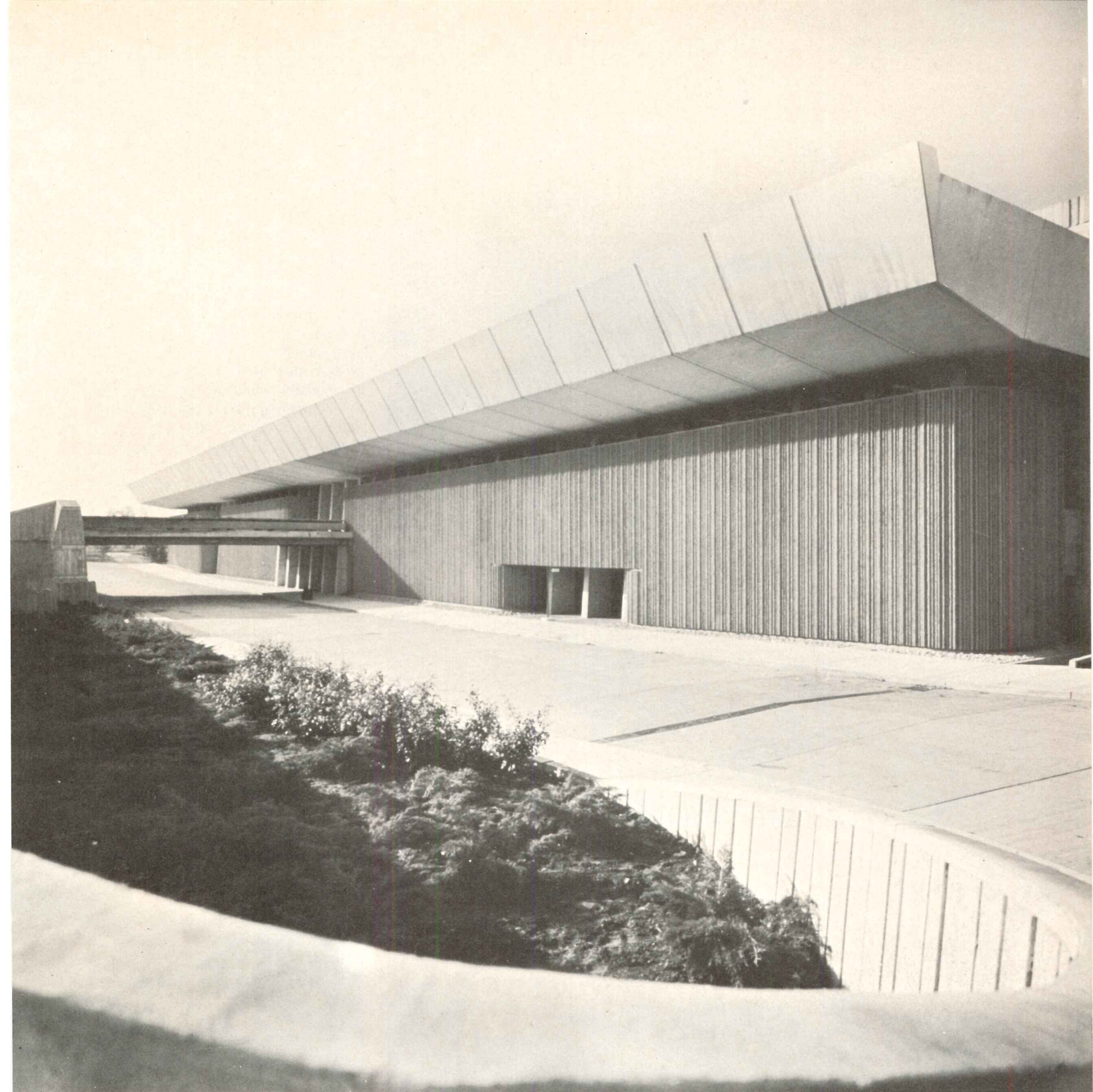
The Ontario Science Center had to accommodate two kinds of visitors; those in large organized groups, such as a class of school children, and single individuals or families touring without supervision. The long Entrance Building (right) was therefore divided into two levels, one for each group. School buses or vehicles carrying organized classes drive into the main entrance, around the large fountain and reflecting pool, and unload at the lower ground level of the Entrance Building (right) with its long sidewalk for parallel parking. The visiting group enters near the center of the long facade, into the flat-ceilinged space in the photo, below, right. This is the student assembly area, with a series of large circular and sunken seating alcoves placed around the long, narrow space. Each seating alcove is a different color, and each class is assigned a color when they enter the Science Center. This device is important because an average of 60 groups, totaling about 1,800 students, visit the Center each day. The staff expects this number to increase to about 100 groups (maximum capacity of the present space) or about 3,000 students daily. And these 3,000 children will all be excited to be there, noisy and curious; it is a major organizational task to keep them together.

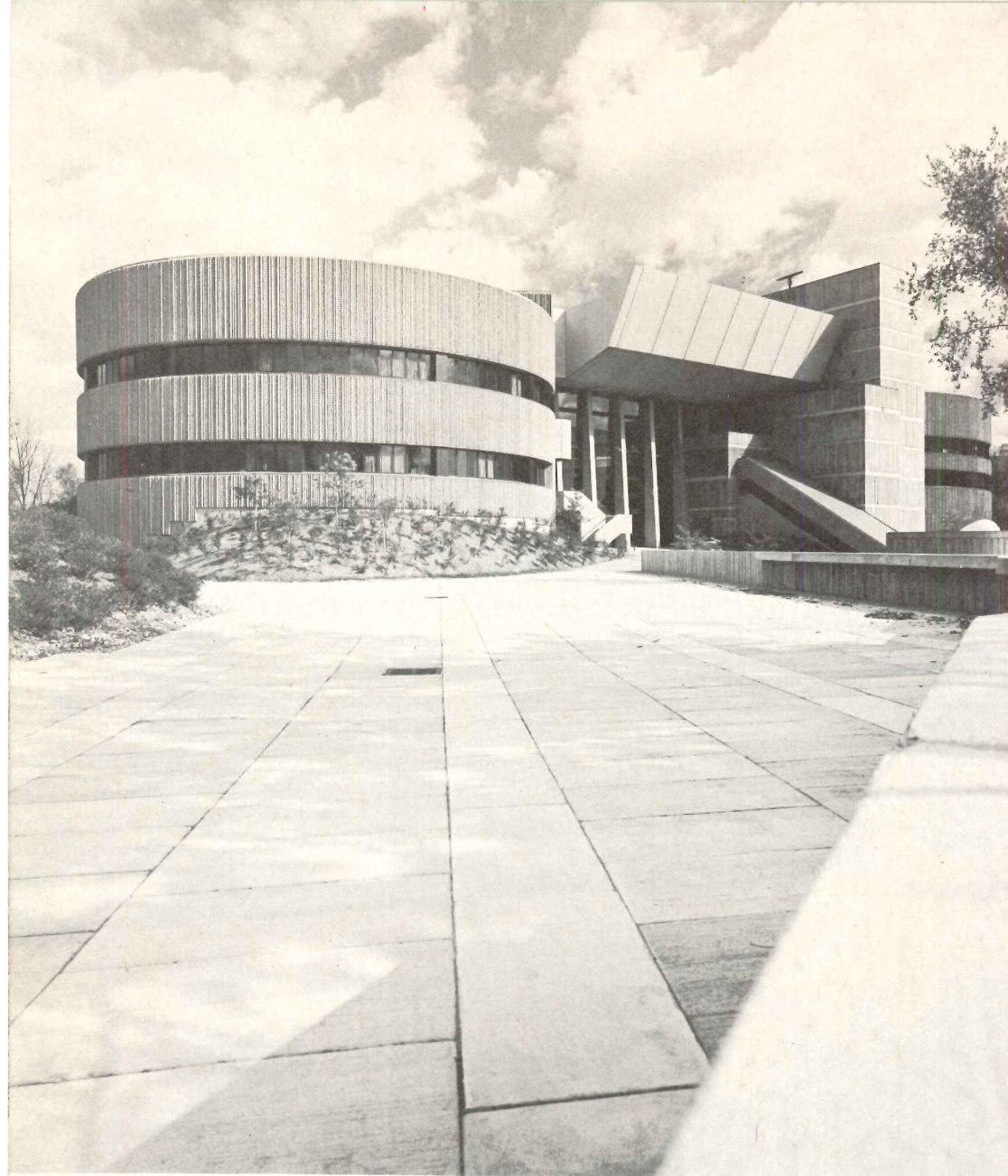
Individual and family visitors enter the upper level of the Entrance Building via a series of wide, low steps (photo below) and across the main pedestrian bridge spanning the bus driveway. Cars are parked in a large lot to the south of the reflecting pool and fountain; the lot is below the elevation of the road and other entrance features, so cars are hidden. Once into the building, individual visitors enter a space similar to the one for classes (one floor



below), but with a gently lighted and undulating ceiling which reflects the entrance building roof. This is a coat checking and orientation space for the public, with a restaurant and cafeteria at one end and the boiler room and heating plant—glass enclosed, mechanized, and broadly displayed as part of the exhibition—at the other. The visitor stays briefly in the Entrance Building and then moves on through the science center. This whole entrance sequence just described is both logical—separating efficiently two kinds of visitors—and dramatic—preparing each visitor for the playful and curiously successful new architectural events to come.

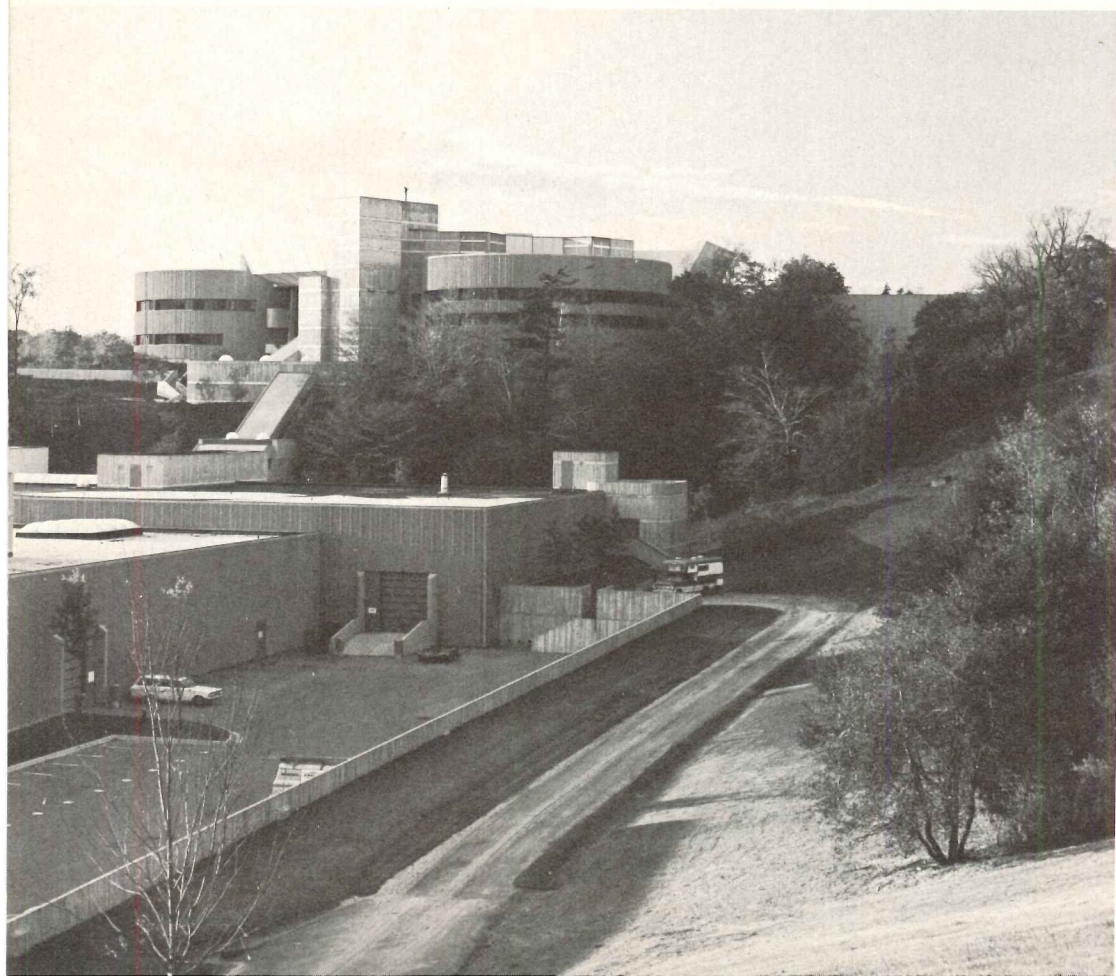




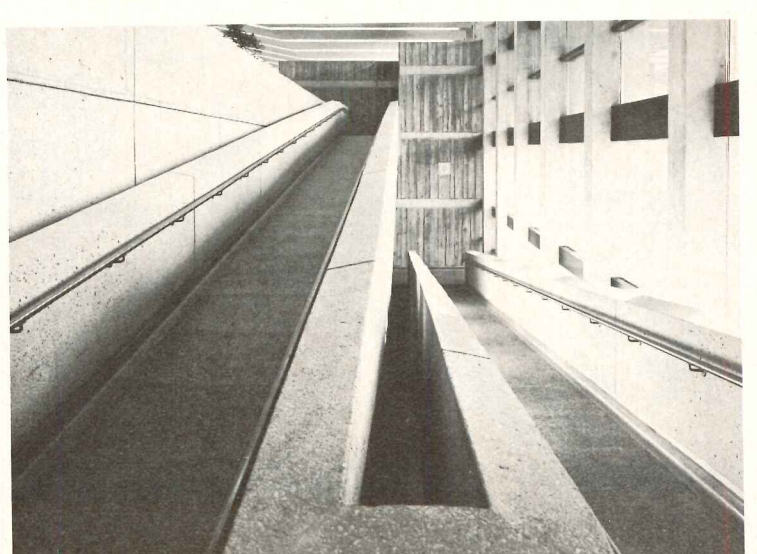


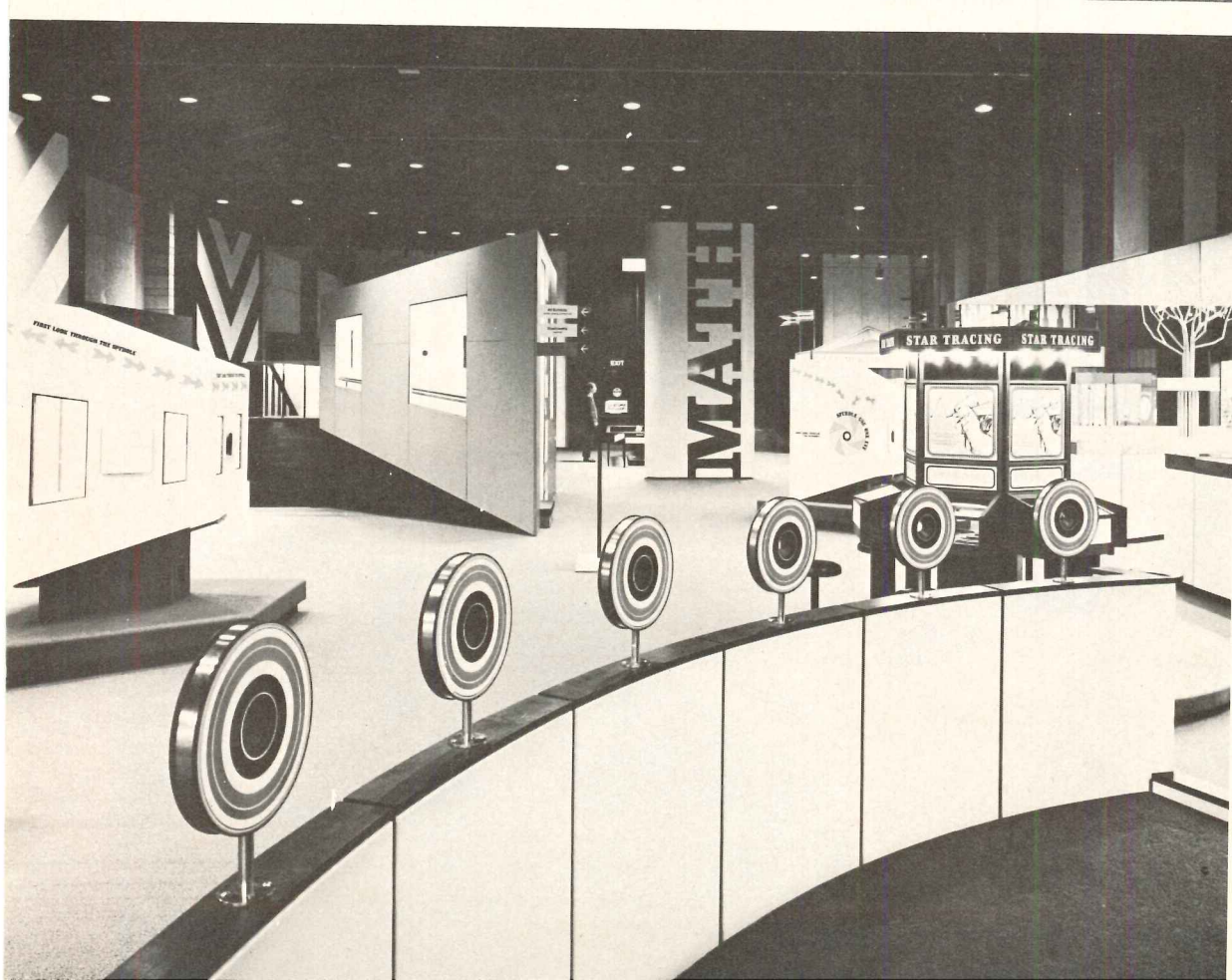
From the Entrance Building visitors can see their next destination—the Core or “tower” building (two photos, left). They also discover for the first time the superb natural setting in which the Science Center is placed. The Core Building occupies the highest land of the site but is surrounded by trees and foliage, so it is difficult to see it from any single viewing point. It is the symbolic and ceremonial center of the complex, housing a great triangular hall for special exhibits and awards functions, a 500-seat auditorium, three smaller lecture theaters, the administrative offices and several special display areas. Lectures and seminars for the various student groups may be conducted here, as well as regularly scheduled and special classes for the general public. The Core Building is entered via a long, relatively constricted bridge (photo, below) which begins at the reception building and ends at the Great Hall. The craftsmanship and detailing are excellent in the Core Building, and one’s attention becomes focused on these issues quickly. The interior walls, like the exterior, are concrete, with very rough and bold vertical ribbing. It is obviously a controlled texture, never haphazard; the brass fittings, such as the ones for fire hoses, are carefully joined with the rough wall, as are the other surface finishes such as sandblasted concrete, plaster, and terrazzo.

From the Core Building visitors proceed down, via the escalator and stair enclosure in the photo below right, to the Exhibition Building. This is the largest of the three buildings in floor area, and the real heart of the Science Center. The architecture here is understated and utilitarian; the exhibits are the thing. There



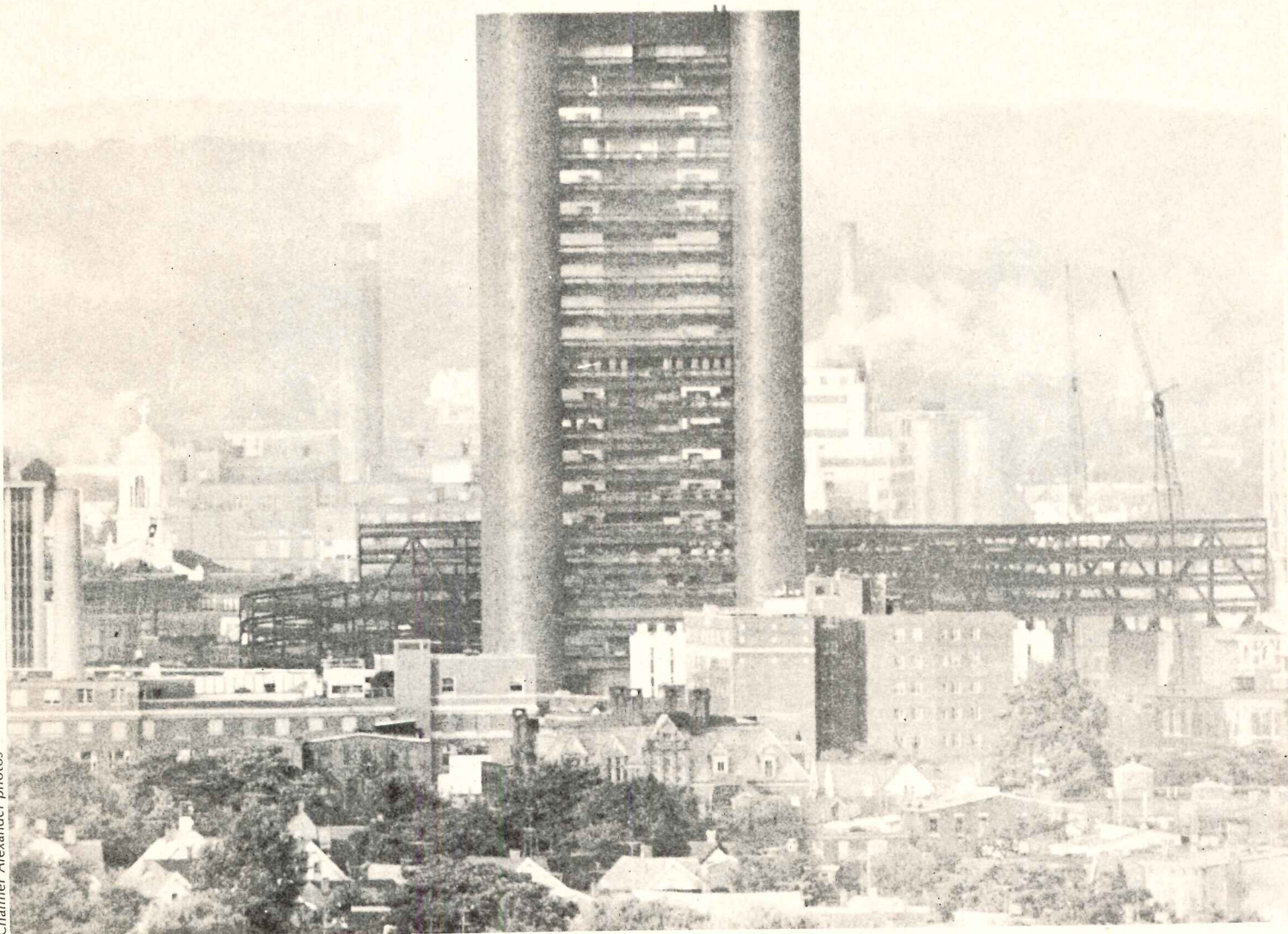
is, again, very little of the usual “museum” atmosphere. The science arcade is filled with audience participation exhibitions that demand of the visitor that he touch, turn, squeeze, jump up and down, or talk. There is also elaborate laboratory apparatus for use by industry, institutions and supervised students for actual work; the equipment is on display in public areas and its use can be communicated immediately to the public. With genuine theatrical light control equipment visitors learn the rudiments of lighting on a model stage with scenes from *Macbeth* and *Henry IV*. There are 450 separate exhibits like this in the Center, most of them in the Exhibition Building.





Visitors sweep out into the landing at the top of the stairs of the Great Hall (above) having come through the pedestrian bridge from the Entrance Building. They proceed down the stairs and through any of the openings to the right in the photo, into the Exhibition Building. The Hall's main function is for occasions attracting large crowds, and as an antechamber to the several theaters around it. At left is a photo of one of the major spaces in the Exhibition Hall. The exhibits are brightly painted, usually mobile, and their graphics are always invigorating.

ONTARIO SCIENCE CENTER, Toronto, Canada. Architect: *Raymond Moriyama*—*David Vickers*, project manager; *John Snell*, project construction manager; *Thomas Motomochi*, assistant construction manager; *Donald Cooper*, design co-ordinator; *Bon W. Mueller*, landscape; *G. Ronning-Philip*, interiors and furniture. Structural engineer: *M. S. Yolles Assoc.*; mechanical engineer: *Nicholas Fodor and Assoc.*; electrical engineer: *Mulvey Engineering Ltd.*; soils engineer: *William A. Trow Assoc.*; acoustic and lighting: *Reevesound Co.*; contractor: *Pigott Construction Co.*

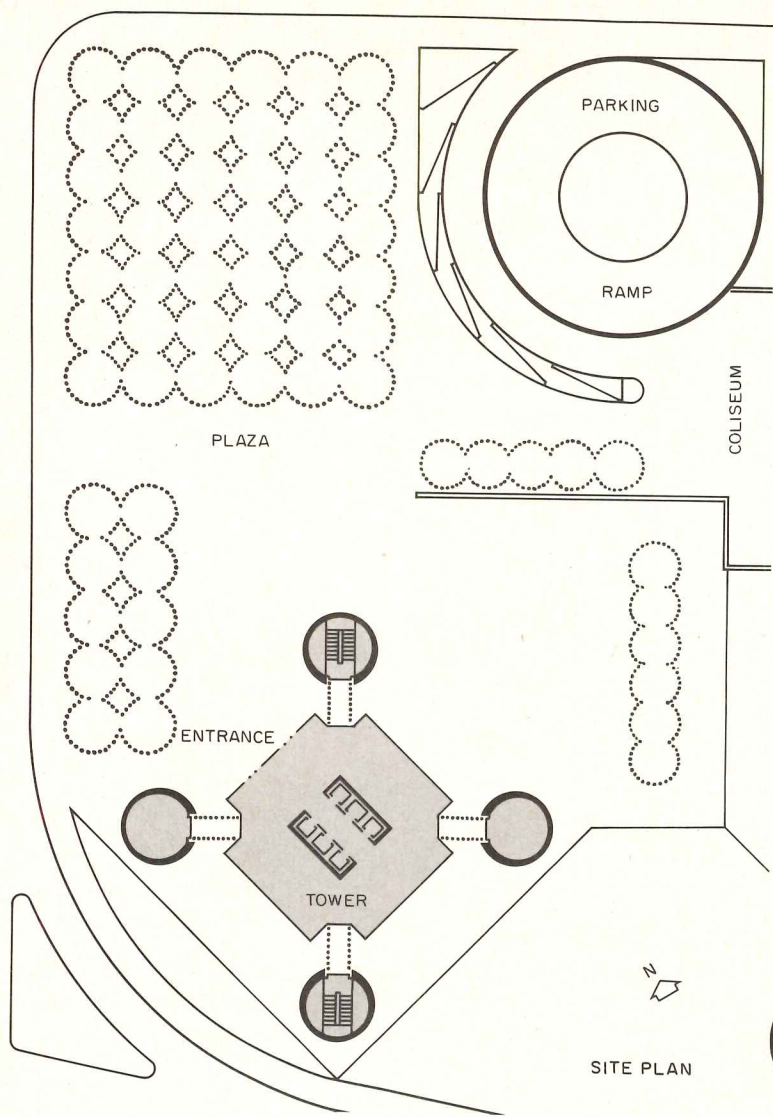


## A LANDMARK TOWER ON NEW HAVEN'S SKYLINE

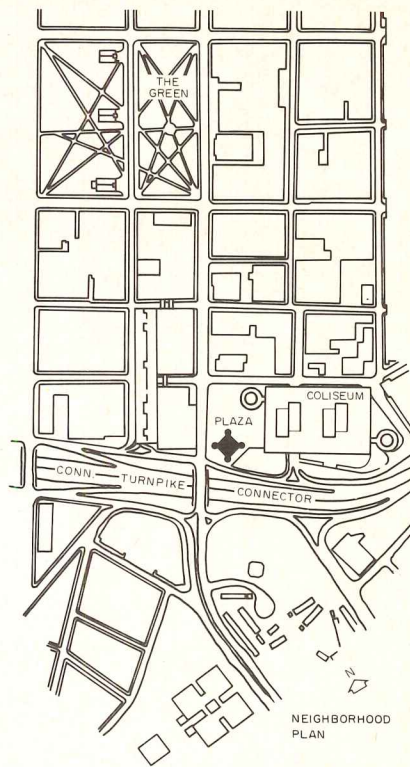
The 23-story tower of the Knights of Columbus Building rises far above the rest of New Haven at the main entrance from the Connecticut Turnpike into the center of town, and seen from the New Haven Railroad terminal four blocks away, it dominates the skyline. Kevin Roche John Dinkeloo & Associates designed the building as this kind of direct entrance event in the city, but it also has a curious relationship to the visual fabric of New Haven itself. As in the photo above, it is a city with several isolated, muscular, sometimes smoking

towers jutting up from the lacy and small-scaled fabric of 18th and 19th century residential, academic and commercial architecture around these stacks — industrialization and New England charm side by side. Similarly, the four circular corner shafts of the Knights of Columbus are the strong, muscular parts of the building; vertical, isolated from the whole, carrying the more delicate partially transparent web of steel beams and glass, where the main work of the building is done.

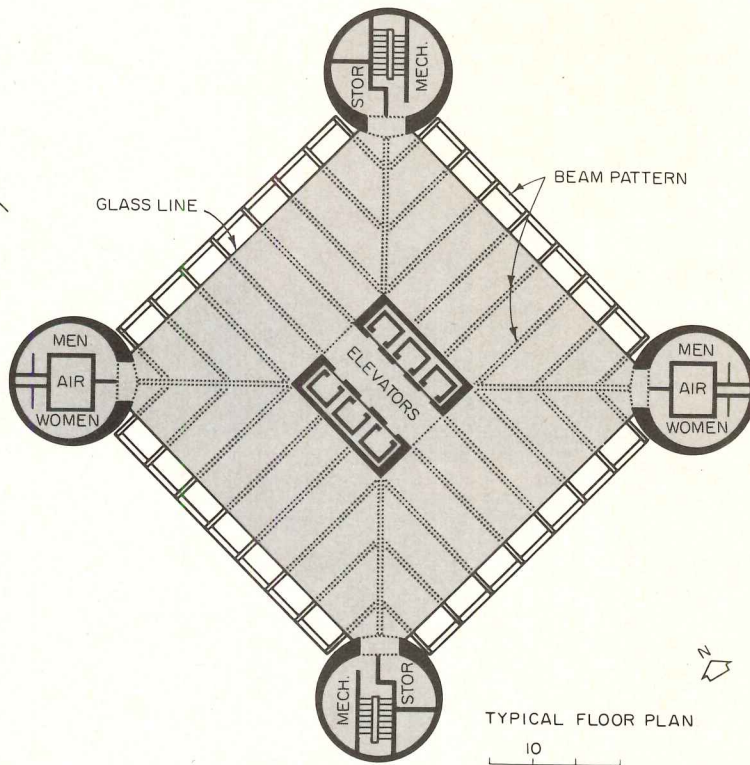
The building itself is simple, and its main components can be



SITE PLAN



NEIGHBORHOOD PLAN



TYPICAL FLOOR PLAN

understood quickly. There are 23 floors, all but three of which are occupied by the national headquarters staff of the Knights of Columbus. The lowest three floors are inset from the rest of the tower, and used as a commercial banking facility plus the entrance lobby. The top floor is mechanical equipment and the fifth floor houses computer facilities for the Knights of Columbus; the other 18 floors are identical clear-span spaces divided by furniture and movable partitions. The core of the tower is occupied by six elevators alone. The two fire stairs re-

quired by code, the lavatories, and the large mechanical equipment spaces are all in the corner towers. These four towers are also the structural supports for the building; they are poured-in-place, post-tensioned concrete, with an ordinary mid-western silo block— $13\frac{3}{4}$  in. x  $12\frac{7}{8}$  in. x  $3\frac{3}{4}$  in., slightly curved face, natural burn—used as a finishing veneer. The neighboring New Haven Coliseum, also designed by Roche Dinkeloo, is now under construction and has been designed so the two projects will form a compatible whole when complete.

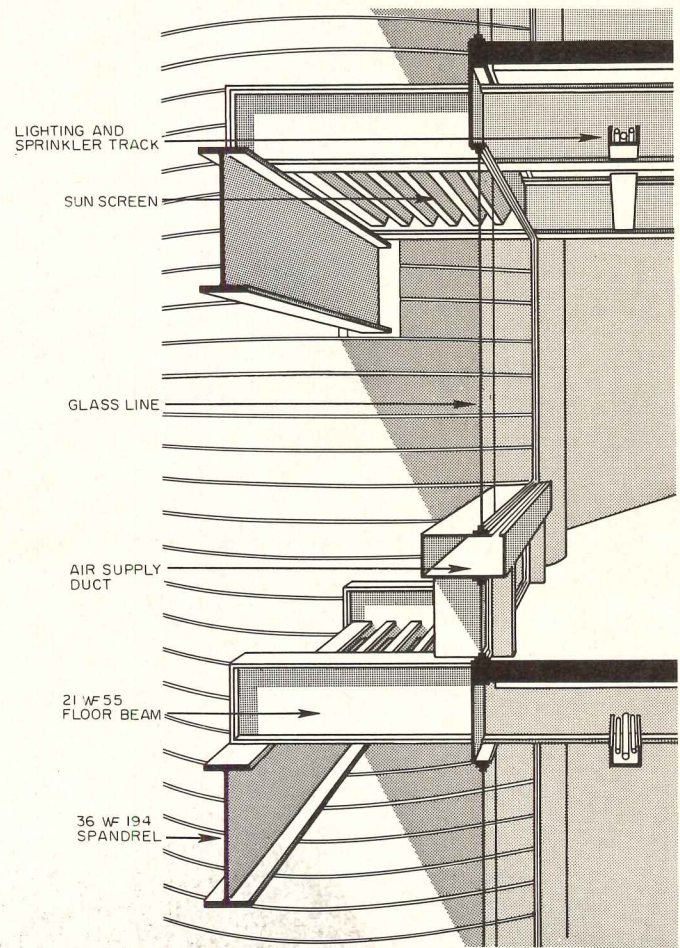
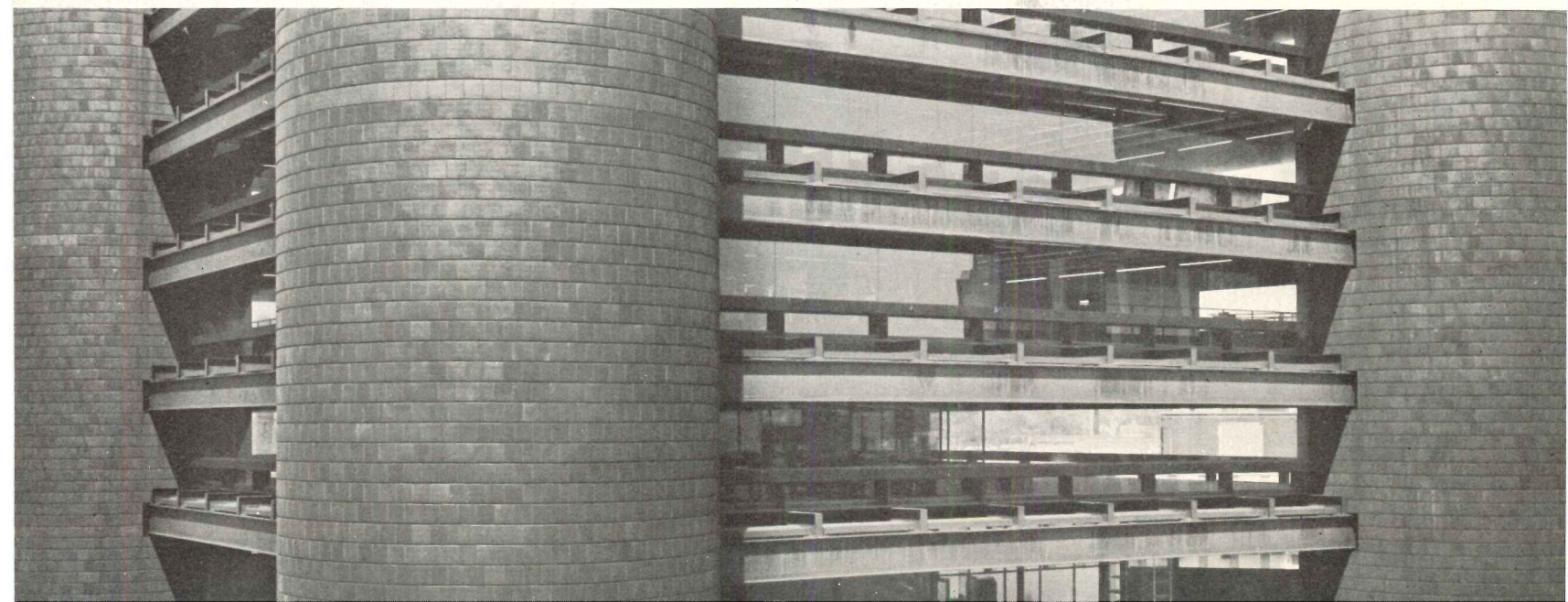
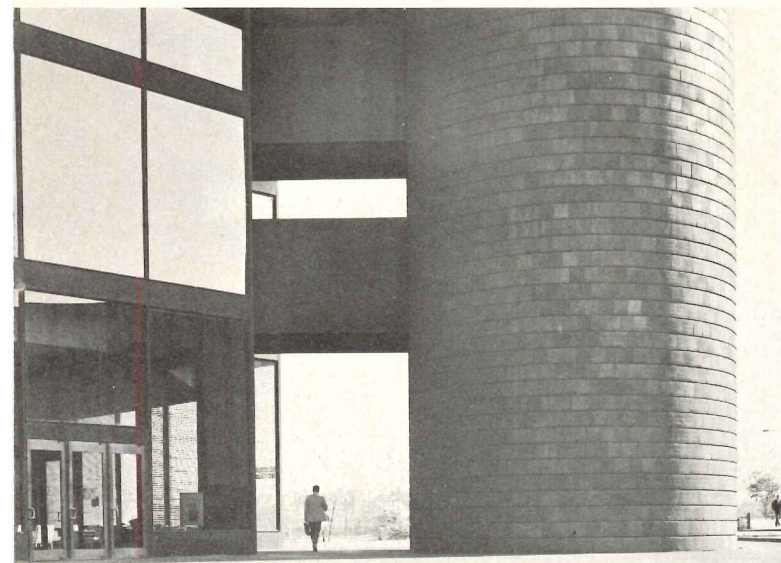
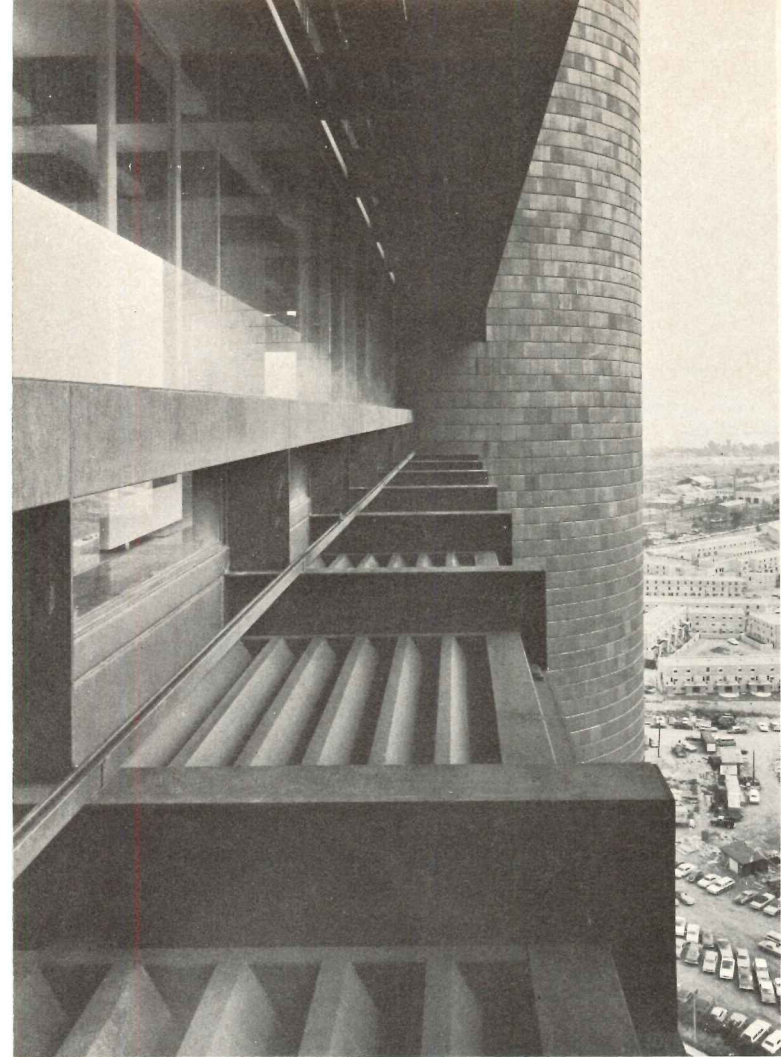
**How did the building get this way?** Designer's decisions are not very often made in a linear, one-follows-the-other fashion, because the complexities of a problem do not allow it. In retrospect we may see some buildings as evolving from a few simple choices by the architect, however, and this is one. Roche's two basic decisions were that the building be tall and thin rather than low and broad, and that the building express as clearly as possible the material of structural steel with which it would be built. The building grows by rigorously

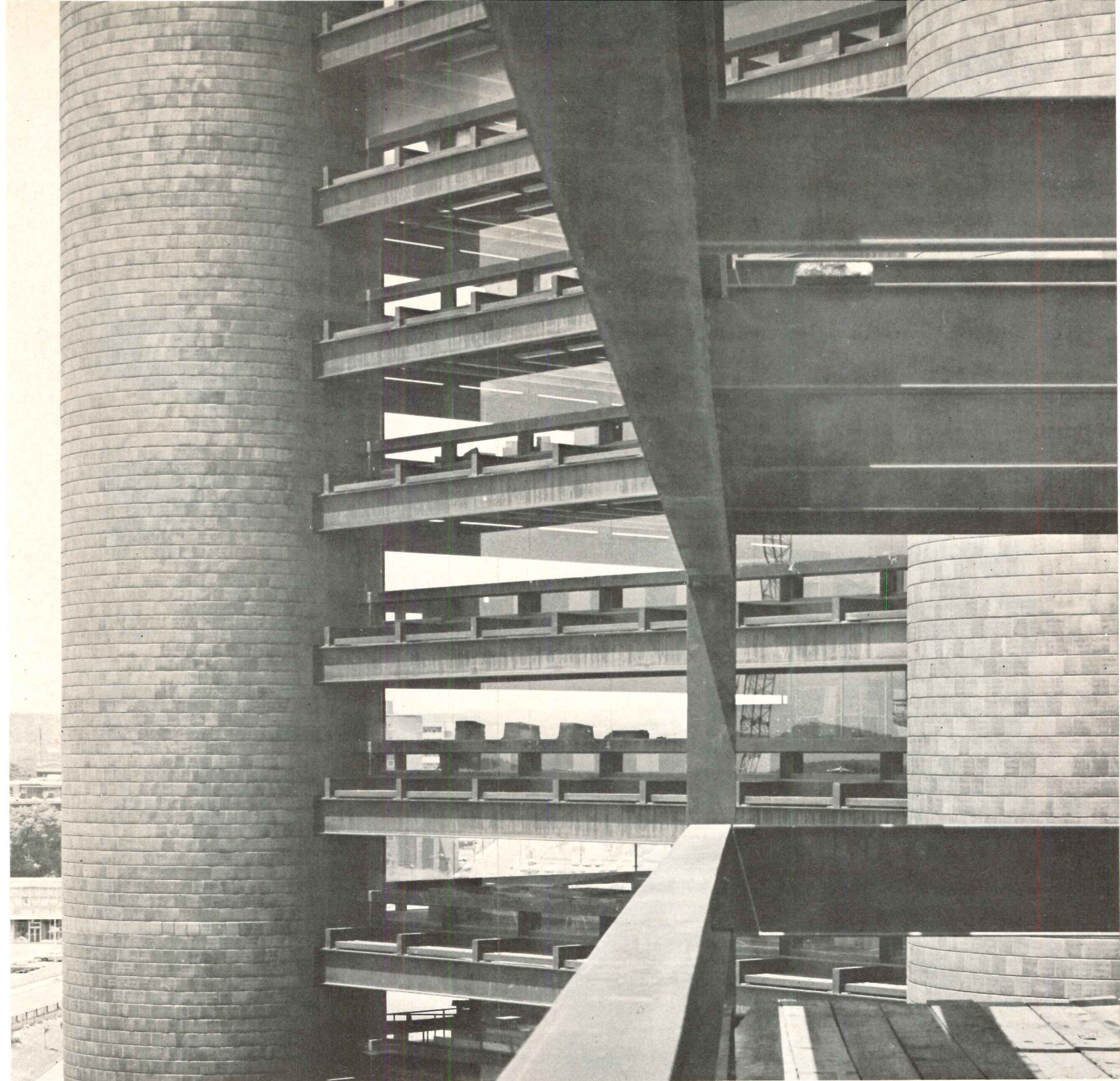
adhering to and exploiting these two decisions.

A tall building, rather than a shorter, broader one, acknowledges the site as an entrance to the city, as mentioned before, it allows a large and open plaza, and it entirely satisfies the Knights of Columbus' operating methods. The resultant area per floor of a tower on this site—8,000 to 10,000 square feet—is smaller than building economics and efficient use of space normally dictate, however. The core can occupy too large a percentage of the floor area. Consequently, the services nor-









mally found in a core were moved to the exterior, with the exception of the elevators. This relocation allowed the distance from core wall to outside window wall to become 31 feet, adequate for efficient office and aisle layouts within. By retaining the elevators at the center, efficient radiating circulation patterns still remained.

The exposed steel on the tower is exposed *structural steel*, not cover plates or window panels. This is perhaps the only tall office building in the country that has its structural steel uncovered and still passes strin-

gent core-city fire codes. The U.S. Steel building in Pittsburgh does the same thing with water-filled columns, but it is not yet complete. The Ford Foundation building in New York has weathering steel cover plates over conventional insulated beams.

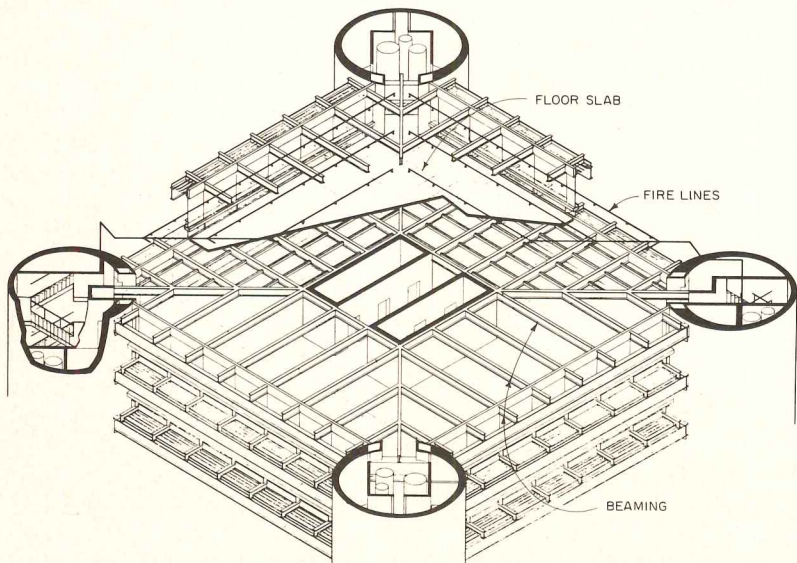
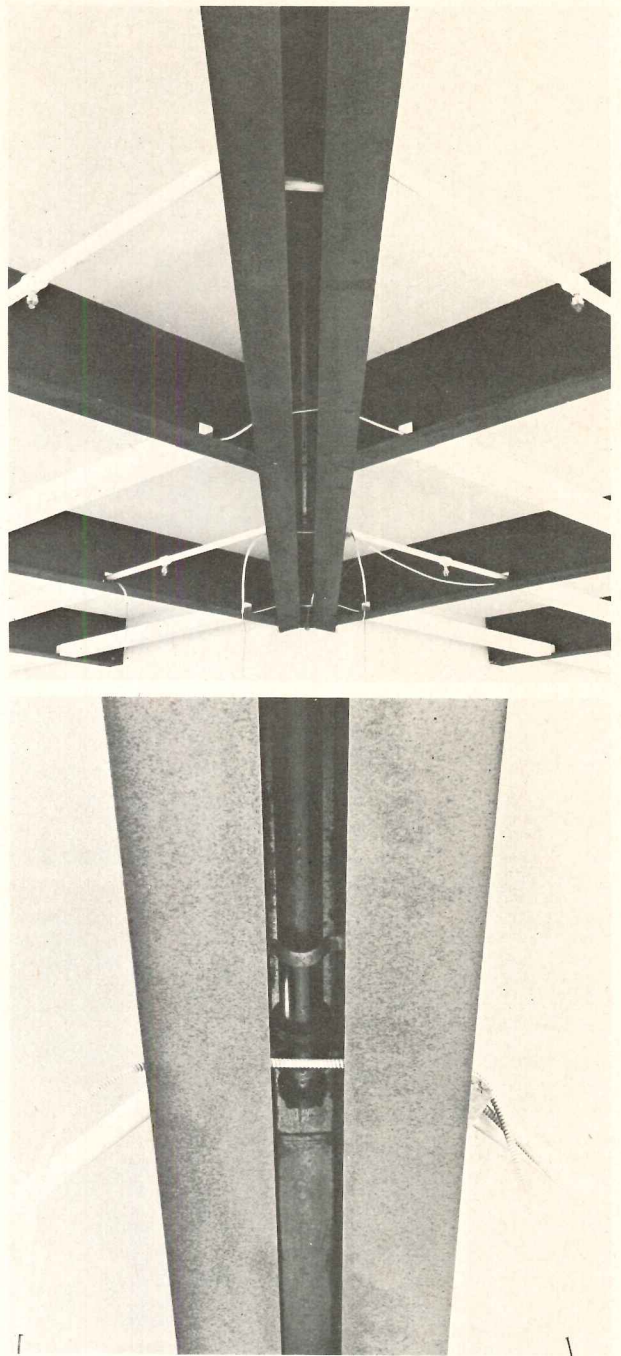
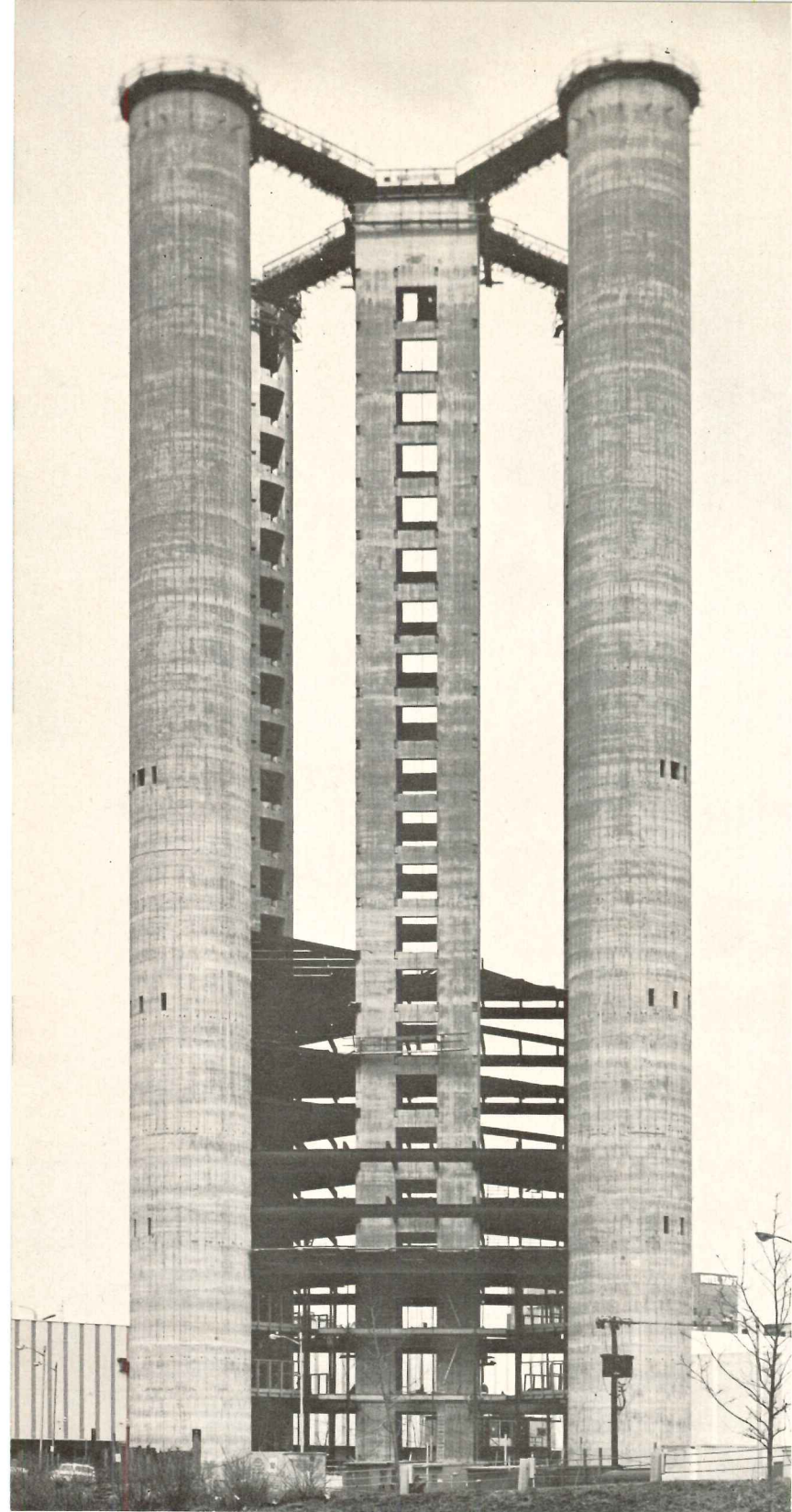
Three design characteristics combined to convince local building inspectors and fire marshals that the exposed beams were safe from heat deformation without insulation. One, the major steel carrying each floor is five feet *outside* the glass line of the building, as in the detail above, center. Re-

cent tests done in Germany, and used by the architects to demonstrate the building's safety, placed steel at various distances outside a glass line or curtain wall, with flames inside, to prove that steel in such locations need not be fireproofed. An added credit was that these tests were performed using smaller steel members than the 36 WF 194 main floor beams of the Knights of Columbus. Large beams dissipate heat more quickly than smaller ones, and are therefore safer, even when loaded to capacity.

Secondly, the major floor

beams bear directly on fireproof concrete that carries straight to the ground. Each silo is fireproof and self-supporting, as is the elevator core in the center; together they are the sole vertical supports for the building. The exits for each floor lead directly into these fireproof shafts, so that the tower may be described as 23 one-story buildings.

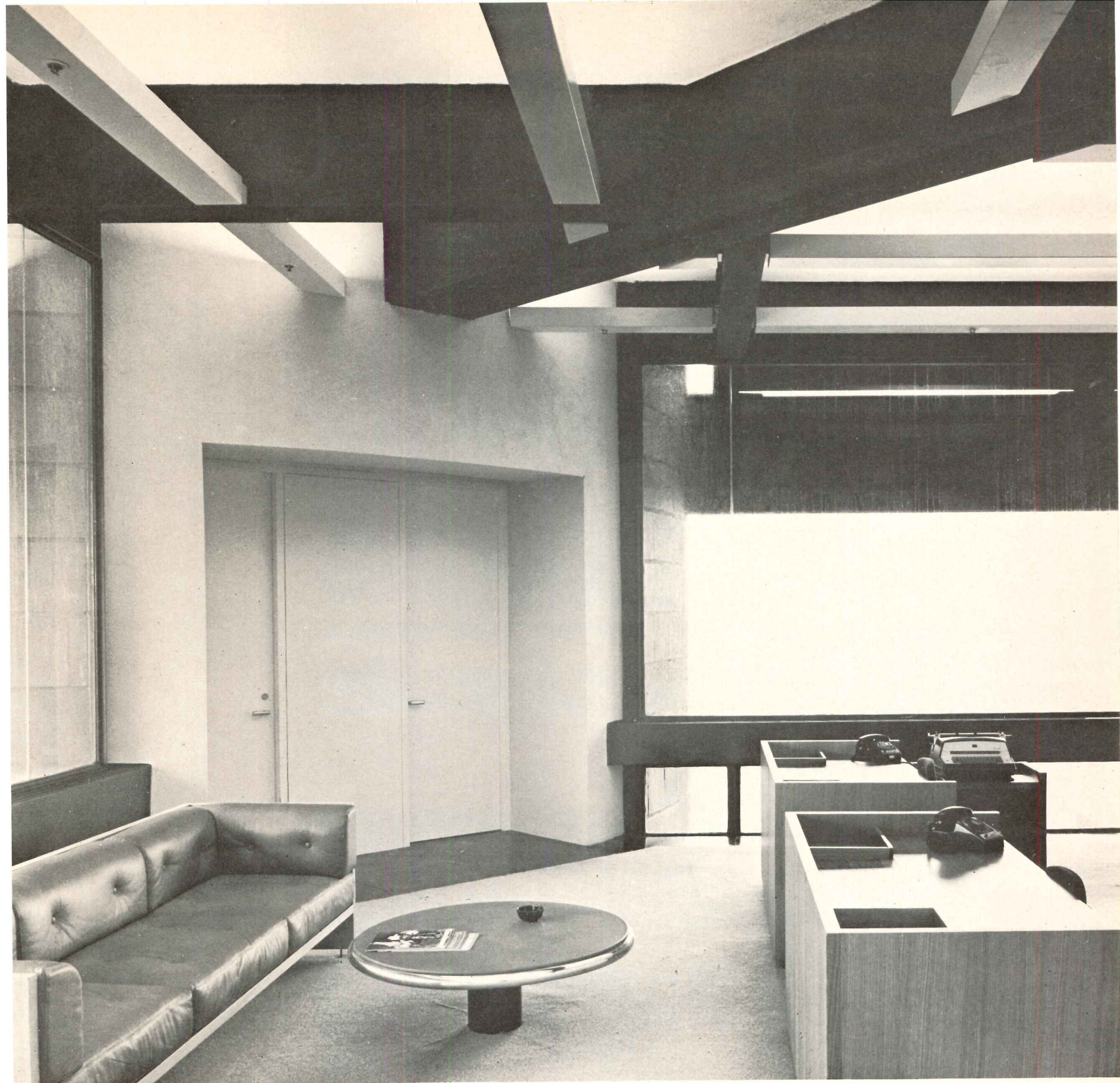
Third, the building is sprinkled throughout, which protects deformations in the interior beams. The same exposed weathering steel is also exposed on the inside, and it is a distinct visual asset to the interior



spaces. The two decisions acknowledged originally, then, and the resultant organization of structure and circulation that they caused, can be characterized another way: the building shows a bulldog commitment to the clear visual expression of physical parts, and to the clear visual expression of organization.

**Construction and details are critical.** To see these general visual commitments through, an architect must be uncompromising in detail decisions; welds and connections may be less

technically direct and efficient than they could be, and construction and erection may become more complex. In this building, the four concrete silos and the elevator core were slip-formed to their full height before any of the floor steel was placed. Each tower is self-supporting, and had to be post-tensioned with steel against wind pressure before the towers were connected, so there would be no tension failure in concrete subjected to lateral pressure. The connectors between the tops of the towers in the photo above, left, are the remains of



the slip-form scaffolding; the connectors do not act in any way to tie the towers together before steel is in place.

Many of the beams in the tower rest on frictionless pads so they move with expansion and contraction of the steel. The 36 WF 194 spandrels are subjected to wide temperature variations, being outside the building, and the 21 WF 55 floor framing beams may be expected to expand and contract in an even more unpredictable manner, being partially outside and partially inside the building.

The two small photos

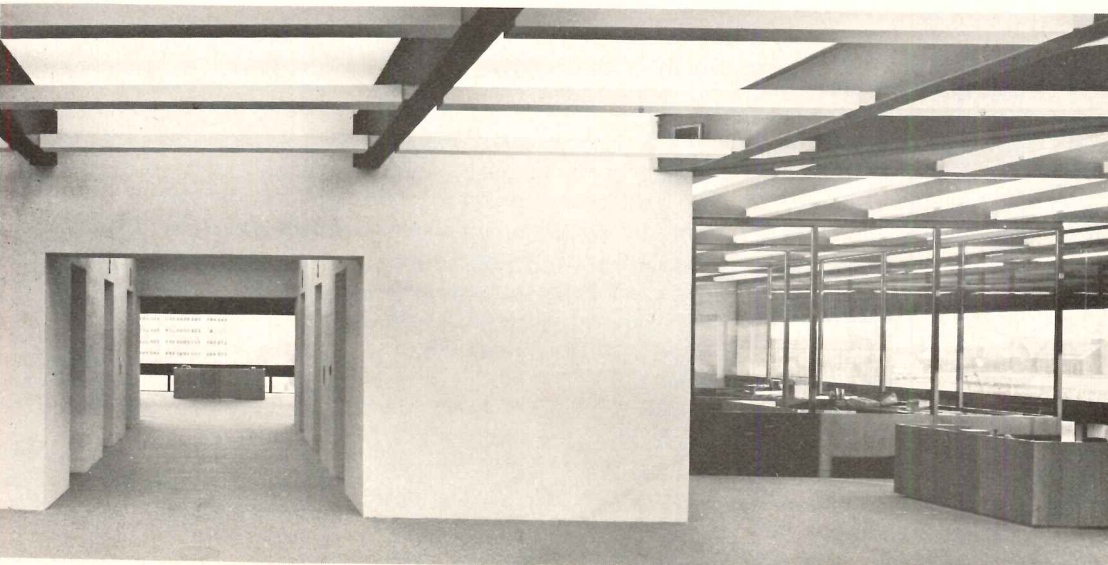
above show one of the diagonal beams running from a silo to the core (see framing isometric, left). The beam is two 21 WF 55's placed together, with the sprinkler pipe and main electrical leads running between them. At about five-foot intervals the two beams are pierced, and the secondary sprinkler and electric conduits branch off around the periphery of the building, both concealed by a simple white metal cover channel, seen in the finished interior above. The sprinkler heads can be seen projecting through this cover plate. The lighting is en-

tirely indirect, projected up and reflecting off the concrete under-surface of the floor above, which is painted white. The detailing throughout the building thus remains meticulous and consistent with the architects' commitment to visual expression; each beam reveals itself, each lighting channel carries through, parts are carefully articulated.

The architects also designed all of the furnishings in the building, shown in the photo above and on the next page. The desks, couches and lounge chairs are solid birch

with simple cushions, and are usually fixed in place. The furniture becomes as much a part of the whole as the walls and the spandrel beams: it is an expression of the power of a few simple decisions rigorously applied, and carried through to completion. —Robert Jensen

KNIGHTS OF COLUMBUS BUILDING, New Haven, Connecticut. Architects: Kevin Roche John Dinkeloo and Associates—David Powrie and Bruce Detmers, project associates. Mechanical engineers: Cosentini Associates; structural engineers: Pfisterer Tor and Assoc.; contractor: Koppers Company, Inc.



The top photo shows a conference room on the twenty-first floor. The middle photo is a typical partition and desk arrangement, showing how the solid partitions work within the beamed ceiling. Below is a view through the elevator core, giving a good feeling for the transparent quality throughout the building. This transparency carries through even to the doors. There are no door jambs, most of each door is made of glass, and there is about one inch of space between doors and frame all the way around. Doors, furniture and partitions were all designed by the architects.

---

# AIRPORTS

---

Architectural exhibits on following pages are divided into four categories: master planning, page 118; terminal facilities, page 122; landside/airside traffic, page 128; and other design work, page 131. The observations below pertain to key factors in architectural practice in this field, and a summary of general practice for airports is given on page 60.

Architecture for airports is horizontal in almost every sense of the word. The handling of huge sites on which no high-rise is permitted (other than a 200-ft. control tower) provides a virtually two-dimensional field upon which planning and deployment of facilities is the special skill of architecture. But airport architecture is horizontal in another sense in that it cuts across an unlimited variety of specialized commissions from interior design for a ticket vending counter to the master planning of an international port.

Money is a primary discipline and resource for architects in this field—as it is in many others. But the planning and design of airport facilities have been more than ordinarily constrained and fragmented by the complex sources of finance, now overlaid with the additional side effects of a recently enacted Federal support bill. All this has produced a hydra-headed client situation that many architects have found to be occasionally frustrating and operationally costly, albeit professionally rewarding.

The authorities responsible for over-all airport creation vary from city or county agencies to such giant bi-state super-agencies as the Port of New York Authority. The money for actual design and construction of facilities comes from the airlines, the public, the concessionaires and now, increasingly, the Federal government. Bond issues that initiate an airport establishment are liquidated by revenues from these sources, and the sources themselves enter into program and actual design requirements to a considerable degree. The airlines have been diverting huge amounts of capital to the purchase of giant aircraft which has had the triple effect of 1) forcing modifications at terminals, 2) depleting capital reserves for that purpose, and 3) improving the long-range profitability of operations. While airlines are not flush with ready cash, they show no inclination to compromise their competitive images, either as lessors of space in multi-line terminals or as sole occupants of their own separate facilities. This may complicate the life of any architect involved, but it also multiplies the opportunities for participation.

These financial considerations are not necessarily peripheral to the actual design solution. For example, the landside/airside design concept for Tampa (page 128) gained much of its acceptance by the fact that common central terminal facilities can be financed on a long-term basis more easily when the airside satellite buildings are remote and more economically responsive to the inevitable changes of aircraft and commerce requirements. And the people-mover system at Tampa is a \$5-million commitment to that economy.

—William B. Foxhall

## Master planning: the necessary prelude

### DALLAS/FORT WORTH REVISED

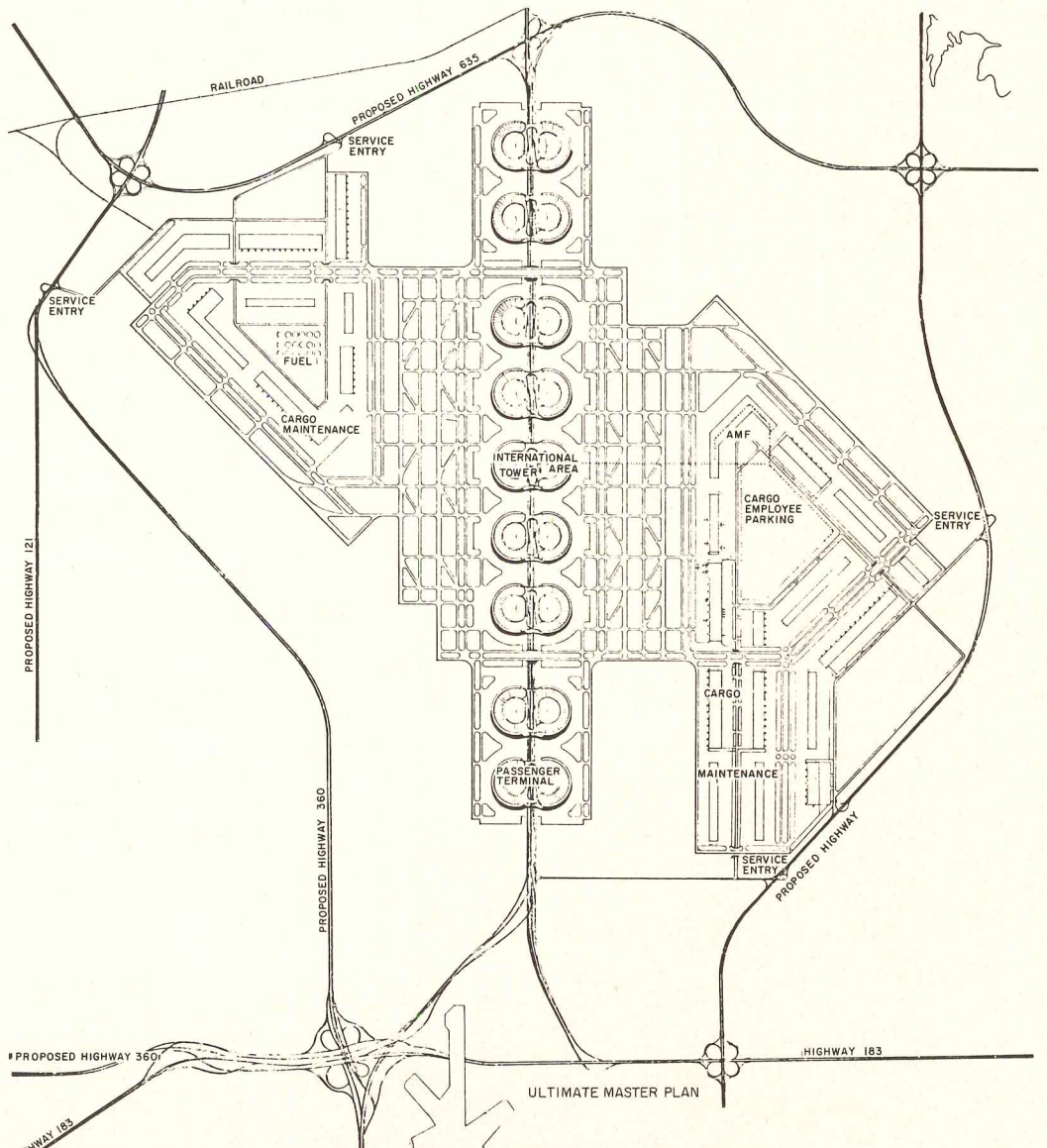
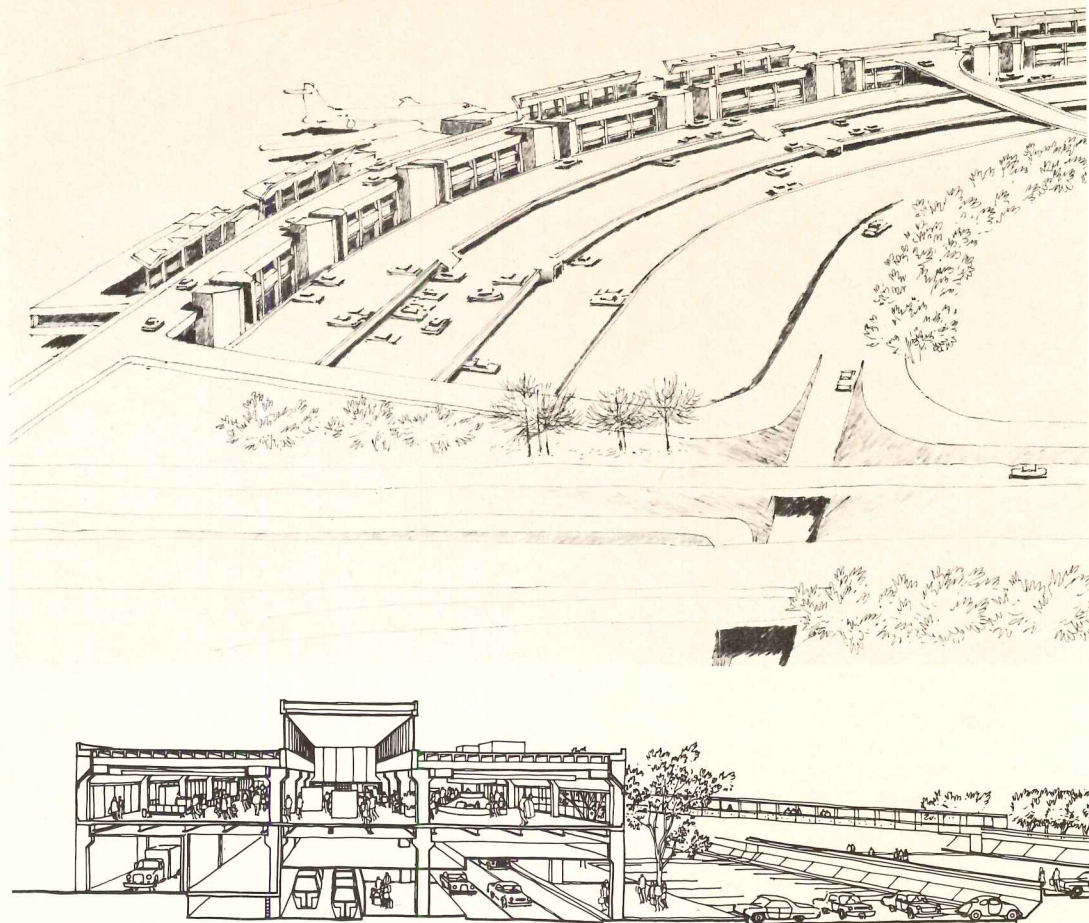
From megastructure to people-port—the evolution of the master plan for this giant among airports (ultimately three times the size of New York's JFK) was both natural and imaginative. While the present plan is almost revolutionary in its decentralization and shortening of walking distances, it is not a complete departure from and certainly is no pejorative denial of the 1967-approved plan by Tippetts-Abbett-McCarthy-Stratton for a two-mile, drive-through spine structure with projecting fingers for enplaning. The TAMS plan itself had been in the vanguard of reaction to the more cumbersome, passenger-punishing aspects of some ports with separate, airline-image-building terminals. Further, it paid strict attention to mounting problems in operating costs—unhappily at the expense of public stamina and shoeleather.

When Thomas M. Sullivan came to D/FW as executive director in 1968 (he had been staff consultant to the Port of New York Authority) he asked for review of the existing plan on two major counts: passenger convenience in shorter parking-to-plane distances; and less constrained or layered land use of the huge 18,000-acre site. As principal in charge of design, Gyo Obata of Hellmuth, Obata and Kassabaum worked with administrator Richard Adler of the airport-experienced firm of Brodsky, Hopf & Adler to re-think both the human and plane-docking aspects of the plan. The spine concept was retained as roadway (and the TAMS firm as over-all airport engineers) while the terminal structures became a series of paired loops along the spine.

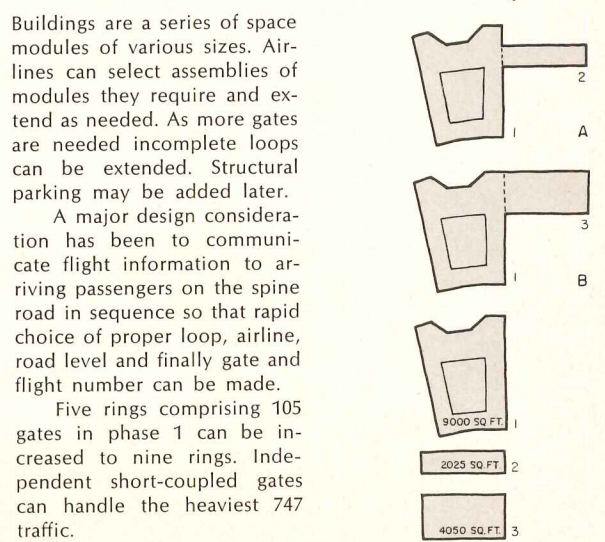
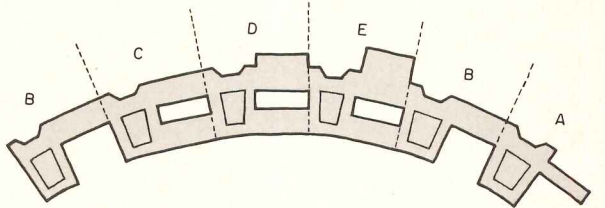
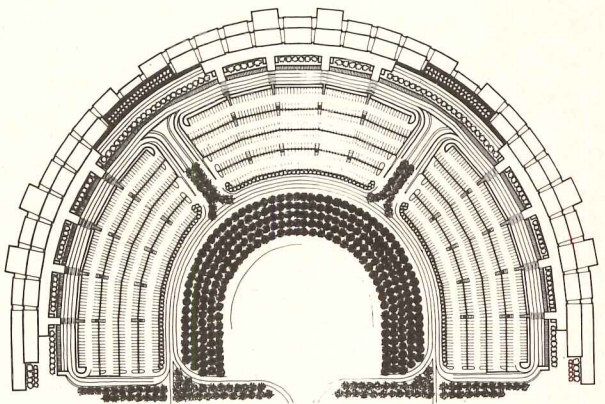
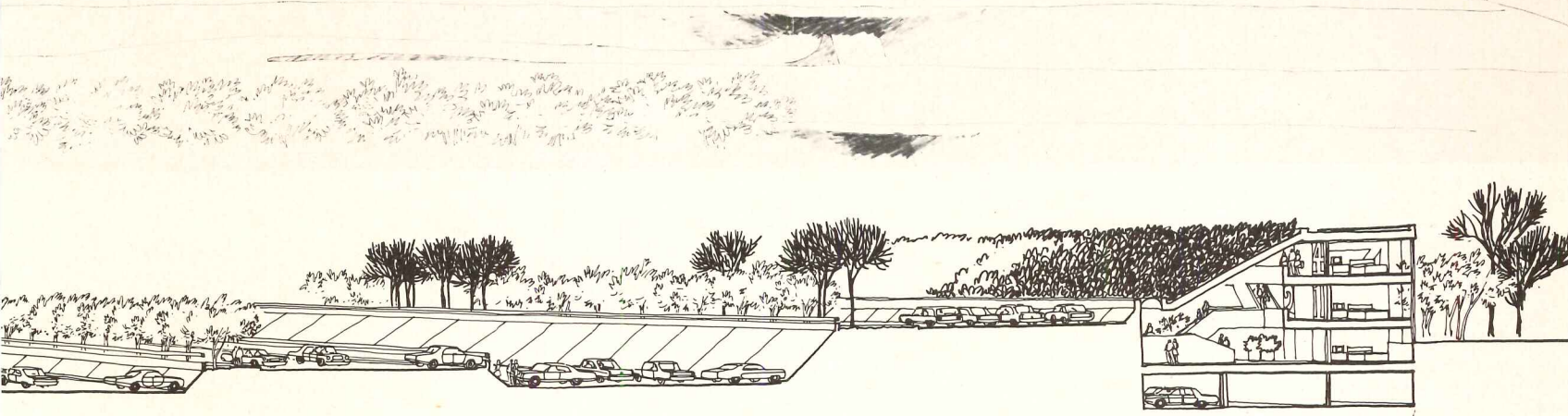
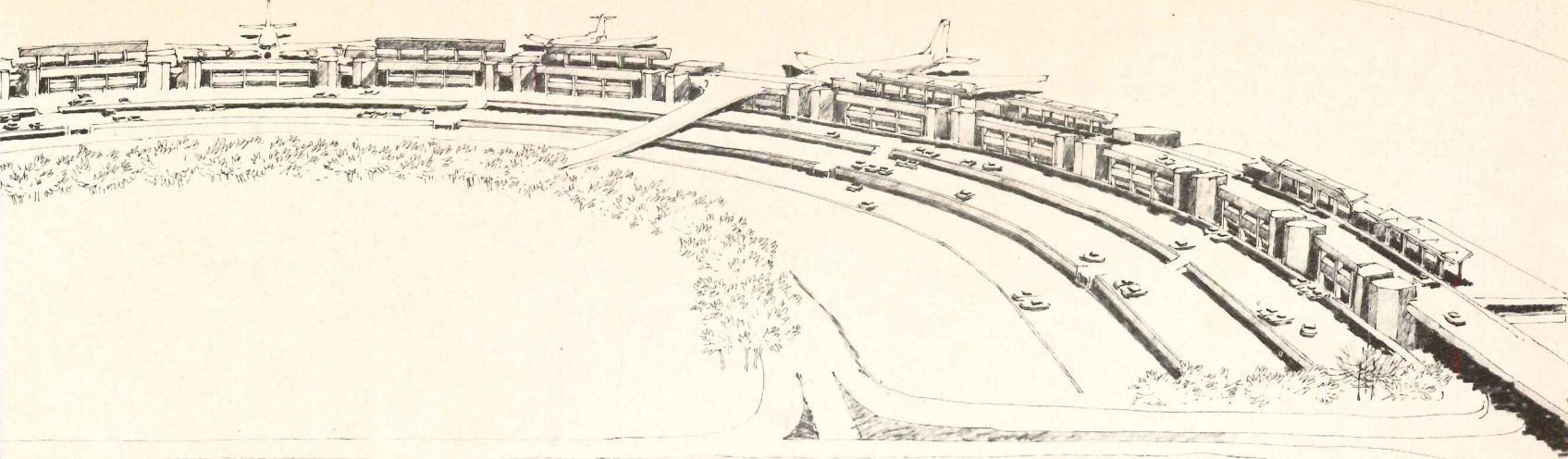
The design objective, says Obata, was to bring the passenger arrival point and the airplane as closely together as possible. Here, a person can drive to a parking lot within the loop near his gate and walk a few hundred feet to board his plane. If he must transfer to another gate or loop, a horizontal transit system interconnecting all loops quickly takes him there.

Terminals are two-level buildings, each with 18 to 25 gates and baggage areas on the upper level and transit on the lower. Deplaning passengers can leave the terminal by a second-level roadway.

DALLAS/FT. WORTH REGIONAL AIRPORT. Project architects: *Hellmuth, Obata & Kassabaum*; project administrator: *Brodsky, Hopf, & Adler*; associate architects: *Harrell & Hamilton* and *Preston M. Geren & Associates*; structural engineers: *Terry-Roselund & Company* and *LeMessurier Associates, Inc.*; mechanical engineers: *Herman Blum/Cowan, Love & Jackson, Inc.*; civil engineers: *Forrest & Cotton, Inc.* and *Carter & Burgess, Inc.*; construction manager: *Parsons/McKee*; airport engineer: *Tippetts-Abbett-McCarthy-Stratton*; airport land consultant: *Peat, Marwick, Mitchell & Company*; control tower: *Welton Becket and Associates*.







Buildings are a series of space modules of various sizes. Airlines can select assemblies of modules they require and extend as needed. As more gates are needed incomplete loops can be extended. Structural parking may be added later.

A major design consideration has been to communicate flight information to arriving passengers on the spine road in sequence so that rapid choice of proper loop, airline, road level and finally gate and flight number can be made.

Five rings comprising 105 gates in phase 1 can be increased to nine rings. Independent short-coupled gates can handle the heaviest 747 traffic.

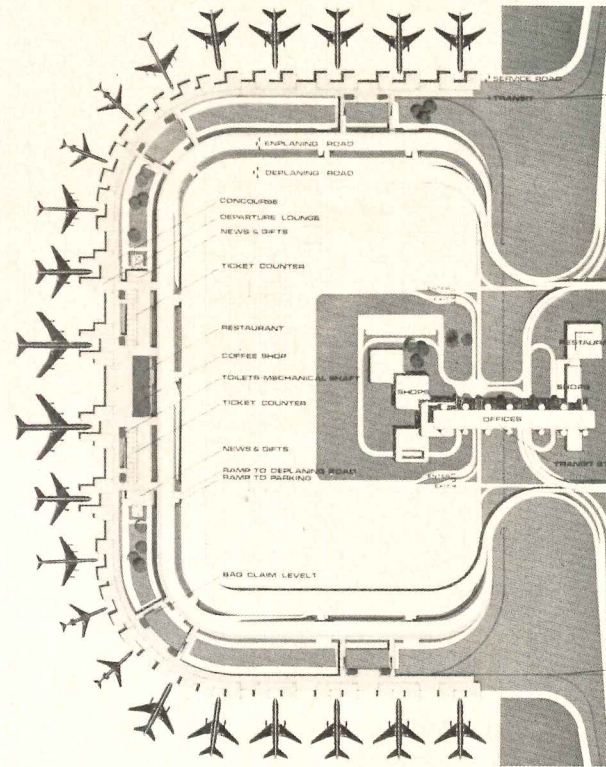
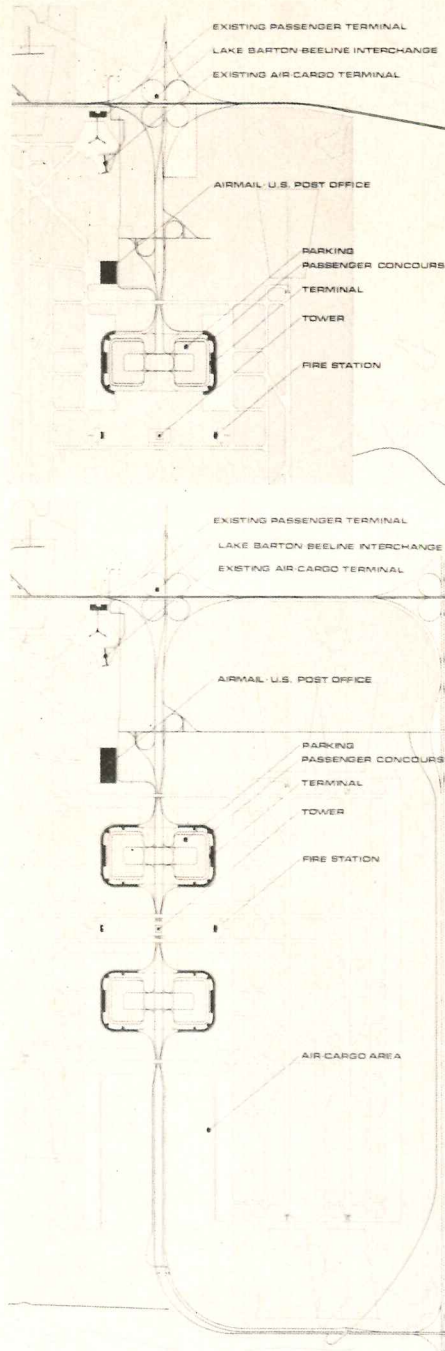
CITY OF ORLANDO JETPORT

This relative in logic to the Dallas/Fort Worth master plan of drive-through spine and paired terminal loop structures makes primary use of the phased expansibility inherent in the concept. Its adaptation to a more limited but still generous site adjacent to McCoy Air Force Base was by no means mere imitation of the Texas scheme. In fact, the architects and consultants developed and examined seven different design concepts including centralized and remote terminals with in-city loading stations. They were able to do this in great detail and to project performances over thirty years' expected growth by the use of computerized simulation models of Martin Marietta's Orlando Division. The result is a combination of unit terminal and gate arrival plans.

The first pair of U-shaped terminals flanking a four-lane divided parkway will be operational by 1974 with 32 gates. Each U can be extended to an ultimate 22 gates capable of handling the largest airplanes. The architects' development program, based on Landrum and Brown forecasts of exceptional regional activity and growth spurred in part by the new Walt Disney World, envisions ultimate development of all four terminal buildings with at least 75 and possibly 88 gates by the year 2000. The master plan allows construction of new gate positions without interrupting service.

The first phase of the program, including two terminal buildings plus a new runway and taxiway system, an automated intra-airport transit system and air cargo facilities, is expected to cost \$78 million.

ORLANDO JETPORT. Joint-venture architects and engineers: *Hellmuth, Obata & Kassabaum and Reynolds, Smith & Hills*; City of Orlando Director of Aviation: *John F. Meacham*; airport consultant: *Landrum & Brown*; terminal simulation model: *Martin Marietta Corp.*

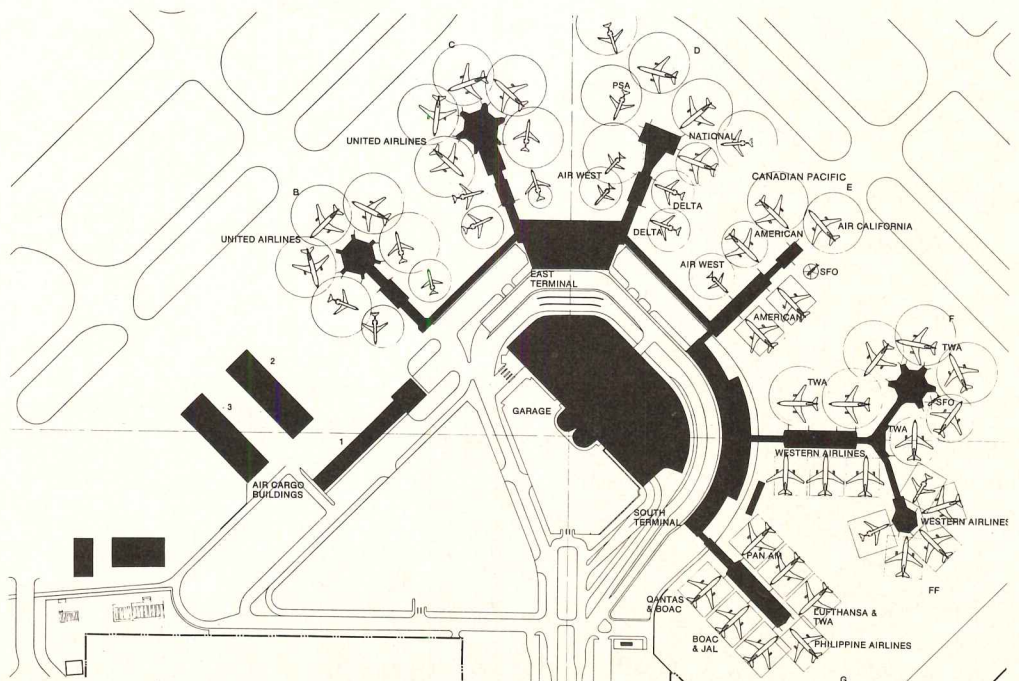


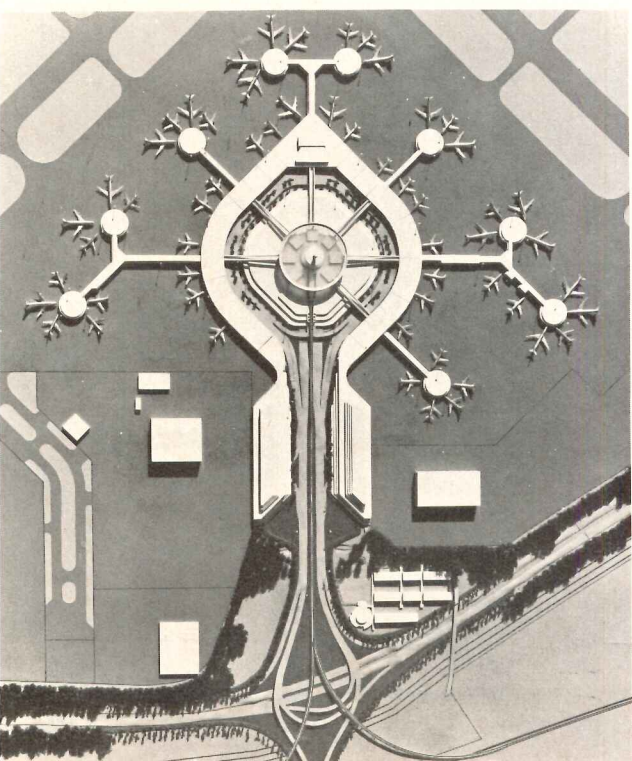
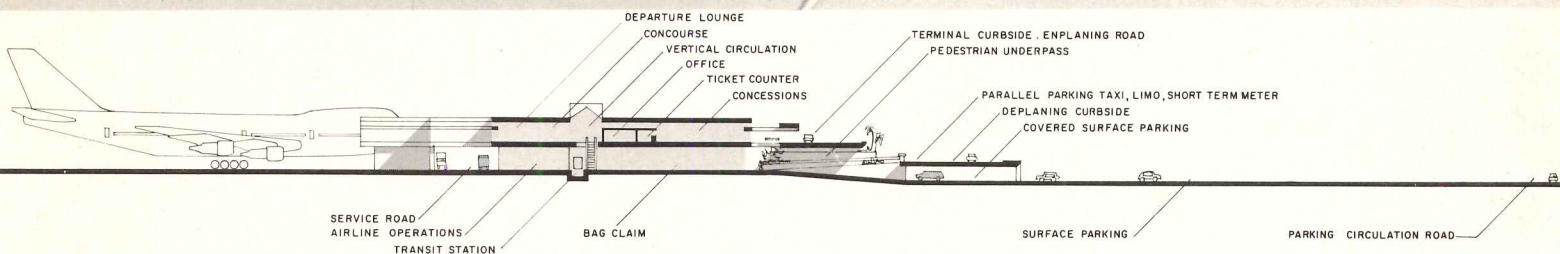
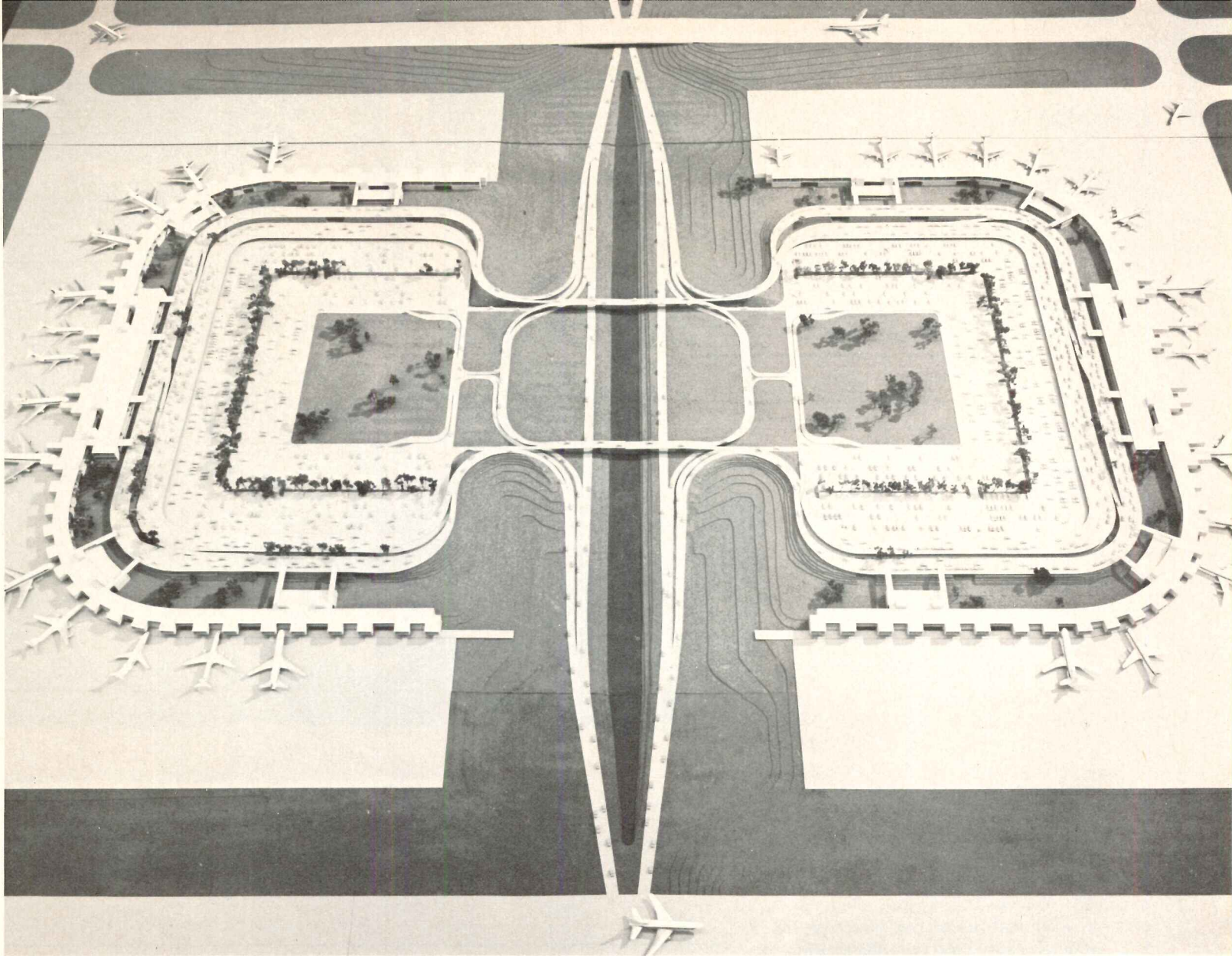
The two-level U-shaped terminal concept with central parking and dual enplaning and deplaning driveways allows an experienced, pre-ticketed passenger to park directly in front of his departure gate. If he needs reservations, he will go to ticket counters at the outer center of the U. Each U has space for about 2,000 cars, and the average walking distance from car to plane is about 600 feet. Departure lounges are on the upper level, and deplaning is through the lower level. The transit system will have three stops in each U. There will be motels and stores at the north end of the site.

SAN FRANCISCO INTERNATIONAL

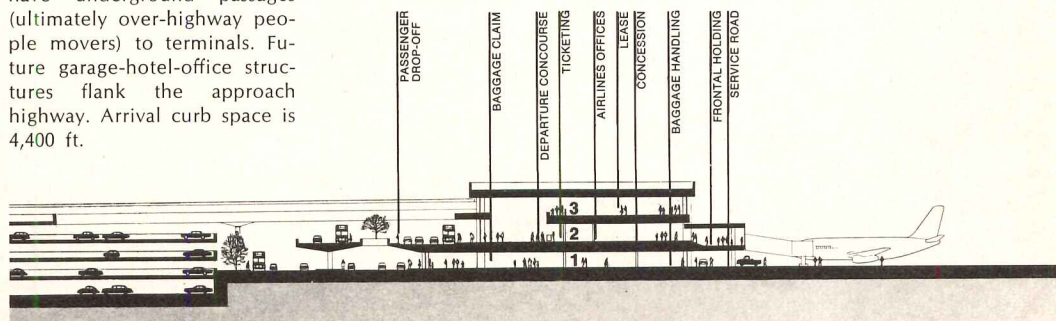
The master planning objective here is to double the passenger loadings on a fixed existing apron already strained to capacity by highly developed finger-terminal facilities (plan, right). The solution proposes a combination of close-in loading positions surrounding a redeveloped traffic loop and terminal plus a new series of over-apron ramps terminating in gated rotundas (rendered plan opposite). Anticipated growth from 54 to 94 gates can be phased around the perimeter roadway as required while retaining existing central and south terminals to be incorporated eventually within a unified design.

SAN FRANCISCO INTERNATIONAL AIRPORT. Owner: *City and County of San Francisco*; architects: *John Carl Warnecke & Associates and Dreyfuss & Blackford*; structural engineers: *Chin & Hensolt, Inc. and T. Y. Lin, Kulka, Yang & Associates*; mechanical and electrical engineers: *Buonaccorsi & Associates.*





In the ultimate plan (left) about 30 gates will be at the face of the three-level terminal with holding areas at the second level (section right), where passengers boarding at rotundas will enter connecting corridors. Future plans call for baggage systems at ground level of 200-ft. rotundas and people movers along corridors. The present 2,700-car, four-level garage will be extended to fill the loop and have underground passages (ultimately over-highway people movers) to terminals. Future garage-hotel-office structures flank the approach highway. Arrival curb space is 4,400 ft.



## Terminal facilities: Complex designs for travel

### BOSTON'S MIGHTY SOUTH TERMINAL

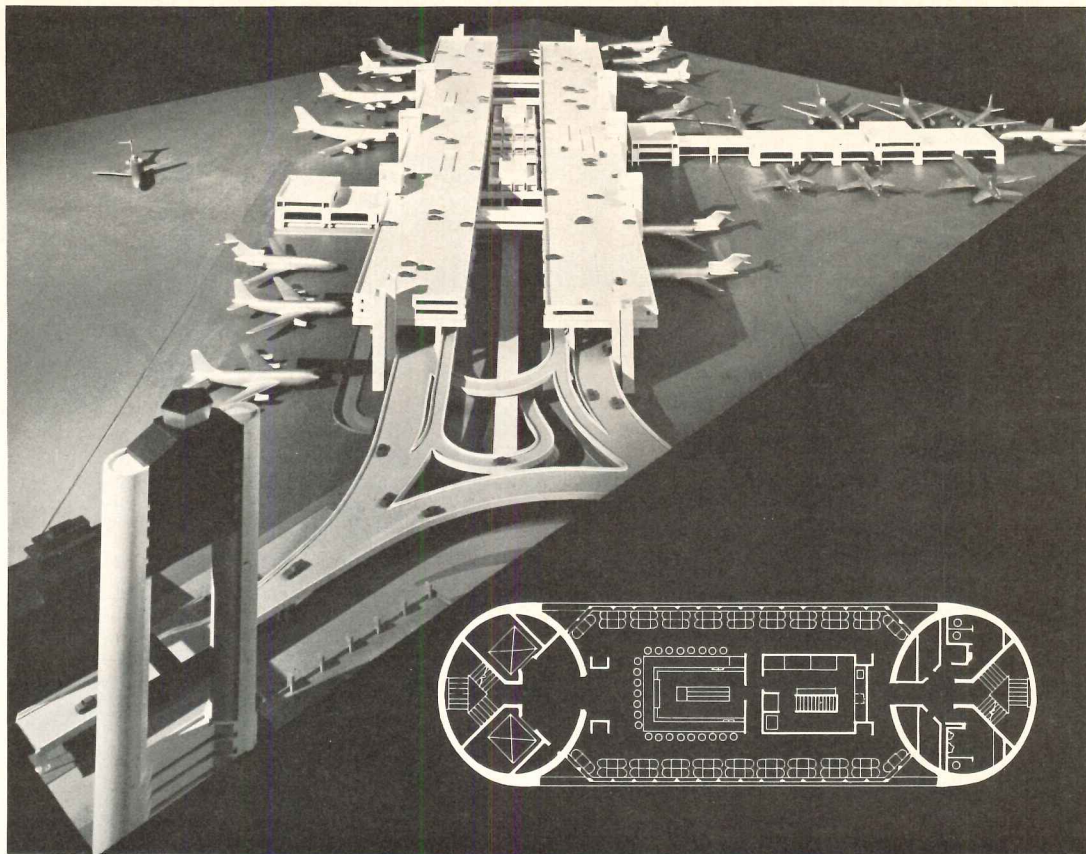
One of the world's largest multi-airline domestic terminals, the South Terminal now in construction at Boston's Logan Airport responds to the pressures of its limited site and projected loading with forceful, layered linearity. But somehow, through organization and design, each of its nine-million passengers a year will find his land transport and his particular one of 34 gates in reasonable proximity within the 1200-ft. long, 7-level structure. If he is the rare exception who conceivably might have bad luck in changing planes (and less than three per cent of domestic travelers ever do change planes at all), he may wish for—and actually receive—some mechanical help in negotiating the dash from one end of an 800-ft. finger to the far end of the opposite finger. If he is one of the hand-luggage commuters that comprise more than half of Boston's air travelers, he can get to his plane by a single elevator drop from his garaged car to one of 6 near-gate elevator positions.

In preliminary design phases of the terminal, it became apparent to the architects and to Richard E. Mooney, director of aviation for the Massachusetts Port Authority, that projected growth of traffic was such that existing roads and parking space on grade would be inadequate. The M.P.A. separately commissioned the Warnecke office to work with traffic consultants Wilbur Smith & Associates in collaboration with Mooney and M.P.A. chief engineer Thomas H. Kuhn to study the problem and develop recommendations. Some of these were: expansion of the central garage (see page 124), a subterminal facility at the garage with baggage-handling curb frontage, an automatic in-port transit system, and wider, more direct roads to major terminals.

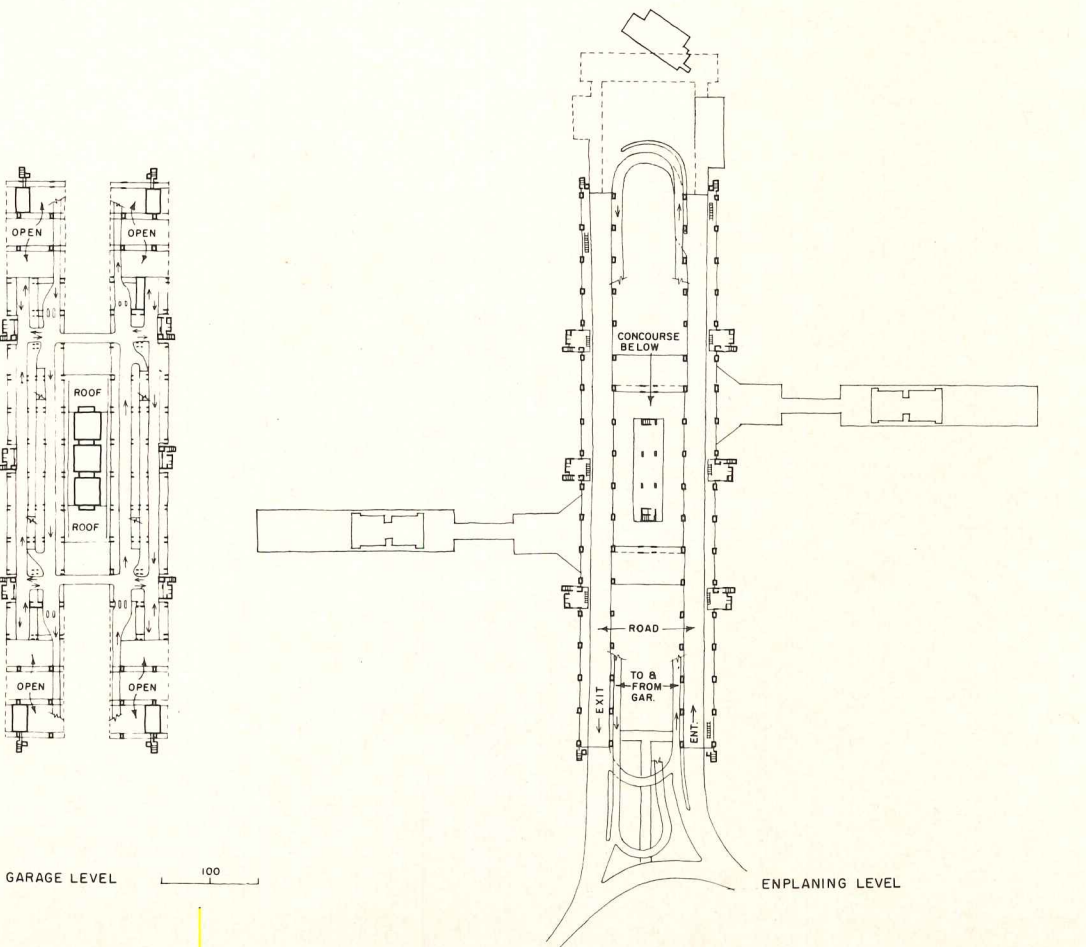
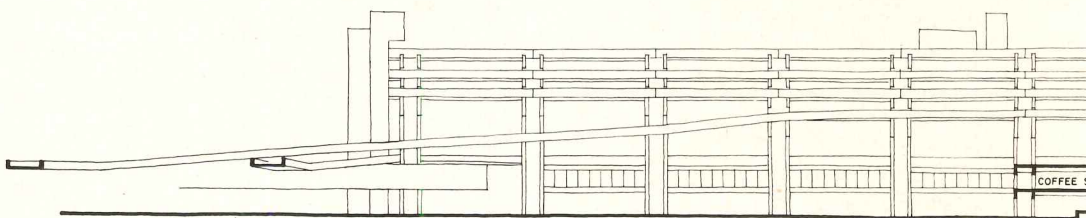
Directly affecting South Terminal design was the approved extension of the roadway system 2000 ft. onto the apron area of the site. This established the folded linearity of the terminal structure encompassing the roadway. Other design criteria derived from programs of the tenant airlines: American, Allegheny, National, Mohawk and Executive.

Another separate commission to the joint-venture terminal architects was the relocated 270-ft. control tower shown in the photo above. Fill-in floors between pylons start at the 16th of 22 levels. Lounge floor shown is at the 17th (200-ft.) level. Other floors have operations offices.

**SOUTH TERMINAL**, Logan International Airport, Boston. Owner: *Massachusetts Port Authority*; joint venture architects: *John Carl Warnecke & Associates* and *Desmond & Lord, Inc.*; mechanical & electrical engineers: *Joseph R. Loring & Associates*; structural engineers: *Lev Zetlin & Associates*; civil engineers: *Congdon, Gurney & Towle*; traffic consultant: *Wilbur Smith & Associates*; acoustical consultant: *Ranger Farrell & Associates*. Structural engineers for the control tower: *Nichols, Norton & Zaldastini*.

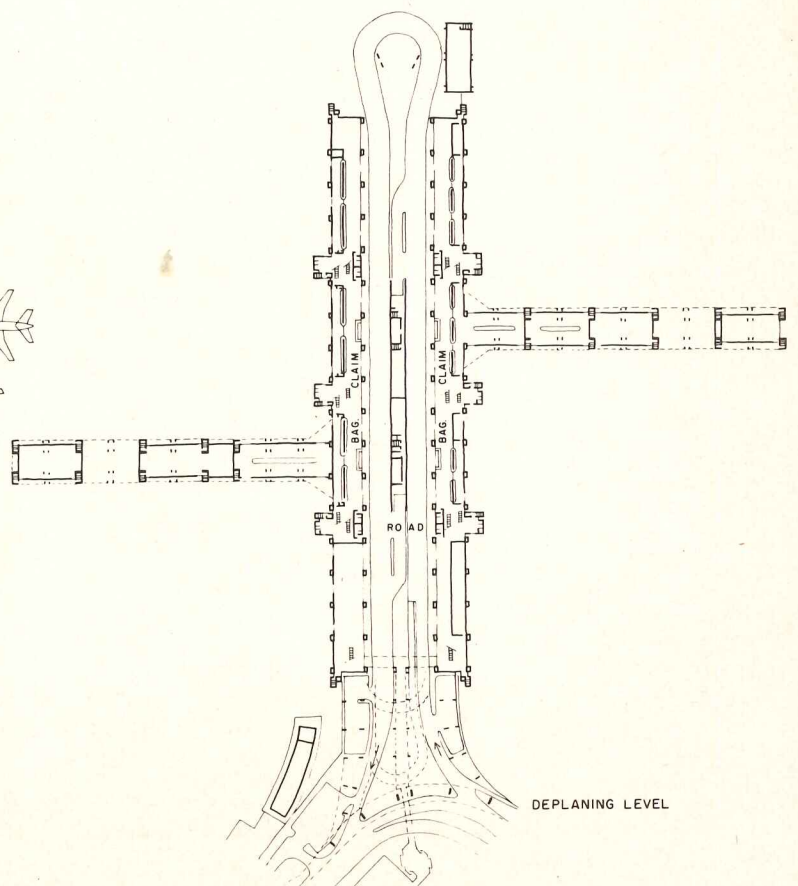
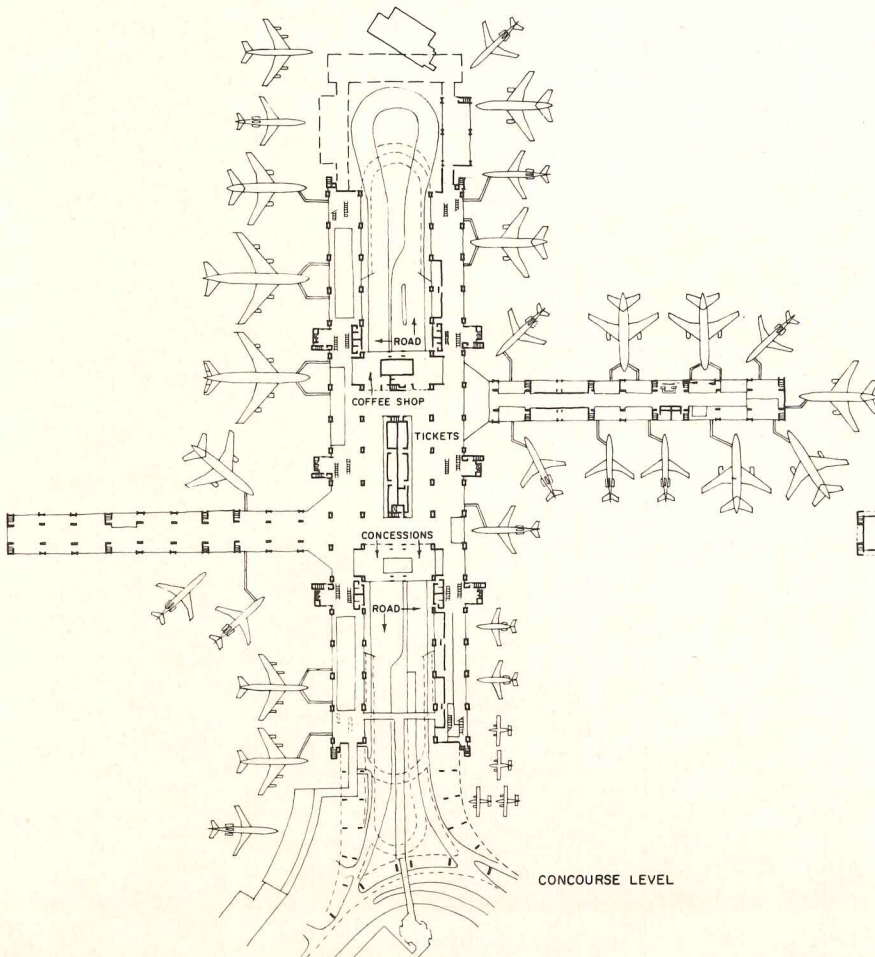
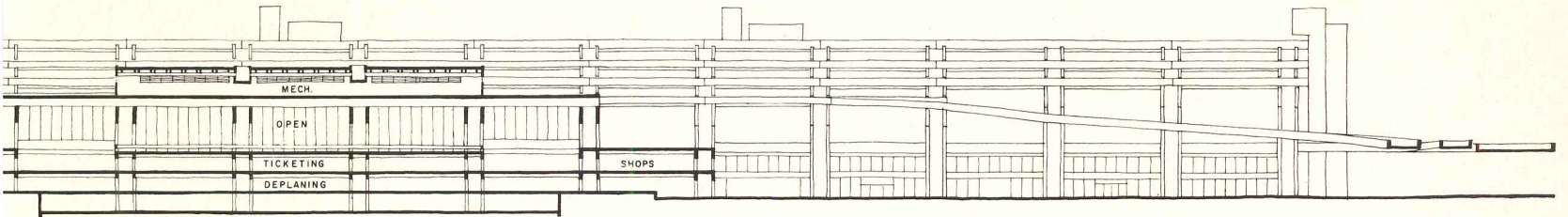
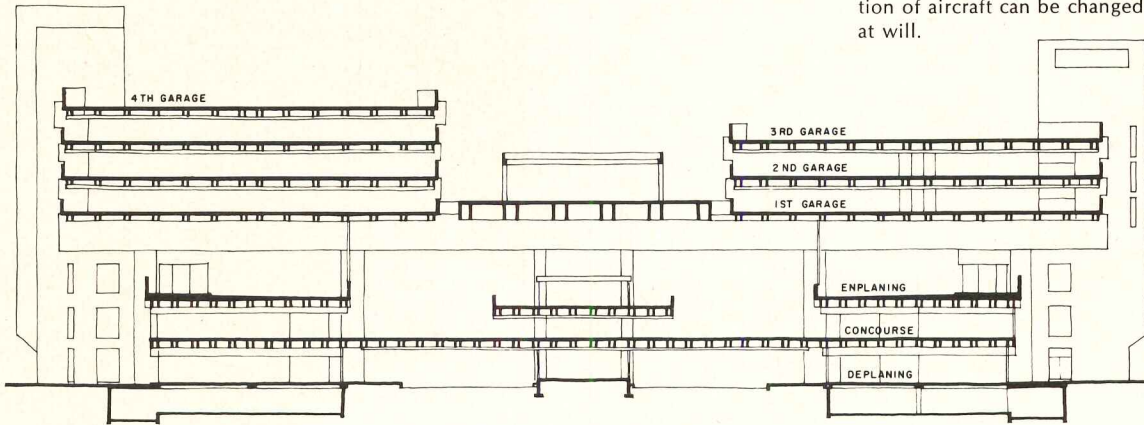
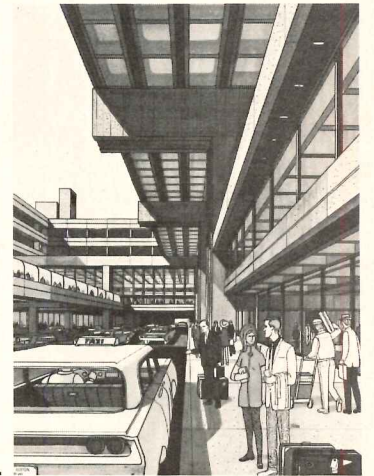


Louis Checkman photos





The construction module of this precast concrete building is a 70-ft. bay, of which there are 17 shown in the long section below. The separation of enplaning and deplaning traffic above and below the concourse level provides maximum curb space and minimum walking distances via 10 entry points and several moving stairs to ticketing and boarding areas on the concourse. Virtually complete flexibility in boarding areas is provided by the fact that each window on a 6-ft. 4-in. module in the main building can be adapted to a loading jetway. Thus, the mix and location of aircraft can be changed at will.



## EASTERN'S BOSTON IMAGE

Architect Minoru Yamasaki, in association with Desmond & Lord, designed this Eastern Airline's unit terminal, prominently set on approaches to the Logan Airport loop. The design of the terminal evolved from an early determination by the airline's architectural department to provide optimum passenger convenience and bring together in one structure: auto parking, curbside unloading, baggage and passenger services, auto renting, and other convenience concessions. A sense of elegance and competence is sustained throughout the two-level highway approaches and the spacious passenger ticketing and holding areas on the second level of the terminal.

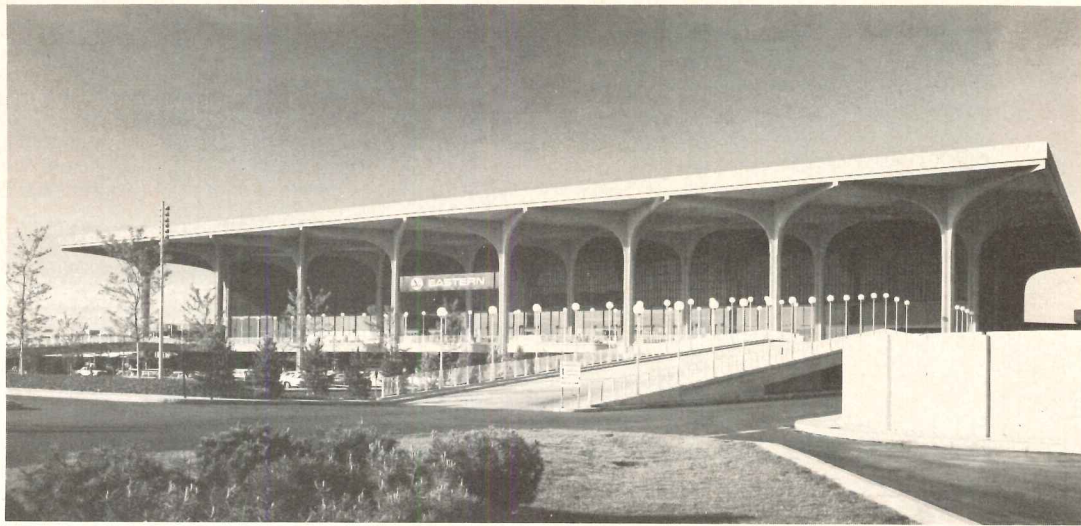
Within the terminal on three upper floors and roof is a parking area for 1000 cars, unobtrusively concealed by the front elevation but conveniently entered through spiral ramps, also concealed within the structure.

Passengers arriving by taxi or other public conveyance are deposited at the second floor level near check-in and ticketing counters. Concourses to Eastern's holding areas in satellites at either end of the rectangular building are comparatively short and have food shops and other conveniences on either side. At the rear of the second-level departure lounge is a third enplaning access to a temporary Mohawk holding area.

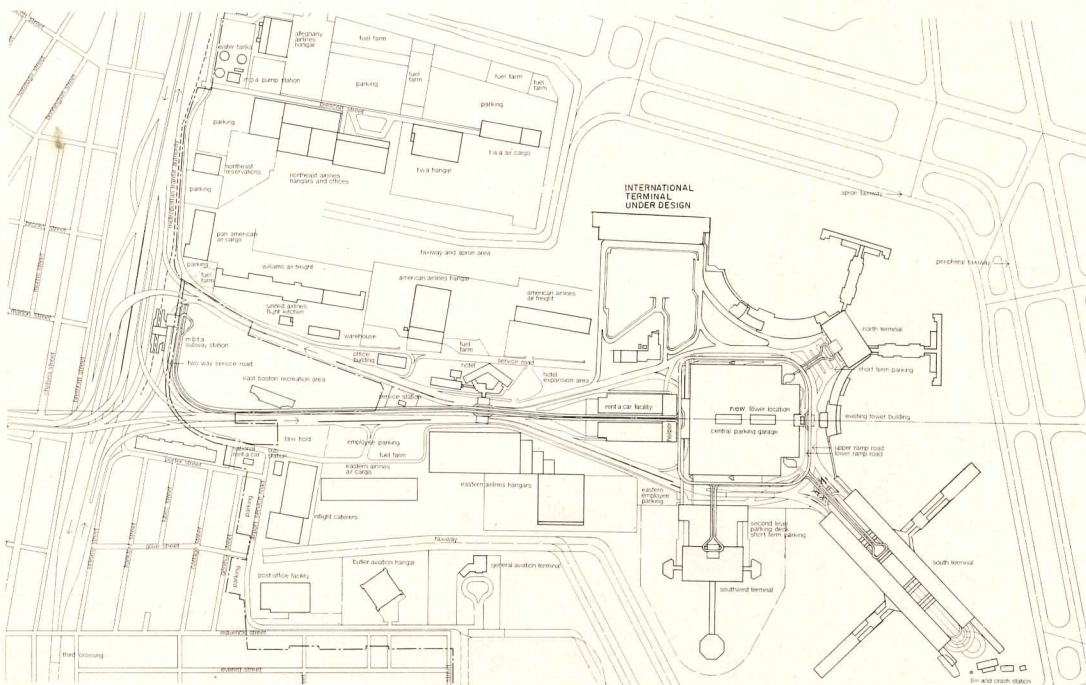
Deplaning passengers traverse the same concourses from the twin satellites to enter the large second-level space and descend by escalator to pick up baggage and ground transportation on the lower level. The satellite at the west end of the building is devoted entirely to air shuttle flights to New York. The east satellite handles domestic and international flights. Each satellite has six gates with telescoping loading bridges capable of handling aircraft of all sizes now in service.

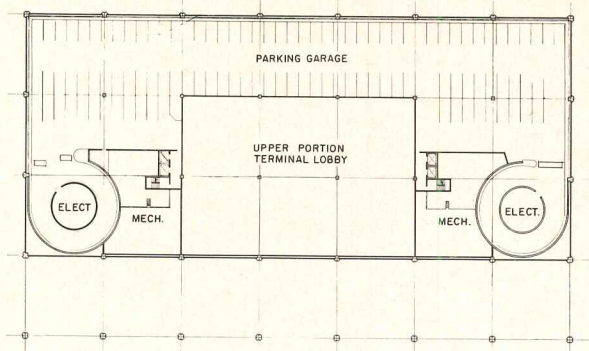
Baggage handling is simple and convenient. On-time passengers deposit checked-in baggage on a conveyor belt system in the main lobby. A late passenger can drop luggage on a second conveyor at each satellite so that his luggage is moved to the aircraft as he dashes for a seat. Luggage of deplaning passengers is moved by conveyors from satellites to one of five carousels in the claim area on the bottom level of the main terminal. Arriving baggage is sorted by an operator at a control panel who identifies bags for each flight by a color-coded tag attached at the check-in counter.

**BOSTON UNIT TERMINAL**, Logan International Airport, Boston. Owner: *Eastern Airlines, Inc.*; architects: *Minoru Yamasaki & Associates and Desmond & Lord, associates*; mechanical and electrical engineers: *Francis and Associates*; structural engineers: *Sepp Firnkas*; landscape architect: *Sasaki, Dawson, DeMay*; acoustical consultant: *Cambridge Acoustical Associates*; lighting consultant: *Wheel Garon*; construction contractor: *Perini Corp.*; garage consultants: *Richard C. Rich & Associates*.

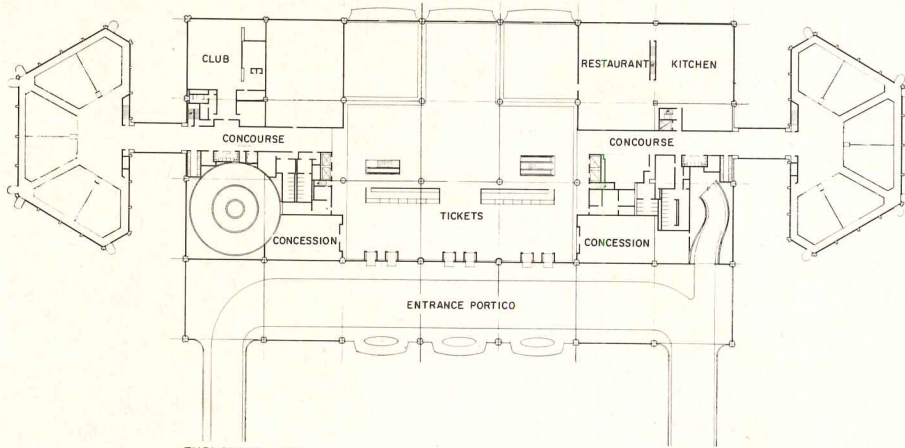


Balthazar Korab photos

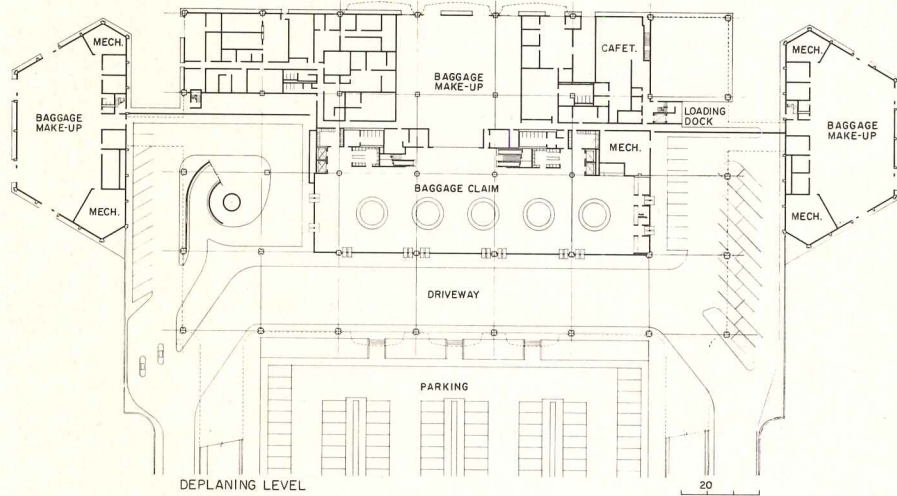




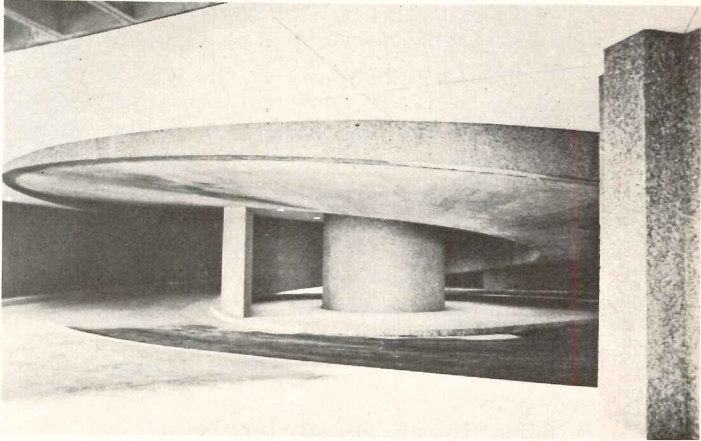
THIRD FLOOR LEVEL PARKING



ENPLANING LEVEL



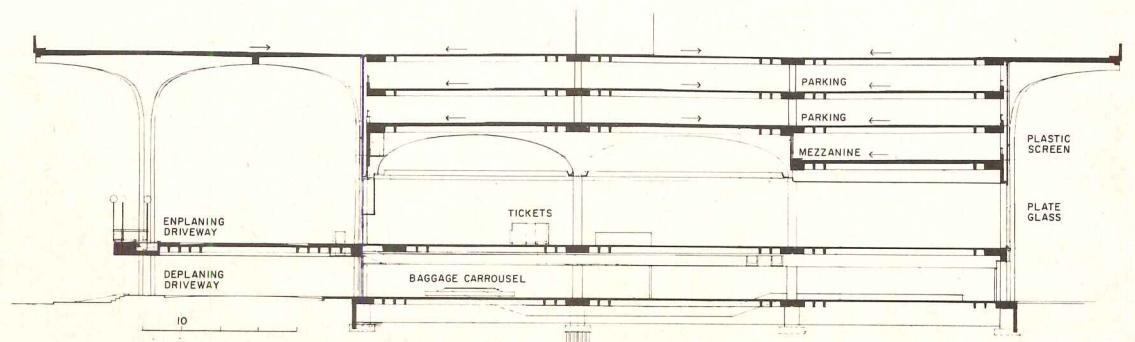
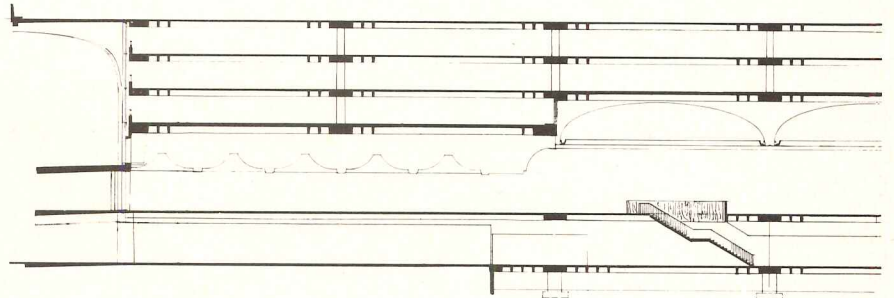
DEPLANING LEVEL



Although the main building is 484 ft long, 304 ft deep and 73 ft high, a sense of place and human scale is maintained through the use of arches and varied ceiling treatments so that the traveler experiences a succession of impressions from lofty grandeur to contained elegance. Post-tensioned concrete construction and the arched support system allowed columns to be 60 ft apart. At the second-level driveway, the glass and bronze curtain-wall permits a view of well-designed graphics and activities inside.

Recent commissions at the redevelopment of Logan include a three-story, 3,000-car central parking garage and the large north terminal building completed in 1967 by architects Perry, Dean & Stewart, then operating as a joint venture called Clifford Douglas Stewart Associates and Perry,

Shaw, Hepburn and Dean. The recently completed second level of finger piers at North Terminal was designed by Kubitz & Pepi and is illustrated on page 121. This same firm in association with Desmond & Lord is currently designing the new international terminal.



## BOAC'S NEW YORK TERMINAL

Nearing completion at New York's John F. Kennedy Airport is BOAC's \$44-million international unit terminal. The terminal was developed under direction of BOAC's general manager of properties K. J. Joyner by London-based architects Gollins Melvin Ward and Partners. Brian Mayes was project manager for the London firm and Daniel Remeta for the U.S. consulting engineering firm of Ammann and Whitney.

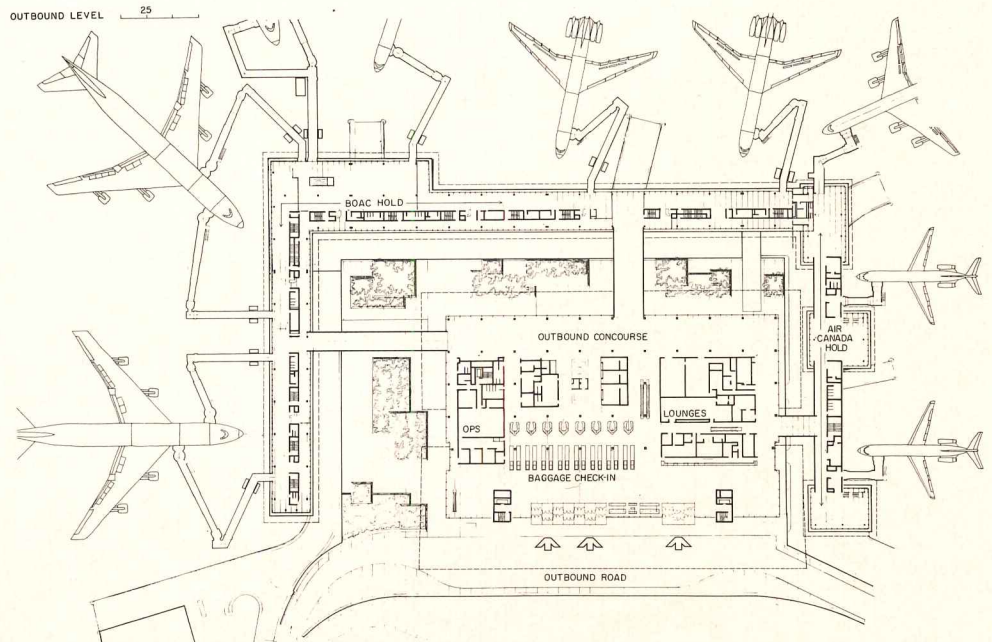
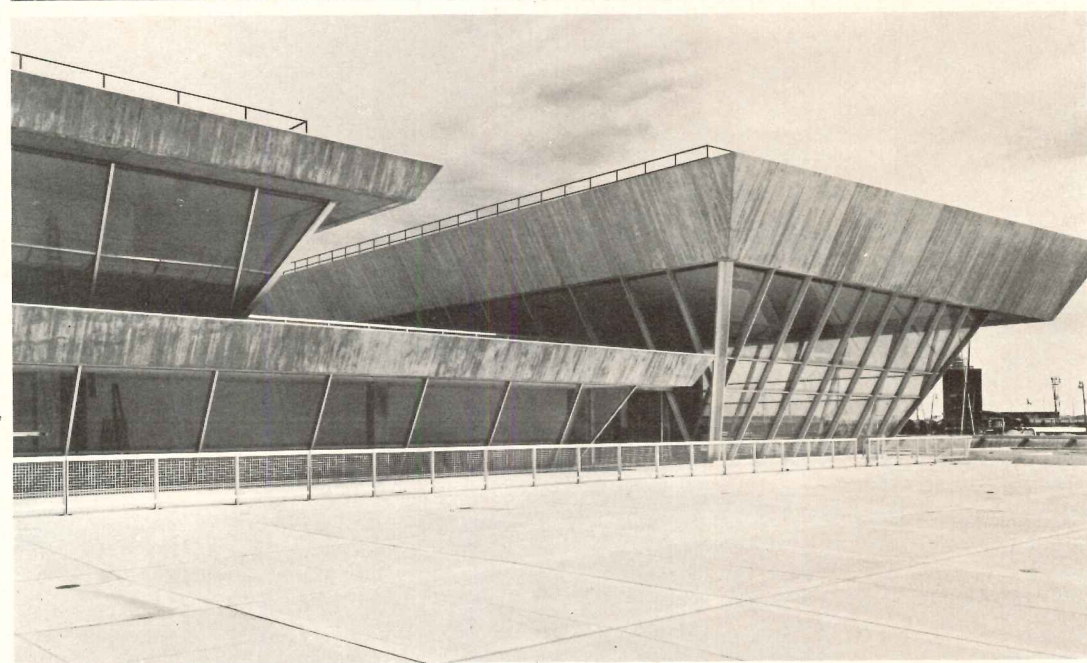
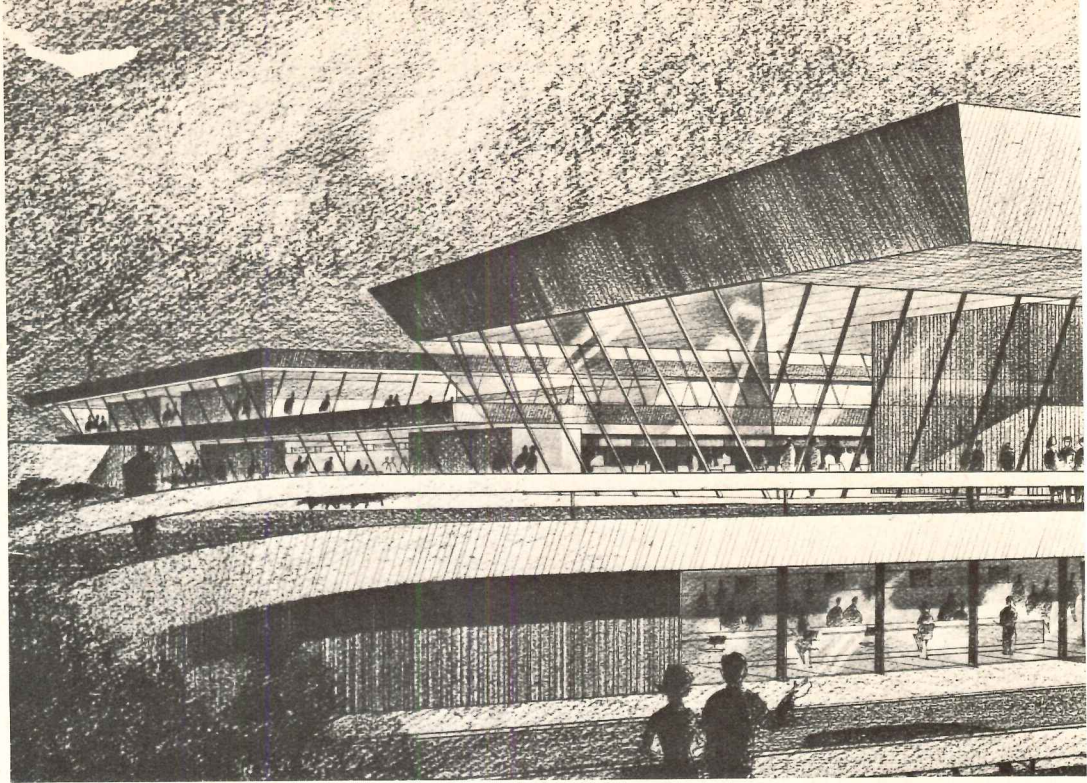
The terminal will remove all BOAC traffic from the congestion of the international arrivals building and will provide leased space to Air Canada, who are partners in the enterprise. This is the first terminal built by a foreign carrier in the United States. BOAC's associates, Qantas, South African Airways and Air Jamaica, will also use the terminal when it is in full service. The first departure from the 26-acre site at the north end of JFK was on June 30, and full service is expected to begin on completion of the terminal in September.

The three-tiered terminal building consists of a rectangular central area 420 ft by 315 ft paralleled on the northeast and east field sides by a service gallery and on the south by two levels of access roads. The gallery structures are separated from the central terminal by a 30-ft service road.

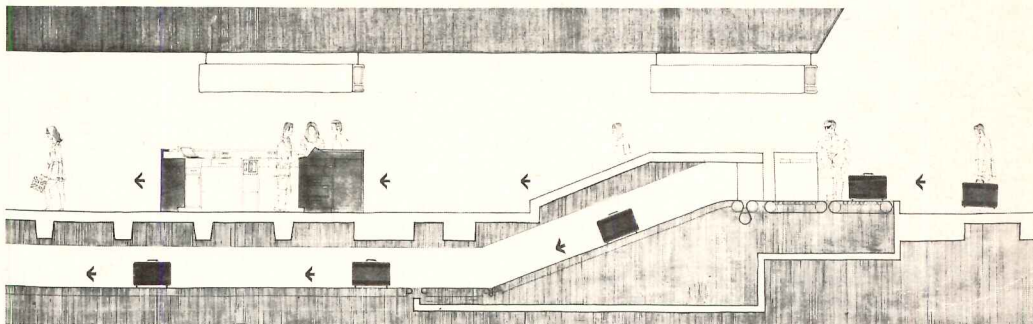
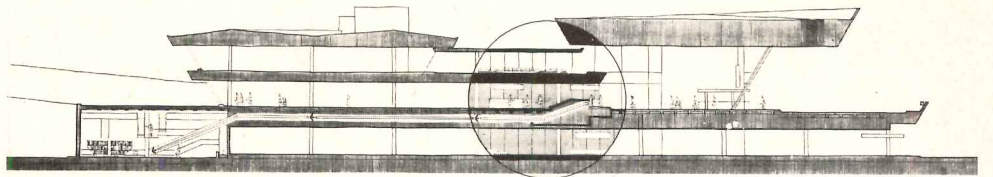
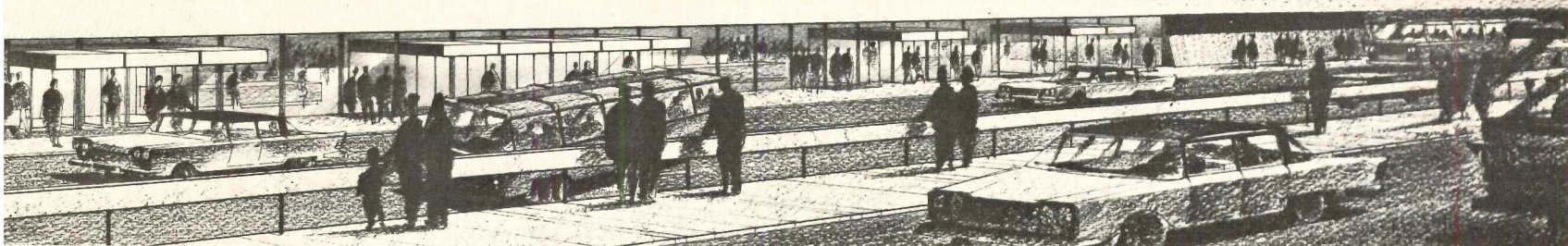
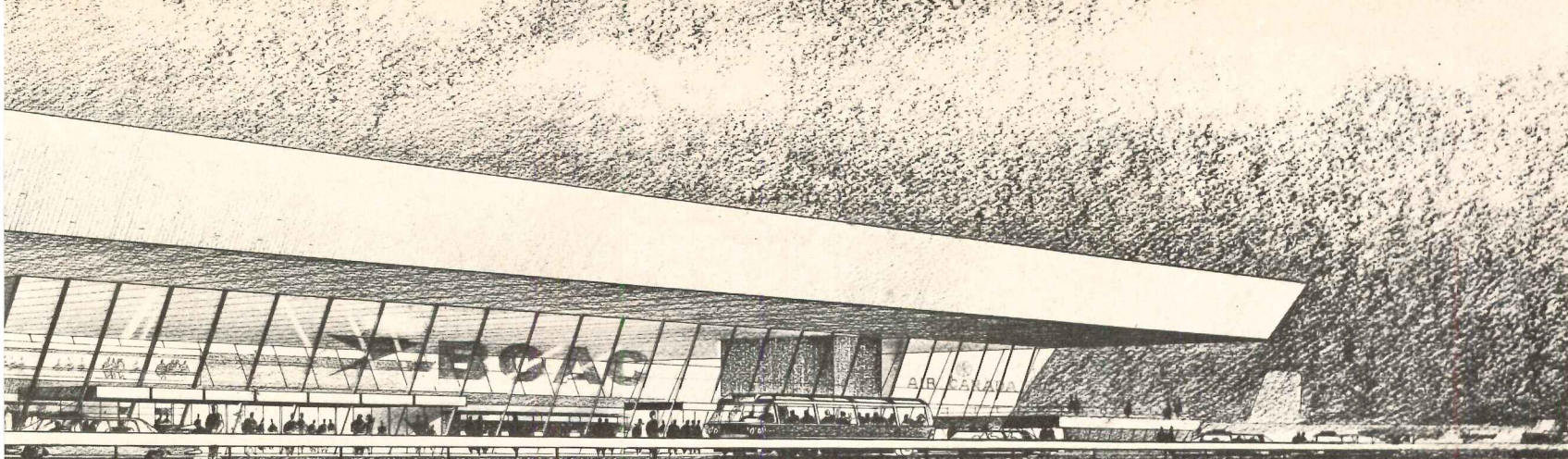
A major design consideration was the FAA requirement for taxiway visibility from the control tower. This imposed a severe height restriction of 60 ft above ground on the south and engendered the low profile design of loading galleries around the terminal. The design of the galleries further implemented the design objective of short walking distances by permitting close-in docking of aircraft around the terminal. The main building is planned on two levels, the upper for departures and the lower for arrivals. A mezzanine extends the full width of the outbound concourse and provides first-class lounges, cocktail bar and offices.

The check-in system pre-sorts passenger and baggage by flight number in a channeled flow-through arrangement. Baggage is transferred by 16 conveyors beneath the floor to a baggage hall at the lower level where it is mechanically sorted, loaded into containers and taken to the aircraft. Arriving passengers are required to clear health and immigration services at the juncture of passageways from galleries, claim their baggage from four carousels and proceed through customs inspection to the lower roadway for ground transportation.

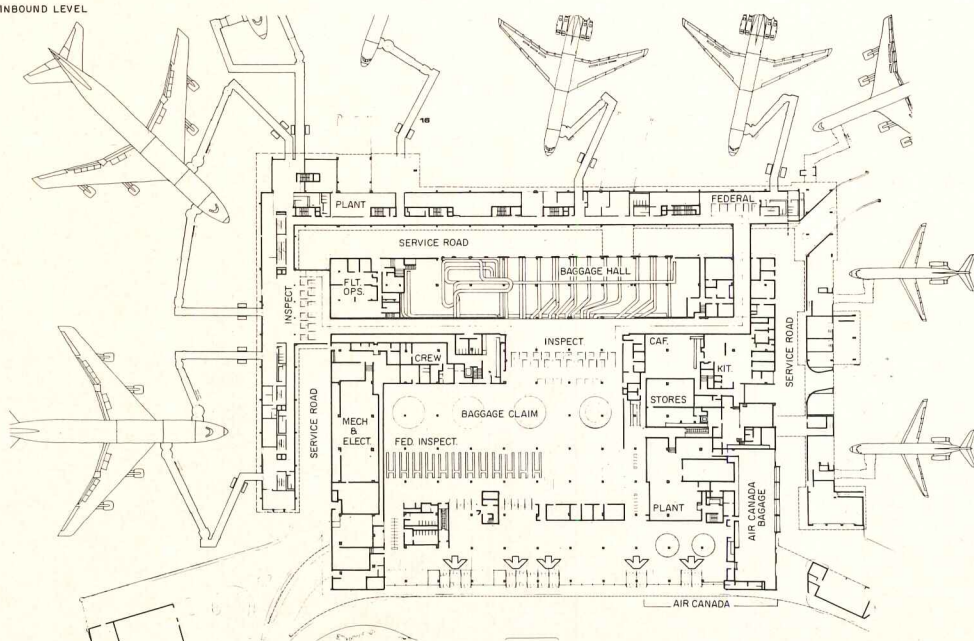
BOAC PASSENGER TERMINAL, John F. Kennedy International Airport, Queens, New York. Owner: *British Overseas Airways Corporation*; architects: *Gollins, Melvin, Ward & Partners*; mechanical & electrical engineers: *Burns & McDonnell*; consulting engineers: *Ammann & Whitney*; contractors: *Gilbane Building Company*.







INBOUND LEVEL



The architectural character of the building is derived from its straightforward plan. The in-sloping glass walls reduce sky glare and increase shading to relieve the air-conditioning load. The 20,000 square ft of glass in both clear and grey panes is a recently developed 15 mm float glass selected to withstand high wind pressures and the stress of the 60-degree inclination of aluminum mullions. Boardmarked concrete is the other exterior material and is carried to the interior supplemented by vinyl wall finishes and acoustic ceilings.

The high roof over the main outbound concourse is a steel truss spanning 200 ft between two concrete cores and cantilevers 60 ft on all sides.

## Landside/airside traffic: studies in directed motion

### TAMPA'S REMOTE SATELLITES

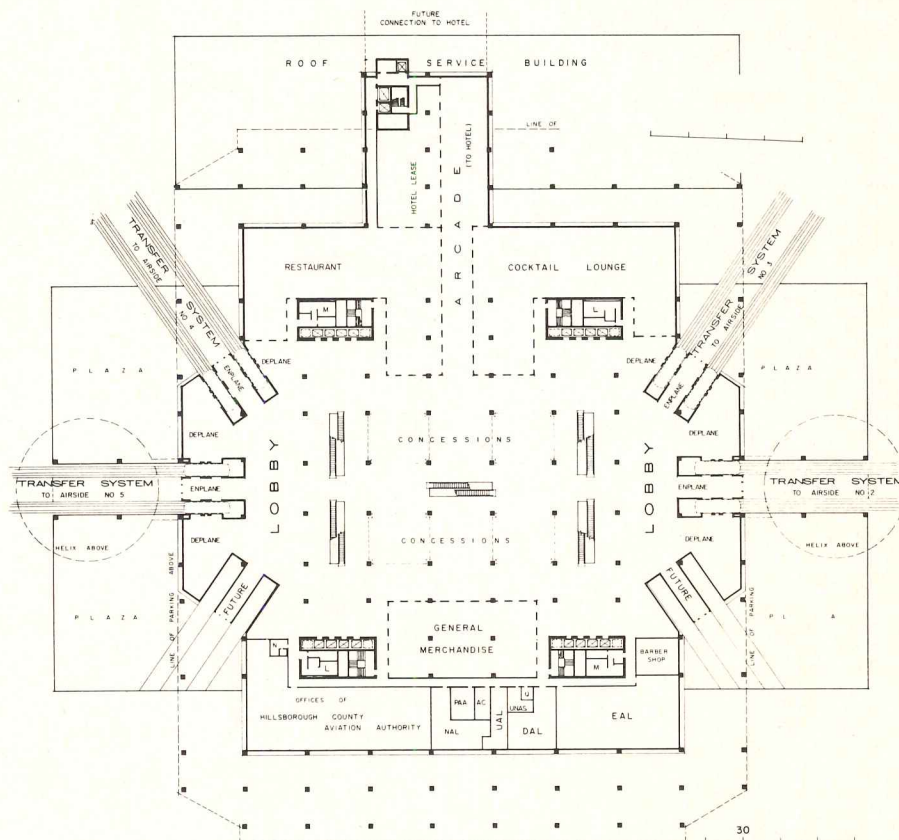
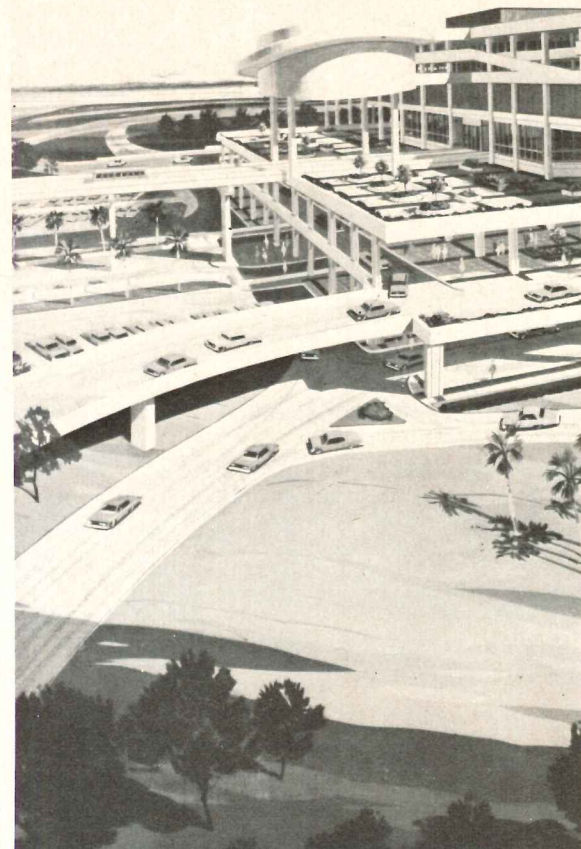
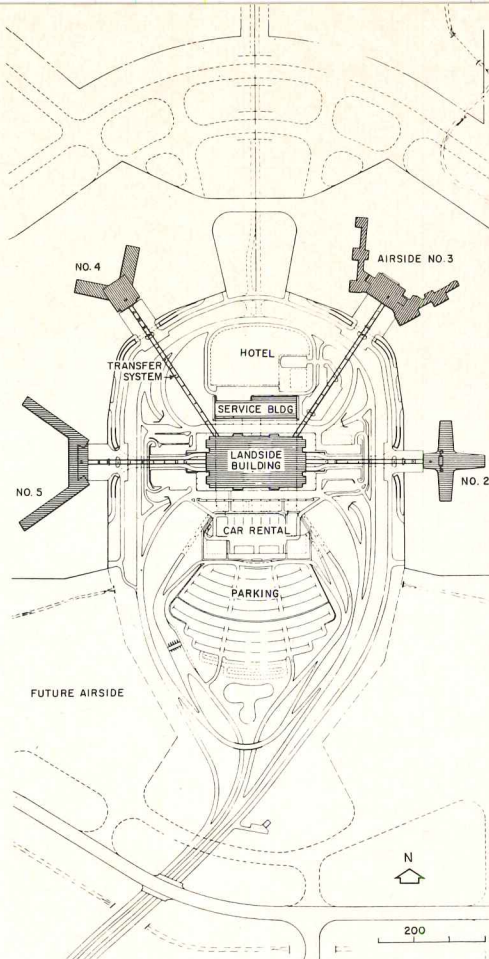
Mechanized transportation and the traffic-flow-control input of graphics and other consultants in conceptual phases of planning and design were enlisted at Tampa's International Airport to overcome distances deliberately extended in the interest of over-all airport efficiency. Designed around what is called the "landside/airside concept," the complex will consist of a central parking and commerce building from which radiate straight-line shuttle trestles with mechanical people-movers to remote satellite docking buildings. The approach roadways and multi-level passenger and service routes within the terminal area itself are thereby provided with ample room for improved circulation to an increased array of centrally located facilities—including a hotel.

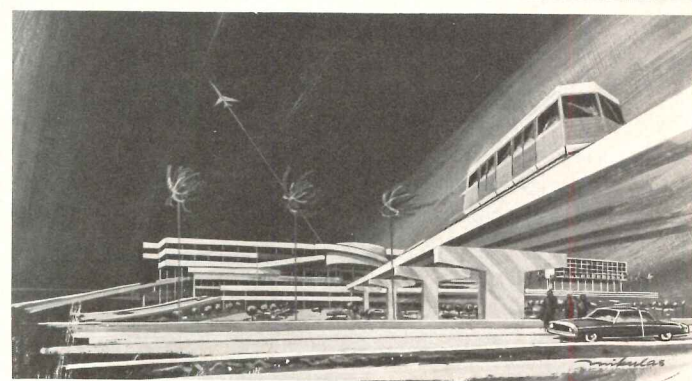
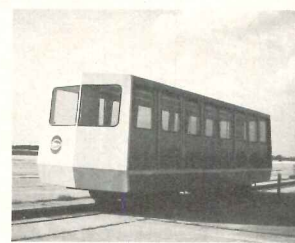
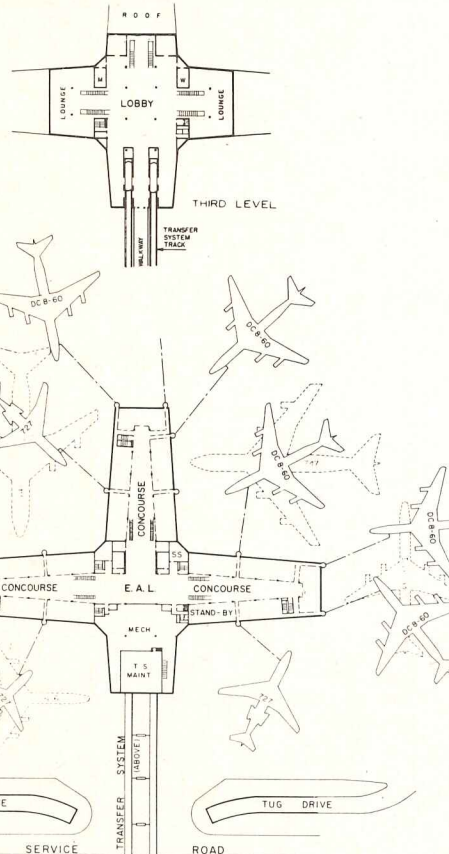
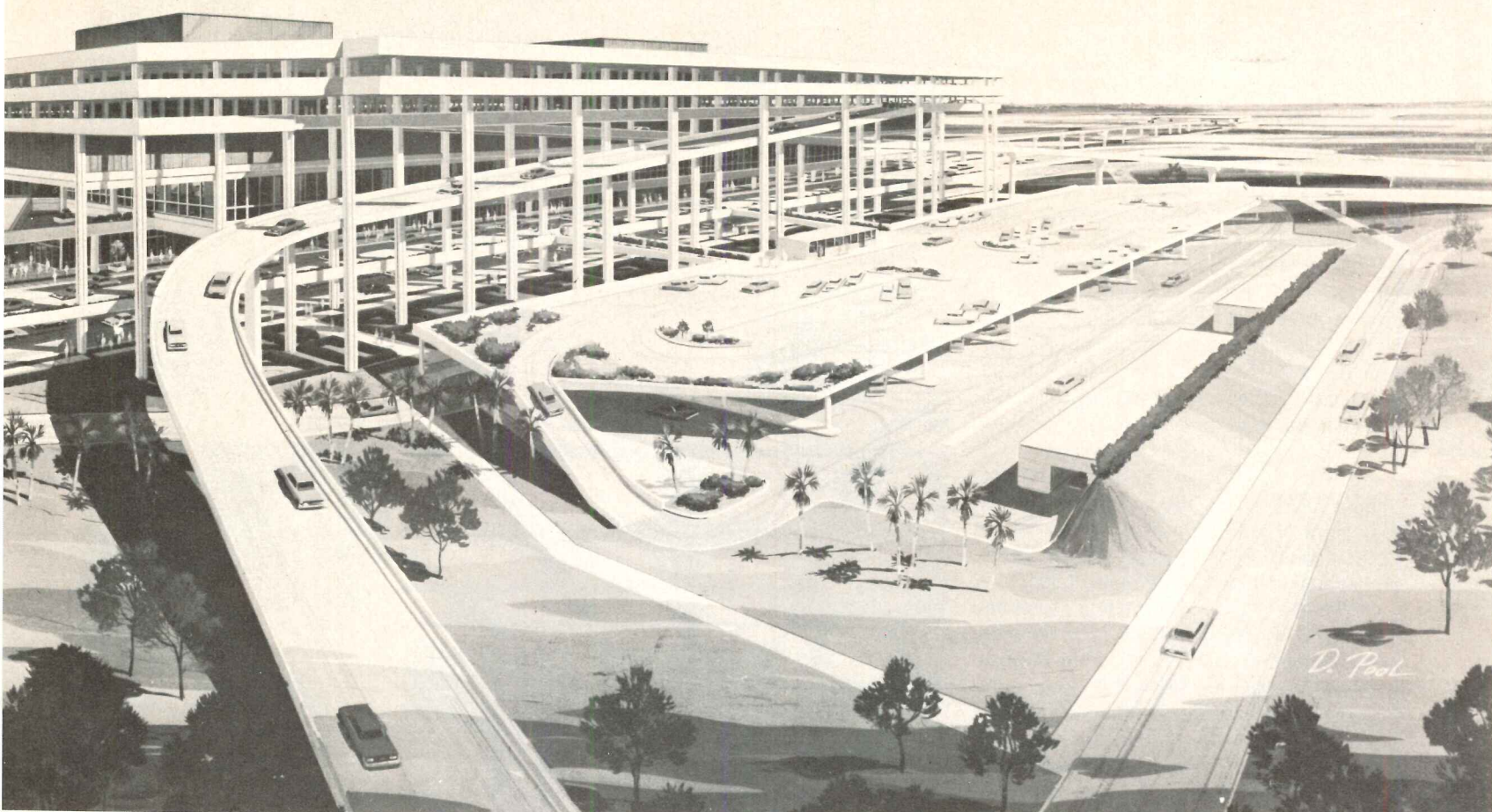
The \$30-million landside building provides 500,000 square feet on three levels for major terminal functions; bag-claim on the first level, ticketing on the second level, and transfer on the third level. Three structural levels above this provide 700,000 sq ft for automobile parking. Three future levels of parking may be added to provide a total of 4,600 spaces. Adjacent to the bag-claim level is a service building with mechanical equipment and storage facilities.

The four airside satellites (\$15 million) contain holding and loading areas. Airside 3 also has customs space. These buildings vary in configuration depending on the tenant airline requirements, and they are sufficiently removed into the apron space to be surrounded by as many docking points as may be required. This mode of increased capacity by distant loading is made possible by a real \$5-million commitment to the people-mover system. The cost of such a system will be largely offset by economies in adaptability of airside buildings while the long-term landside structure remains intact. The complex was designed to handle some 2,900,000 enplaned passengers per year for about nine airlines by 1975.

Jane Davis Doggett, who heads the New Canaan, Conn., firm of Architectural Graphics Associates, describes the possible design assistance input of the graphics specialist as an opportunity for testing the logic and appropriateness of traffic flow solutions rather than relying hopefully on the application of signs after the flow pattern is fixed. By being involved in schematic planning, she points out, the graphics specialists may point out trouble spots in the plans that can be readily corrected.

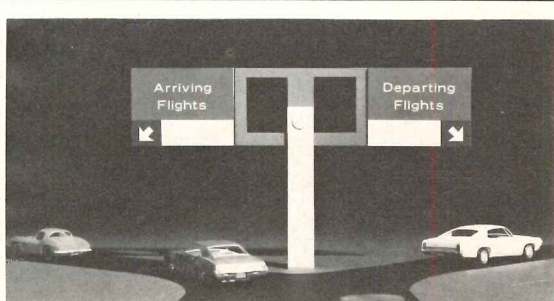
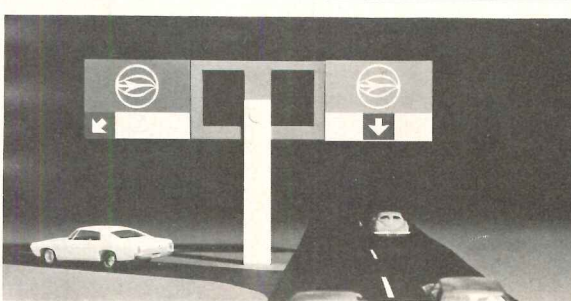
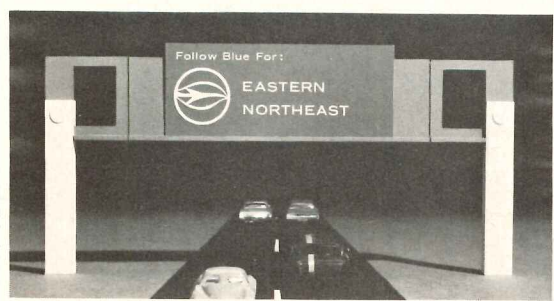
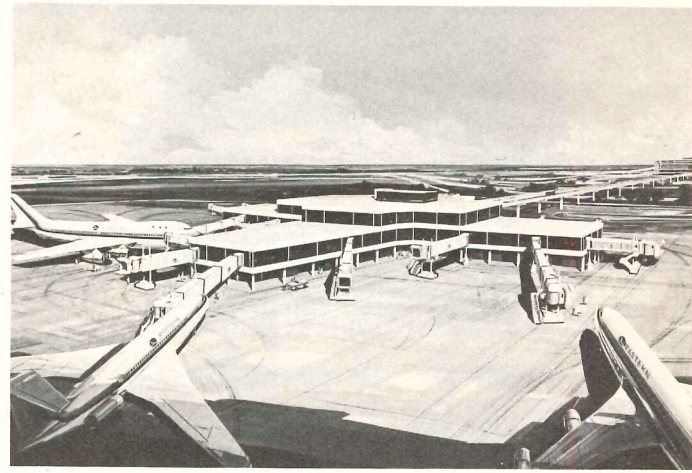
LANDSIDE/AIRSIDE TERMINAL COMPLEX, Tampa International Airport. Owner: Hillsborough County Aviation Authority; architects and engineers: Reynolds, Smith and Hills Architects-Engineers-Planners, Inc.; airport technical consultants: J. E. Greiner Co., Inc., and Leigh Fisher Associates; graphics: Architectural Graphics Associates, Inc.





Two transit vehicles (styled by Elliot Noyes for Westinghouse) are provided for each airside building, operating as shuttles on parallel tracks 30 ft apart and 1,000 ft long. The air-conditioned vehicles are rubber-tired, 36 by 10 by 9 ft, electric powered and computer driven. Each holds 100 to 125 people standing for the 30-second trip.

Arrival, departure and service routes for various airlines are sorted out and clarified for drivers of rapidly moving vehicles by a scientifically paced and color-coded series of signs that cue the traveler's decisions at key points along the way from the main gate to his particular destination in the complex, as in model photos below.



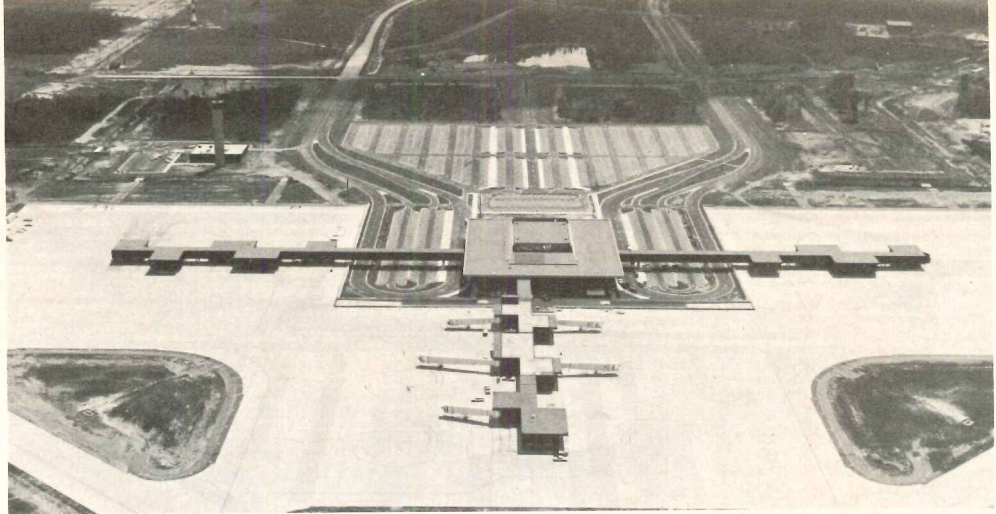
JACKSONVILLE PLANS FOR GROWTH

Jacksonville International is a medium-sized airport opened in 1968. It was designed as a low-budget (\$26.7 million for the entire airport including land) first phase of a pay-as-you-go expansion program toward a projected 895,000 enplaned passengers per year by 1975. This program is likely to be accelerated, if census figures showing a 155 per cent increase in Jacksonville's population in the past decade are an indicator.

The 4,600-acre site permits generous highway access to grade parking and three long fingers (600 ft. from lobby center to farthest gate) allow stepped increase from an initial 17 gates to an ultimate 36 gates.

The two-story, \$7 million terminal building is recessed below apron level to allow straight-through access from the upper-level enplaning lobby to gate concourses. The flight departure roadway runs along the north side of the terminal with 4-door access from curbside to ticket lobby which occupies about a third of the lower level. Baggage is returned for claim on the ground floor at the south side along which the deplaning drive proceeds to the highway system. A tug-drive loop penetrates the first floor for baggage and service vehicles' access to pick-up and claim areas.

JACKSONVILLE INTERNATIONAL AIRPORT, Duval County, Florida. Owner: Jacksonville Port Authority; architects and engineers: Reynolds, Smith & Hills; graphics: Architectural Graphics Associates, Inc.; contractor: The Auchter Company; airport consultant: Landrum & Brown.



Aero-Pic



Alexandre Georges



Alexandre Georges



The graphics for Jacksonville Airport (photos at right and road signs left) were precursor to the more elaborate Tampa system previously described. They have demonstrated the effectiveness of the use of symbols and colors in combination with simplified verbal displays as a mode of rapid communication. The effectiveness of the symbol idea is further extended in the ball symbols at bottom left, which were designed for Shreveport Airport as a color-coded symbol with the stripes swirled upward in blue for departure directions and downward in earth colors for arrival and ground facilities.

Architectural Graphics Associates' Jacksonville project coordinator, Dorothy Jackson, points out that the combination of colors and symbols in any airport must be used in a controlled hierarchy so that color-blind people can distinguish the differences in tone, and normally-sighted people will not be confused by use of too many colors for functional separations. The concept of advance indexing of airlines by color permits the symbols to function independently of verbal messages at key points.

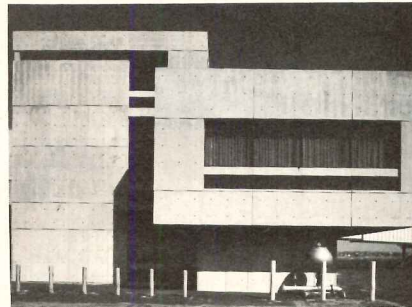
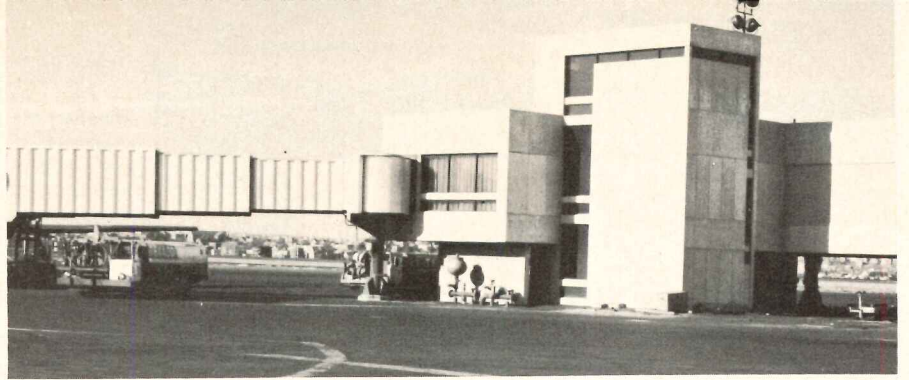


Alexandre Georges

## Other design work: a future for everyone

### ADDITIONS AND INVENTIONS

The variety of work involved in airport design and construction is endless. The exhibits on this and the following page are a sampling of such work involving conventional architectural commissions such as the pier-additions shown at right, the application of prefabricated structural tubes to a low-cost flexible docking structure (below), hangars, over-water jetports and automatic people-moving and baggage handling systems. These by no means exhaust the catalog of design work and invention. Airport interiors, for example as shown on page 98, graphics, cargo facilities and the design of special interiors for aircraft are other commissions that architects have found interesting and rewarding. The mechanized garage, page 141, is still another innovation that has planning and architectural implications for airports.



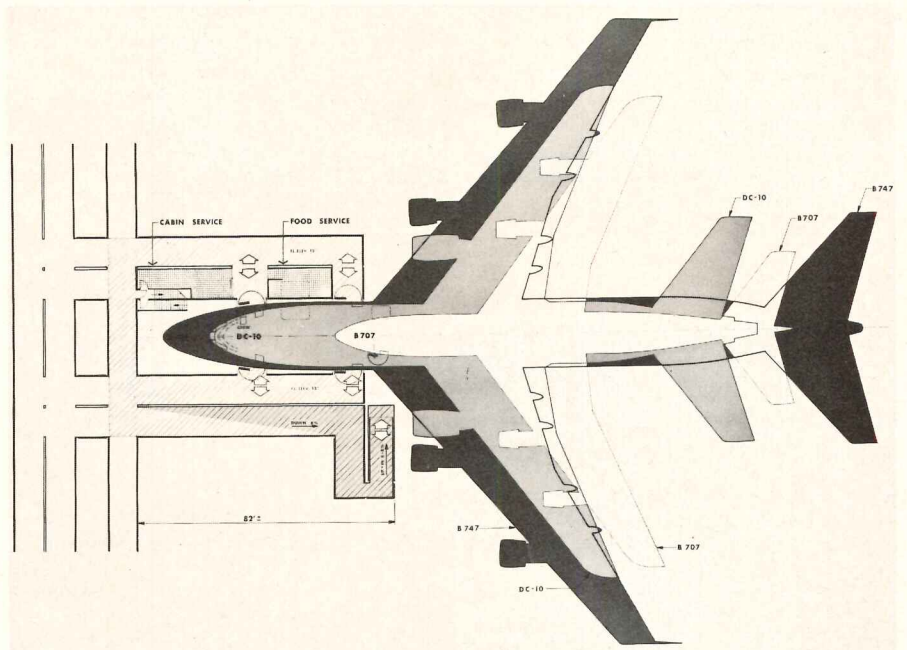
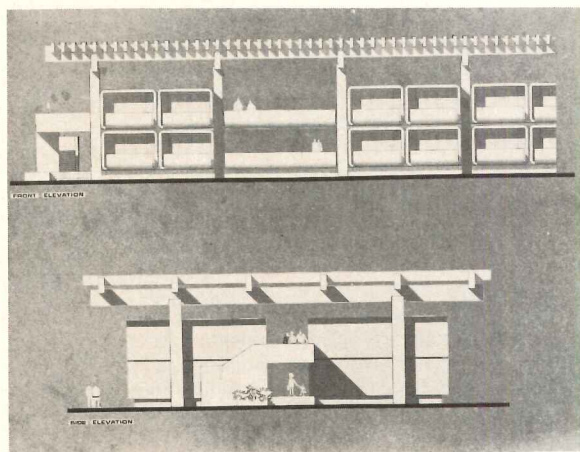
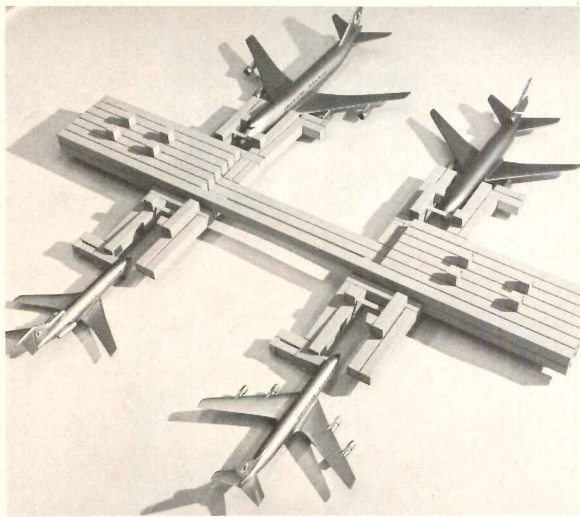
**Additions to piers B and C** at Logan Airport North Terminal (see plan, page 124) consist of full second-level concourses and holding areas with snack bars and cocktail lounge. Kubitiz & Pepi were the architects. This same firm, in association with Desmond and Lord, is

currently designing a new international terminal for construction at Logan in 1971.

The new construction at piers B and C includes a 480-ft. long hold room, built at right angles to the end of each pier. This construction provides a total of 24 boarding gate posi-

tions on the upper level.

These pier additions were constructed with independent foundations over the original piers so that the lower piers remained in continuous operation. Telescoping jetways at upper level gates protect passengers from weather.



**Glass-fiber-wound tubes** constructed on giant spandrels and structurally complete with honeycomb insulation provide the modular elements of a docking facility designed by Simon D. Waitzman when he was the architect-member of American Airlines' corporate planning group.

Development of the structural tube became a sort of breakthrough program in

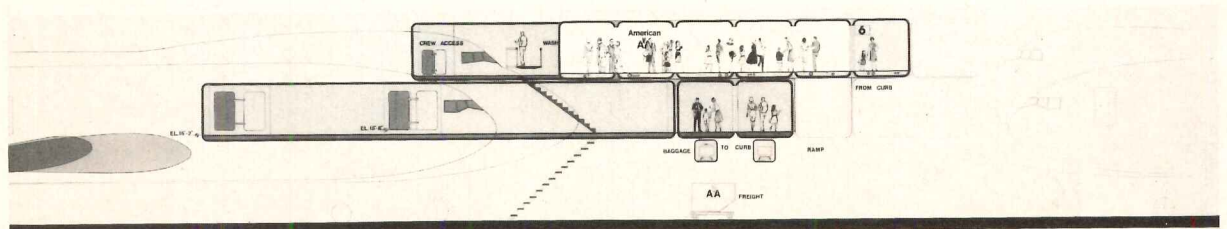
which manufacturers were invited to make proposals based on performance specifications.

The nose-dock itself consists of four tubes spaced at the 16-ft. level to accommodate the doors of the 747 and DC 10. The fourth tube slopes down to accommodate the 727 and DC 8 class of aircraft. A fifth tube over the passenger loading tubes provides access for the crew and windshield

washer operations.

The low-cost structural system can be readily adapted to changing needs.

Waitzman, now vice president for airport planning of John Carl Warnecke and Associates, is incorporating the tube module into that firm's design for a resort motel called Lemon Tree Bay in St. Croix, Virgin Islands. Elevations of the motel are at left.

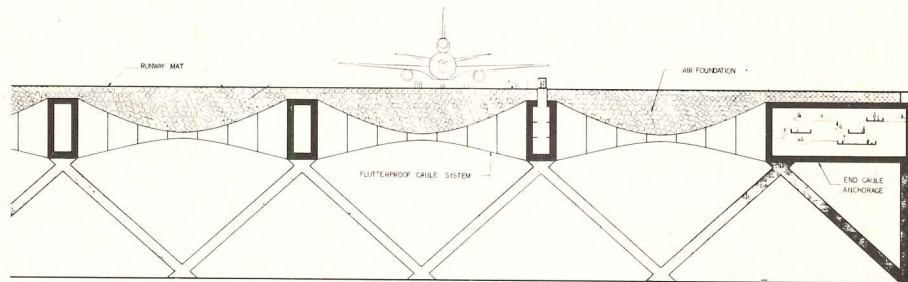
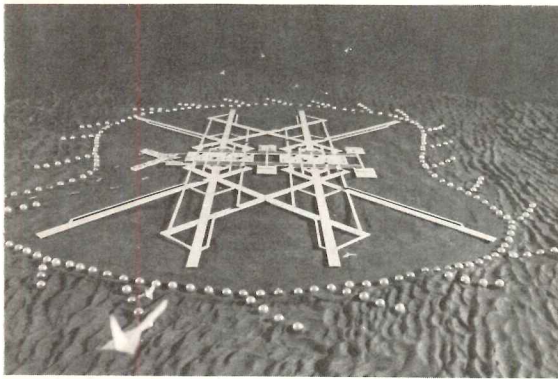
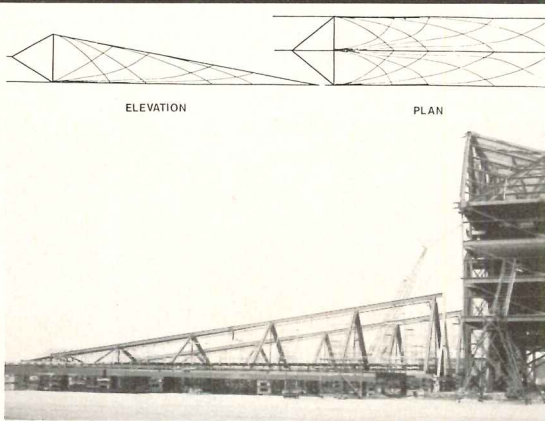
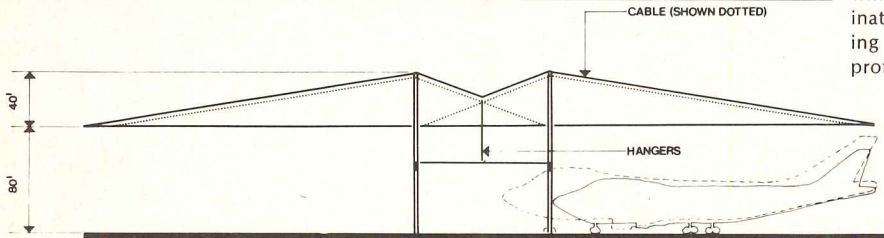
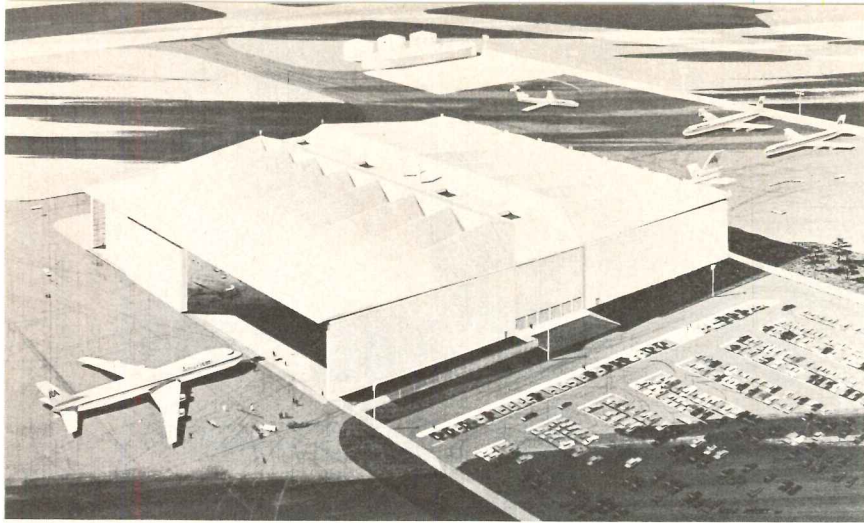


AIRPORTS

The giant prototype hangar for super-planes (left), soon to be completed for American Airlines at San Francisco, was designed by the joint venture of Lev Zetlin Associates with architects Conklin and Rossant. The innovative roof of the hangar is a cable-supported series of hyperbolic shapes which cantilever 230 ft. out from a central spine of truss structure. The roof folds, are formed of steel deck which is stressed and becomes a primary structural element in which the cable supports eliminate heavier truss work. Testing of the structural unit and profile of the cable support are

shown at left. The two buildings shown immediately below represent other support facilities now under design. The Air Canada hangar designed by Giffels Associates is under construction at the Toronto International Airport. The hangar will have two column-free bays, each 270 by 280 ft. with 89-ft. clear height. Total height of the structure is 120 ft.

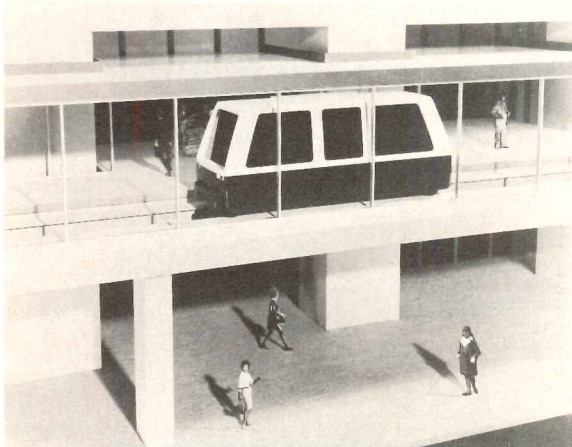
The Canadian Pacific Airlines operations complex (designed by Phillips, Barrett, Hillier, Jones & Partners) has 870,000 square ft. of floor area including one of the largest hangars in Canada.



Over-water jetports are a favorite speculation in many congested, land-poor areas. While few actual design commissions have emerged, feasibility studies and proposals have been commissioned in

New York, Cleveland, Chicago and elsewhere. Shown at left is an offshore floating airport researched and documented by architects Charles D. Dallichio II and Jan A. Dabrowski of New York. The structure

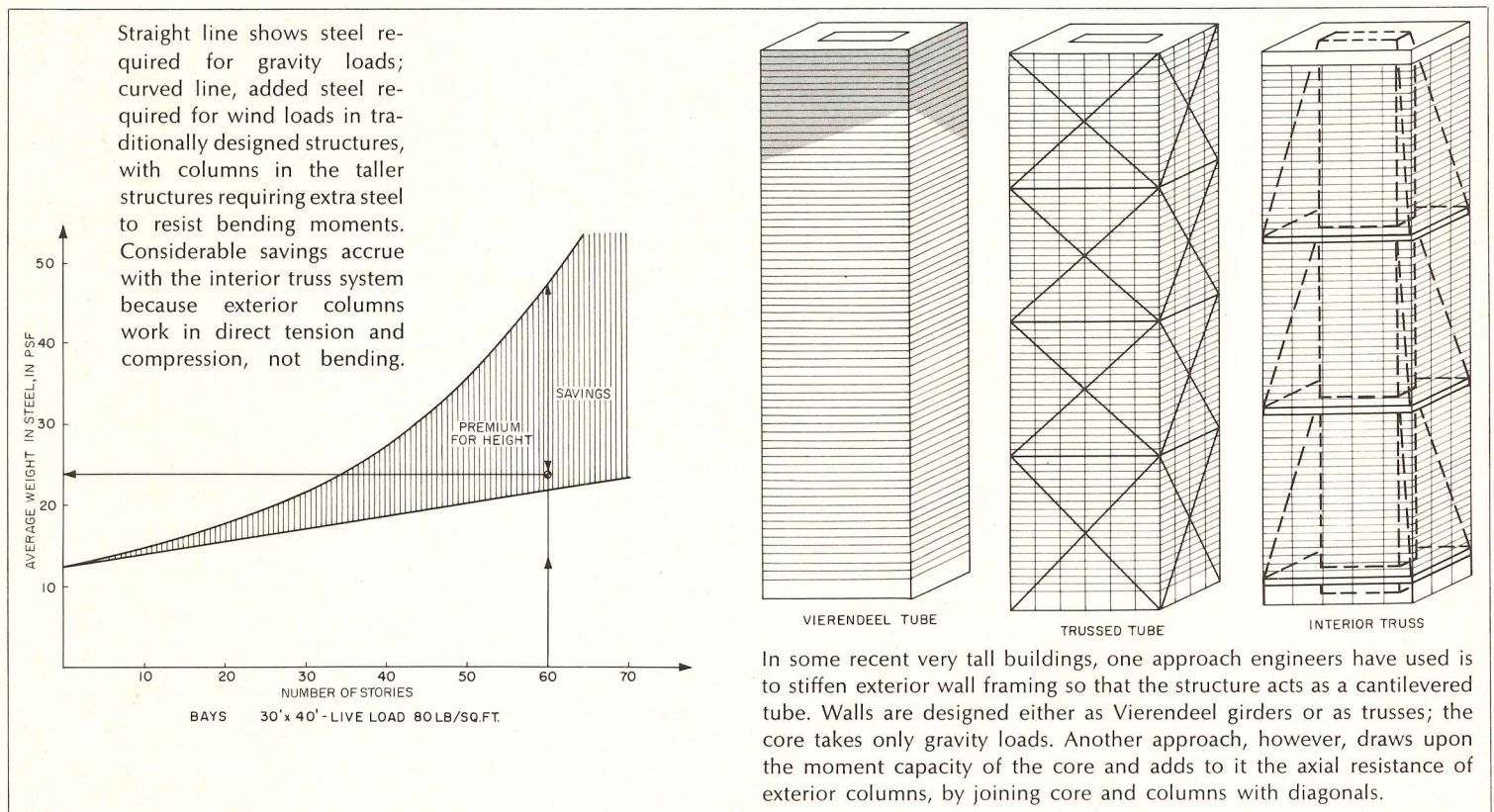
shown above is one of the series of systems for over-water construction and urban skyports developed and copyrighted by Environ-space Research and Technology Corporation, affiliate of Lev Zetlin.



Transit systems for people and baggage are under various phases of development. Automated baggage systems apparently must wait for more centralized financing than is available today. People movers, however, are considered part of the general airport facility and several are in use or firmly on order. The Dashaveyor system (far left) is proposed for Dallas/Ft. Worth. The Jetrail (first left) is in service for Braniff at Love Field near Dallas. Mobile lounges for plane loading are also available.

## Optimizing structural design in very tall buildings

*How one engineering firm approaches the design of high-rise towers, producing big savings by using new, sophisticated techniques to resist wind loads*



The structural design philosophy which the consulting engineering firm of Severud, Perrone, Sturm, Conlin, Bandel has evolved for the higher of the high-rise buildings could be summed up in this statement: Find ways to make all of the various structural elements work to their maximum capacity, consistent with practical construction methods; further, to utilize non-structural elements (such as mass) to help reduce movement caused by wind.

Savings in steel tonnage—and cost—can be dramatic in tall, high-rise buildings (40-50 stories and over) if certain design techniques are employed to utilize the full capacities of the structural elements. For example, with conventional wind-bracing techniques, the amount of steel required to keep drift (sway) within tolerable limits can be more than that required to withstand gravity loads. But new approaches being used by the Severud organization enable them to cut the steel tonnage back to a

little more than required just for gravity loads. The savings in steel tonnage can amount to several millions of dollars in a 60-story building.

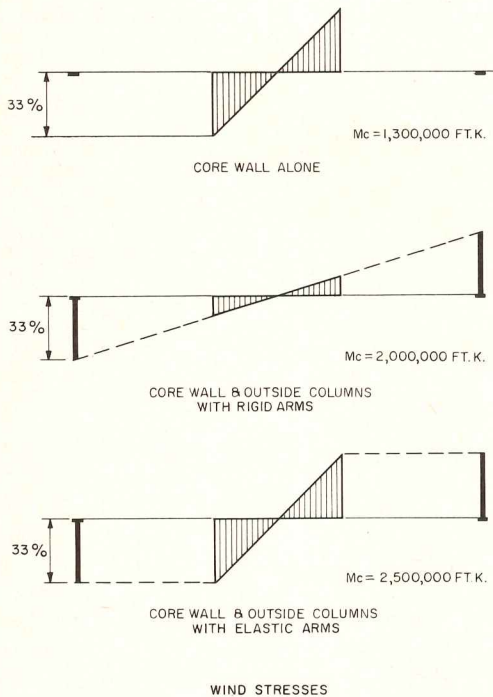
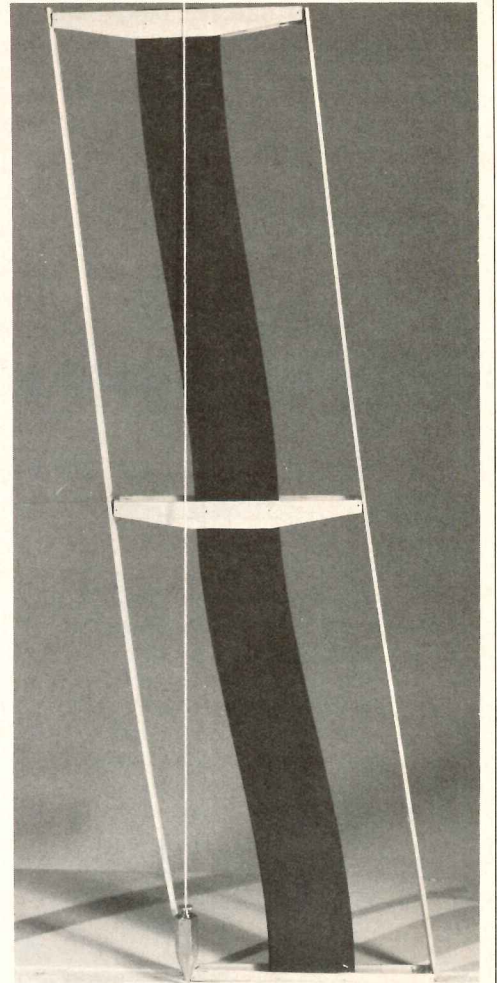
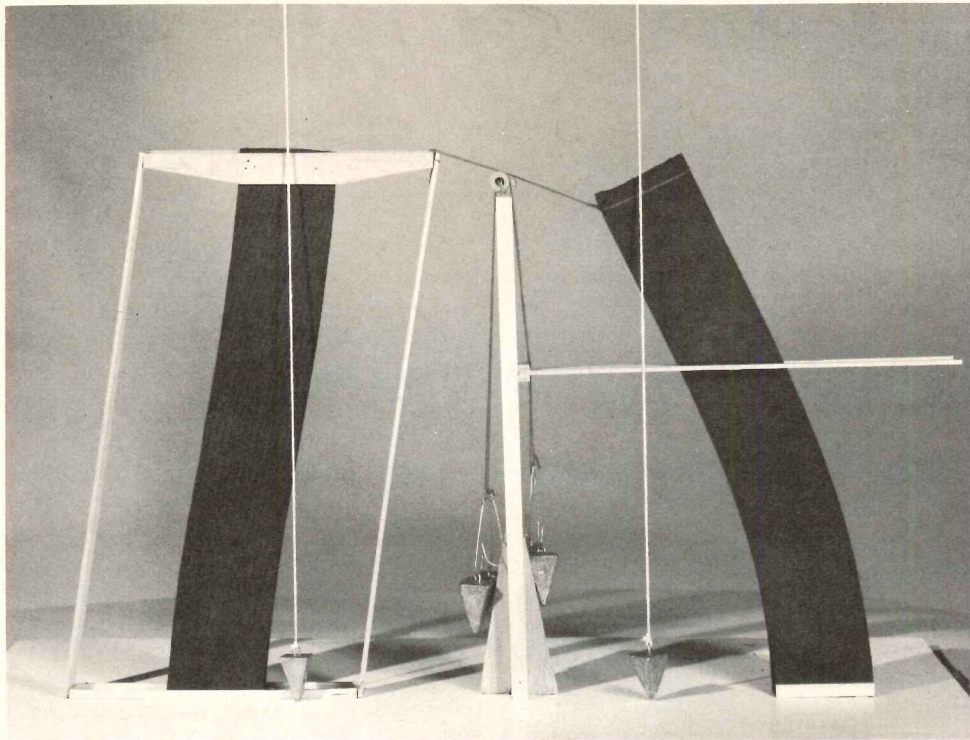
A second aspect to be considered is that the sheer size of these buildings means any savings that can be achieved in floor-supporting elements such as beams and girders can, in total, produce significant cost reductions. With plastic design, weight reductions for beams and girders can be on the order of 35 per cent or more. Of course, connections that provide structural continuity are more expensive than those for simply-supported members. However, the savings can be very substantial, particularly if some ingenuity is applied to the design of moment connections.

**New approaches to wind bracing necessary to make high high-rise buildings practical**  
Conventionally, tall buildings have been braced against wind by providing trussed

bracing at the core or around stairwells, or concrete shear walls at these locations, or at other convenient plan locations such as end walls, or party walls in apartment buildings.

But when buildings are higher than 500 ft or so, the core, if kept to a size consistent with elevating and mechanical requirements, does not have sufficient stiffness to keep drift caused by wind down to reasonable limits. Adding to the problem is the fact that these tall buildings are also slender, at least in one direction. While the buildings themselves might be stable enough, the lateral movement might be so large as to cause cracking of partitions and windows, and even perhaps to cause unpleasant psychological reactions amongst the building occupants.

If the core is not sufficient for wind load, then in long-span structures, such as present-day office buildings, the designer has to turn to the exterior framing to get stiffness. The approach engineers used in the past to achieve this was to design columns



Photos show how the structure works in which a moment-resisting core is hinge-connected to exterior columns. The efficacy of the system is demonstrated in the upper-left photo in which both models have the same lateral load applied. The unrestrained core deflects much more than the "tied" core (horizontal piece is only a guide; core is of sponge rub-

ber). Note that there is no bending in the columns. The columns keep the core from rotating at the top, causing it to bend as shown. The photo above shows the behavior of such a structure with two ties. The drawing at left shows how the moment capacity of the core and engaged columns is nearly twice that of the core alone. The assumption made

in the drawings is that the capacity available in the columns for wind load is 33 per cent of that for gravity load. It can be seen in the middle diagram that when the exterior columns are rigidly connected to the core, the usable moment-resisting capacity of the core is reduced considerably from the situation where the core is hinge-connected to the columns.

and girders as rigid frames (wind bents). But while the building had the desired stiffness, the structural design was disadvantageous in that big bending moments were thrown into columns, particularly in office buildings which required large column-free areas between the outside wall and the core. Thus the columns became huge and steel tonnage could reach an amount as high as 60-65 lb per sq ft.

More recently, structural engineers conceived the idea of designing very tall structures so that they behave like hollow-tube cantilevers in resisting wind forces. The structural framing is made stiff in the plane of the walls to take wind loads, while the core is designed only for gravity load. Wind blowing perpendicular to one side of the building is transmitted via stiff floors acting

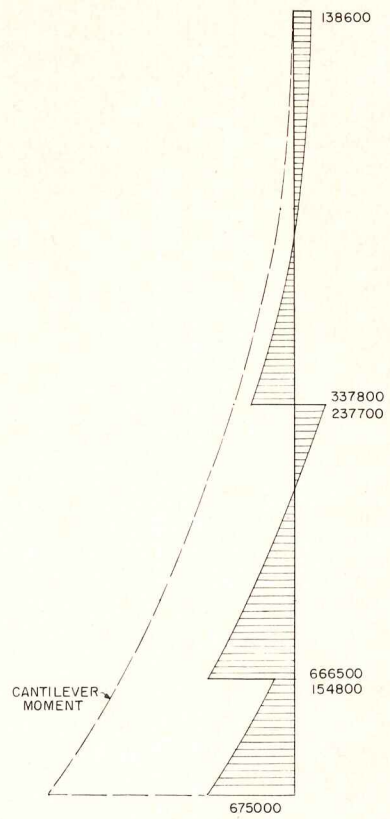
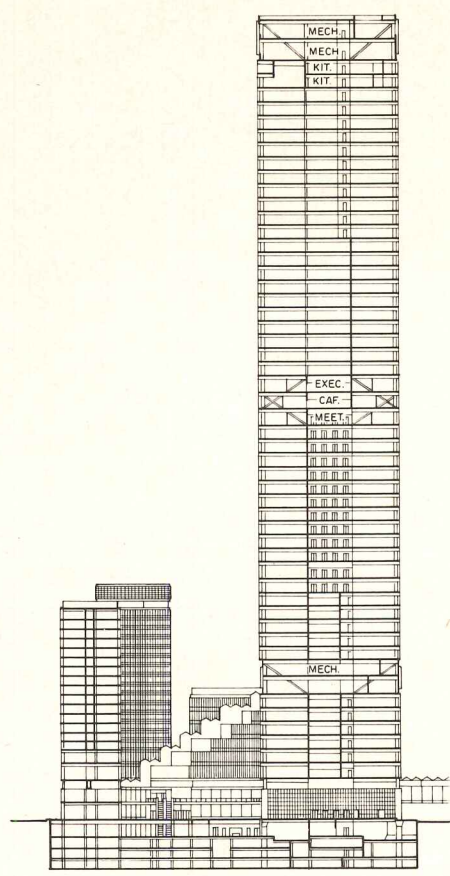
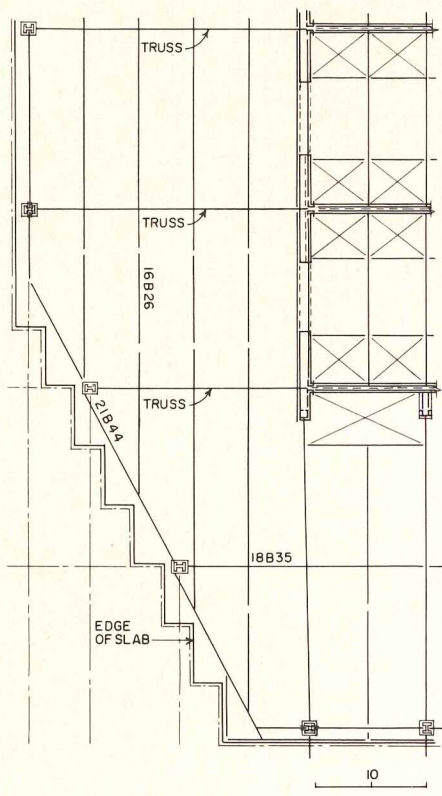
as diaphragms to the two walls parallel to the wind which resist the load in shear. In buildings finished to date, the exterior walls have been made stiff by one of two methods: 1) designing the exterior framing as a Vierendeel girder, or 2) designing the exterior wall as a truss with diagonal bracing. The advantage of the first is that the exterior wall is rectilinear, and more familiar esthetically; its disadvantage is that it takes more steel than the second approach because local bending is induced in the members. The big advantage of the second approach is its structural efficiency with wind forces being resolved mainly by tensile and compressive forces; the disadvantage, if it is so to be considered, is that the architect of necessity must work with diagonal elements in the design of his exterior wall.

Recently a third approach has emerged. Severud is employing it in the 51-story I.D.S. Center tower in Minneapolis, designed by architects Philip Johnson and John Burgee. This approach draws on the inherent, but in other approaches sometimes latent, strengths of both the core and the exterior framing, but it circumvents inefficiencies inherent with wind bents.

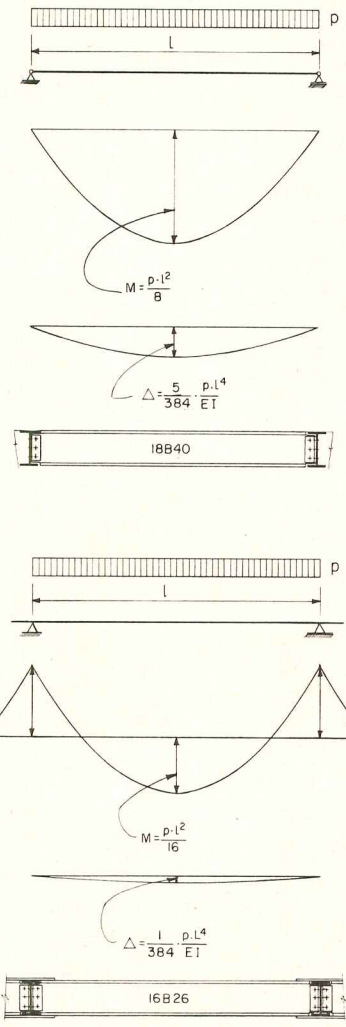
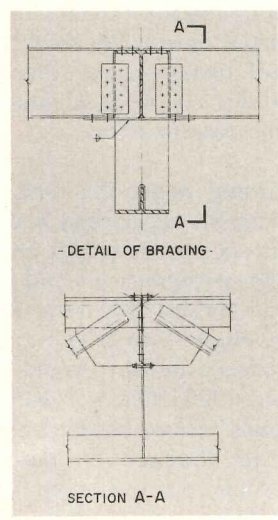
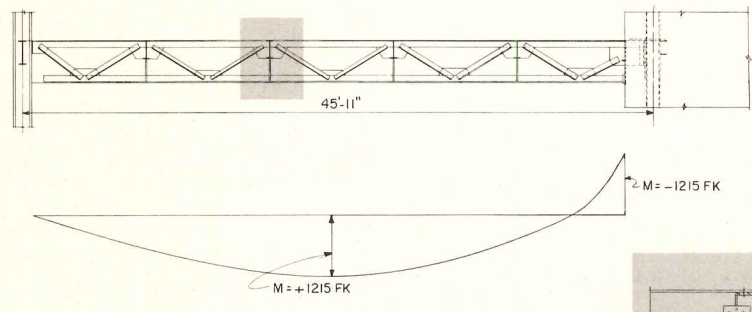
Severud partner Hannskarl Bandel points out that inasmuch as codes allow stresses in columns to be increased by 33 per cent over those permitted for gravity loads to accommodate wind load, the design approach should use this reserve capacity as efficiently as possible. Furthermore, he says, the core also should be made to work as a wind-resisting element.

The approach, as applied in the I.D.S.



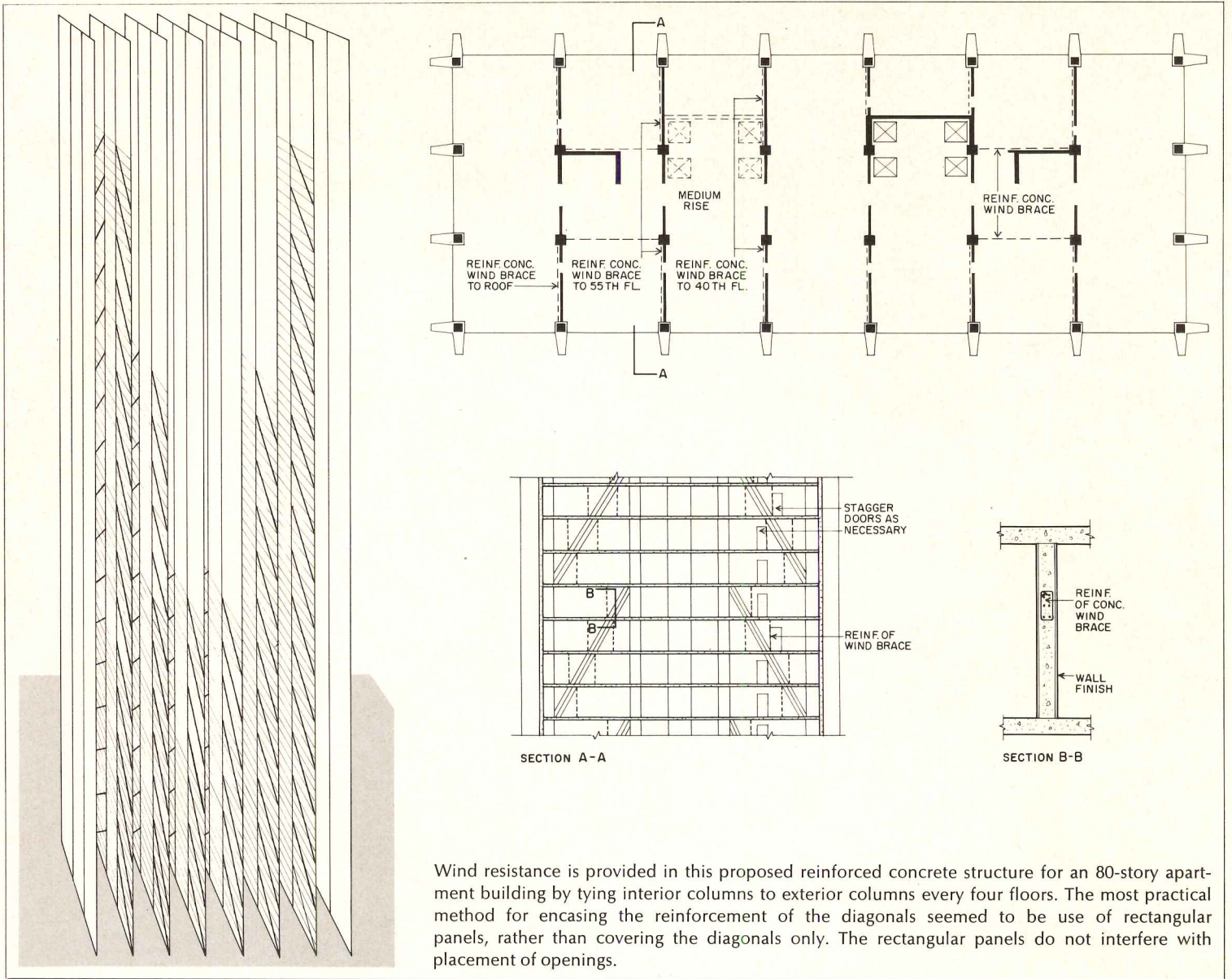


CORE-WALL MOMENTS BRACING TRUSSES AT 9TH, 30TH FLOORS AND ROOF



The 51-story I.D.S. tower in Minneapolis designed by the architectural firm of Philip Johnson and John Burgee utilizes interior trusses at mechanical floors to tie the core to exterior columns. Core-wall moments induced by wind are shown in the diagram above at far right. The structural advantage of designing filler beams with continuity is shown in the drawings, bottom, far right—lesser

moment and lesser deflection. A suggested moment connection between filler beams and truss is shown in the gray-toned details. The trussed girders are, of course, fixed rigidly to the core, and are simply supported at exterior columns, reducing the bending moment caused by gravity load. The weight of the steel in the structure is a surprisingly low 17 pounds per square foot.



Wind resistance is provided in this proposed reinforced concrete structure for an 80-story apartment building by tying interior columns to exterior columns every four floors. The most practical method for encasing the reinforcement of the diagonals seemed to be use of rectangular panels, rather than covering the diagonals only. The rectangular panels do not interfere with placement of openings.

building, and in others the Severud firm has under design, is basically this:

The core is made a moment-resisting element by being designed as trussed framing, concrete shear walls, or a composite of the two. The core is connected to exterior columns at two or three levels in the building by means of diagonal trussing (usually where there are mechanical floors, computer rooms, kitchens, etc., where diagonals will not interfere with space usage). These trusses are connected "elastically" to exterior columns; in other words the connections effectively are hinges. The reason for this is to have the core engage the exterior columns, but not throw any bending moment into them when the structure is loaded by wind. The behavior of the system is best illustrated by looking at the drawings and diagrams on page 135.

The core by itself (assuming no surrounding structure) if loaded laterally would deform as a free cantilever. But when the core engages the exterior columns it is no longer free to move in this manner. The trussed framing tries to rotate with the core, but it cannot do so because it is restrained by the exterior columns. The columns neutralize the rotational force by a compressive reaction in the set of columns on the lee-

ward side of the building and by a tensile reaction on the windward side.

An ancillary advantage of the interconnection between interior trussing and exterior columns is that the tendency for differential elongation caused either by temperature effects or creep and shrinkage can be largely equalized between outer columns and interior cores—the diagonal bracing between vertical members does not allow free deformations.

#### Cutting down the cost of the structural elements supporting floors

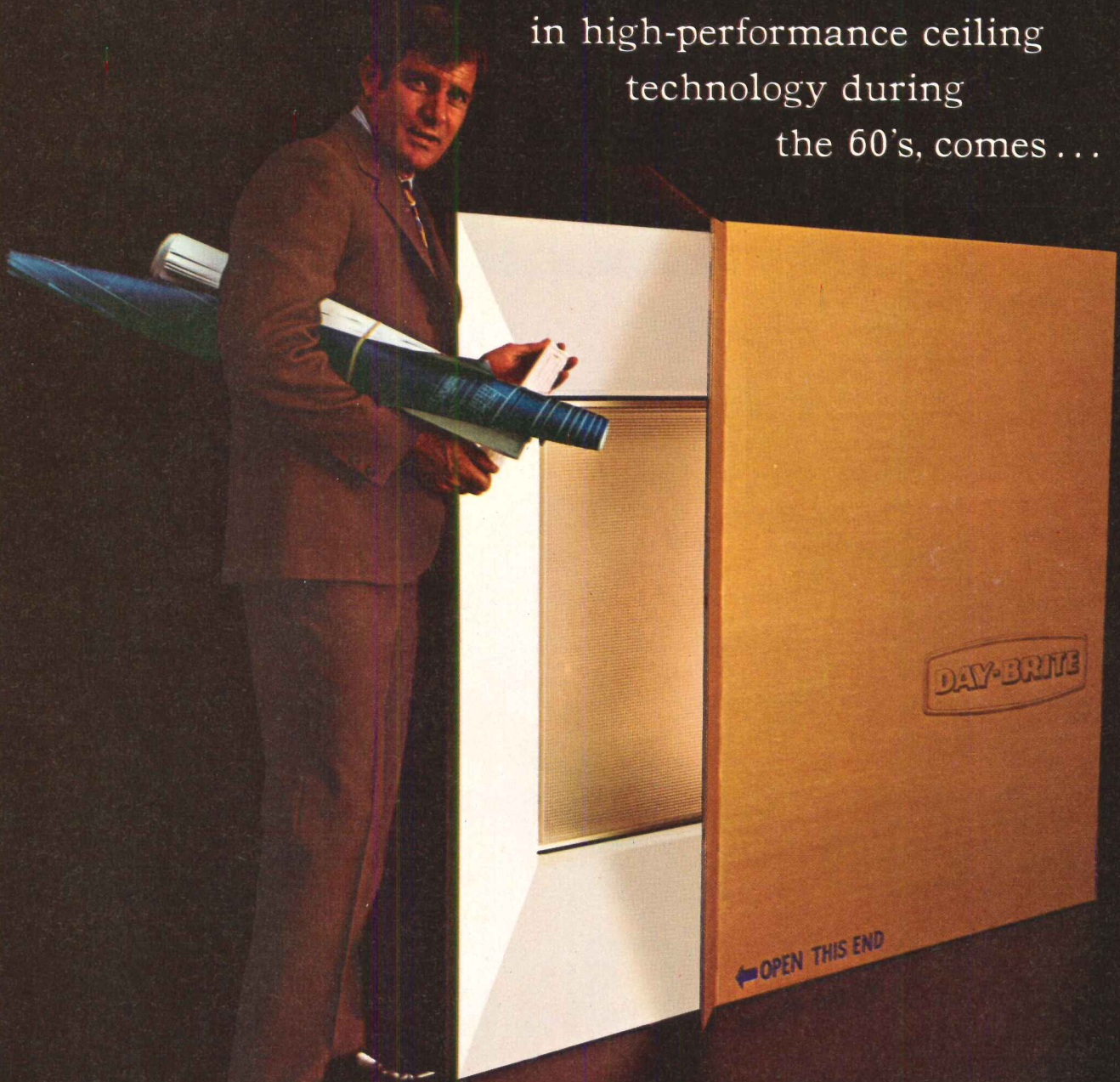
The design of beams and girders utilizing high-strength steels and plastic theory permits considerable reduction in steel tonnage required. Elastically designed beams and girders using high-strength steel would have larger deflections than with ordinary-strength steels because of their lesser depth, and thus lesser moment of inertia. This potential problem is overcome when beams and girders are designed with continuity which cuts deflection to less than half that of simply supported members. But a big problem in working out a plastically designed floor system is detailing the moment connections in such a way that they are not so complicated to fabricate as to wipe out the sav-

ings accomplished by the reduction in weight of steel. A possible solution for connecting plastically-designed filler beams to trussed girders is shown on page 135.

Coping with the space requirements for lateral runs of large air-conditioning ducts further complicates the problem of designing the floor system. Trussed girders provide large openings, but they are more expensive to fabricate than rolled sections. A solution suggested by the Severud office for providing large circular openings in rolled sections used for girders, and for enabling continuous connection between filler beams spanning from girder to girder is also shown, page 135.

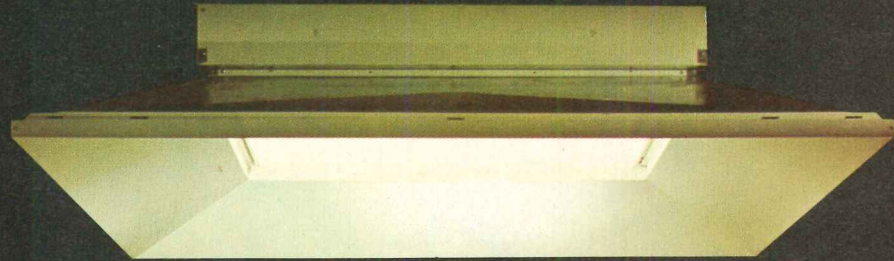
The continuity between filler beams does not affect other structural elements in a deleterious way. But, if girders between core and exterior columns were made fully continuous, they would create bending moments in the columns, necessitating a larger size than would be required for gravity and wind loads. But, on the other hand, a rigid connection can be made at the core which has the capacity for moment connections, and the girder works as a cantilevered member simply supported at one end. This means of support has nearly 70 per cent the efficacy of a member fixed at both ends.

From Day-Brite developments  
in high-performance ceiling  
technology during  
the 60's, comes ...



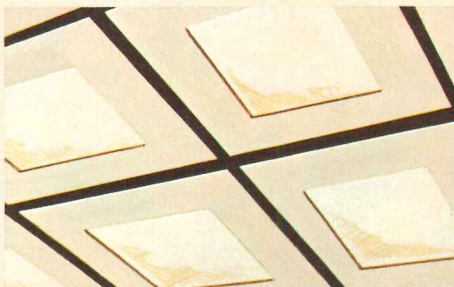
# THE CEILING OF THE 70'S

Now there is  
**COMPAC...**

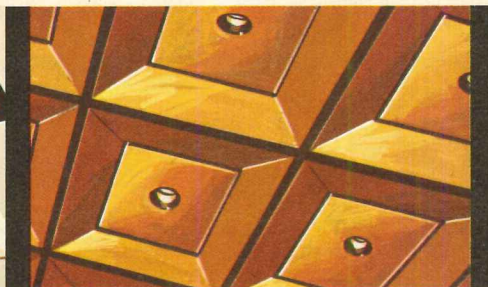


BLUE CROSS OF NORTHWEST OHIO, Toledo, Ohio  
ARCHITECT: Samborn, Steketee, Otis and Evans

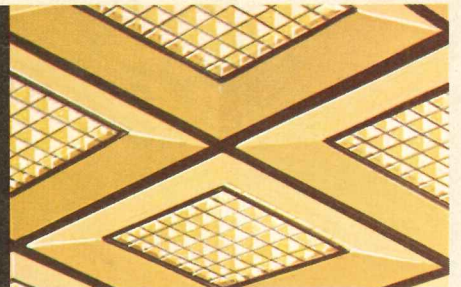
**THESE 3 ALTERNATE "FACES" FURTHER EXPAND COMPAC'S DESIGN CAPABILITIES**



FLAT/REGRESSED



ARCHITECTURAL DOWNLIGHTING



DECORATIVE

# the complete ceiling that comes in a carton!

Until now, a high-performance ceiling has been a piece-by-piece proposition that required coordinating a diversity of products and materials . . . an element that's taken as many as six or more steps to install, with responsibility divided among several sources.

Compac takes up where high-performance ceilings of the 60's left off. Instead of designing from a complicated array of separate components, Compac helps you create highly functional and aesthetically satisfying ceilings with pre-engineered "packages" which combine all the necessary elements, and more. And when Compac is included in the building plan, *it is specified with a single source of responsibility for the entire installation!*

From Day-Brite, the Lighting and Ceiling Systems people, Compac is far more than illumination. Compac is "people comfort" . . . a system of wall-to-wall ceiling modules that provide air supply and return, heat transfer,

sound absorption/attenuation and audio communication, as well as high quality lighting. Compac is completely assembled at the factory and delivered to the construction site ready to install!

Design-wise, Compac knows few restrictions. A choice of partition track widths on all sides permits complete flexibility in the use of movable walls. Compac accommodates columns at module intersections or in the center of a module. And because it installs so economically and integrates so many functions, Compac can effect some rather remarkable savings both in construction and operating costs.

Compac is no experimental concept. Compac is *now* . . . completely developed, thoroughly tested, and performance proved. We'd like you to know *all* of its many advantages. So write, and we'll send you the complete story on . . .



BLUE CROSS OF NORTHWEST OHIO




AMERICAN BANK and TRUST CO. OF PA.  
ARCHITECT: Muhlenberg-Greene-Veres

## COMPAC

the ceiling of the 70's



 DAY-BRITE LIGHTING DIVISION  
EMERSON ELECTRIC CO.  
5411 BULWER  
ST. LOUIS, MO. 63147  
**EMERSON**

For more data, circle 58 on inquiry card



KOHLER'S LADY FAIR  
SHAMPOO CENTER  
AND BABY BATH

BOLD NEW COLORS!  
(NEW ORLEANS BLUE)

WASH YOUR  
HAIR...  
OR YOUR  
BABY  
(BUILT IN  
SPRAY ARM)



ONE OF OUR  
HAPPY BLUES

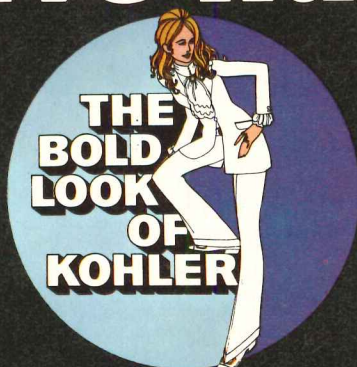


SWING  
AWAY  
SPOUT



SLOPED LIKE  
A BATH

# Kohler says ho-hum baths have had it.

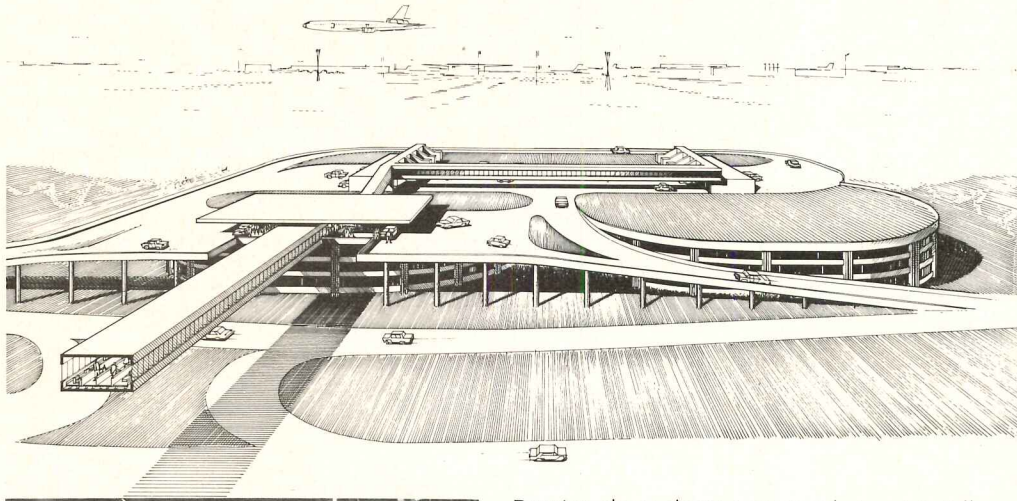


Kohler Co., Kohler, Wisconsin

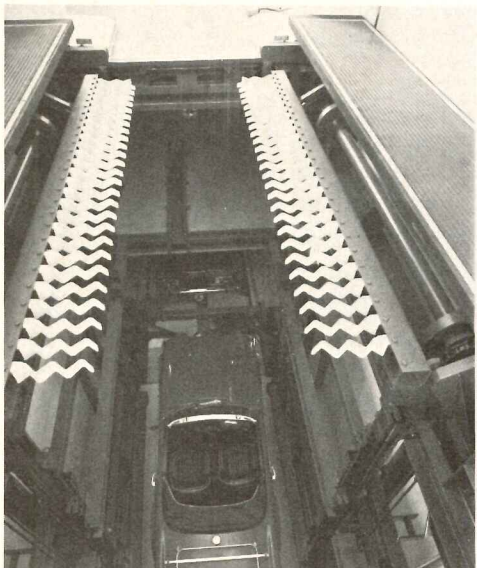
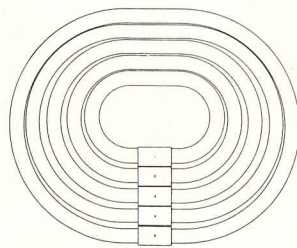
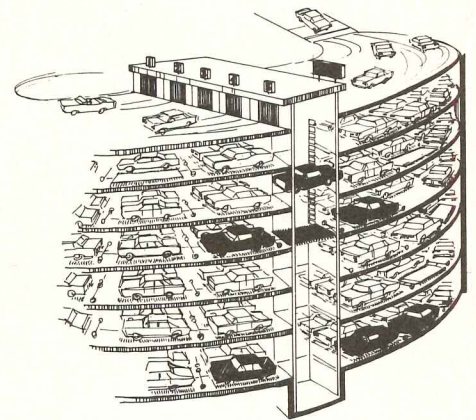
For more data, circle 59 on inquiry card

For more information circle selected item numbers on Readers Service Inquiry Card, pages 211-212

A fully automatic parking system that saves time and space without sacrificing safety



Drawing above shows a proposed airport installation. Cars leave perimeter road and drive up ramp to garage roof, drop off luggage and proceed to either of two banks of parking cabins. Long moving walkway (front left) carries driver to terminal. Drawing below shows five concentric parking rings that make up one parking level with five entrance booths. Photo (right) shows car parked on rotating metal parking ring. Drawing (right) shows entrance booths and a car being lowered in conveyor to a place on a ring below. Photos (left) show same process, emphasizing opposing comblike teeth of conveyor and car ring.



**Rotopark** is a simple, fully automatic parking system that provides quick, efficient service using less over-all space. A car can be parked or retrieved in about 1 min. and 30 to 60 per cent less space is used for the same amount of cars than in the best ramp system. The driver takes an electronically punched ticket with time, date and car location on it. The entrance doors open and he moves the car into the entrance booth and leaves the garage. Beneath the entrance booth is a ring of cars at each parking level. If there are five entrance booths, there are five concentric parking rings at each level (see diagram). Now that the car is ready for parking, the floor under the car

lowers and retracts leaving the car on the comb-like racks of a conveyor. A ring of parked cars beneath the entrance has been rotated so that an empty space is moved into the conveyor shaft and the car is lowered to its space (see left photo and cross section). To retrieve car, ticket and payment are placed in appropriate slots and the car is rotated back to the conveyor and raised to the driver's level. Fail-safe devices insure that no one is in the car as it is parked, that the car is not over-sized for the system and that all operations are safely performed. ■ Otis, New York City.

Circle 300 on inquiry card

More products on page 144

# If anyone can handle the airport building boom...

## Robertson can.



Everyone knows we're facing an airport building boom with no end in sight. So it's good to know that one company—Robertson—can take total responsibility for the manufacture and installation of wall, roof and floor systems for terminals, concourses, cargo buildings and hangars. Robertson has been there before:

We have clad hangars for 23 major airlines and three airframe manufacturers. The roster includes the world's largest building . . . the final assembly unit for the Boeing 747. We have participated in the construction of concourses at JFK, Tampa, Dallas, Denver, Jacksonville, Minneapolis, Los Angeles, Washington, Dayton, Oklahoma

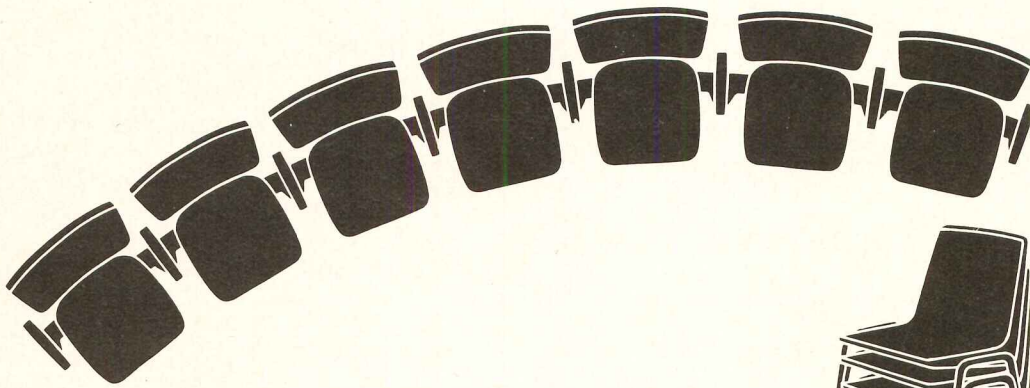
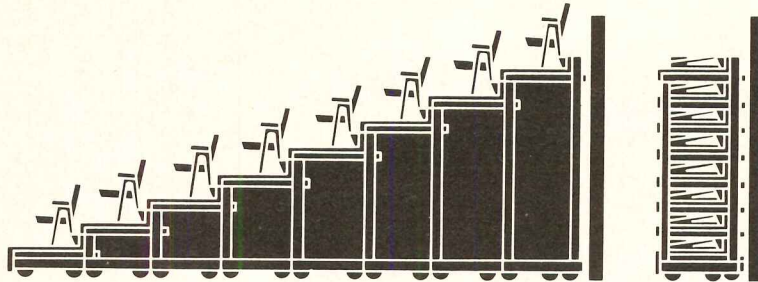
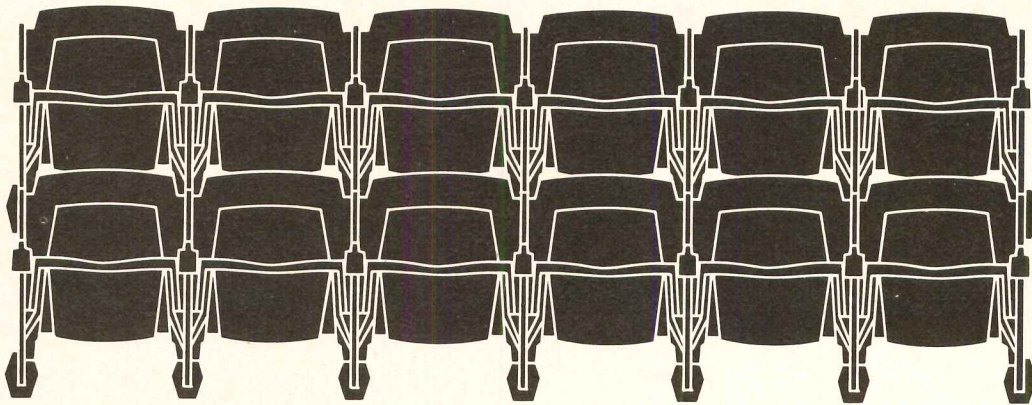
City, Boston, Islip, Newark, LaGuardia and Philadelphia. And we took total responsibility. From manufacture through installation, we keep close control over costs . . . save money for your clients. For more information on our total capabilities, write H. H. Robertson Company, Room 1105, Two Gateway Center, Pittsburgh, Pa. 15222.

## ROBERTSON

For more data, circle 60 on inquiry card



# You just can't beat the system.



Our "Audience System", that is, American Seating is the one company that can offer you total one-source responsibility from initial planning through professional seating installation.

We are the one company with manufacturing capabilities broad enough to provide you with specialized seating for virtually every function — luxurious theatre seating, stadium or arena seating, stacking and folding chairs, and Fold-A-Way Seating Systems that easily move in or out, depending on the size of the event. And the almost unlimited selection of styles, fabrics and colors, helps you achieve complete design coordination throughout.

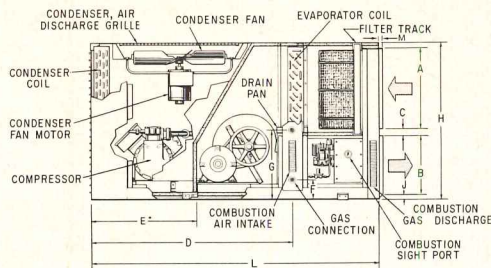
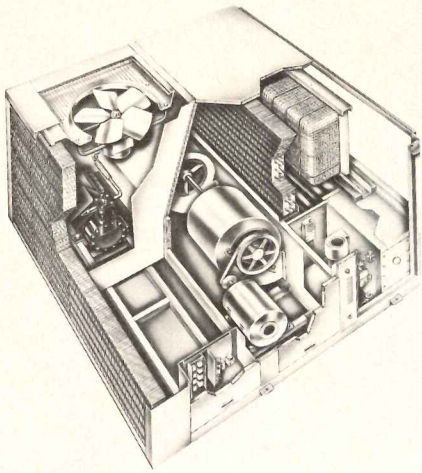
Planning, products, installation — you just can't beat the American Seating Audience System. Let us tell you more about the many services we can render to the architect. **Write American Seating Co., Dept. AR-723, Grand Rapids, Mich. 49502.**

*for the Environment of Excellence*



*For more data, circle 61 on inquiry card*

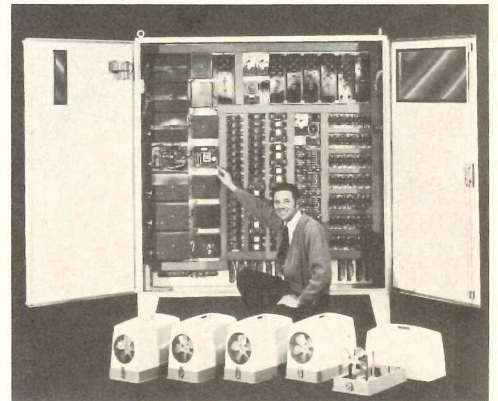
continued from page 141



**LOW-PROFILE AIR-CONDITIONING** / This rooftop single-zone unit features a low silhouette. There are 4 models ranging from 7½ to 20 tons and the largest is 45 in. high. Either natural gas or electric heat is available on all models. Horizontal firing in the furnace section makes the low profile

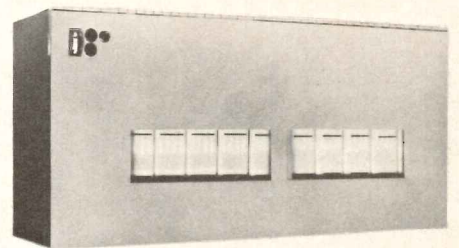
possible and also improves performance. Combustion is via a forced draft system: a fan which blows combustion air into the furnace. Maintenance is simplified by galvanized steel casing with a baked acrylic enamel finish. A monitoring panel is provided to indicate failures in heating, cooling and crank-case heater. ■ Reznor ITT, Mercer, Pa.

Circle 301 on inquiry card



**TEMPERATURE CONTROL PANEL** / A control panel which creates 7 separate climate zones in a 4,400 sq. ft. greenhouse was made by Wadsworth Electric for the Chicago Horticultural Society's Botanical Garden. The panel controls day and night temperatures and opening and closing of vents, operates all heating and cooling equipment including fans and pumps, and cycles misting for propagation areas. It controls the environment with sensors housed in aspirator cases which draw air in at plant level, providing information for an electronic amplifier to act upon. A special control closes vents in ridges and sidewalls in case of rain or high winds. ■ Ickes-Braun Glasshouses, Inc., Deerfield, Ill.

Circle 302 on inquiry card



**EMERGENCY LIGHTING SYSTEM** / This 6- or 12-volt emergency unit will keep a 2-lamp, 100- or 200-watt fluorescent lighting fixture lit when the regular power supply is interrupted. The control unit instantly connects the lamps to the battery, providing 115 volt, 60 cycle a.c. power for a minimum of 1½ hours. The light output is 70 per cent or more of normal capacity. ■ Standby Systems, Inc., Somerville, Mass.

Circle 303 on inquiry card

More products on page 152

*Our 46th year*

#170

2¼"

¾"

1¼"

Adjusting Screw 12" O.C.

¾" Adjusting Range

Closed Cell Sponge Neoprene (Government Specification MIL R6130 A Type II Grade C)

Extruded Anodized Aluminum Thickness .062"

**ADJUSTABLE DOORSTOP**

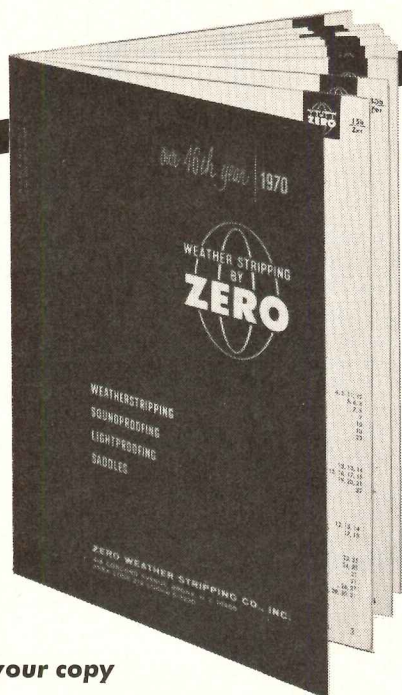
- Sound-proof
- Light-proof
- Weather-proof

**HEAD & JAMB**  
Mitered to fit opening

the most complete and authoritative guide for—

- WEATHER STRIPPING
- SOUND PROOFING
- LIGHT PROOFING
- THRESHOLDS

Zero's new Catalog shows many new products, contains 177 full size drawings.



Write today for your copy

**ZERO WEATHER STRIPPING CO., INC.**

Our 46th year of service to architects

415 Concord Avenue, Bronx, New York 10455 • (212) LU 5-3230

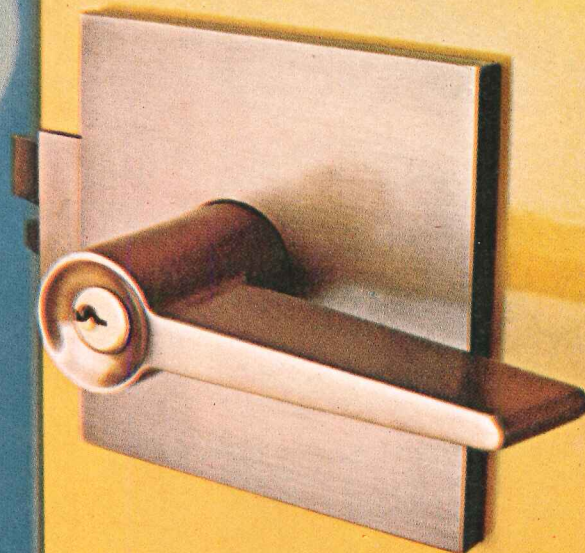
For more data, circle 62 on inquiry card



# 910L Metro... where you program for security

When the input is Corbin, you're programming for safety, security and speed. Corbin Unit® locksets are renowned for combining maximum security and fast, economical installation with design leadership second to none. Contact a Corbin distributor for information and service or write P & F Corbin, Division of Emhart Corporation, Berlin, Conn. 06037. In Canada, Corbin Lock Division.

*For more data, circle 63 on inquiry card*



# Security— Uptight or Out-of-Sight.

Cookson Steel Rolling Doors and Counter Doors provide the widest range of applications in all types of commercial, industrial, government and institutional buildings. They meet the most demanding architectural and design specifications. When locked up tight, they deliver the greatest possible security and protection against damage; yet they roll up, out of sight, into a compact hood whenever desired. Smooth and easy operation, trim appearance, reliability, reasonable installation and maintenance cost—all are Cookson Steel Rolling Door and Counter Door by-words. As are many exclusive special features to fit your specific needs.

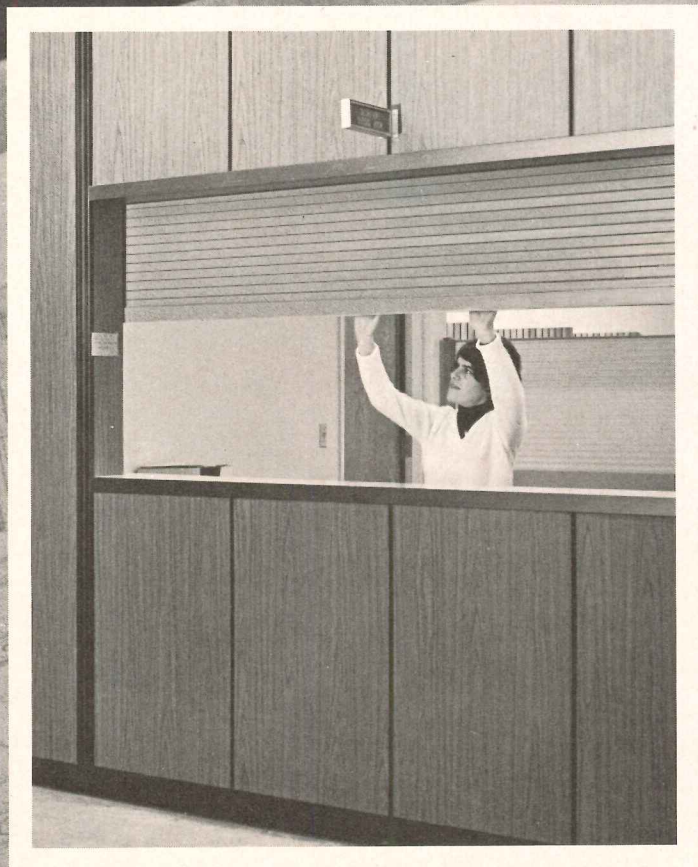
For more complete information on Cookson Steel Rolling Doors and Counter Doors, "Servire" Fire Doors and Counter Fire Doors, Rolling Grilles, Side Coiling Grilles and Operable Walls, write for Bulletin 7001, or see us in Sweet's.



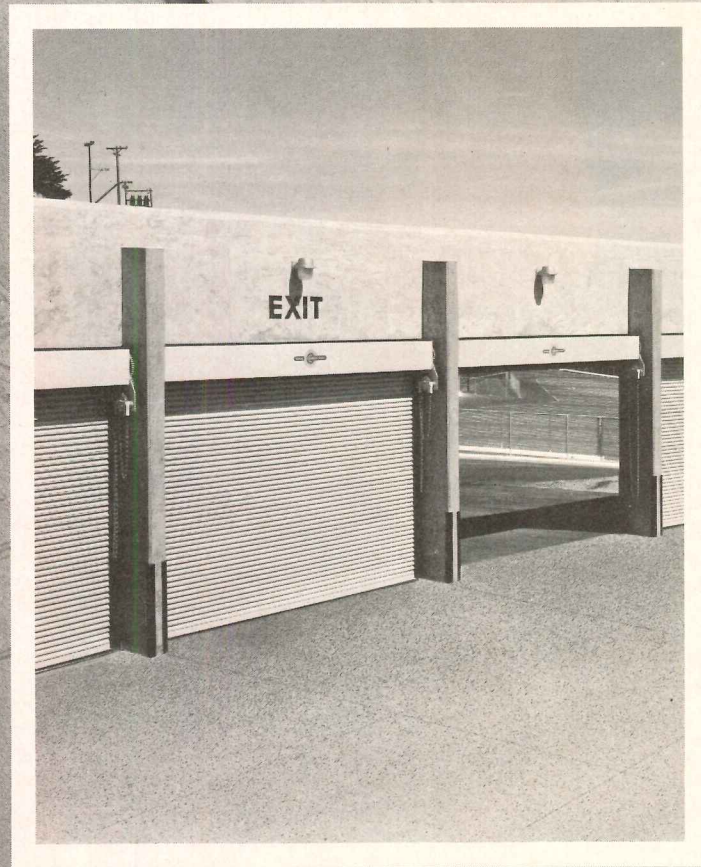
*"Best way to close an opening"*

**THE COOKSON COMPANY**

700 Pennsylvania Ave.,  
San Francisco, California 94107



Counter Door



Steel Rolling Doors

For more data, circle 64 on inquiry card

## One of Alabama's largest office buildings is a tower of reflective L-O-F glass.

A silvery shaft 30 stories high.

Aesthetically beautiful while playing it cool. Because the building will have Thermopane® insulating glass with Vari-Tran® Chrome 114 in all windows. Tuf-flex® tempered glass with Vari-Tran/Chrome coating will be in all spandrels.

This building's facades will read as one material. Reflections on its glass surfaces will change and shift with light conditions. And the surrounding environment will become part of its aesthetic expression.

Functional, too. The Thermopane with Vari-Tran coating provides a shading coefficient with light color venetian blinds of .22 versus .53 for heat absorbing type plate glass. This results in substantial savings in cooling equipment and annual operating costs. The Thermopane units also insulate against winter heat loss.

Glare and sky brightness will be reduced. But colors of objects seen through the windows will be unaltered.



The \$19-million First National-Southern Natural Building, a total energy structure designed by Welton Becket & Associates, is being built in Birmingham by Henry C. Beck Co. It will be ready for tenants in 1970.

For data on products with silvery and golden Vari-Tran coatings in six variable heat and light transmittances, write Architectural Construction Department, Libbey-Owens-Ford Company, Toledo, Ohio 43624.

**L-O-F HI-PERFORMANCE GLASS** 

For more data, circle 65 on inquiry card



**INNOVATION IN DESIGN.** One of a series created for DAP Architectural Sealants. Design and rendering by Richard P. Howard Associates, Architectural Illustrators, Sylvania, Ohio. Harold R. Roe, A.I.A.

# versatility

Delivering top sealant performance without imposing limitations on architectural design is a job for DAP Flexiseal®. It's not unreasonable to expect 20 years' service without failure from this outstanding polysulfide polymer system—even in moving joints once considered marginal. Now available in two-part and one-part systems. Both feature *balanced modulus*—adhesion always exceeds cohesion. Both have received the Thiokol\* Seal of Security. For catalog on the complete line of DAP architectural sealants, please write: DAP Inc., General Offices: Dayton, Ohio 45401. Subsidiary of *Plough, Inc.*

For more data, circle 66 on inquiry card

**DESIGN CONCEPT:** The featured apartment tower is the focal point of a high density commercial and residential complex set in a suburban locale. The tower is supported on four massive U-shaped columns housing vertical transportation. Lower area of the structure, less desirable for living space than upper floors, is used as a 5-story atrium garden for year 'round greenery.



# DAP® ARCHITECTURAL SEALANTS

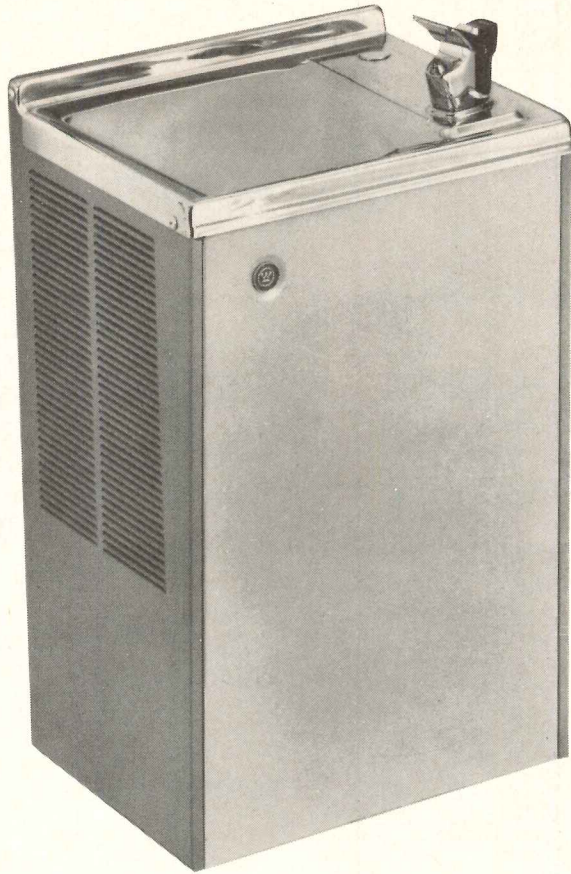
Also available in Canada



\*Trademark of the Thiokol Corporation



# Water Colors.



Frost White  
Platinum Beige  
Metallic Bronze  
Nugget Gold  
Dusty Olive  
Coral Red

Just install them and Westinghouse Instant Cold Water Coolers turn into water colors on your wall. Install easily, too. Packed with each Wall Mount is a time saving installation template. Only Westinghouse has these colorful ways to make your Water Coolers a thing of beauty. Also available in brushed satin stainless-steel or two-tone olive-beige enamel.

You can have instant hot water, too, with our hot water accessory. Factory-installed on all models. Backed by Westinghouse Nationwide Sure Service. See Sweet's Files. Or refer to "Water Coolers" in the Yellow Pages. Westinghouse Water Cooler Dept., Columbus, Ohio 43228.

You can be sure...if it's

**Westinghouse** 

*For more data, circle 67 on inquiry card*



**One  
standby power system is over-  
engineered, over-built and  
over-tested. Then it's rated  
conservatively. So you can  
believe the nameplate. It's how  
we provide for the unknown.  
And sometime, somewhere, life  
itself may hang in the balance.**

**No. 1 is the One**



1400 73RD AVENUE N.E., MINNEAPOLIS, MINNESOTA 55432  
OUR 50TH YEAR BUILDING GENERATORS AND ENGINES

*For more data, circle 68 on inquiry card*



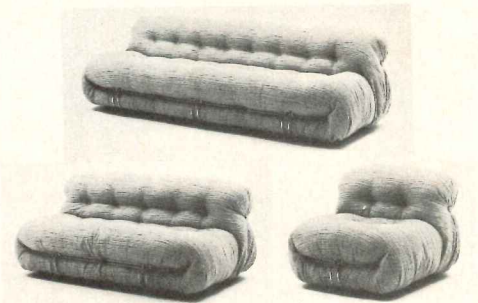
# WILL YOUR CLIENT'S ROOF BECOME ONE BIG SPONGE? NOT IF YOU SPECIFY FOAMGLAS<sup>®</sup> INSULATION

FOAMGLAS is waterproof. It can't get wet from roof leaks or vapor inside the building. It provides a solid base for built-up roofing, too, because it's dimensionally stable and has high compressive strength. And FOAMGLAS is the only insulation guaranteed for 20 years.

Write for more information and a copy of the guarantee. Pittsburgh Corning Corporation, Dept. AR-80, One Gateway Center, Pittsburgh, Pa. 15222.



For more data, circle 69 on inquiry card



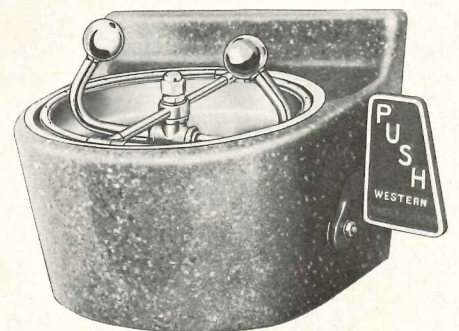
**SIMPLE UPHOLSTERED FURNITURE** / The Soriana furniture group uses lightweight armature to restrain upholstered form. The chrome-plated steel armature is attached to a wooden platform base. The furniture can have either fabric or leather upholstery over a layer of urethane foam wrapped in Dacron. ■ Atelier International Ltd., New York City.

Circle 304 on inquiry card



**VERSATILE LIGHTING SYSTEM** / The Swiss Light Structure consists of five-fingered Bakelite distribution pieces: 2 vertical fingers and 3 horizontal ones. Horizontal connecting tubes can be put over the fingers; where no connecting tube is needed, a short tube with a bulb on the end can be used. Six horizontal connections form a hexagon. The photo shows one installation in Brussels. ■ Koch and Lowy Inc., New York City.

Circle 305 on inquiry card



**EMERGENCY WASH** / This polyester and stone eye-face wash protects against permanent injury from such hazards as acids, chemicals and petroleum products. It works like a water fountain, but uses flow control to release the correct amount of water from twin eye-wash heads and a 360 deg. face spray ring. ■ Western Drinking Fountains, Inc., San Leandro, Calif.

Circle 306 on inquiry card

more products on page 166



**We make a lot of different ceilings.  
To do a lot of different things.  
This one's thing is versatility.**

An Armstrong C-60/60 Luminaire Ceiling is as changeable as the needs of the area below it. The 60" x 60" modules can accommodate any of five standard-size recessed lighting troffers (1 x 1, 1 x 4, 2 x 2, 2 x 4, 3 x 3), or they can be fitted with flat panels. In any case, light fixtures, panels, even the modules themselves can be moved or rearranged if and when lighting requirements change. So the right amount of light can be put wherever it's needed without sacrificing the advantages of an integrated ceiling system. Coupled with its lighting versatility, C-60/60 Luminaire offers several air-handling options, superior noise control, and partition and sprinkler head adaptability. C-60/60 Luminaire is one of a wide range of efficient, versatile Armstrong Ceiling Systems. An Armstrong Architectural Representative is in the best position to tell you more about them. For his name and a copy of our ceiling systems folio, please write Armstrong, 4208 Rock St., Lancaster, Pa. 17604.

**Armstrong** / CEILING  
SYSTEMS  
THAT WORK



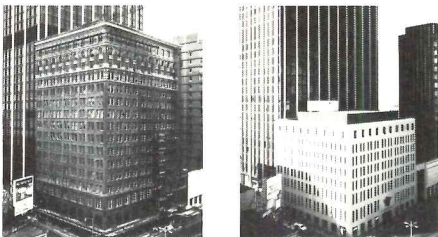
# Modernize with marble

**THE ZIBELL SYSTEM  
MAKES MARBLE VENEER  
A LOGICAL CHOICE  
FOR REMODELING**

The Zibell System is a fast and efficient method of attaching 7/8" marble veneer to new or old structures. The light metal grid system which supports the marble can be anchored to existing facades with very little remedial work as a rule, and the light weight of the installation is easy on old footings. The Zibell System often makes the in-place cost of marble

competitive with less desirable materials, and has been the answer to many design and budget problems. Perhaps it can help you. Get the whole story on how the Zibell System reduces the cost and expands the design possibilities of marble veneering in new construction and remodeling.

**WRITE FOR THE BROCHURE "THE ZIBELL ANCHORING SYSTEM."**



**BEFORE AND AFTER** When the first National Bank of Atlanta built its new 41-story office building alongside the old, the architects elected to remove six floors from the old structure and give it a new dress of White Cherokee Georgia Marble, using the Zibell System. Virtually no remedial work was required on the old facade.

Architects were Emery Roth and Sons and Finch, Alexander, Barnes, Rothschild and Paschal.

**COAST-TO-COAST CONSULTING SERVICE**—Our engineers stand ready to assist you anytime, anywhere, on any project involving marble or limestone. A phone call will put one of our men across the desk from you in a matter of hours. Phone 404/688-2861.



**Georgia Marble  
Company**

11 PRYOR STREET, S.W., ATLANTA, GEORGIA 30303  
A subsidiary of Jim Walter Corporation



For more data, circle 70 on inquiry card

For more data, circle 71 on inquiry card

# FOR WALLS MEANT TO BE SEEN- NOT HEARD: NEW WALLCRAFT.

Wallcraft is the new soft wall covering from E. T. Barwick Industries. Unlike most wall coverings, Wallcraft is made of densely tufted or flocked man-made fibers on durable synthetic fabric backings. It can be applied to almost any wall surface of almost any shape. Application may be at the site or prefabricated on wallboard or partitions.

Wallcraft is ruggedly long-wearing and easily maintained. Vacuuming or simple detergent sponging are usually sufficient for cleaning. Sound absorption is unusually high,

too. Wallcraft absorbs up to 50% of the noise that hits it. It meets federal specifications for flame spread of less than .25.

Beautiful. Durable. Economical. Easily maintained. There's never been anything like Wallcraft, the quiet one from Barwick. Consider its advantages for schools, offices, hotels, shopping centers, nursing homes. For details contact: Wallcraft Contract Interiors, Division of E. T. Barwick Industries, Inc., Chamblee, Georgia 30341.

WALLCRAFT CONTRACT INTERIORS / A DIVISION OF E. T. BARWICK INDUSTRIES, INC.



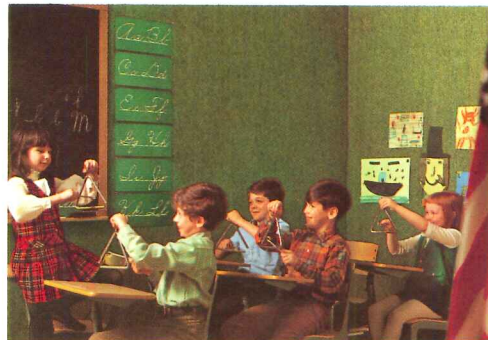
**Fashionwall.** (shown above and below) Tufted loop-and-sheared pile of Acrilan® acrylic fiber. The ultimate in design and texture. 15 colors; solids, tweeds, and stripes.

**Softwall.** (background photo) Level loop nylon tufted on an olefin back. 3/16-inch pile height. Available in five solids, five pin stripes, and five tricolor stripes. Medium price. For areas of high-frequency noise: restaurants, hotels, offices.



**Veltron.** 17,000 nylon fiber ends per square inch electronically flocked on an olefin backing. Available in eleven colors in your choice of a velveteen or crushed velveteen appearance. Recommended for high traffic areas.

**Textra** for economy. Needle-punch pile of 70% olefin/30% PVC. Especially suitable for schools, office landscaping, and shopping centers. Available in ten coordinated colors.



WALLCRAFT



## WHICH WOULD YOU CHOOSE TO REDUCE OUTSIDE NOISE?

By using Soundtropicane® 40 you combine the sound isolation effectiveness of a 6" concrete block wall with the beauty and strength of laminated glass. Ordinary plate glass is about 1/10 as effective as equivalent thickness Soundtropicane® in isolating acoustical energy, less than half as effective in isolating noise.

Soundtropicane® is available with STC ratings of 36, 40 and 43. It can be made to control heat and glare by incorporating any of three pleasing bronze shades in 10%, 28%, or 55% light transmission, using any thickness of glass desired.

Discover it for yourself. Consult Sweet's File catalog 4a/De or write Dearborn today for a free copy of the Glas-Wich catalog.

**dg** DEARBORN GLASS COMPANY  
6600 S. Harlem Avenue  
Argo, Illinois 60501

*For more data, circle 72 on inquiry card*

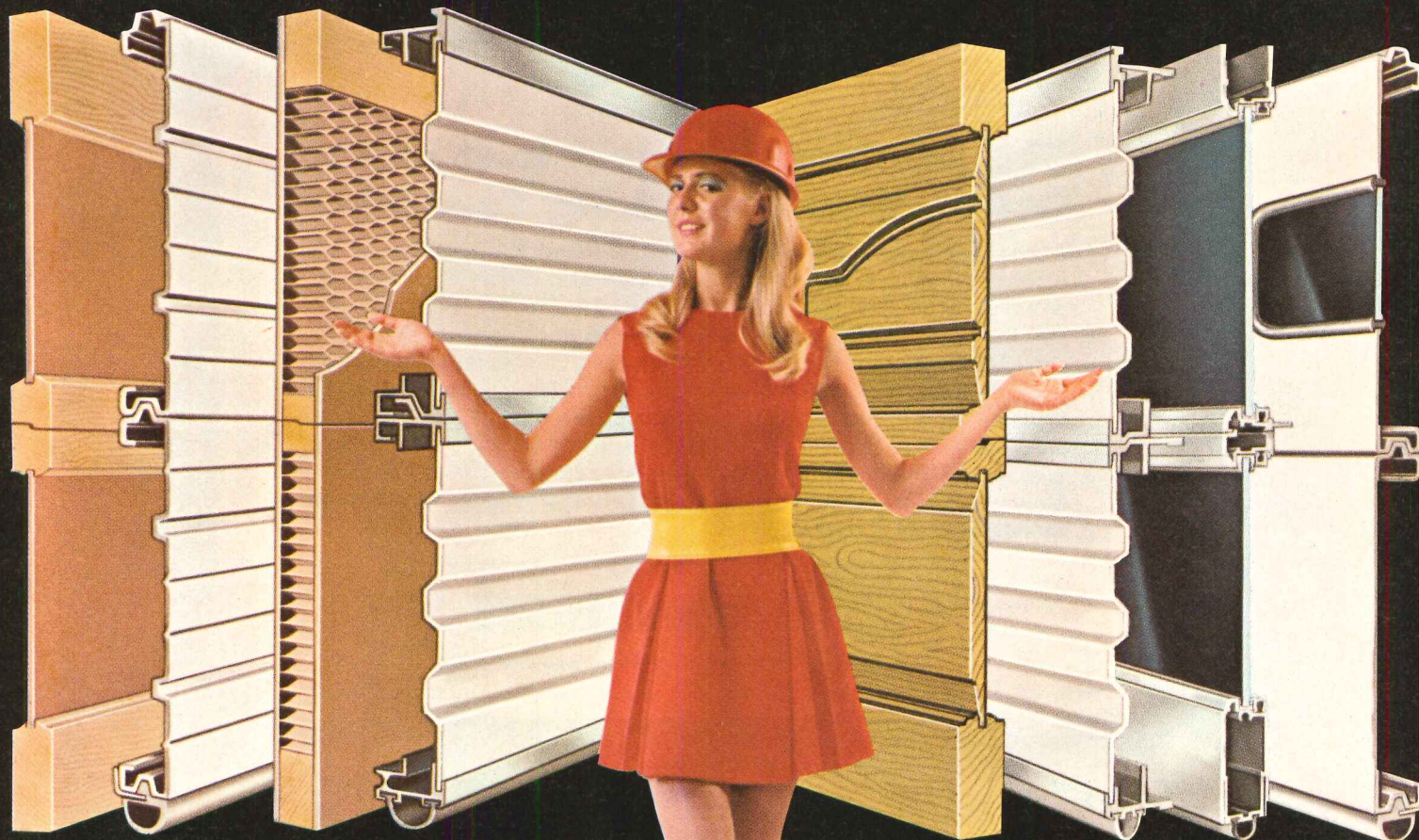
### SOUNDTROPICANE® INSTALLED IN NEW O'HARE OFFICE PLAZA

Architect: Morton Z. Levine and Associates, Inc.  
Leasing & Managing Agents: Nardi and Podolski  
Contractors: Inland-Robbins Construction, Inc.

Soundtropicane® is the ideal glass for installations, close to large metropolitan airports, where excessive noise is a negative environmental factor. The location of the new O'Hare Office Plaza required a glass that would effectively reduce the noise of jets on take-offs and landings, and be strong enough to withstand shattering due to jet vibrations. Soundtropicane® filled all the requirements.

Dearborn is also the manufacturer of Tru-Site non-glare glass and variant forms of glass for industry and architecture.





Panelled wood

Ribbed steel

Flush wood

Aircraft hangar

Carved panel

Fiberglass

Service station

Flush steel

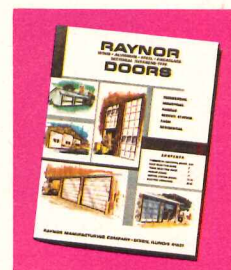
## RELAX...You've got nothing to lose but your garage door problems.

And there's good reason for your peace of mind. Raynor is the brand you can always depend on. Selection? You name it, Raynor has it. Residential, commercial and industrial garage doors. In all essential, durable materials . . . wood, aluminum, fiberglass, and steel. Raynor incorporates the latest engineering advances. Custom-wound springs. Extra-heavy tracks. Customized



**RAYNOR**<sup>™</sup>  
The Brand You Can Depend On

hardware. Electric operators for every door. And for further protection, permanent parts-list records are maintained at the factory for all doors. All these features allow Raynor to provide the finest guarantees in the industry. Add them up . . . you get selection, delivery, price and quality. All you can lose are your garage door problems. Raynor Manufacturing Co., Dixon, Ill. 61021.



Send for literature

For more data, circle 76 on inquiry card

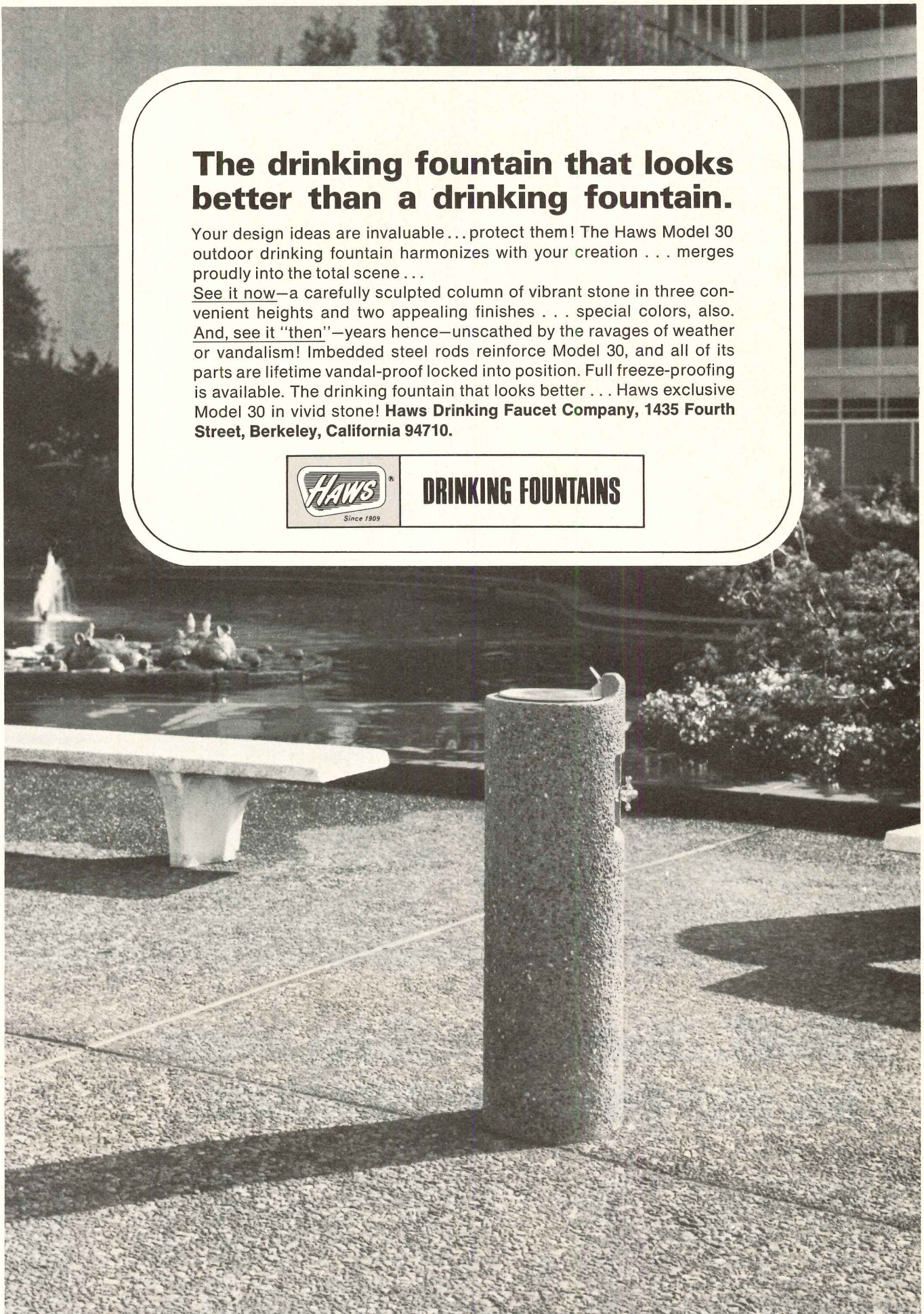
## The drinking fountain that looks better than a drinking fountain.

Your design ideas are invaluable... protect them! The Haws Model 30 outdoor drinking fountain harmonizes with your creation... merges proudly into the total scene...

See it now—a carefully sculpted column of vibrant stone in three convenient heights and two appealing finishes... special colors, also. And, see it "then"—years hence—unscathed by the ravages of weather or vandalism! Imbedded steel rods reinforce Model 30, and all of its parts are lifetime vandal-proof locked into position. Full freeze-proofing is available. The drinking fountain that looks better... Haws exclusive Model 30 in vivid stone! **Haws Drinking Faucet Company, 1435 Fourth Street, Berkeley, California 94710.**

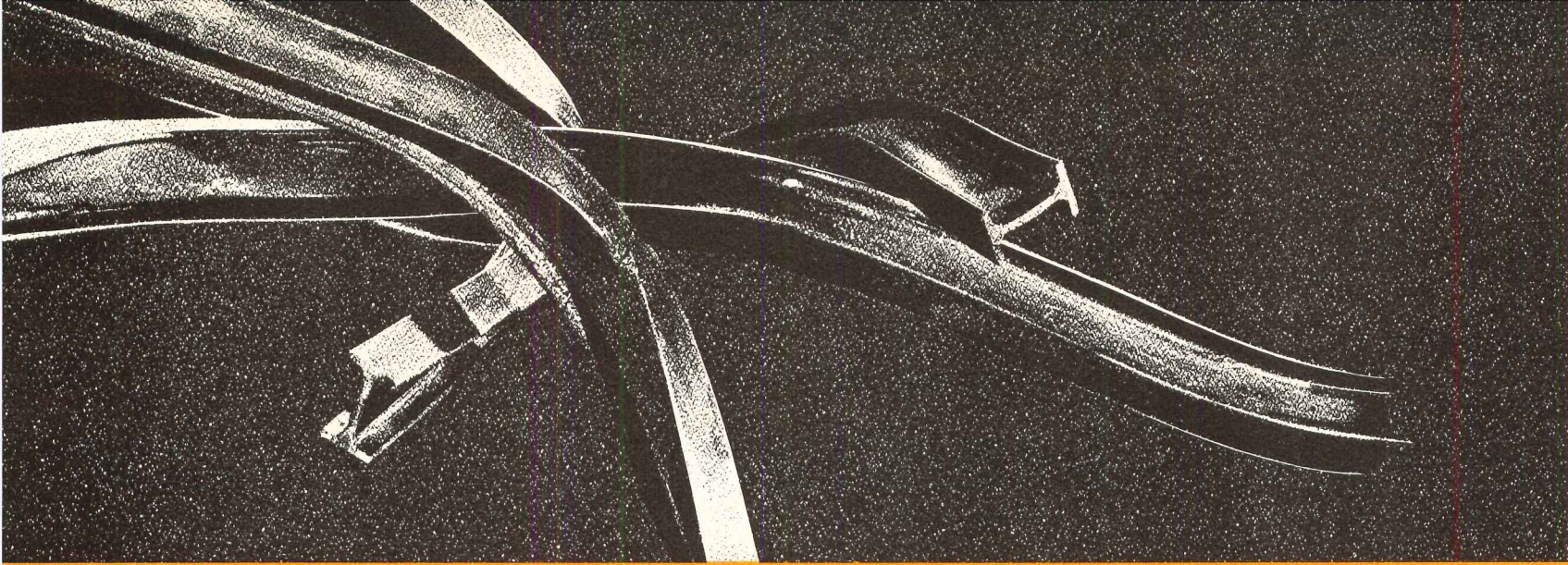


**DRINKING FOUNTAINS**



*For more data, circle 77 on inquiry card*





## Before fire makes it too hot for steel, talk to Zonolite about the kind of fire insurance you spray on.

It's Zonolite® Mono-Kote, the compound that fireproofs steel and concrete. And does it so well that its fire-resistance ratings range up to 5 hours, depending on the structural system it's part of.

Mono-Kote comes ready to use. Just add water. And spray. It pumps easily—as high as

50 stories. Goes on fast. Delivers a bond strength of more than 500 pounds per square foot.

Other features? Indeed! Like zero erosion, after being tested in 100 m.p.h. winds for 87 hours. Result: no "dusting" in air-conditioning and ventilating systems. Also, its use permits

reduction in the thickness of concrete floors. Cost? Very little.

Want all the facts and figures from the Zonolite fireproofing experts? Say the word.

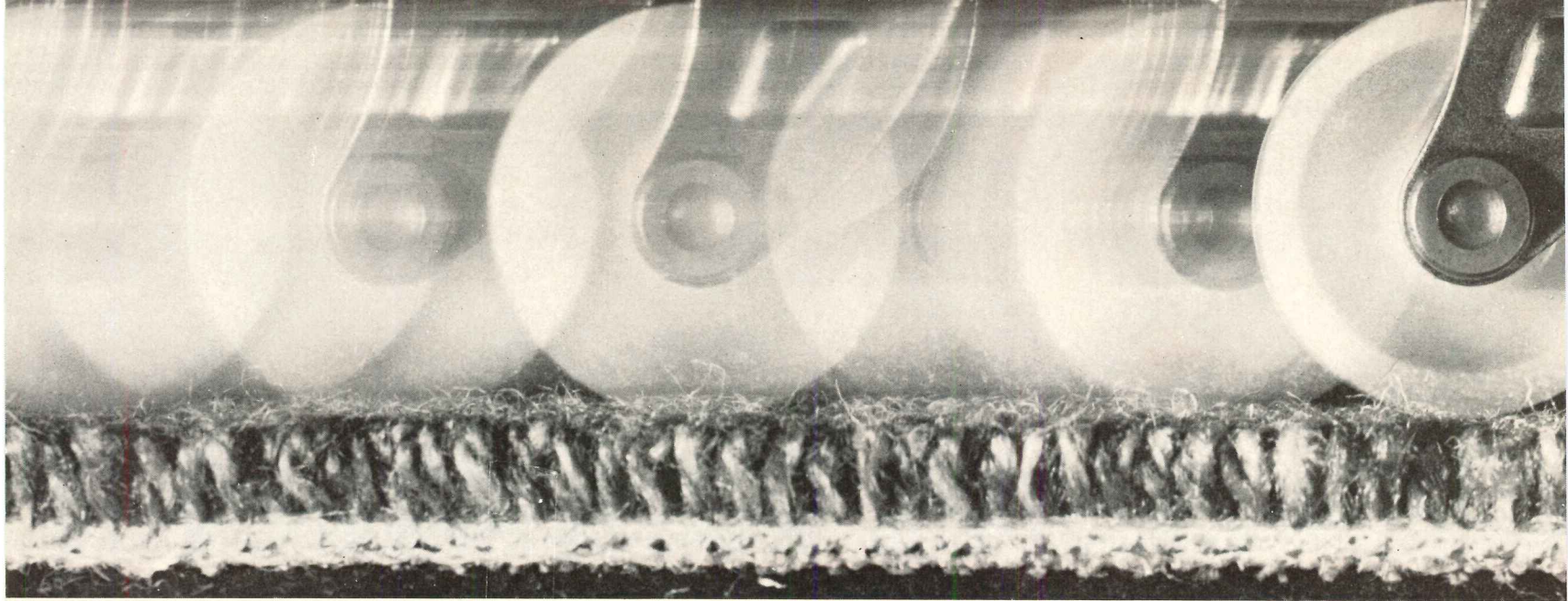
### ZONOLITE

W. R. GRACE & CO.  
62 Whittemore Avenue  
Cambridge, Mass. 02140



# Just say Grace.

For more data, circle 78 on inquiry card



# Now wheels roll easily on carpet... if the carpet is backed by Jute!

## Direct glue-down installation does it.

Now—specify carpet where you couldn't specify carpet. Glued directly to the floor, double Jute-backed carpet eliminates mushy cushions or pads that bog down conventional wheels and casters. Bonds securely to any floor, to resist shifting and delamination. But comes up cleanly so the carpet can be reinstalled elsewhere.

And the cost is less. Less than foam-backed carpets with equal pile specifications. Less than equivalent carpets, plus separate underlayment. But still gives all the advantages of carpet. Low maintenance cost. Luxury looks. Good sound absorption. High employee morale. Less heat loss in many cases.

Shouldn't *you* be specifying it? Especially since it works so well in all the general office, computer, cafeteria areas (carpeted in the past 3 years) at Ford Motor Co., Dearborn—and many other demanding installations of a variety of types.

# JUTE

Jute Carpet Backing  
Council, Inc., 25 Broadway,  
New York, N.Y. 10004

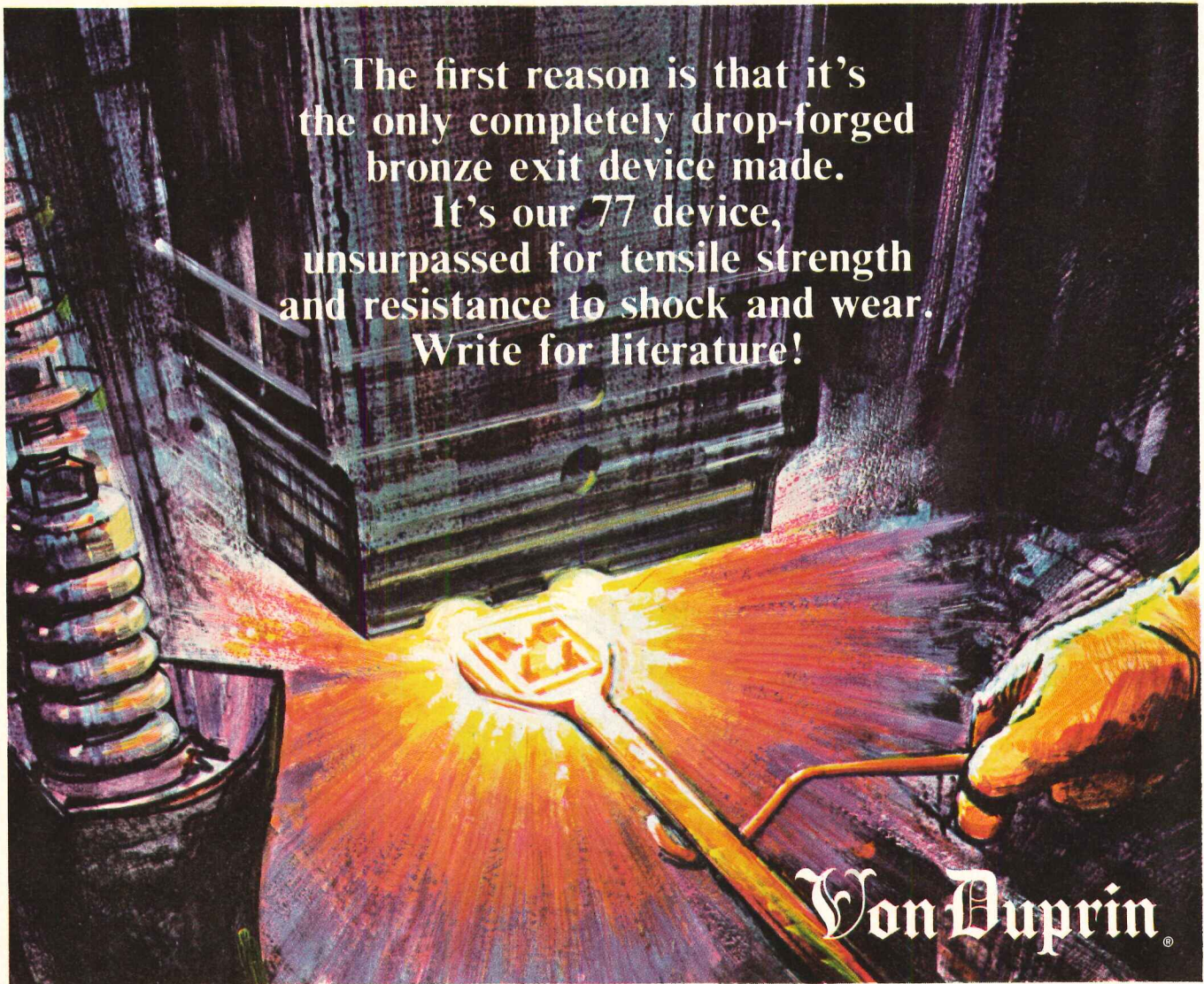
WRITE FOR ARCHITECTURAL  
GUIDE SPECIFICATION

Prepared by William E. Lunt, Jr., C. S. I.

American Industries, Inc. • BMT Commodity Corp. • Bemis Co., Inc. • C. G. Trading Corp. • D & C Trading Company, Inc. • Delca International Corp. • Dennard & Pritchard Co., Ltd. • A. de Swaan, Inc. • Robert F. Fitzpatrick & Co. • Gillespie & Co. of N.Y., Inc. • Hanson & Orth, Inc. • O. G. Innes Corp. • Jute Industries, Ltd. • Lou Meltzer Co. • Pak-Am Inc. • William E. Peck & Co. of N.Y. Inc. • R. L. Pritchard & Co. • Revonah Spinning Mills • Stein, Hall & Co., Inc. • White Lamb Finlay Inc. • Willcox Enterprises, Inc.

For more data, circle 79 on inquiry card

**This is a fine looking  
exit device. But that's the last  
reason for specifying it.**



The first reason is that it's  
the only completely drop-forged  
bronze exit device made.  
It's our 77 device,  
unsurpassed for tensile strength  
and resistance to shock and wear.  
Write for literature!

**Von Duprin**®

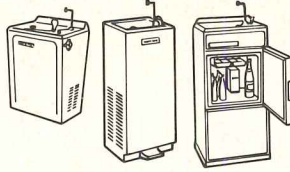
VON DUPRIN, INC. • 400 WEST MARYLAND STREET • INDIANAPOLIS, INDIANA 46225 IN CANADA: VON DUPRIN, LTD.

*For more data, circle 80 on inquiry card*

**Hot water** — 60 cups per hour — for coffee, tea, or instant soups. Turns a Halsey Taylor water cooler into a complete refreshment center. Eliminates the hazard and mess of hot plates — or time-wasting “off-the-premises” coffee breaks.

**Capacity** — 60 cups per hour of 180° to 145° water — or 10 cups rapid draw — from gooseneck, lever-operated cup filler.

**Available as** — a factory-installed accessory on Halsey Taylor wall-mount cooler WM-14-CB, and floor-standing coolers SC-14-CB, WT-14-CB, and compartment type model CP-3-CB.



Write for Catalog and specifications.  
**THE HALSEY W. TAYLOR COMPANY**  
 1560 Thomas Road, Warren, Ohio 44481  
 SUBSIDIARY • KING-SEELEY **KST** THERMOS CO.



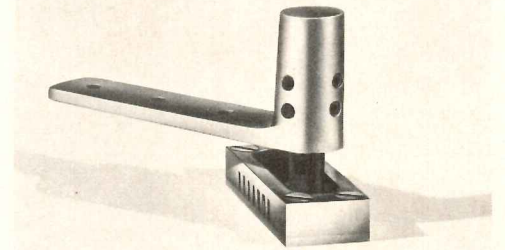
For more data, circle 81 on inquiry card

# PEOPLE PLEASER



**ASBESTOS-FREE FIREPROOFING** / *Caico Blaze-Shield Type D C/F* is a spray fireproofing made of a blend of mineral fibers and proprietary binders; it contains no asbestos. The direct-to-steel spray can be applied from floor level and the required thickness can be built up in one application. It is also a thermal and acoustical insulator and protects steel against corrosion. ■ U.S. Mineral Products Co., Stanhope, N.J.

Circle 307 on inquiry card



**LATERAL MOVEMENT HINGE** / *Raconteur* is a concealed pivot hinge that moves laterally by means of cogs in the gear box so that the door's edge swings away from the jamb; this eliminates the need for the usual clearance provisions. This hinge is available for interior doors up to 3 ft by 7 ft weighing up to 80 lbs. ■ Hager Hinge Co., St. Louis.

Circle 308 on inquiry card

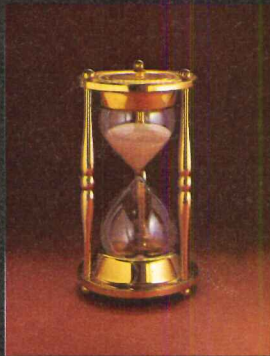


**SAFE PISTON TOOL** / This semi-automatic powder-actuated piston tool uses small pellets at any of 8 power settings to drive 1/2 in. to 3 in. pins or threaded studs to fasten wood or steel to either concrete or steel. A pellet must be rotated 90 deg to the chamber before the tool can be utilized. The track is offset from the line of the chamber so that none of the gases can feed back to other pellets in the chamber. The tool will not fire without being fully depressed against the surface; it cannot drop or air-fire. ■ Ramset, New Haven, Conn.

Circle 309 on inquiry card

more products on page 174

# It's about time.



Span-Deck's story is about time . . . like in "time is money." And in Span-Deck's story, we mean lots of money.

We're talking about "time costs" that have become so important, such as . . .

- . . . interest on construction loans
- . . . uncompleted-job site vs. income producing property
- . . . supervision and overhead hours
- . . . architect's inspections and phone time
- . . . weather and labor hazards
- . . . fluctuating material costs

Span-Deck minimizes time costs . . . for while a job-site is being prepared, structural elements can be plant-produced off-site. Span-Deck floors and roofs erect at 10,000 to 20,000 square feet per day, wall panels at 5000 square feet per day. This is the kind of speed that has cut "time costs" in half.

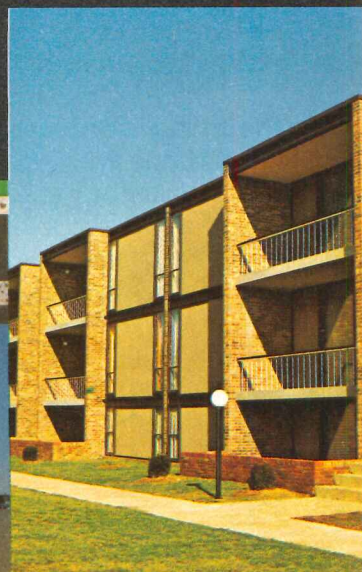
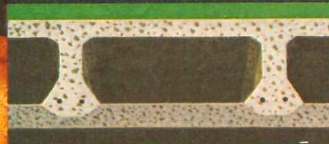
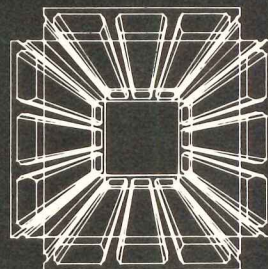
The Span-Deck story is also about design flexibility, fire-safety, acoustics, low span-depth ratio, dimensional accuracy, nationwide availability and the finest, most precise, prestressed concrete, hollow-cored decking unit (requires no topping) made in the United States, Canada or England.

If *your* time is valuable, it's about time for Span-Deck.

For the complete Span-Deck story and the name of the producer nearest you, contact: Span-Deck, Incorporated,  
P. O. Box 99, Franklin, Tennessee 37064.

*For more data, circle 82 on inquiry card*

**span deck®**





## New Facad is so sculptured, it's almost sculpture.

There's a new way to incorporate sculpture and textural relief in building design. It can be done with Facad®.

This sculptured facing system of easy-to-install thin, molded, reinforced cement panels can be used as a total wall element; as spandrel panels, fascias, balcony panels or soffits.

Sturdy, but lightweight (2 pounds/square foot), Facad is easy to handle. It comes in sizes up to 4' x 10'. No special skills or extra structures are required. Installation is within the competence of carpenters or glazers.

Facad is durable. Because it is all mineral, it is completely incombustible.

Facad comes in a series of standard panel surfaces, one of which is shown above. It can also be custom molded to afford architectural designers a broad choice of texture, color and pattern.

For complete information, call the Architects Service Representative at your nearest U.S. Plywood office or write:



**U.S. Plywood**

A Division of U.S. Plywood-Champion Papers Inc.  
777 Third Avenue, New York, N.Y. 10017

For more data, circle 83 on inquiry card

# Bright idea



**Beautiful way to reduce washroom costs: specify new, contemporary-looking, polyester fiberglass-reinforced Bradglas Washfountains.** The colorful new materials create exciting accents for any washroom decor. They weigh up to 80% less than precast stone, yet have a strength-to-weight ratio approaching that of steel. The smooth, non-porous bowls and panels are highly resistant to abrasion, acid, and corrosion. And will not chip, peel, or flake. Vandalproof Washfountains serve up to eight people with just one set of

plumbing connections, reducing installation costs as much as 80%. Washfountains also save about 25% on both floor and wall space. And they're foot-operated, so they're much more sanitary than ordinary washfixtures. Circular and semi-circular 54" diameter models are available in a variety of decorator colors. For information see your Bradley washroom systems specialist. And write for latest literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

# from Bradley!

*Leader in Washroom Fixtures and Accessories*



*For more data, circle 84 on inquiry card*





# Lake Point Tower conquers the Windy City's weather—with an assist from Butyl sealants.

## Will history repeat itself at "Big John"?

In Chicago, so the saying goes, if you don't like the weather, just stick around for a few minutes... it's bound to change.

Trouble is, the change is usually for the worse. If ever there was an acid test for sealants, the Windy City is it.

That's why we're especially proud of the way tapes made with Enjay Butyl rubber have held up in the famous Lake Point Tower. For three blustery winters and rain-swept summers, they've kept the wet in its place... outside.

With a track record like Lake Point Tower behind them, it's not surprising that tapes of Enjay Butyl rubber were selected for Chicago's newest skyline-buster, the John Hancock Building.

"Big John," as it's affectionately called, has enough windows to make it a glazer's nightmare. But since Butyl rubber tapes were used, we're betting it won't be anything of the sort.

Big John's sealants of Enjay Butyl rubber have a lot going for them. Ozone resistance, for one thing. Durability, for another. Plus all the accumulated experience we've amassed with Butyl rubber since we introduced it 30 years ago.

Ask your glazing contractor about it. Especially when you're involved with a building that has to stay dry—inside—for years to come.

Just say Big John sent you.

Enjay Chemical Company, Synthetic Rubber Division, 60 West 49th Street, New York, N. Y. 10020.

Lake Point Tower • Developers: Hartnett-Shaw & Assoc. Inc., Chicago and Fluor Properties Inc., Los Angeles • Architect: Schipporeit-Heinrich, Chicago • Glazing Contractor: National-Hamilton-Division of Bienenfeld Glass Corporation, Chicago • Sealant Manufacturer: Protective Treatments, Inc., Chicago • Windows are Butyl sealed Polarpne insulated glass. Polarpne is a Division of Combustion Engineers, Inc. John Hancock Center • Owner/Developer: John Hancock Mutual Life Insurance Co. • Architect: Skidmore, Owings and Merrill • Glazing Contractor: National-Hamilton-Division of Bienenfeld Glass Corporation, Chicago • Sealant Manufacturer: Protective Treatments, Inc., Dayton, Ohio •

*For more data, circle 85 on inquiry card*



**ENJAY CHEMICAL COMPANY**

# What's the surest way to specify the right Wade DWV System Floor Drain?

You'll find all the numbers in the industry bible for DWV systems, the Wade Specification Manual.

It tells you all about Wade Floor Drains. The different kinds. The specs. The types. Everything you need to know in order to specify the Wade Cast Iron Floor Drain that's right for the system you're designing.

Our bible also gives you specification and product information on everything else we make. Everything from roof drains, to water hammer arrestors, to interceptors, to carriers and cleanouts.

All of these DWV system prod-

ucts are designed, engineered and manufactured to the highest quality standards by the Wade Division of the Tyler Pipe team. The team that makes everything you need for a total cast iron DWV system.

Things like cast iron soil pipe, No-Hub Couplings and TY-SEAL® Gaskets from our Soil Pipe Division.

Things like waterworks and municipal fittings from our Utilities Division.

Next time specify your DWV system products from the bible. To get your free, registered copy, simply write us on your letterhead.

If it goes into a cast iron DWV system, Tyler makes it.

WADE DIVISION

**TYLER**  
PIPE INDUSTRIES



P. O. BOX 1211 | TYLER, TEXAS 75701

## By the numbers.

- W-1100
- W-1100 BODY
- W-1120
- W-1120 BODY
- W-1120-BT
- W-1120-CO
- W-1120-CO BODY
- W-1120-DF
- W-1120-V
- W-1140
- W-1140 BODY
- W-1160
- W-1160 BODY
- W-1180
- W-1180 BODY
- W-1380
- W-1380 T
- W-1390
- W-1390-LK
- W-1390-T
- W-1390-SB
- W-1400
- W-1410
- W-1410-SO
- W-1410-T
- W-1420
- W-1430
- W-1430-SO
- W-1430-T
- W-1440-DS
- W-1460-S
- W-1470
- W-1470-L
- W-1500
- W-1500-A
- W-1510
- W-1520
- W-1520-LB
- W-1520-P
- W-1540-T
- W-1540-TL
- W-1560-B
- W-1560-BM
- W-1570 TD
- W-1620
- W-1630
- W-1640
- W-1640-T
- W-1660
- W-1660 SO
- W-1670
- W-1680
- W-1700
- W-1700 A
- W-1710
- W-1710-AM
- W-1710-LB
- W-1730
- W-1730-L
- W-1740
- W-1740-F
- W-1740-K
- W-1740-T
- W-1740-TI
- W-1740-UF
- W-1750
- W-1750-L
- W-1750-LH
- W-1760-F
- W-1820
- W-1820-A
- W-1820-B
- W-1830-D
- W-1860-D
- W-1860-DT
- W-1860-E
- W-1860-ET
- W-1870-A
- W-1890
- W-1890-R
- W-1840-CV
- W-1840-CVL
- W-1950-CV
- W-1980
- W-1980-L
- W-2030
- W-2030-F
- W-2040
- W-2040 F
- W-2050
- W-2050-F
- W-2050-GF
- W-2080
- W-2085
- W-2360
- W-2360-B
- W-2370
- W-2370-B
- W-2380
- W-2380-B
- W-2590
- W-2390-B


Member, Plumbing and Drainage Institute

Copyright Tyler Pipe Industries 1970

For more data, circle 86 on inquiry card


# Plexiglas.<sup>®</sup>

## The no-risk lighting lens at John Hancock Center.



Plexiglas acrylic plastic, code-approved nationwide for lighting lenses and diffusers, is now demonstrating its superior performance characteristics in John Hancock Center, and in practically every other new big-name building you can think of.

First there's lighting efficiency. Precision lenses of Plexiglas provide maximum light on the task with low surface brightness at normal viewing angles.



Then there's permanence. Neither time nor the destructive effects of fluorescent illumination cause noticeable discoloration of Plexiglas. And the light weight, easy cleaning and

high breakage resistance of Plexiglas provide obvious maintenance advantages.

You also get complete design freedom with Plexiglas. You can cover greater areas because you're free to use panels as large as 5 feet by 5 feet.

Write for full information on Plexiglas for lighting and the names of lighting equipment manufacturers using Plexiglas.

Plexiglas is made only by



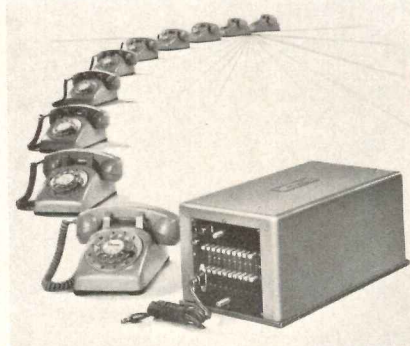
John Hancock Center, Chicago  
Owner/Developer: John Hancock  
Mutual Life Insurance Company  
Architects: Skidmore, Owings and Merrill

For more data, circle 87 on inquiry card

continued from page 166

# TELETALK®

BRIDGES THE COMMUNICATIONS GAP



Increasing demands on time, personnel and services require close-knit communications. Webster Teletalk specially designed systems are keyed to coordinating administration and operation of businesses, hospitals, schools, offices, clinics, institutions, and sports arenas.

**Teletalk loud speaking intercom** connects all departments, all areas giving immediate voice contact with the flick of a switch. Systems include area paging, time signals, emergency warning, music distribution, and more.

**Teletalk dial systems** give you all the advantages of a private telephone system. Automatic switchboards are even practical for as few as 1 line, 10 phones. Teletalk private systems may now be **interconnected** with utility phones to save even more money—in "rented" services.

**Teletalk security systems** help maintain secure operation of buildings and grounds. Remote areas can be monitored from a central security office or local police station over leased telephone lines. Webster Electric Company, Inc., Racine, Wisconsin 53403. Circle number below.



# TELETALK

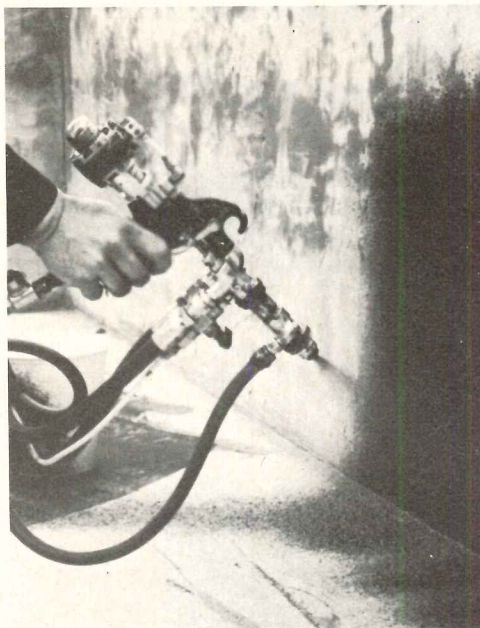
COMMUNICATIONS BY WEBSTER

For more data, circle 88 on inquiry card



**HOSPITAL CARPETING** / *SimFlor* is a contract carpeting especially suited for health facilities. It is fire-resistant, easy to clean because it is made of a new fiber that releases stains instead of spreading them, and it reduces noise. It also cuts down static shock and resists crushing and abrasion. ■ Simmons Co., Chicago.

Circle 310 on inquiry card



**SPRAY-ON POLYMER WATERPROOFING** / This seamless, 2-compound waterproofing is applied as a liquid and cured at ambient temperatures to form a rubbery membrane. Spray machine application is recommended for large areas; the 2 components combine in the spray nozzle. A trowel, brush or squeegee can be used for smaller areas. The coating is highly flexible—it expands and contracts without cracking, impervious to water, and resistant to chemicals and bacteria. ■ Thiokol Chemical Corp., Trenton, N.J.

Circle 311 on inquiry card  
more products on page 184

THIS SPACE CONTRIBUTED BY THE PUBLISHER

## The cure for cancer



There is no doubt that sooner or later research will find the ultimate cure for cancer. We can help make it sooner. If you help us. Give all you can to the American Cancer Society.

Fight cancer with a checkup and a check.

For more data, circle 89 on inquiry card



# Summitville® QUARRYETTES

GO EVERYWHERE... FOR ECONOMY FARE

Quarryettes are miniature *extruded* Quarry Tile . . . offering almost unlimited design versatility, beauty and durability in all kinds of buildings . . . schools, hospitals, homes, commercial and institutional structures.

Quarryettes are available in a wide range of compatible natural earth colors, modular 1" x 1" x 1/4" and 2" x 2" x 1/4" sizes . . . straight

shades and blends . . . four contoured shapes.

Best of all . . . Quarryettes "go" on floors and walls everywhere at costs competitive even to products that wear out. Ask your Summitville representative, Tile contractor or check Sweet's catalog.

SUMMITVILLE TILES, INC., SUMMITVILLE, OHIO

# THONET



The Belmont, from our new collection. Thonet. One Park Ave., New York 10016. Showrooms: New York, Chicago, Los Angeles, San Francisco, Dallas, Miami, Atlanta.

*For more data, circle 90 on inquiry card*

The vinyl wall meets the painted wall.



Presenting the first fully coordinated walls in Color, Design and Texture.

On the right, Devoe Green Brass, in paint. On the left, color-coordinated Corbu Roca, from the new Devoe line of contract vinyl wallcoverings. A new, easier way to coordinate all the colors of a commercial interior.

These new Devoe CDT® vinyl wallcov-

erings are all cross-referenced to Devoe Paint's new collection of fashion colors of the 70's. And they're available in a full assortment of designs and textures, in the complete commercial weight range. So if you want a Burnt Orange wallcovering in a 25-ounce grass cloth — and the same

shade in an enamel trim or a vinyl wall paint — you can order both at once . . . from one supplier.

A note on your letterhead will bring samples. Write: Mr. H. J. Smith, Devoe Paint, 224 East Broadway, Louisville, Kentucky 40202.

CDT® Vinyl Wallcoverings by **Devoe**® A Division of Celanese Coatings Co.

# 120,000 sq.ft. of free-access Weberfloor...



## speeds construction of Administrative & Research Center

Globe-Union, Inc. of Milwaukee gave architect Charles W. Harper of Harper-Drake Associates two demanding goals for its new administrative engineering and research complex. First, a 10-month completion deadline requiring steel erection in less than 30 days. Second, complete flexibility in building design to accommodate constantly changing services of all kinds.

With Weber's access flooring, electrical and communication lines, the special plumbing required for laboratories, heating and ventilating ducts and mechanicals of all kinds could be installed after the floor slabs were poured. These utilities were designed while the building shells were being completed. Once the buildings were closed in, installers of the various services were able to work faster and more accurately under comfortable indoor conditions.

With unrestricted access to all services under the Weberfloor, Globe-Union has the flexibility it needed for modifying or relocating these utilities at any time. Offices and laboratories can be rearranged without tearing up expensive flooring and without the expensive mess of drilling through concrete to conventional raceways.

With savings in electrical, plumbing and mechanical services deducted, Globe-Union's finished Weberfloor, about half of it carpeted, netted out to approximately \$1 per square foot.

**Write for free booklet**, giving many other advantages of Weberfloor in general construction. Please contact Weber Architectural Products, Division of Walter Kidde & Company, Inc., 1340 Monroe N.W., Grand Rapids, Michigan.

*For more data, circle 92 on inquiry card*

◆ *For more data, circle 91 on inquiry card*



# TCS

## Why coat stainless steel?

. . . because proper soldering of stainless steel requires an extra step of pretinning or use of corrosive fluxes. These fluxes must be removed after soldering to prevent attack on the stainless. TCS solders perfectly using a non-corrosive rosin flux. Pretinning is unnecessary.

. . . because architectural metals are subject to corrosive attack in severe chemical, industrial or marine environments.

TCS enhances the proven ability of stainless steel to resist corrosive attack under these conditions.

. . . because the reflective surface of stainless steel may sometimes be undesirable in architectural applications.

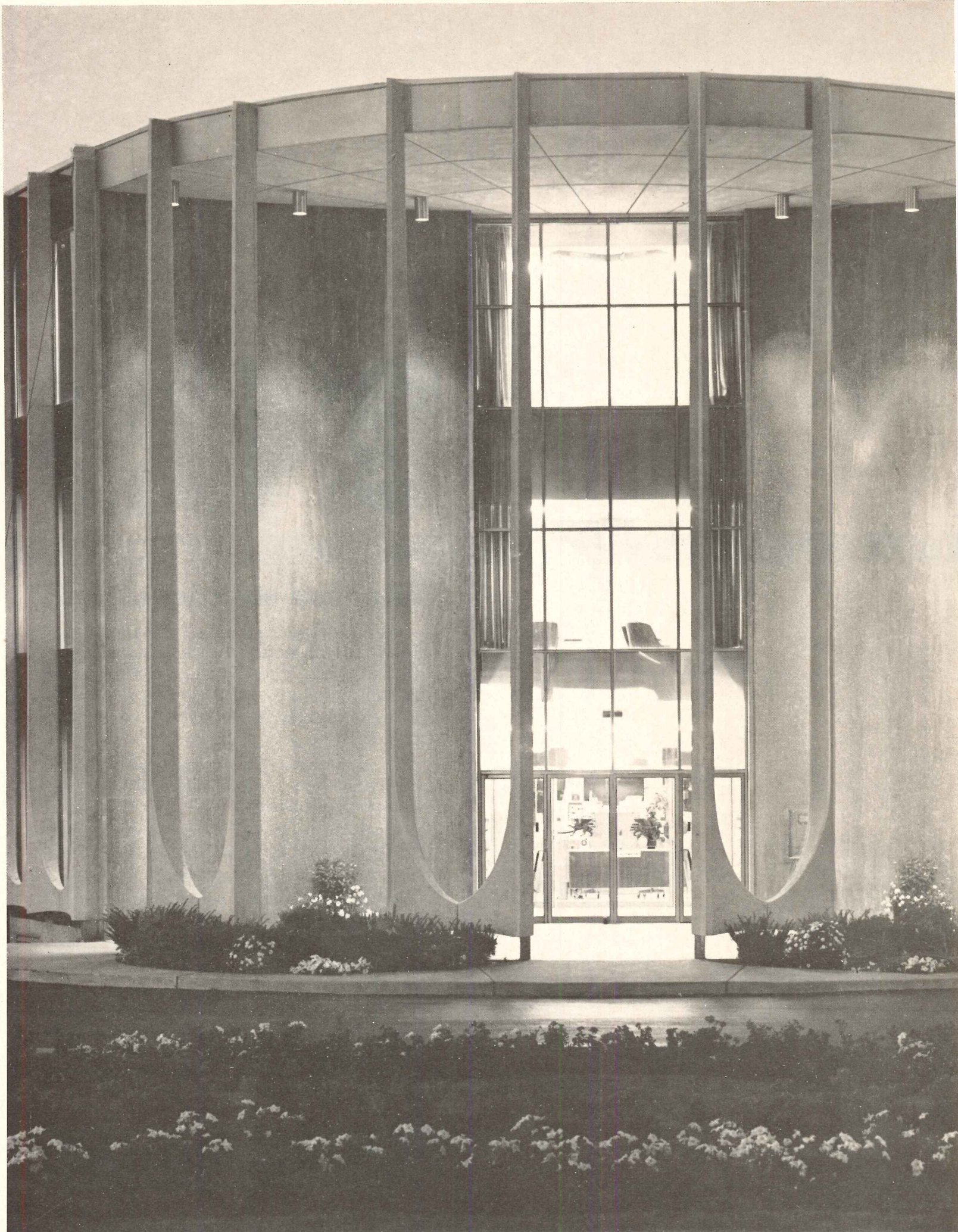
TCS weathers naturally to a predictable, uniform and attractive dark gray. If color is desired, it can also be painted.

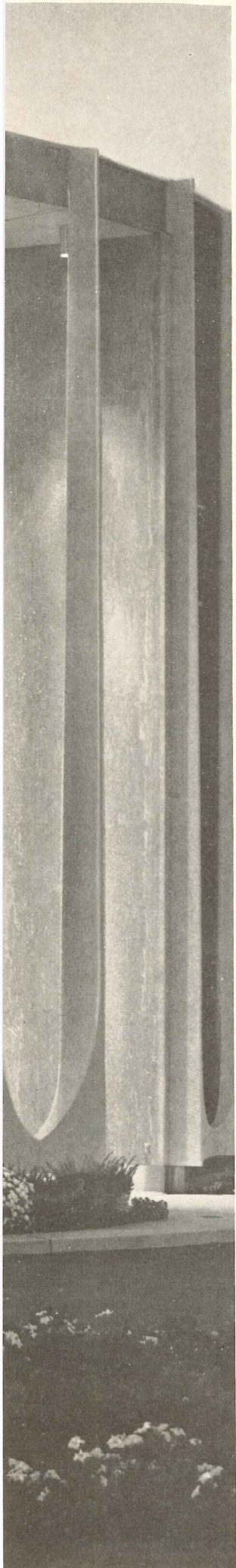
TCS, Terne-Coated Stainless Steel, is 304 nickel-chrome stainless steel covered on both sides with terne alloy (80% lead, 20% tin). It is a product of Follansbee Steel Corporation, Follansbee, West Virginia.

# FOLLANSBEE

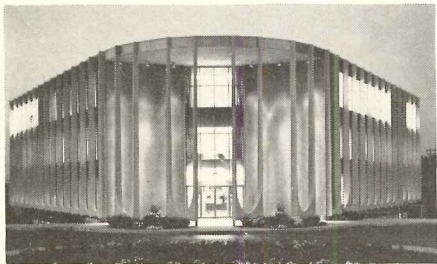
FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA

*For more data, circle 93 on inquiry card*





**Architect John A. Benya must love  
All-Electric design. It gave him the freedom  
to design a heart-shaped bank.**



John A. Benya won't build anything unless it's All-Electric—the most flexible approach to total environmental control.

The people at the Creve Coeur Bank in Creve Coeur, Missouri, bought this concept when they asked him to design a new bank. Now the town of Creve Coeur (French for broken heart) has an All-Electric bank in the shape of a heart. Two years ago Mr. Benya used the freedom of All-Electric design to build a football-shaped bank.

For the Creve Coeur Bank,

Mr. Benya used electric baseboard units plus supplemental heating units in the environmental control system. This system allows the bank to heat one area while cooling another. The system is totally flexible and it gives the freedom to expand the building when necessary.

Electric heat is clean. And there's no loss of energy because the source of heat is right in the room. So you don't lose heat transporting it down the line.

With these advantages, you can understand why so many commercial buildings are going All-Electric. Talk to your electric utility company today.



**Live Better Electrically**

Edison Electric Institute, 750 Third Ave., New York, N.Y. 10017

*For more data, circle 94 on inquiry card*

*From a  
new kind  
of quarry.*

Nevamar still gets looks of amazement . . . with the authenticity of our Sculptured Slate finish. How can anyone, people want to know, duplicate the natural cleft of quarried slate? In a plastic laminate?

Well, let's just consider the "how" a secret . . . but since we developed the whole idea of dimensional finishes . . . and were the first to introduce Sculptured Slate . . . naturally, we do it better.

With Sculptured Slate, Nevamar has recreated nature in a way that has to be seen to be believed. Actually, it's better than nature, since our Slate won't chip or peel, stain or mar. Send for samples and see for yourself . . . the many creative applications.

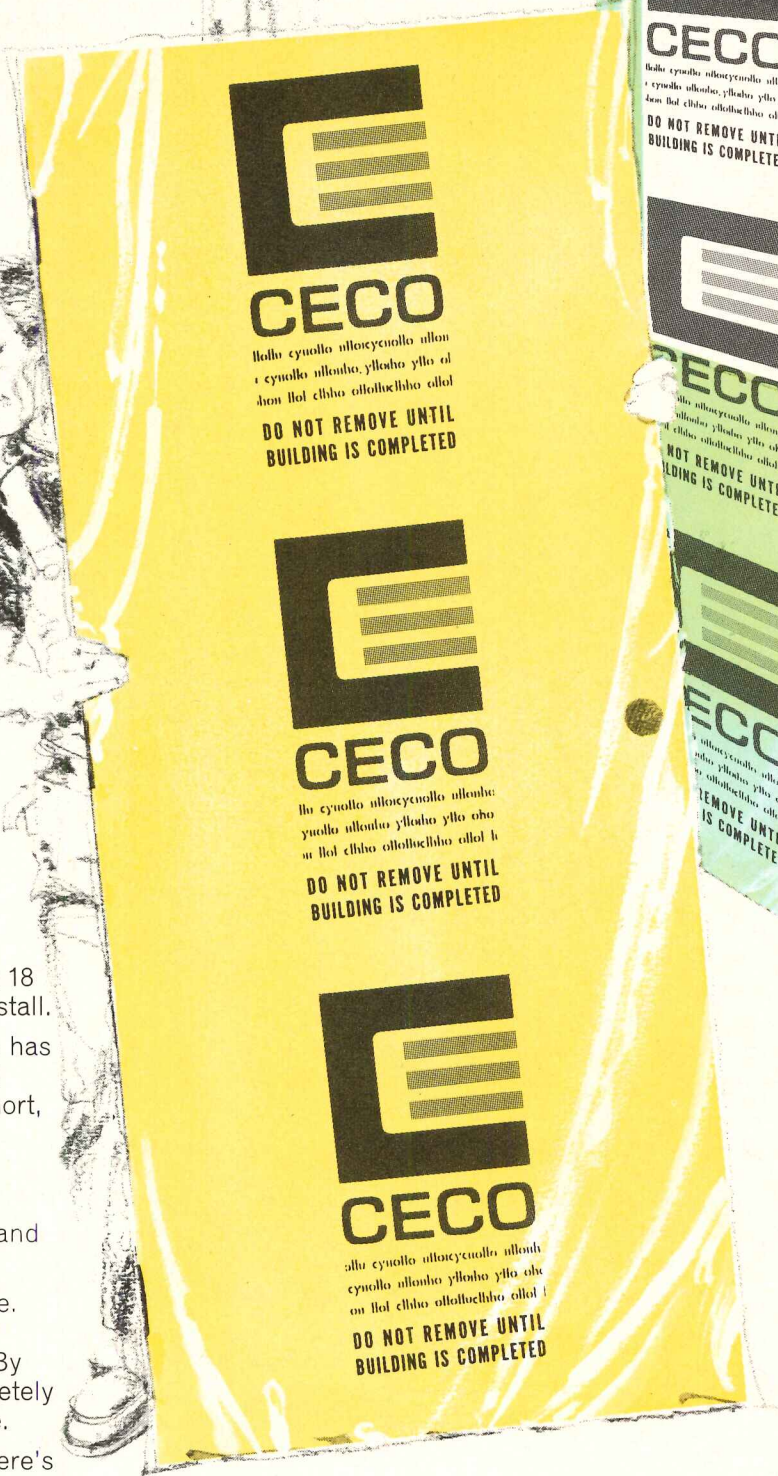
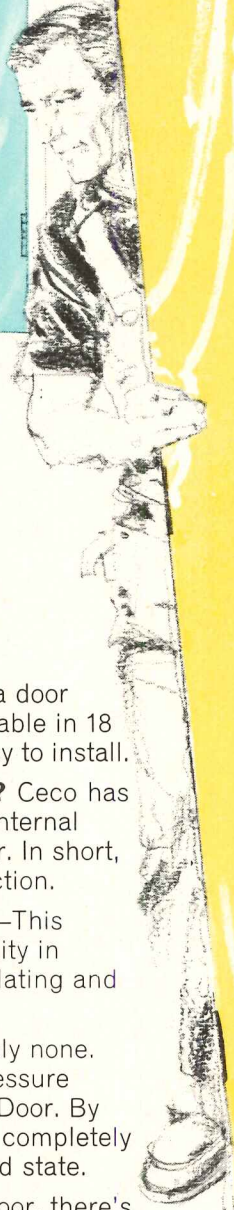
Nevamar: out of a new kind of quarry with a totally new kind of slate.

 **NEVAMAR**  
*newest look in Laminates*

Enjoy Fibers And Laminates Company  
Odenton, Maryland 21113  
A Division of Enjay Chemical Company

*Sculptured*  
**SLATE**

*Dimensional finish plastic laminate*



# The New "Imperial"

...a truly fine steel door with rigid urethane core.

Here's a door that's exceptionally strong . . . a door that's rated heavy duty . . . a door that's available in 18 or 16 gauge steel . . . a door that's so very easy to install.

**Why is the Imperial Steel Door so good?** Ceco has taken the steel skin and urethane core plus internal reinforcements and bonded all three together. In short, you get "monolithic sandwich-type" construction.

**Rigid urethane, a superior core material**—This closed-cell material possesses excellent rigidity in relation to its light weight. Its combined insulating and soundproof values are exceptional.

**No unfilled cavities in the core**—Absolutely none. The urethane core is froth-foam, which is pressure pumped into the hollow core of the Imperial Door. By vigorous chemical expansion, the froth-foam completely fills all cavities, then rapidly sets up in a solid state.

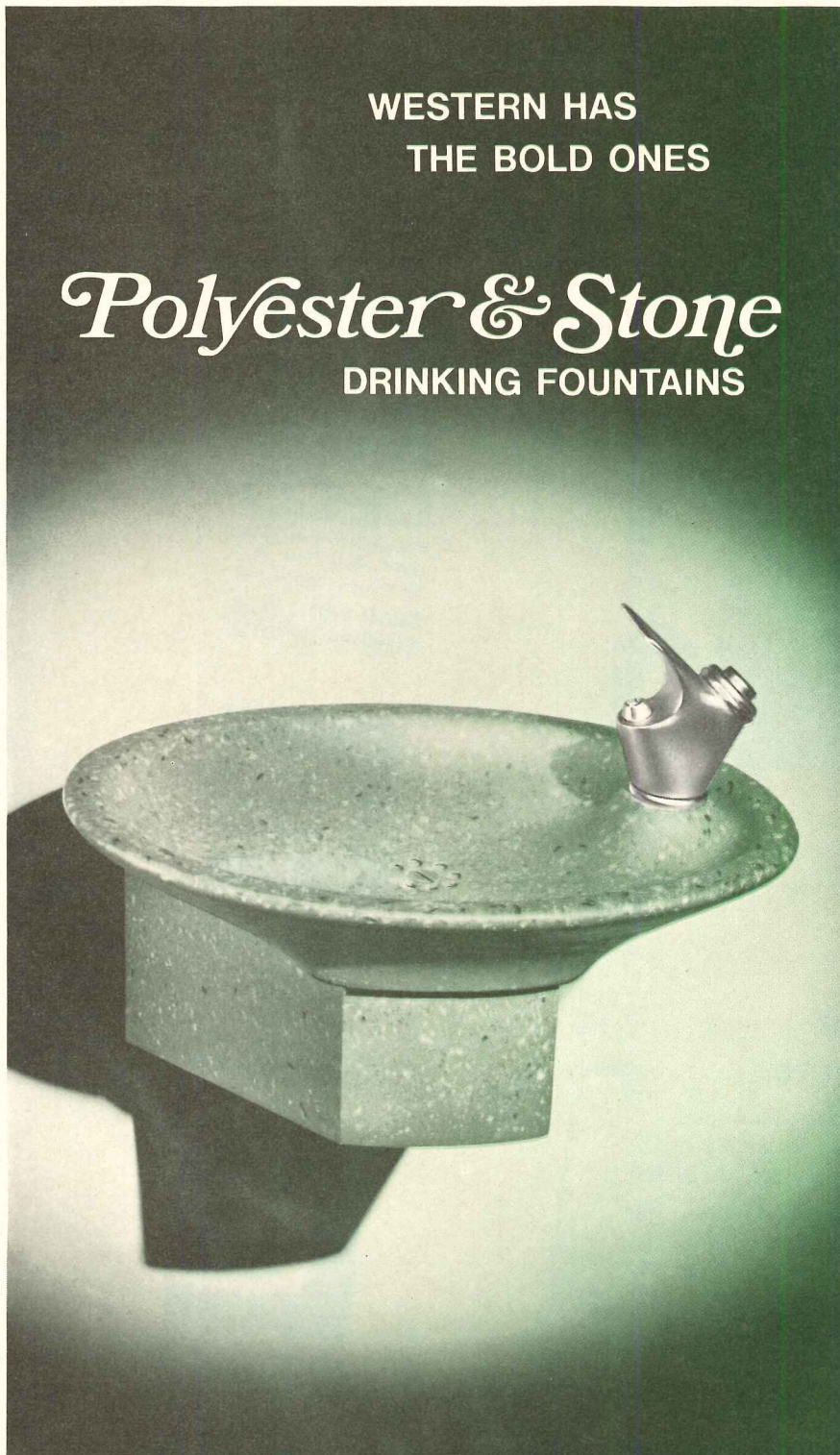
**Installation is a snap**—With the Imperial Door, there's no cutting, chiseling, trimming or drilling. Job-site labor expense is cut to the bone.

**What about color?** Choose from seven standard Colorstyle finishes. Colors are first-quality, oven-baked, vinyl-type enamels. Each door comes protected in a tough polyethylene bag in a reinforced carton. Prime and special finishes also available.

**Take the next step**—Get together with your Ceco representative. For additional information, write The Ceco Corporation, 5601 W. 26th Street, Chicago, Ill. 60650.



*continued from page 174*



WESTERN HAS  
THE BOLD ONES

*Polyester & Stone*  
DRINKING FOUNTAINS

This attractive, lightweight, and durable polyester and stone drinking fountain is available in your choice of five glorious colors—grey, green, charcoal, white, and beige. Western also has nine other Bold Ones that go perfectly in any building.

Write for our complete catalog and see for yourself why the Bold Ones are your best bet.



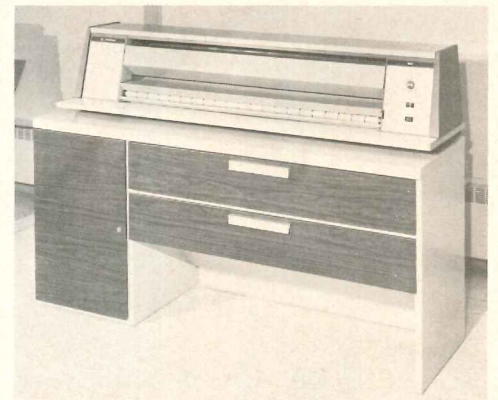
**WESTERN DRINKING FOUNTAINS, INC.**

A subsidiary of Sunroc Corporation  
14487 Griffith St., San Leandro, California 94577

*For more data, circle 96 on inquiry card*

**VANDAL-PROOF LIGHTING** / This ceiling-attached luminaire is made of "indestructible" polycarbonate to withstand abuse in such vandal-prone buildings as schools, penal and corrective institutions, and bus terminals. Its tamper-proof construction avoids unauthorized removal. A prismatic lens enclosure uses light efficiently and can reduce the number of lighting fixtures needed by half. ■ Holophane Co., Inc., New York City.

*Circle 312 on inquiry card*



**PRESSURE COPY PROCESS** / A new diazo copying process makes use of pressure and small amounts of organic amine to produce 8½ by 11 prints in 10 seconds. The process eliminates the need for ammonia fumes or chemical mixes therefore making the process safe and odor free. From 3,000 to 4,000 black line, blue line or sepia reproducible prints can be made using a pint cartridge of organic amine fluid. ■ Charles Bruning Co., Mt. Prospect, Ill.

*Circle 313 on inquiry card*



**POUCH CHAIR** / This leather over foam upholstered Kangaroo chair has a pouch for newspapers and magazines. It is comfortable and simple in design. ■ Stendig, Inc., Chicago.

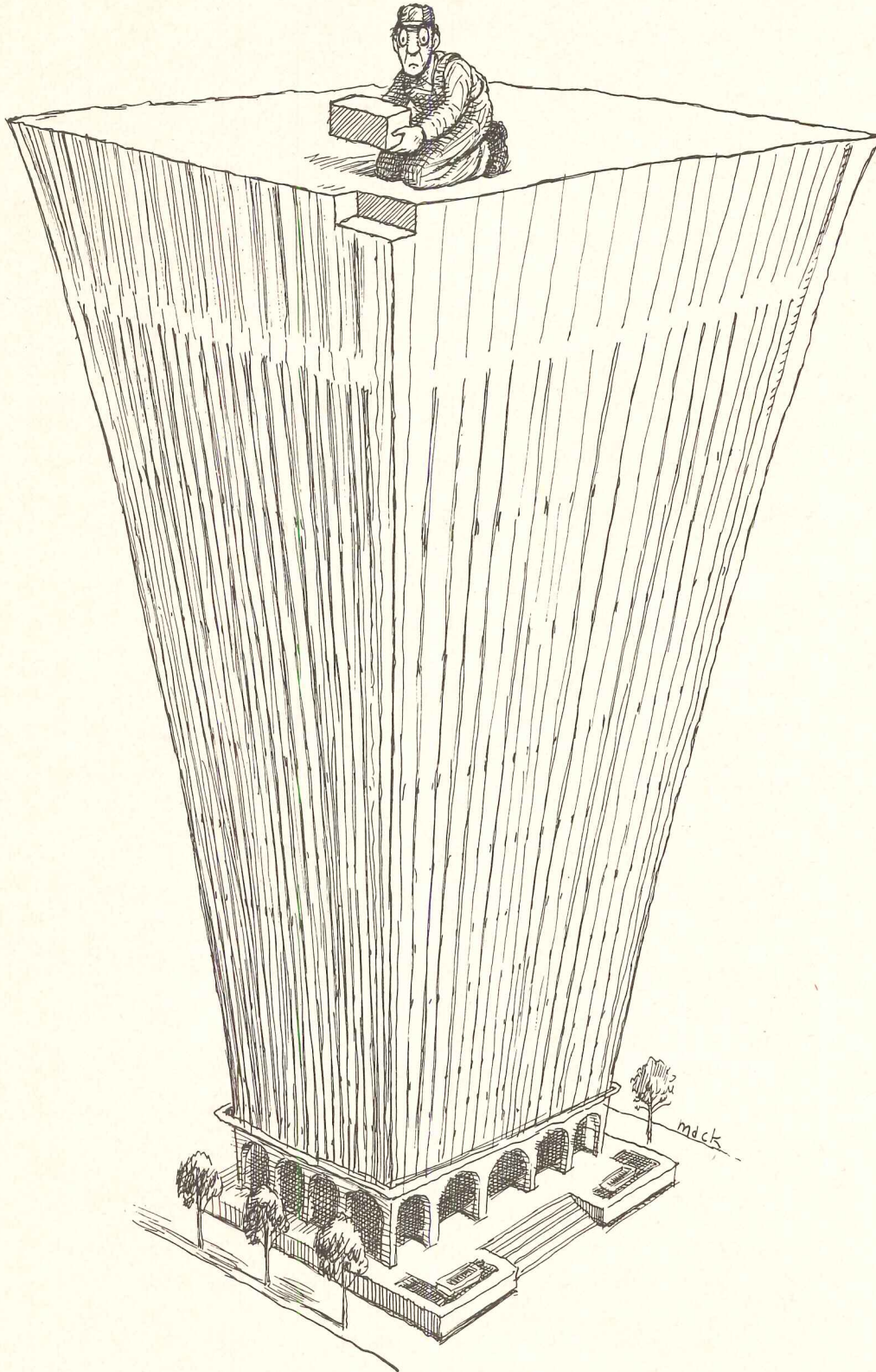
*Circle 314 on inquiry card*

There it stands: An award-winning beauty.  
It was one of those buildings that had people standing around  
as it went up saying, "Wow, it's really going to look great  
when it's finished."  
But nobody bothered to think about what's coming.  
Every single building going up today—no matter what

it's for—must allow room for the Communications  
Explosion.  
Call 212-393-4537 collect for a complete list of  
Building Industry Consultants. They'll help you plan now  
so that nothing has to be ripped  
apart later.



Too bad we're going to have to rip it apart.



## **Rule: All walls must be vertical.**

Why look for trouble? Walls have been straight up and down for years and nobody ever complained.

So why experiment? Why not just stay with the commonplace? For one thing, it's easier. And for another, you'll save yourself the time it takes to read the rest of this ad. Because what we have to say will be of interest only to men of imagination.

Men like Architect Ara Derderian, who parlayed vertical wall and sloped wall cable-hung units into this visionary exhibition center.

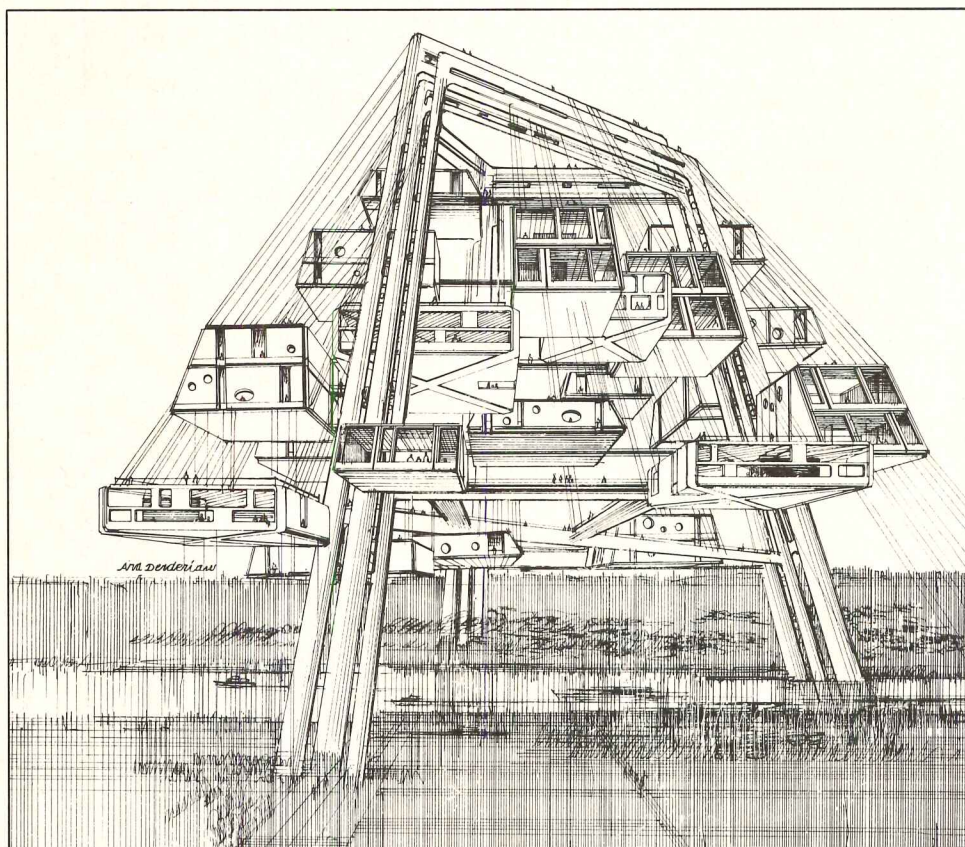
And, to accompany his unconventional sloped windows, we've developed an unconventional method of hanging the only window covering he could use to combine light-and-air control with privacy: blinds.

Looking ahead with Ara Derderian, we've determined that thin wires, threaded through the blinds' tips, would



enable them to parallel the sloped windows, yet still leave them free to tilt, raise and lower.

In this way, we repeal the law of gravity. And indicate to you that our imagination can keep up with yours. If only you'll let it.



## Levolor Blinds. For architects who break the rules.

ARCHITECT ARA DERDERIAN'S VISIONARY EXHIBITION CENTER MAY NEVER BECOME A REALITY. YOUR "VISION" MAY. □ DISCUSS IT WITH US NOW, BEFORE YOU HAVE TO START COMPROMISING. □ LEVOLOR LORENTZEN, INC., 720 MONROE STREET, HOBOKEN, NEW JERSEY 07030

*For more data, circle 97 on inquiry card*

## There are at least three ways to look at terminal seating.

... With the logical eye of a businessman whose budget won't permit mistakes.

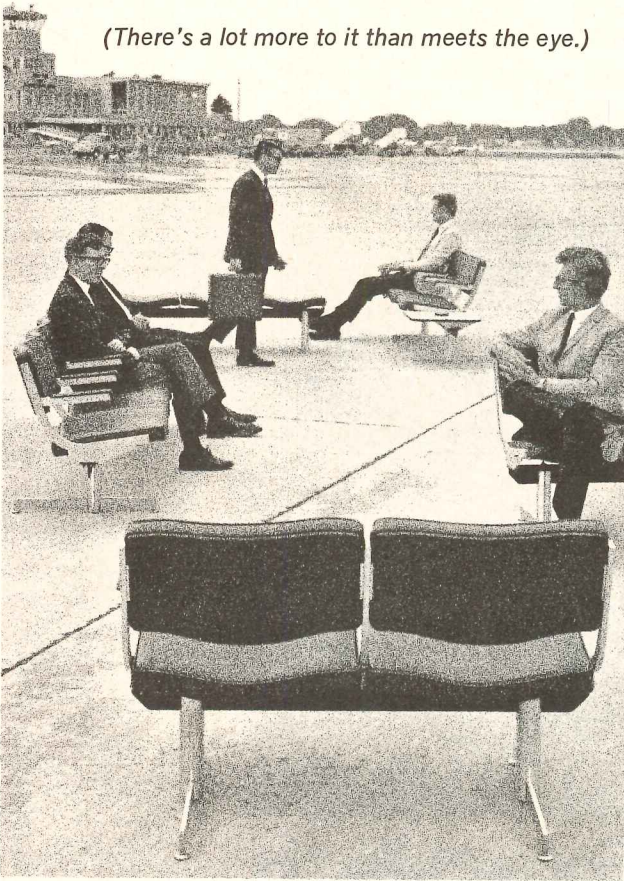
... With the hopeful eye of a customer seeking a moment of comfort in his fast-paced life.

... With the trained eye of a designer insistent on a statement of value in a raucous, commercial world.

Look.  
Look.  
Look.

Harter Sequential.

*(There's a lot more to it than meets the eye.)*



<b>HARTER CORPORATION</b>	
805 Prairie Avenue Sturgis, Michigan 49091	
I'd like to take a closer look at Harter Sequential seating for <input type="checkbox"/> airline <input type="checkbox"/> other high-traffic seating.	
Name _____	Title _____
Company _____	
Address _____	
City _____	State _____ Zip _____

For more data, circle 98 on inquiry card

## NEW LOOKS IN LETTER STYLES FOR INTERIOR SIGNING



### GRAPHICS 1000

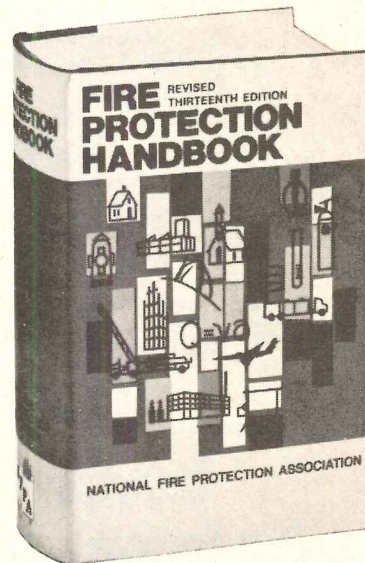
From the GRAPHICS 1000 SYSTEM, fresh letter styles never before available for engraved signs. Select a type face to complement your interior themes in schools... hospitals... office buildings. For beauty and permanence, the letter color is achieved by filling the routed-out letters with any one of hundreds of enamel colors available. Your choice of sign color, too, in any of the high pressure laminated plastics. Make your selections from our complete catalog.



### KNIGHT MANUFACTURING COMPANY

5975 Armour Drive P.O. Box 15282 Houston, Texas 77020

For more data, circle 100 on inquiry card



The "bible" of fire protection. Just issued 13th Edition gives a progressive understanding of fire and its control while being a logical encyclopedia on sound fire protection engineering. Published by NFPA — worldwide, the leading authority on fire. 2,128 pages. \$22.50 per copy, f.o.b. Boston. Postage prepaid when check accompanies order. Write Dept. D11.

**National Fire Protection Association**  
60 Batterymarch St., Boston, Mass. 02110  
Telephone (617) 482-8755

For more data, circle 101 on inquiry card

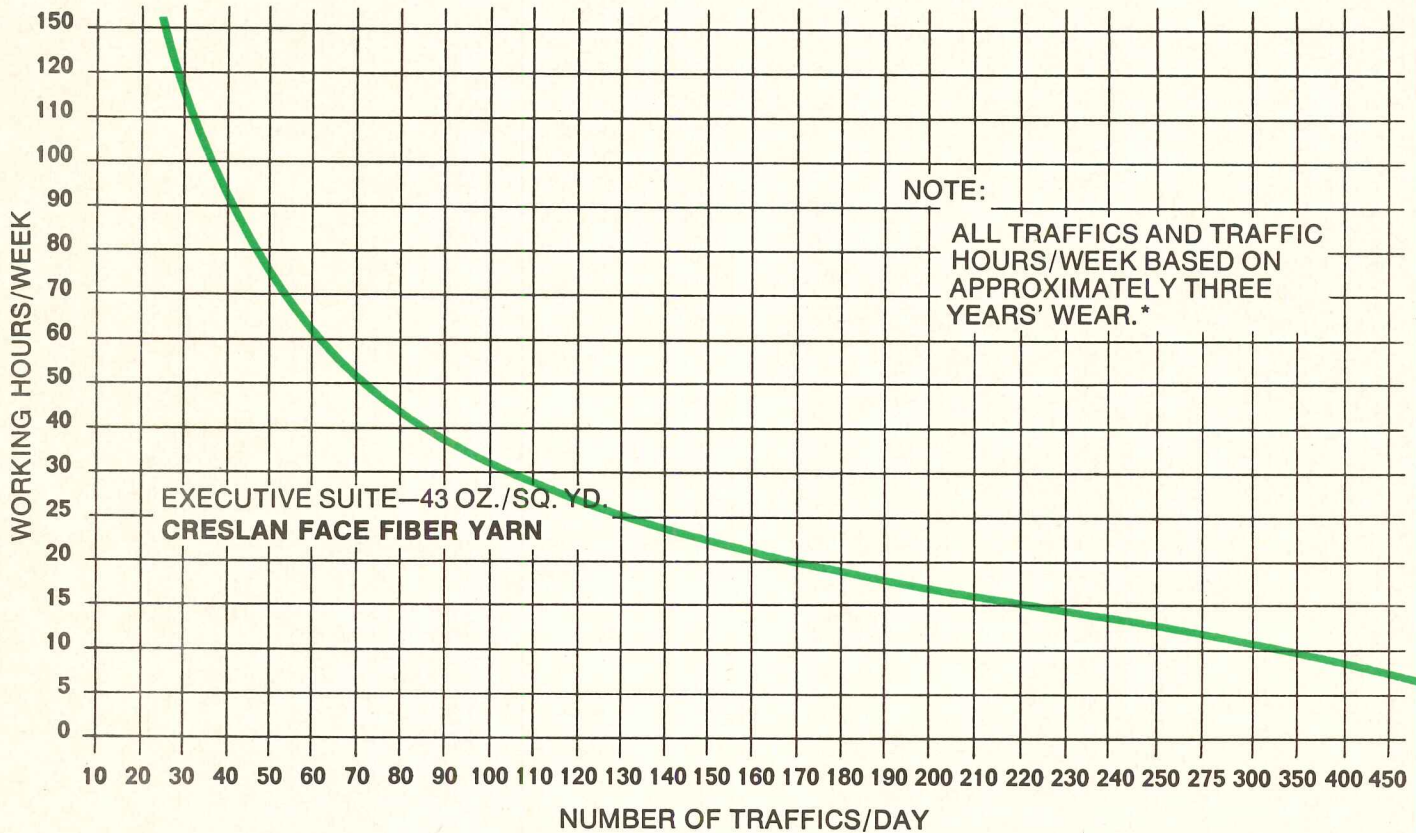
# Everybody talks about traffic-rated contract carpet

**MODERN  CARPET has finally done it.**

## Traffic hours/week rating

### EXECUTIVE SUITE

1/8 Gauge—10 Stitches/Inch—1/4" Pile Height  
43 oz. per sq. yd.



The graph above is part of a revolutionary new engineering technique, designed to take some of the guesswork out of contract carpet specifications. MODERN CARPET INDUSTRIES, INC., has developed this new technique to tell you, for any given carpet construction, just how much traffic that carpet can withstand.

Thus, when the graph gives MODERN'S EXECUTIVE SUITE carpet, a rating of 3500 carpet hours a week, it means 100 people can walk on this carpet each hour of a 35-hour work week. Now, MODERN can engineer the correct carpet construction for your carpet needs.

MODERN can produce such efficient carpet because it employs the most advanced spinning, manufacturing and dyeing techniques available. And every carpet is rigidly quality controlled for its performance.

Even the fiber is special. Creslan® acrylic fiber.

It dyes beautifully in a full range of colors. It wears with great durability, resists soiling and is maintained with minimum care. It is mildew-proof, moth-proof, non-allergenic and virtually static free.

If you want to get all the facts about MODERN'S traffic-rated carpets, send the coupon for fully-detailed booklet.

**Creslan**<sup>®</sup>  
LUXURY ACRYLIC FIBER

Creslan is a product of American Cyanamid Company, Wayne, New Jersey

**Modern Carpet Industries, Inc.** A-8  
Contract Dept., 2131 Kingston Court S.E., Marietta, Ga. 30060  
I am interested in your plan for plotting traffic-load conditions vs. work hours per week.  
 General Information.  
 Please have representative call on me.  
Currently specifying carpet for installation less than 500 sq. yd.   
500 to 2500  over 2500   
Name \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

\*Based on study by Modern Carpet Industries.



# SNEAK PREVIEW.

This year we'll be holding sneak previews of Sweet's Architectural Microfilm Library system in hundreds of architectural offices across the country. We have spent five years and over one million dollars working on it. And we're still working on it. With these previews we'll be able to tell just how much more work needs to be done.

Ours isn't the first such system and it probably won't be the last. But we plan to make it the best. Several companies have already put theirs on the market. Together with all the problems they are still

having with them. Which become your problems. Like cost. Like locating information. Like browsing and comparing. Like queuing up at the reader/printer. Like color.

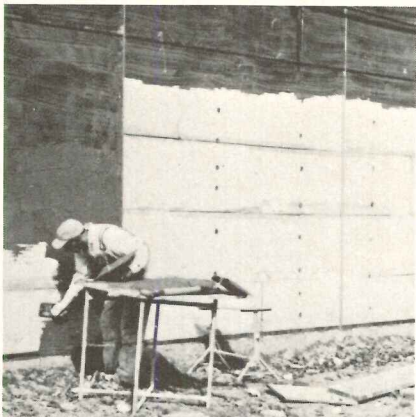
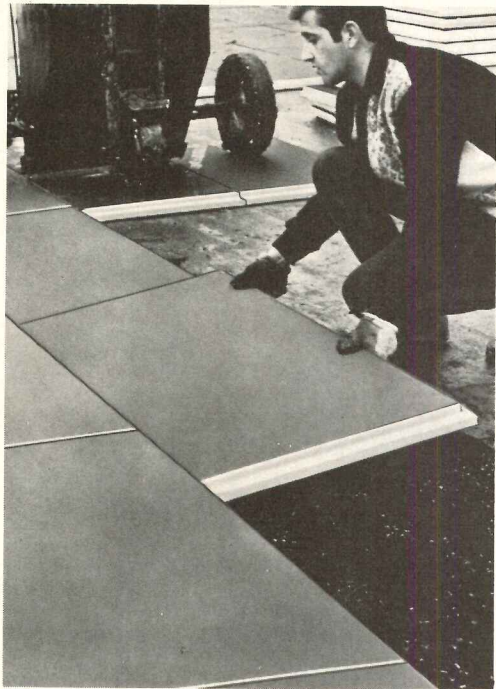
Only when we have solved all these problems through rigorous preview tests and we are satisfied that it is the best system available will we sell it.

By best, we mean the most efficient, trouble-free and economical information retrieval system in the market. Like you'd expect from Sweet's.

For the record, Sweet's

Architectural Microfilm Library is not just microfilm. Together with Sweet's Architectural Catalog File, the most used source of product information in the construction industry, it forms a complete system combining the advantages of printed and filmed data.

There are many other facts about microfilm we'd like to discuss with you off the record. If you're interested, just send your name and address to: Architectural Microfilm Library, Sweet's Division, McGraw-Hill Information Systems Co., 330 W. 42nd St., New York, N.Y. 10036.



## 70,000 ft<sup>2</sup> of masonry- with no seams?

... and no cracks after 10 years. It was easy with insulating board made of Styropor® expandable polystyrene foam from BASF. Styropor insulating board does more than give you a low installed cost on any job. It gives you higher insulating values, or better compressive strength, or a non-dusting board, or immediate supply from a coast-to-coast network of molders and wholesalers.

Styropor gives you all those values plus the freedom to design unique new buildings such as 70,000 ft<sup>2</sup> of seamless masonry that doesn't crack—or—cold storage units that go up quickly and economically—or—roof decks that go down fast and save heat year after year.

Styropor® expandable polystyrene gives you all those extra values because BASF Corporation is dedicated to providing not only an excellent insulating product but total support for you, including on-the-spot technical service that assures you the most effective building at the lowest possible cost.

## STYROPOR®

## BASF

BASF Corporation  
100 Cherry Hill Rd., P.O. Box 181  
Parsippany, N.J. 07054  
(201)-263-0200

Styropor® is a registered trademark of BASF.

Advertising Dept., BASF Corporation  
Dept. 141H7  
P.O. Box 181  
Parsippany, N.J. 07054

How can Styropor insulating board give me more freedom and a better building?

Send Data  Send List of Molders   
Send Technical Help

Name \_\_\_\_\_

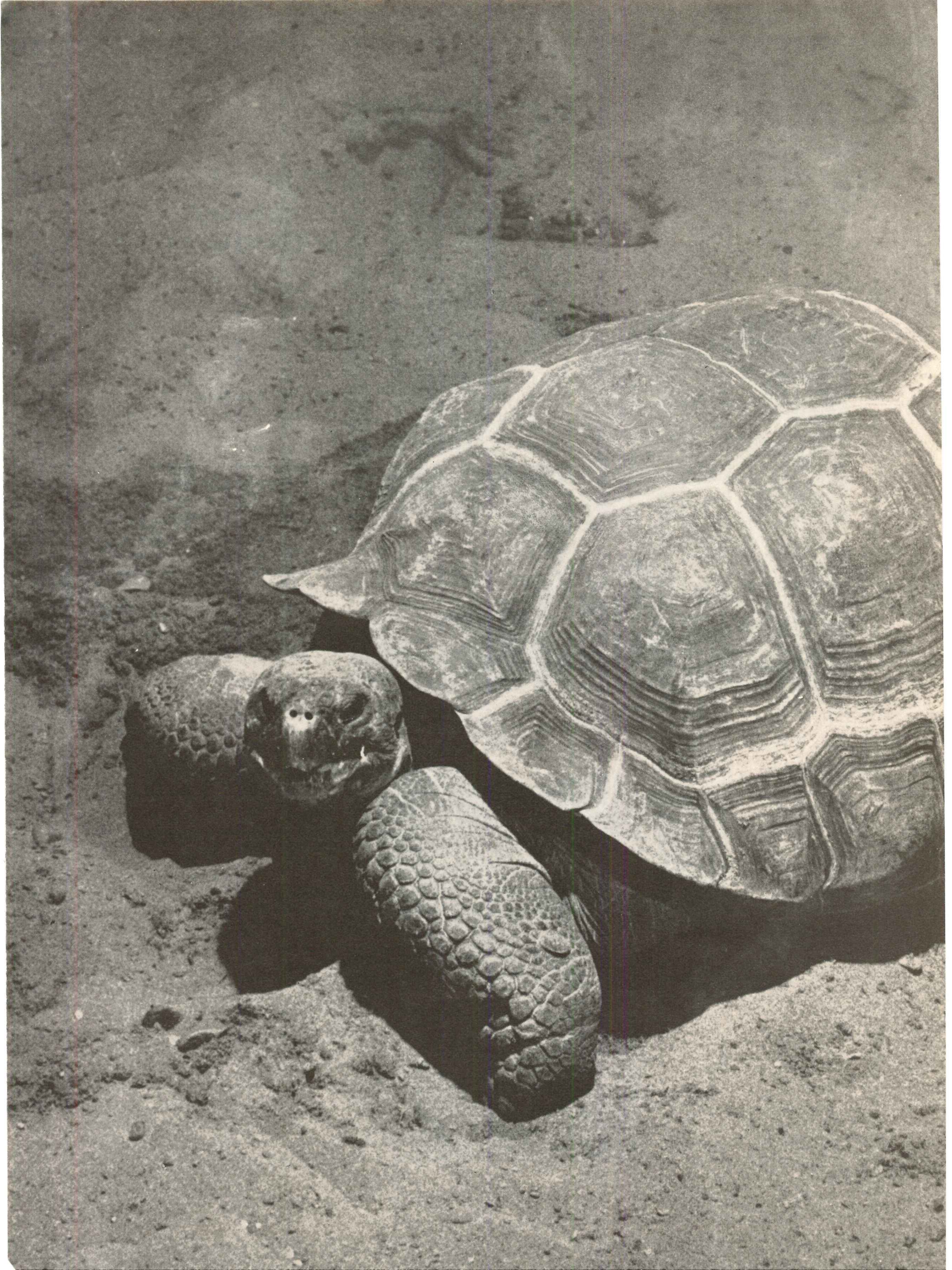
Company \_\_\_\_\_

Address \_\_\_\_\_

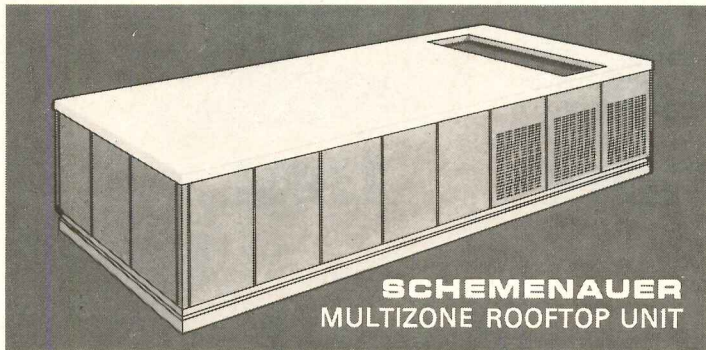
City \_\_\_\_\_

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

For more data, circle 103 on inquiry card



# You just can't beat a one-piece roof.



Our rooftop heating/air-conditioning unit sports a one-piece roof, too. And what a roof!

It's leak-proof because it's seamless. It's rust-proof because it's fiberglass.

But that's not all. The aluminum side panels are rust-proof. And for double protection, they're pre-finished with baked enamel. Special fasteners tightly bolt them to sturdy aluminum posts. No screws to rust. No screw holes to leak.

Around the base of the unit, gasket seals add further weather protection. From the roof of your building to the roof of our rooftop, no steel is exposed to weather.

That's how we make this multizone unit weather-proof—whether you use it for heating and ventilating only, or for full air conditioning.

Under this weather-proof shell are top performance features you would expect to get only in a rooftop unit designed to last as long as the building.

Send me all the facts about weatherproof Schemenauer multizone rooftop heating, ventilating, and air-conditioning units: RT-14410

\_\_\_ Gas Units    \_\_\_ Electric Units    \_\_\_ Hydronic Units

Have your sales representative call on us.

NAME \_\_\_\_\_

TITLE \_\_\_\_\_ FIRM \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

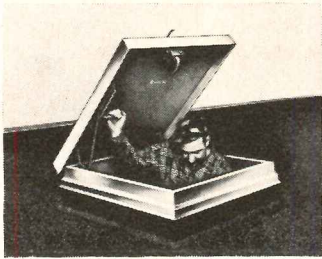
Mail to: Modine, 1510 DeKoven Ave., Racine, Wis. 53401



**MODINE**

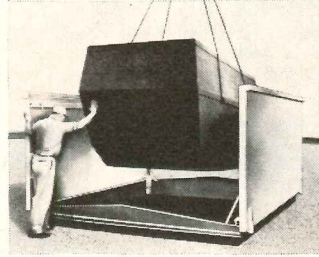
**Nothing quite equals Modine/Schemenauer heating and air conditioning quality.**

*For more data, circle 104 on inquiry card*



**Up**

**down**



**under**

**thru**

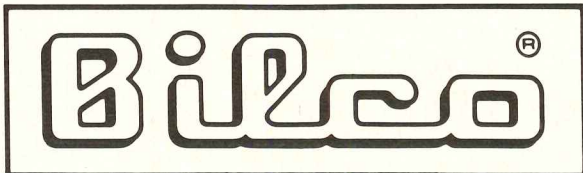
## Easy does it with a BILCO Door

When you're about to provide the best in access through a horizontal surface — think BILCO — leader in design and quality of special purpose doors.

There's a BILCO Door for every need — for convenient personnel access through roofs, floors, ceilings — for access to pumps, valves, meters. All are ruggedly built for long service. All operate with the ease and safety for which BILCO Doors have earned a universal reputation.

And when you need an extra-large special size in any type, specify BILCO for a product designed and built to insure your client's lasting satisfaction.

Where in the world do you go  
for the best in horizontal access doors?



The BILCO Company, Dept. A28, New Haven, Conn. 06505

For more data, circle 105 on inquiry card

## Massey put it together.

A new chair with a one-piece moulded plastic back. The Polaris chair. Massey put a lot of thought into the Polaris chair. To make it just right.

They put it together with a one-piece back. Because it's stronger. Looks better. Because they could eliminate ugly seams and exposed screws that snag clothing. And because there's no fold to catch dust and candy wrappers.

They put it together with 2" of foam on the back and a foam cushion over springs on the seat. Because they knew it would sit better. Be more comfortable. Hour after hour.

They put it together of moulded plastic. To keep its beauty for a lifetime. To keep it from getting scratched and marred in heavy day to day traffic.

They put it together to give you a chair that can meet the public. Over and over again. Put it together yourself. If it adds up. Write Massey and get together with their new Polaris chair.



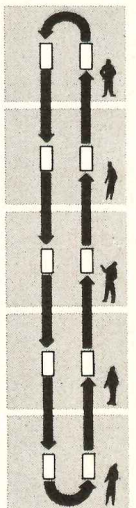
**Massey**  
seating co.  
NASHVILLE, TENNESSEE 37208

For more data, circle 106 on inquiry card

## Automatic, vertical, multi-story MAIL CONVEYORS



- CONTINUOUS OPERATION
- AUTOMATIC DISPATCHING
- SERVES ALL FLOORS
- DELIVERS AND COLLECTS TRAYS
- HANDLES A TON IN 8 MINUTES



**FREE BULLETIN** describes Standard Conveyor *Recordlift*—ideal for multi-story buildings requiring inter-floor delivery of mail, documents, books, anything weighing up to 32 lbs. per load. Widely used in high-rise office buildings, insurance companies, banks, libraries, hospitals, etc. *Send today.*

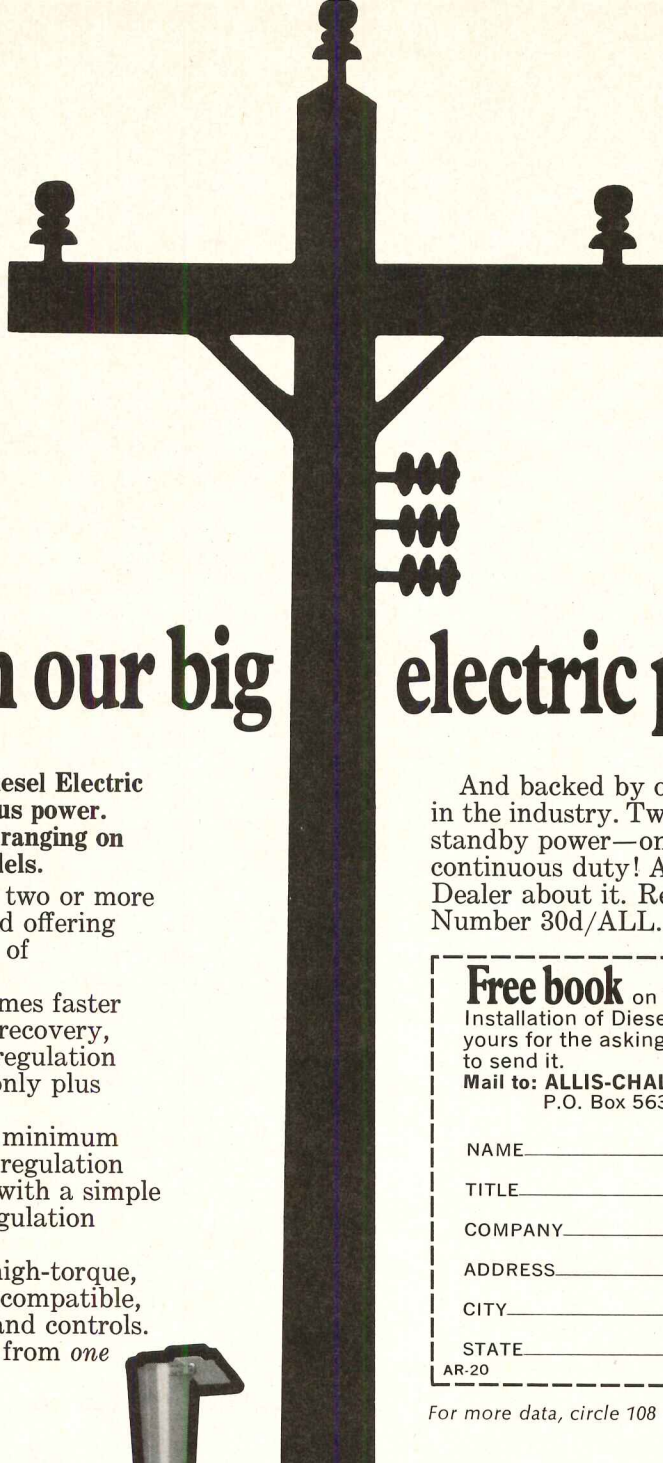


**Standard  
Conveyor  
COMPANY**

312-H Second Street, North St. Paul, Minn. 55109

For more data, circle 107 on inquiry card





# Have you seen our big electric power line?

Now there are seven Allis-Chalmers Diesel Electric Systems to see for standby or continuous power. Starting with the 35-KW DES-35. And ranging on up to 45, 60, 90, 125, 200, 250-KW models.

All designed for easy paralleling of two or more units for unlimited KW capacity. And offering unmatched dependability as a source of electric power.

Voltage response is three to four times faster than with any others! Quick voltage recovery, high momentary KVA. And voltage regulation accuracy from no load to full load—only plus or minus  $\pm 1\%$ !

Fast frequency response time with minimum transient dip. In most cases 3 to 5% regulation from no load to full load is obtained with a simple mechanical governor. Steady state regulation of  $\pm .25\%$  is standard.

All these systems are powered by high-torque, fuel-saver Allis-Chalmers diesels in a compatible, compact match of engine, generator and controls. With parts and service responsibility from one source. Allis-Chalmers.

And backed by one of the most generous warranties in the industry. Two years or 3,600 hours of operation as standby power—one year or 3,600 hours of operation on continuous duty! Ask your Allis-Chalmers Engine Dealer about it. Refer to Sweet's Architectural File Number 30d/ALL. Or send the coupon.

**Free book** on Selection, Planning, Installation of Diesel Electric Systems is yours for the asking. Just tell us where to send it.

Mail to: **ALLIS-CHALMERS Engine Division**,  
P.O. Box 563, Harvey, Ill. 60426



NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

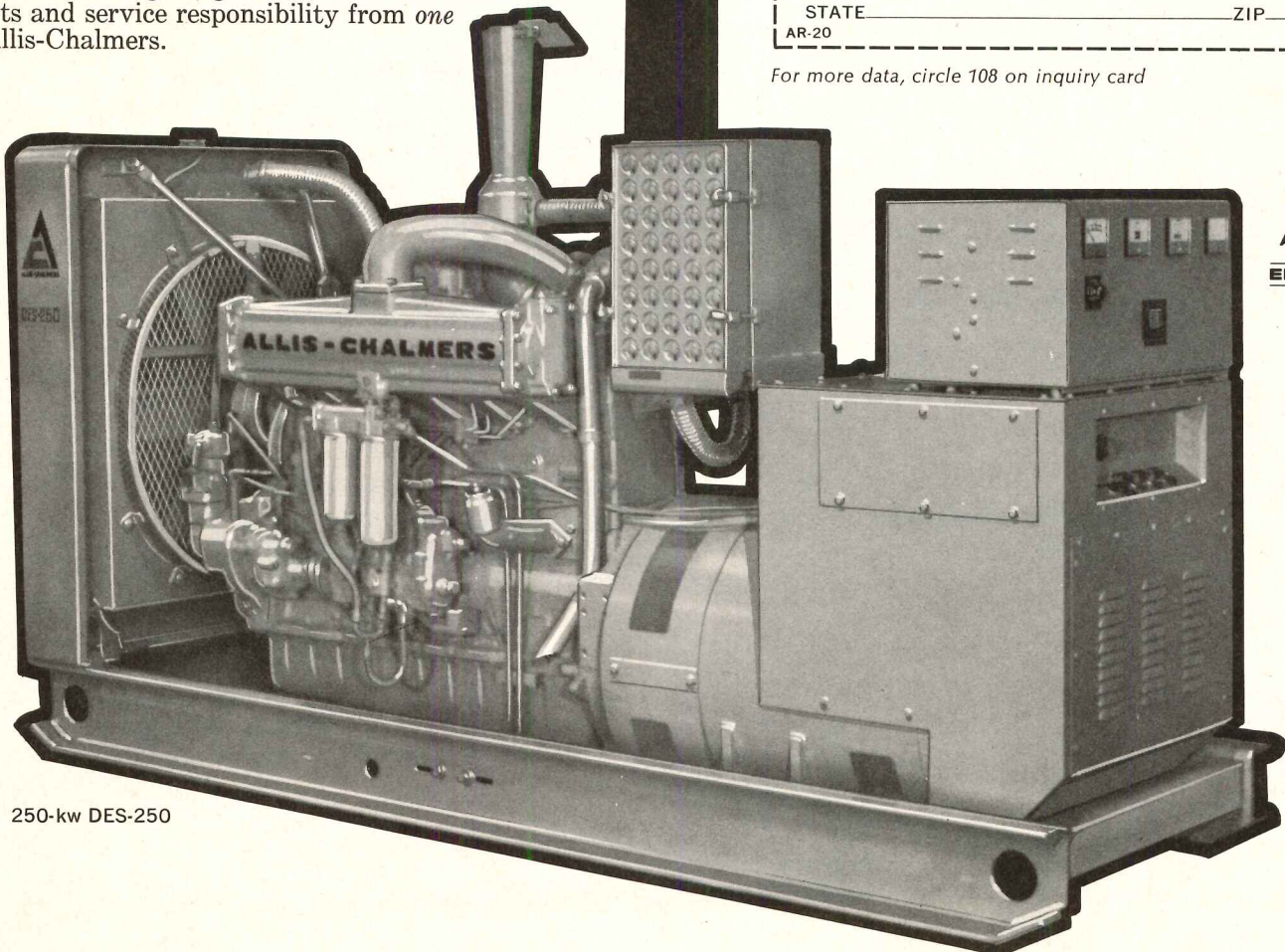
ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

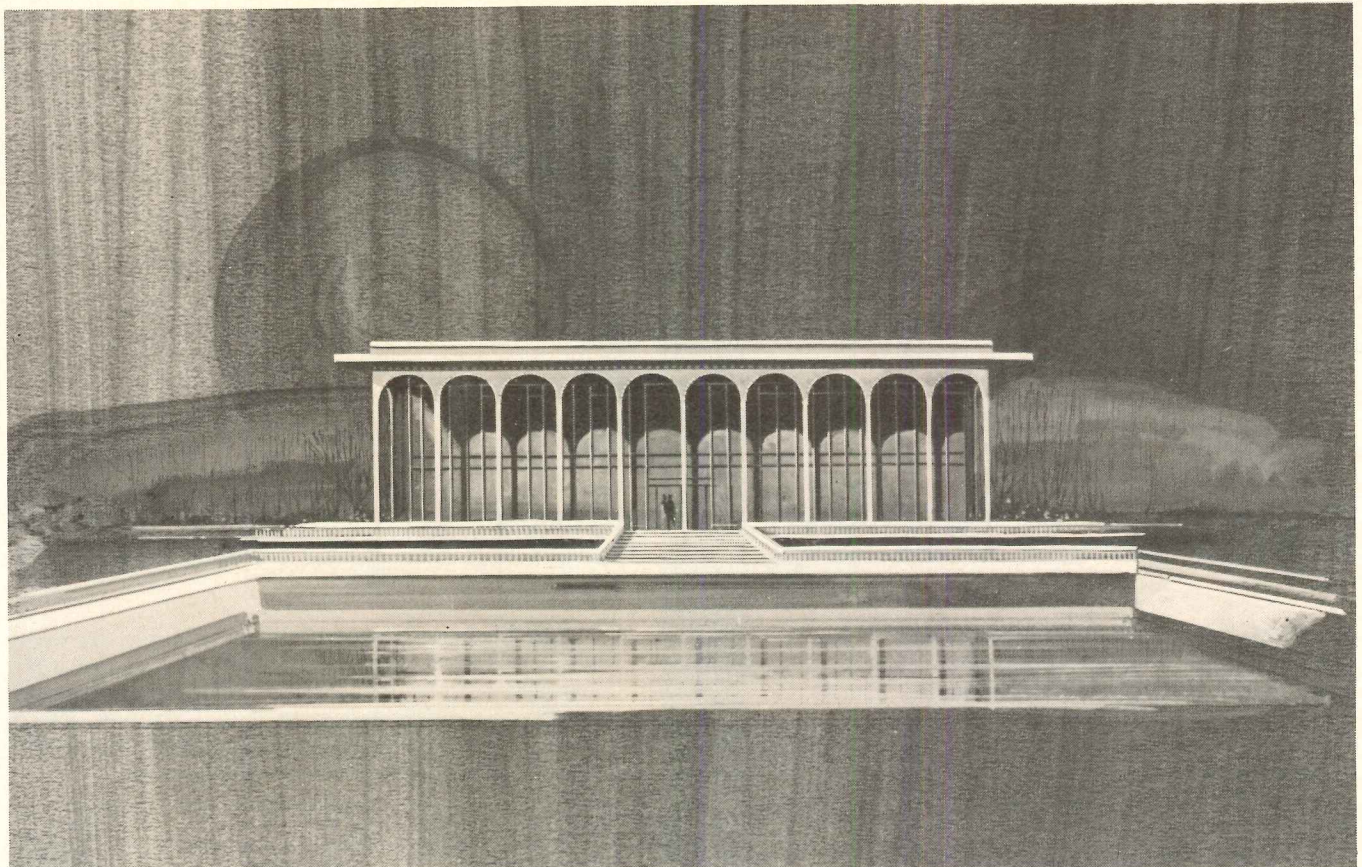
AR-20

For more data, circle 108 on inquiry card



250-kw DES-250





# Weath·R·Proof

## Insulating Glass

**Weath-R-Proof**, a new name in insulating glass, is warranted for 20 years.


**Weath-R-Proof** has a wide range of design flexibility, and can be fabricated to fit your most imaginative specifications.

**Weath-R-Proof** units are promptly shipped to meet construction deadlines.



**THERMOPROOF GLASS COMPANY**  
4815 Cabot Avenue—Detroit, Mich. 48210  
Subsidiary of Shatterproof Glass Corporation

For more data, circle 109 on inquiry card



**Antron.<sup>®</sup>  
Chosen to show profit  
instead of dirt...  
in the world's largest  
carpet installation.**

The Nassif Building—housing 6500 employees of the Department of Transportation—contains 128,000 square yards of carpet. All with pile of 100% Antron\* nylon.

The operating partners of David Nassif Associates explained why they specified "Antron". "Cleaning is the whole game. Carpeting is less costly to maintain than tile.

"We knew there would be no durability problem with nylon, so we were primarily concerned with economically maintaining the appearance level of the carpet. A maintenance saving would enhance our return on investment, so 'Antron' was chosen for its soil-hiding ability.

"We are confident that we made the right decision."

David Nassif Associates believe "Antron" was the right choice for them. It probably is right for the job you're working on now. There is a broad variety of carpet styles in "Antron" now available. Let us know what you're planning. We'll put you in contact with carpet mills that can solve your problems with a carpet of "Antron"



**Better things for better living  
...through chemistry**

*For more data, circle 110 on inquiry card*

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

Building: The Nassif Building, Washington, D. C.  
Owner: David Nassif Associates  
Tenant: The Department of Transportation  
Architect: Edward Durell Stone  
Carpet: Pile of 100% Antron<sup>®</sup> nylon  
Engineering Consulting Firm:  
Universal Engineering Corp., Boston, Mass.  
Maintenance: Dynaclean Maintenance Company

E. I. du Pont de Nemours & Co. (Inc.)  
Carpet Fibers, Box 100-JG-AR  
Wynnewood, Pennsylvania 19096  
Please send contract brochure describing Antron<sup>®</sup>.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

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

# If I grow up I want to be a fireman.



This child has Muscular Dystrophy. Slowly but relentlessly the disease will destroy his healthy muscles and replace them with useless fat. As the muscles deteriorate, he'll lose the strength to walk or stand. Later he won't be able to sit upright in a wheel chair or turn over in bed or even feed himself. His weakness leaves him so vulnerable to colds, pneumonia, or other complications, he rarely survives to maturity.

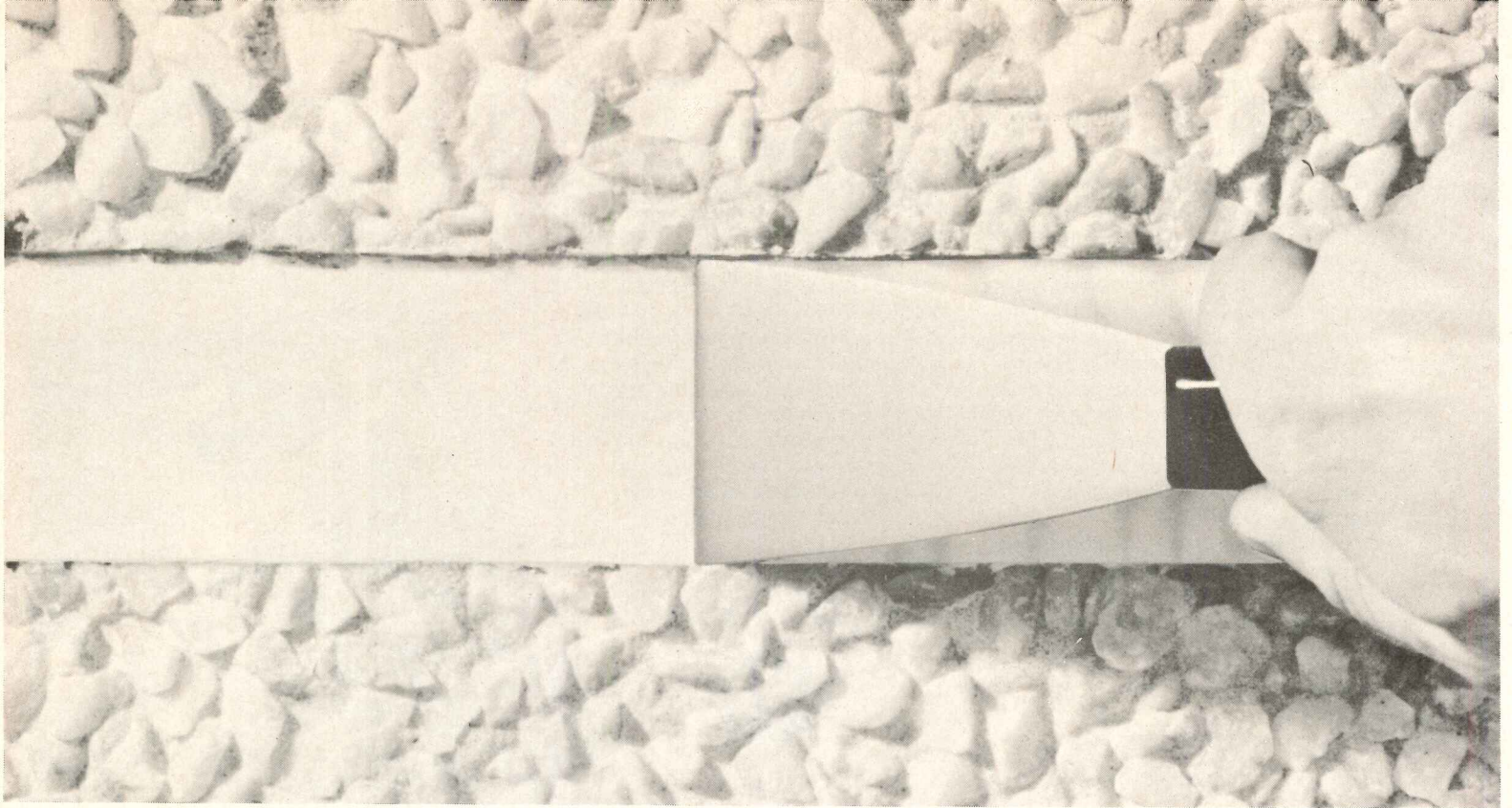
Scientists are beginning to penetrate the mystery of this tragic disease. Today there is some hope that these children will grow up. That hope lies in MDAA's massive scientific research program.

Only your contributions keep it going. Give generously.

Muscular Dystrophy Association of America

1790 Broadway, New York, New York 10019

Mrs. Richard M. Nixon, Honorary Chairman; Henry M. Watts Jr., President; Jerry Lewis, National Chairman



**DYmeric<sup>®</sup> keeps tough joints beautiful.**

**And comes with a man  
who makes sure it does.**



The oversize joint is too much for most sealants. But not DYmeric. DYmeric is a unique polymer sealant. And it moves with, not against dynamic movement. It won't weep, won't sag—not even when the joints wind up wider than you designed them. DYmeric hangs in there, too. For up to 20 years and more. It tools off flat and smooth, weathers beautifully, and has exceptional adhesion characteristics. It meets the requirements of Federal Specification TT-S-00227E and Canadian 19-GP-3. It is easy to use, too. Mixing, gunning and tooling are a breeze. (This may not mean much to you but the contractor will praise your sealant selection for years to come.) Good as it is, DYmeric can't handle every sealant job you come up with. And that's where your Tremco sealant specialist comes in. Along with DYmeric, he's got 14 other Tremco sealants to choose from. And the experience to know which one to use where. That way, you get the right sealant for every application. Plus his job-site assistance before, during and after every project. Next time you run into dynamic movement, call the Tremco man. If DYmeric can't handle the problem, he'll tell you exactly what will.

□ The Tremco Manufacturing Company,  
Cleveland, Ohio 44101; Toronto 17, Ont.

**TREMCO**  
**The water stoppers**

For more data, circle 111 on inquiry card

When modern buildings go up, qualified electrical contractors go in . . . with the ready capability, latest equipment, specialized experience to install electrical systems correctly. Systems for heating. Cooling. Lighting. Communications. Systems adding up to the building's modern Electro-environment. It's an environment of comfort, convenience, efficiency and esthetic appeal for the people who will live or work inside for years to come . . . thanks to the qualified electrical contractor.

He'll safely satisfy a new building's power distribution needs, and keep pace with needs as they change. Many factors contribute to the ready

capability he can put to work for your benefit. Among them, he has the best-trained manpower, the work-force flexibilities and the awareness of local codes to keep electrical problems from developing. To keep all electrical systems functioning efficiently. Economically. Reliably.

And remember: when he installs electrical systems, he *guarantees* electrical systems . . . for one full year. A qualified electrical contractor takes a lot of pride in his work. And you can count on it.

National Electrical  
Contractors Association  
Washington, D.C. 20036



**The electrical  
promise of  
tomorrow needs  
the  
electrical  
contractor  
of today.**

New construction. The building won't be complete until a qualified electrical contractor provides for its modern Electro-environment.

# Keep the bad guys out!

Here's good news for owners and tenants of shopping centers, shipping terminals, warehouses, apartment house garages... and their insurance companies.

A Square D security control station can make it virtually impossible for anyone to tamper with the opening or closing of any electrically operated door.

*You're protected two ways.* First, this new industrial quality control station is supplied with a key which must be used to open or close the door.

Second, even if someone removes the cover screws in an attempt to jumper the electrical mechanism, a special mechanical interlock will hold the cover securely in place.

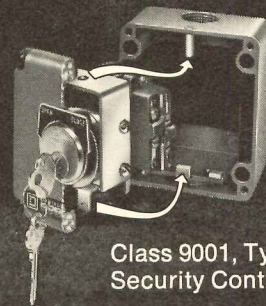
There's no way around it. And the only way you can release the interlock is with the key.

A standard builder's hardware type lock is furnished with the station. This permits keying into other locks, if desired.

Both flush-mounted and surface-mounted stations are available, with or without a push button to stop the travel.

Be sure to specify Square D security control stations for your doors. And get a good night's sleep.

For more information, write Square D Company, Dept. SA, Milwaukee, Wisconsin 53201.



Class 9001, Type KY-198  
Security Control Station.



**SQUARE D COMPANY**

*Wherever Electricity is Distributed and Controlled*

# ACOUSTA-PANE® . . . for things that should be seen . . . but not heard.

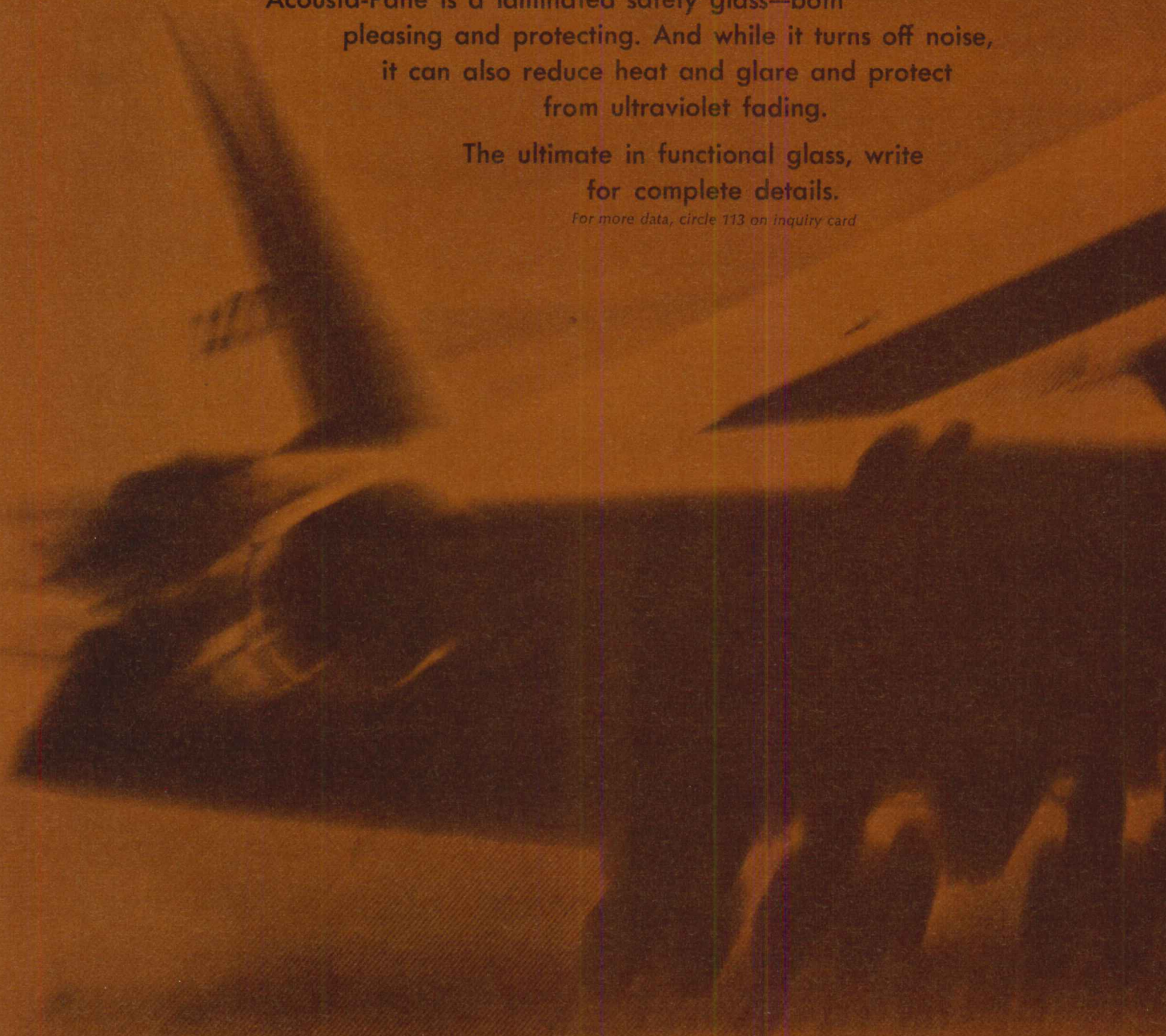
Huge, luxurious, the ultimate in flying. But if you're planning a building near one, you'd better keep it quiet.

Amerada Acousta-Pane turns off the noise. In terminal buildings. In hotels and motels. In schools. In offices. Any kind of noise, anywhere you need to keep it quiet.

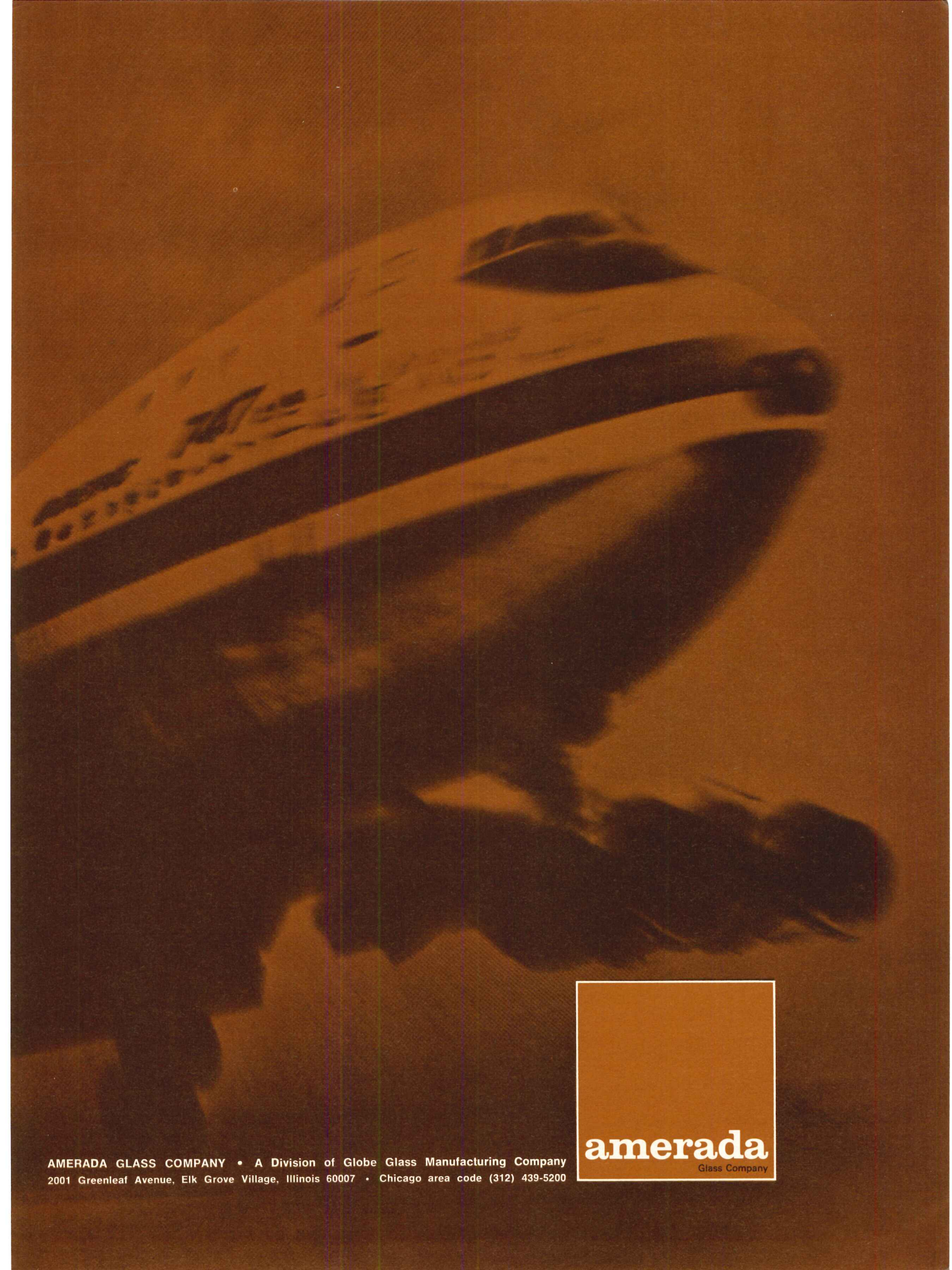
Acousta-Pane is a laminated safety glass—both pleasing and protecting. And while it turns off noise, it can also reduce heat and glare and protect from ultraviolet fading.

The ultimate in functional glass, write  
for complete details.

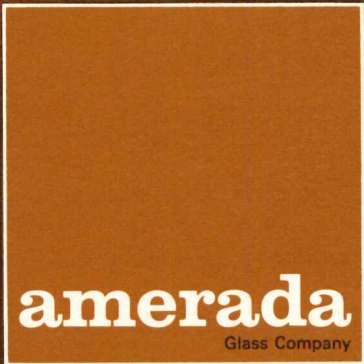
*For more data, circle 113 on inquiry card*













AMERADA GLASS COMPANY • A Division of Globe Glass Manufacturing Company  
2001 Greenleaf Avenue, Elk Grove Village, Illinois 60007 • Chicago area code (312) 439-5200



Doesn't anybody make refrigeration equipment with all-copper tubing  and an Automatic Defrost-Vaporizer  and heater wire strips and triple-seal gasketing   and 5 standard finishes  and self-supporting insulation  and adjustable legs?

Nor-Lake does. With a full range of components and options, the only thing we won't change is the quality.

  
**NOR-LAKE INC.**  
 Second and Elm, Hudson, Wisconsin 54016  
 Phone: 715-386-2323 Dept. 3161  
*Pride is contagious  
 at Nor-Lake*



Over 270 models—all designed to NSF configurations.  
 Sweets File 23a/No.

What else should I know about Nor-Lake Refrigeration equipment?

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

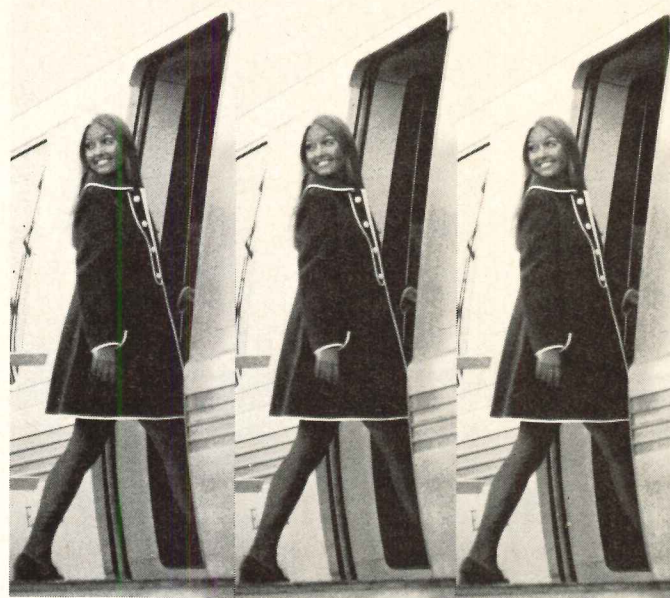
Address: \_\_\_\_\_

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

I need Refrigeration Equipment for \_\_\_\_\_

For more data, circle 114 on inquiry card

# Send for our new book on moving people.



## It's full of transit ideas for your city, airport, campus, plant, or development.

We've put them all down in a colorful, idea-packed booklet that could be your planning guide for the future.

For a free copy of "New Mobility for the Seventies," write Westinghouse Electric Corporation, Transportation Division, Avenue A & West St., East Pittsburgh, Pa. 15112.

J-3-70

You can be sure...if it's Westinghouse



For more data, circle 115 on inquiry card

# The reliable way to protect your business against power shortages

Your plant, critical process, office building, apartment houses, computer center—or any facility using electrical power—faces a predicted shortage of that power. What can you do? One answer is to install Solar gas turbine standby generator sets. *They provide reliable emergency power when you need it!*

## IMMEDIATE DELIVERY

Solar manufactures a range of gas turbine standby generator sets. The Solar *Spartan* gas turbine 225-kilowatt standby generator set is *available for immediate delivery*. Delivery of Solar's *Saturn*® gas turbine 800-kw set takes a little longer.

Solar generator sets arrive on-site ready for fast installation anywhere from rooftop to basement to parking lot. For example, the 800-kw generator set is about  $\frac{1}{3}$  the weight and  $\frac{1}{2}$  the size of piston-engine units of comparable output. Solar turbine sets need no heavy foundations, are virtually vibrationless and do not require water for cooling. A complete installation service by Solar is readily available if desired.

## TOP RELIABILITY

The prime advantage of Solar gas turbine generator sets is their proven

record of coping successfully with hundreds of power outages. Unlike piston-engine equipment, which requires elaborate external heating systems in cold weather, Solar sets *start quickly no matter how cold or hot the temperature... can deliver full power in seconds!* Thus Solar sets have *built-in reliability* which, in our opinion, is unmatched by any piston powered generators. Furthermore, exhaust emission is far cleaner, thus curbing air pollution.

## PROVEN PERFORMANCE

Solar's 1100-hp *Saturn* gas turbine has proved its reliability in more than 10 million operating hours in all parts of the world. In fact, more than 500 Solar turbine generator sets have been sold for use in office buildings, computer facilities and hospitals as well as to AT&T and the Bell System for standby electrical power at their hardsite, disaster-proof communications centers and telephone exchanges.

## LOW-COST POWER INSURANCE

While the base price of Solar sets may be slightly more than for comparable piston-engine equipment, when all costs—including installa-

tion and maintenance—are considered, Solar sets are *more economical to own and operate*.

## LOW-COST MAINTENANCE

Piston-engine units should be maintained by running under load every week or so. Because of the human factor, hundreds of such sets currently installed are poorly maintained and *may not start on demand—especially in cold weather*. Due to its inherent simplicity and few moving parts, a gas turbine needs far less maintenance to provide maximum assurance of reliable starting.

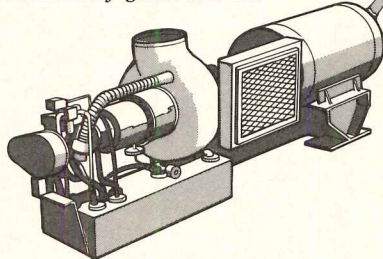
## PLACE YOUR ORDER TODAY

Now is the time to order a Solar gas turbine standby generator set for immediate delivery, or to plan and budget for installing this most modern of all standby power equipment in the months ahead.

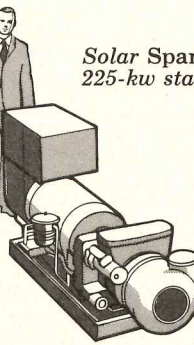
In either case, write: Solar, Dept. S-349, San Diego, California 92112.

**HSOLAR**  
DIVISION OF INTERNATIONAL HARVESTER COMPANY

*Solar Saturn gas turbine  
800-kw standby generator set*

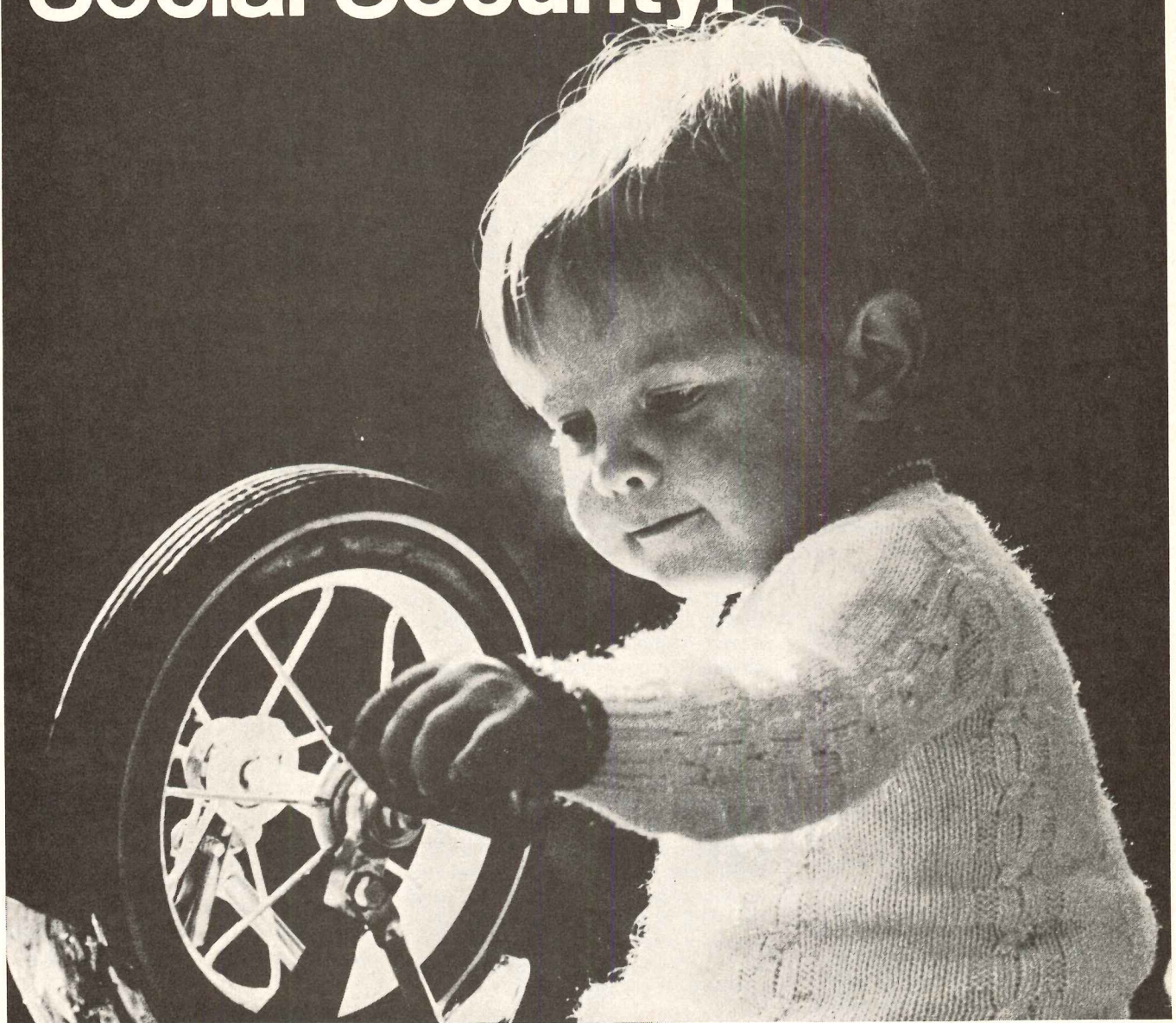


*Solar Spartan gas turbine  
225-kw standby generator set*



For more data, circle 116 on inquiry card

# This man collects Social Security.



You don't have to be retirement age to get social security. Take a young man like this.

What happens to him if his father dies prematurely? How does his mother raise him?

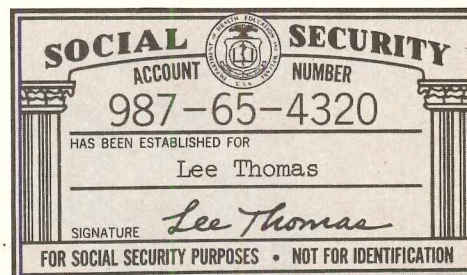
Savings and insurance? Many families have them.

But nearly every family has social security. And this year, social security is helping over three million children and their widowed mothers.

A young widow with two children, whose husband earned \$100 a week on the average, for example, receives \$348.80 a month in survivors benefits.

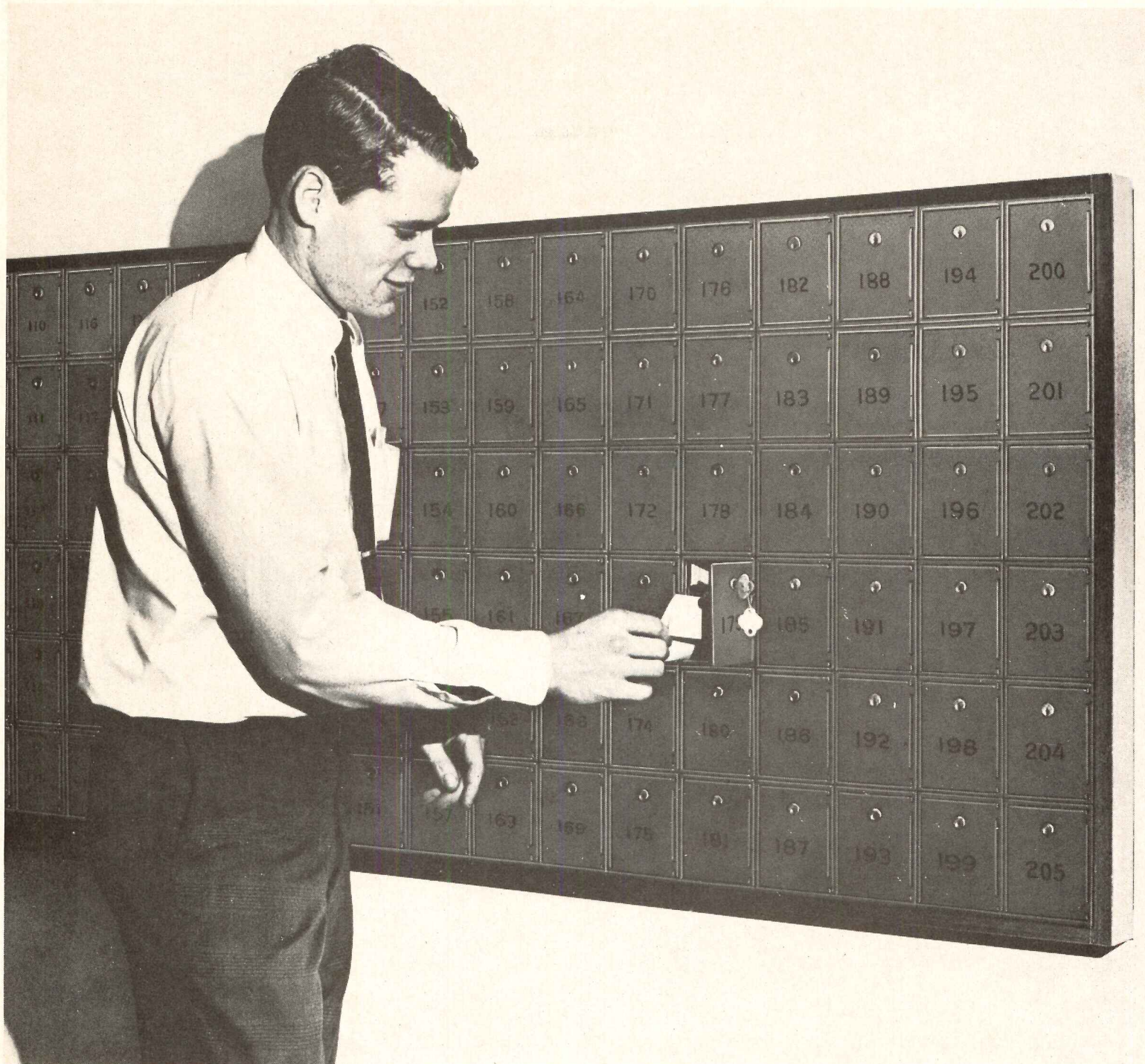
And full-time students who are survivors or children of disabled or retired workers may collect benefits until they reach 22. Social security benefits now being paid to these students amount to more than the scholarships at all colleges and universities in the country.

If you think social security helps when you retire, you're right. But it's also something you can depend on *now*. For further information, contact any social security office.

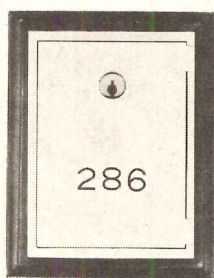


Social security pays four benefits: survivors, disability, retirement, and Medicare.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Social Security Administration



# KEY CLUB



The key to a Wood Products letter box symbolizes exclusive benefits for both patron and building owner. Each compact box features top security and maximum convenience as well as clean, crisp styling.

Model #200 key-operated letter boxes are shown in this ultra-modern apartment house lobby. Available with either cast bronze or cast aluminum door and frame nested in fine quality, wood pigeon-hole construction. Each letter box has the positive protection of flush hinge pins and recessed-in-frame door. All have the lasting beauty and durability to enhance apartment entrance lobbies everywhere.

Complete installation plans furnished free of charge. Simply send rough sketch, showing space available and type, size and quantity of boxes desired.



**WOOD PRODUCTS**  
DIVISION OF EMHART CORPORATION  
BERLIN, CONNECTICUT 06037

For more data, circle 117 on inquiry card

# ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1970 Sweet's Catalog File as follows.

- A Architectural File (green)
- I Industrial Construction File (blue)
- L Light Construction File (yellow)
- D Interior Design File (black)

## A

Aerofin Corp.	78
A-I Allis-Chalmers Mfg. Co.	195
A-I Amerada Glass Products	202-203
A-I American Cyanamid Co., Fibers Division	189
A American Seating Co.	143
American Standard, Commercial Air Conditioning Div.	81
A-I American Telephone & Telegraph Co.	185
A-L Andersen Corp.	30-31
Architectural Record	56-57
A-I-L-D Armstrong Cork Co.	153
A Autoquip Corp.	33
A-L Azrock Floor Products	3rd Cover

## B

A Bally Case & Cooler, Inc.	83
E. T. Barwick Industries Inc.	155
BASF Corp.	191
A-I Bell Telephone System	185
Bestile Mfg. Co.	32-8
Bethlehem Steel Corp.	76-77
A-I-L Bilco Company	194
A-I Bradley Washfountain Co.	169

## C

A-I Ceco Corp.	183
Celanese Coatings Co.	177
Celanese Fibers Marketing Company	62
Commercial Carpet Corporation	17
Continental Instruments Corp.	82
A-I-D Conwed Corp.	157-158
A-I Cookson Co.	146
Corbin, P&F, Div. Emhart Corp.	145

## D

A DAP Inc.	148-149
Day-Brite Lighting Div. of Emerson Electric	137 to 139
A Dearborn Glass Company	156
A-L Delta Faucet Company	72
A Dover Corp., Elevator Div.	41
I-D DuPont de Nemours & Co., Inc., E. I.	197
A-I Duriron Co., Inc.	1

## E

Edison Electric Institute	180-181
A-L Elkay Mfg. Company	34
A-I Enjay Chemical Co.	170-171
A-D Enjay Fibers and Laminates Company-Nevarmar	182
A-I-L-D Epic Metals Corp.	86

## F

Fife, Inc., Richard	86
A Follansbee Steel Corp.	179
A-I Fuller Co., H. B.	160

## G

A-I-L General Electric Co.	52-53
A-D Georgia Marble Co.	154
Goodyear Tire & Rubber Co.	8, 68
A-I GREFCO, Inc., Building Products Div.	38-39

## H

A Harrington & King Perforating Co., Inc.	51
Harter Corporation	188
A Haughton Elevator Company	48-49
A Haws Drinking Faucet Company	162
Holophane Co., Inc.	2-3
Honeywell	70-71

## J

Jute Carpet Backing Council, Inc.	164
-----------------------------------	-----

## K

A-I Keene Corp.	20-21
A-I Kinnear Corp.	14
Knight Mfg. Co.	188
A-I Kohler Company	140
A-D Krueger Metal Products Co.	64-65

## L

Latco Products	32-8
A-L Lennox Industries, Inc.	25 to 27
Leviton Mfg. Co., Inc.	2nd Cover
A-D Levolor Lorentzen, Inc.	186-187
A-I-L-D Libbey-Owens-Ford Co.	147

## M

Massey Seating Co.	194
McQuay, Inc.	47
Modine Mfg. Co.	192-193
A-I Musson Rubber Co., R. C.	78

## N

National Electrical Contractors Association	200
National Fire Protection Association	188
A-D Nevamar-Enjay Fibers and Laminates Co.	182
A Nor-Lake, Inc.	204

## O

A-I Onan Div., Studebaker Corp.	151
A Otis Elevator Co.	22-23

## P

Payne Company	32-1
A-L Pella Rolscreen Co.	79-80
A-I Pennwalt Corp.	12-13
Philips GAD ELA	IAS-1
A-I-L Pittsburgh Corning Corp.-Foamglass	152
A-I PPG INDUSTRIES, INC.—Coatings & Resins Div.	32
Pratt & Lambert Inc.	159
A-D Prescolite Mfg. Corp.	11
Price Pfister Div.	15

## R

A-I Raynor Mfg. Co.	161
A-I Robertson Co., H. H.	142
A Rohm and Haas Company	173
Rohn Mfg. Co.	75
RUSSWIN, Div., Emhart Corp.	69

## S

A Sargent & Company	87
A Season-all Industries, Inc.	24
A Silbrico Corp.	50
A-I Sloan Valve Company	4th Cover
A-I Solar Div., International Harvester Co. Southern California & Southern Counties Gas Cos.	32-6 - 32-7
A-I Span-Deck Mfg. Assn.	167
Speed Queen, Div. of McGraw-Edison Co.	73
Square D Company	201
A Standard Conveyor Co.	194
Steelcase Inc.	88
Summitville Tiles, Inc.	175
Sweet's Catalog Service	190, 209

## T

A-I Taylor Co., The Halsey W.	166
A Thermoproof Glass Co.	196
A-I Thiokol Chemical Corp.	58
A Thonet American Chair Company	176
Tile Council of America, Inc.	28-29
A Titus Mfg. Corp.	6-7
A Tremco Mfg. Co.	199
Tyler Pipe Industries	172

## U

A Union Carbide Corp.	18-19
A-I-D United States Gypsum Co.	42
A-L U.S. Plywood Corp.	84-85, 168
A-L Uvalde Rock Asphalt Co.	3rd Cover

**V**

- Vega Industries Inc. .... 74
- A-D Virginia Metal Products Div. .... 16
- A Von Duprin, Inc. .... 165

**W**

- A Weber Showcase & Fixture Co. .... 178
- Webster Electric Co., Inc. .... 174
- Western Drinking Fountains, Inc. .... 184
- Westinghouse Electric Corp.—  
Transportation ..... 204
- A-D Westinghouse Electric Corp.—  
Water Cooler ..... 150
- A-I-L-D Weyerhaeuser Company ..... 66-67
- A Wheeling Corrugating Co. .... 54-55
- A Wiedemann Industries Inc. .... 78
- Wood Products Div. of Emhart ..... 207

**Z**

- A-I Zero Weather Stripping Co., Inc. .... 144
- A-I-L Zonolite Division ..... 163

**ARCHITECTURAL RECORD**

McGraw-Hill, Inc., 330 West 42nd Street, New York, New York 10036  
 Advertising Sales Mgr.: Louis F. Kutscher (212) 971-2838  
 Eastern Sales Mgr.: Donald T. Lock (212) 971-3583  
 Central Sales Mgr.: Robert G. Kliesch (215) 568-6161  
 Advertising Services Mgr.: Joseph R. Wunk (212) 971-2793  
 Marketing Services Mgr.: Elizabeth Hayman (212) 971-2858  
 Classified Advertising: (212) 971-2557

**District Offices:**

- Atlanta 30309**  
Edward G. Graves, 1375 Peachtree St., N.E., (404) 892-2868
- Boston 02116**  
Ted Roscoe, 607 Boylston St., (617) 262-1160
- Chicago 60611**  
Robert T. Franden, Edward R. Novak, 645 N. Michigan Ave.  
(312) 664-5800
- Cleveland 44113**  
Willis W. Ingersoll, 55 Public Square, (216) 781-7000
- Dallas 75201**  
Angus A. Macaulay, 1800 Republic National Bank Tower, (214) 747-9721
- Denver 80202**  
Richard W. Powers, 1700 Broadway, (303) 266-3863
- Detroit 48226**  
Richard D. Thielmann, 2600 Penobscot Bldg., (313) 962-1793
- Houston 77002**  
Angus A. Macaulay, 2270 Humble Building, (713) 224-8381
- Los Angeles 90017**  
Robert L. Clark, 1125 W. Sixth St., (213) 482-5450
- New York 10036**  
Donald T. Lock, Douglas S. Markhouse, Ted Roscoe  
500 Fifth Ave., (212) 971-3583
- Philadelphia 19103**  
Robert G. Kliesch, George T. Broskey, 6 Penn Center Plaza  
(215) 568-6161
- Pittsburgh 15222**  
Edward C. Weil, 4 Gateway Center, (412) 391-1314
- St. Louis 63105**  
Richard Grater, 7751 Carondelet Ave., (314) 725-7285
- San Francisco 94111**  
Richard R. Butera, Robert L. Clark, 255 California St., (415) 362-4600

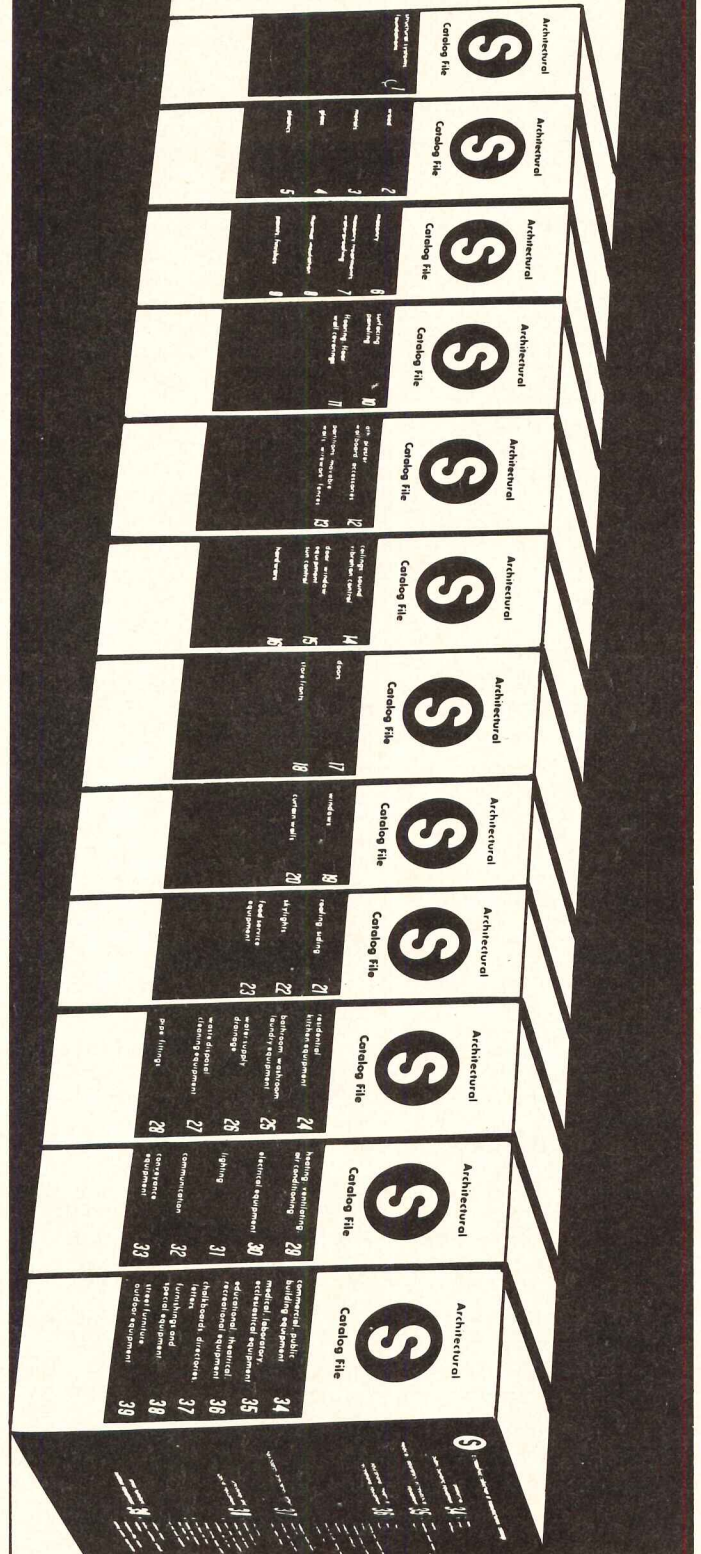
**Overseas Offices:**

- Brussels**  
Galerie Porte de Namur, 22-26, Chaussee de Wavre  
1050 Brussels, Belgium
- Frankfurt/Main**  
Elsa-Brandstroen Str. 2, Frankfurt/Main, Germany
- London**  
34 Dover Street, London W.1, England
- Milan**  
Via Baracchini No. 1, Milan, Italy
- Paris**  
17, rue Georges Bizet, 75 Paris 16°, France
- Tokyo**  
2-5, 3-chome, Kasumigaseki, Chiyoda-ku, Tokyo, Japan

**WE  
MUST BE DOING  
SOMETHING RIGHT.**

YOU REFERRED TO SWEET'S  
55,000,000 TIMES LAST YEAR —  
5,000,000 MORE REFERRALS  
THAN 1968.

**THANKS FOR YOUR GROWING  
VOTE OF CONFIDENCE.**



**Sweet's Construction Catalog Services**  
 McGraw-Hill Information Systems Company  
 330 West 42nd St., New York, N. Y. 10036

# CLASSIFIED SECTION

## EMPLOYMENT

### BUILDING DESIGN

Career opportunity available for either a Graduate Architect or Architectural Engineer. Other engineering degrees acceptable with experience. Applicant should have a minimum of four years experience in the building design field. Design application during construction desirable. Salary open. Advancement opportunities in keeping with the established history of solid growth.

Consumers Power Company is a progressive natural gas and electric utility servicing the lower peninsula of Michigan. The assignment would be at the General Offices, with an excellent geographical location in Michigan's water-winter recreation land. Plant interview expense and relocation of household goods will be completely reimbursed.

Call collect or send resume to R. E. Wallace, University, Area Code 517, 788-1350.

#### Consumers Power Company

212 West Michigan Avenue  
Jackson, Michigan 49201

An Equal Opportunity Employer

### ARCHITECT II

Hartford, Conn.—\$13,624-\$16,224

Opportunity for professional. Responsibility involves reviewing plans and specifications for conformance to applicable codes, statutes and regulations. Degree and license as a Registered Architect required.

Outstanding city paid benefits. Appointment may be made above the minimum.

Comprehensive resume should be addressed to:

Personnel Dept.  
City of Hartford  
500 Main St.  
Hartford, Conn. 06103

## POSITIONS VACANT

**Small Office Architects—Expanding Architect-Engineering Firm** seeks small office architects for participation in a plan which will be mutually beneficial. Especially desirable at this time are young firms of two or three years' experience and eager to grow fast. Senior practitioners who are planning retirement programs or design oriented small firms will find our approach tailor made. Submit confidential resume of experience and volume to P-1715, Architectural Record, Class. Adv. Dept., 645 N. Mich. Ave., Chicago, Ill. 60611.

**Project Architect—Expanding Architectural/Engineering firm** has opening for "talented" Project Designers and Draftsmen. Located in Western New York and maintaining a regional practice through the states of New York, Pennsylvania, Vermont, New Hampshire and Connecticut, this firm can provide exciting challenges to architects orientated to the design of medical, educational, commercial and industrial facilities. License and/or degree helpful, but not mandatory. Please send confidential resume, including salary requirements to: Mr. Franklin D. Guidone, AIA, Director of Design, The Cannon Partnership, 2637 Main Street, Niagara Falls, New York 14305.

**Architect—College Grad. Pref. w/3 yrs. Exp.** Small, but expanding firm in Balto. has a permanent position for an ambitious man who wants to get in on the ground floor. Diversified practice includes top clientel and broad range of projects. Excellent salary and company benefits. Good opportunity for advancement. Call or send resume to: Nelson-Salabes, Inc. Architects/Planners, 1045 Taylor Avenue, Balto., Md. 21204—301-828-6636.

**Position open for Mechanical Engineer** registered by written examination. Requires experience in multi-story commercial structures including HVAC. Send resume to Thomas E. Stanley, Architects-Engineers, P.O. Box 1554, Dallas, Texas 75221.

## EMPLOYER SERVICES

**Architects-Engineers, Everett Kelley Associates** is well known for its professional placement of Technical people. Currently we have many qualified people seeking new opportunities. If you have a need contact us in complete confidence. Ron Williams, EVERETT KELLEY ASSOC, 121 S. Broad St. 20th fl. Philadelphia, Penn. 19107 (215) 546-5240. (Exclusively an Employer FEE PAID Personnel Service).

## SPECIAL SERVICES

**New Concept Group-Food Facilities Planners.** Food Service Consultants specializing in all phases of institutional food service systems. Feasibility Studies, Program Composition, Systems Configuration. Facilities Design, Layout, Equipment, Interiors, Specifications. Operational Analysis, Management Control Systems, Staffing, Personnel Training, Menu Composition, Time Motion Studies. Our permanent staff composed of Consultants, Food Service Administrators, Dieticians and Designers. We have completed many pioneering projects. We desire Master Planning Work; Nationally, such as Hospital Groups, University Campuses, School Boards, Restaurant Hotel Franchise Operations. 375 Main Street, Hackensack, N.J. 07601 (201) 489-2400-1 or (201) 489-2227.

## PROFESSIONAL SERVICES

### CONSTRUCTION COST CONTROL, INC.

#### Consulting Engineers

Construction Management • Preliminary Estimates  
Working Drawing Estimates • CPM Scheduling  
6355 N. Broadway Chicago, Ill. 60626  
312-338-6060

## RECORD IMPRESSIONS

A new service offering reprints, reports and back issues.

## AIR CONDITIONING

A NEW INTERPRETATION

Updated Special Reports from 1967, 1969 and 1970 by

editor Robert E. Fischer and consultant F. J. Walsh with six new pages of cross referencing and guides to uses of materials 64 pages, 2-color, softbound \$3.95 per copy

## SHOPPING CENTERS

Three centers by Harrell + Hamilton illustrate their new ideas in the field and their more extensive role in the development process.

16 page, 4-color reprint  
50 cents per copy

Did you miss these important issues of RECORD HOUSES? If so, there is a limited supply available.

1968—\$2.00 per copy  
1969—\$3.25 per copy

Record Impressions  
ARCHITECTURAL RECORD  
330 West 42nd Street  
New York, New York 10036  
Att: Joseph R. Wunk

No. of copies

Please send me:

- AIR CONDITIONING \_\_\_\_\_  
@ \$3.95 per copy
- SHOPPING CENTERS \_\_\_\_\_  
@ \$.50 per copy
- RECORD HOUSES of 1968 \_\_\_\_\_  
@ \$2.00 per copy
- RECORD HOUSES of 1969 \_\_\_\_\_  
@ \$3.25 per copy

Enclosed is my check   
Money order   
for \$ \_\_\_\_\_

NAME \_\_\_\_\_

FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

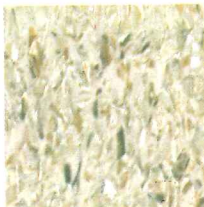
CITY/STATE \_\_\_\_\_

ZIP \_\_\_\_\_

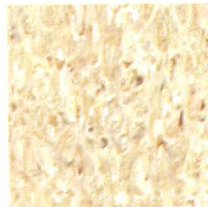


**NEW  
FROM  
AZROCK**

**Through-the-thickness styling  
in vinyl asbestos floor tile  
for heavy-traffic areas**



VL-13 Olive Mist



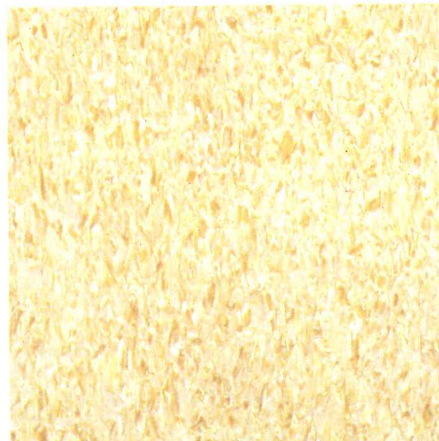
VL-11 Frosted Beige



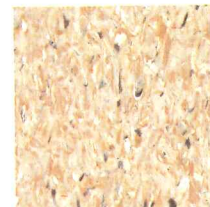
VL-10 Mocha White



VL-15 Jade Haze



VL-14 Lemon Ice



VL-12 British Tan



Abraded Sample

# Thru-Onyx

Add a new dimension of elegance to the floors you design with this exclusive new styling achievement in Azrock vinyl asbestos tile. Thru-Onyx is created with fine particles of actual marble and translucent vinyl chips, some containing asbestos. Patterning is distributed through the tile thickness, as illustrated in the abraded sample above. Beautifully designed for heavy-traffic commercial, institutional, and residential use. 1/8" gauge, 12" x 12" size.

Specify **AZROCK**<sup>®</sup> with confidence

Consult Sweet's File or write for samples.  
Azrock Floor Products, 553A Frost Building, San Antonio, Texas 78205

ARCHITECTS  
*C. F. Murphy & Associates  
The Perkins & Will Partnership*

GENERAL CONTRACTOR  
*Gust K. Newberg Construction Company*

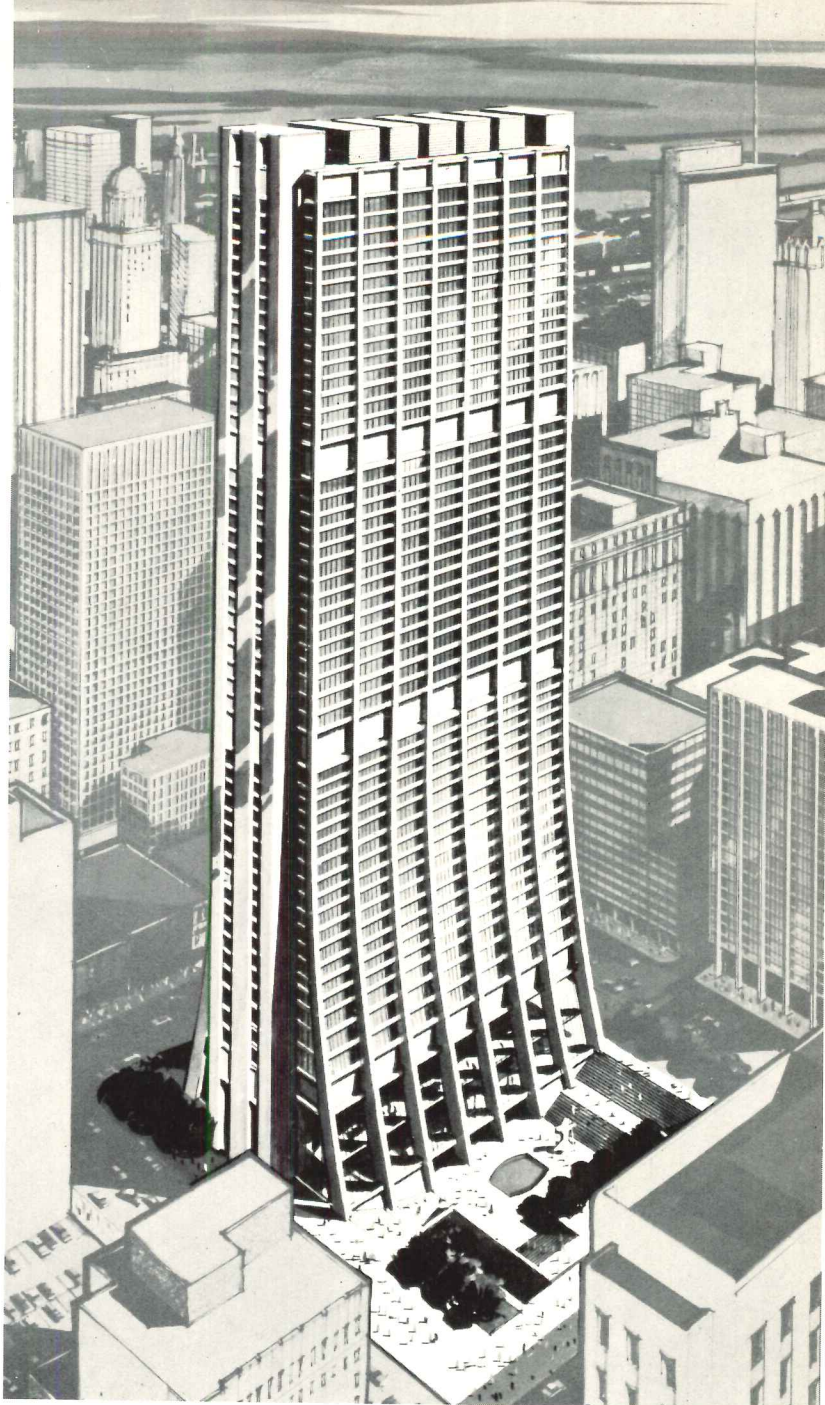
PLUMBING CONTRACTOR  
*Great Lakes Plumbing & Heating Company*

PLUMBING WHOLESALERS  
*Amstan Supply Division*

FIXTURE MANUFACTURERS  
*American Standard*



**Graceful  
new home of  
The First National Bank  
of Chicago**



■ From its graceful tapering facade to its elegant interior appointments, One First National Plaza is in every respect, an archetype. In more ways than one, it is the world's tallest bank building. There's a feeling of permanence and solidity about its distinctive and towering "pearl gray" granite exterior which is reflected inside in the granite counters and marble walls. Adding to this grandeur is a ceiling of vertically suspended planes of copper and stainless steel which diffuse the light source from above. Unique coin returns operate from below the teller counters. The Bank's security TV console monitors more than 1000 locations and is the largest and most complex security system of any public building in the world. Over \$15 million in computer equipment serves thousands of depositors, with more than one billion in deposits.

A real understanding of the most intimate human engineering factors is much in evidence throughout the building's mammoth 2,200,000 square feet of floor space. The flush valves, for example, are Sloan Quiet-Flush II, famous for their quietness, dependability and long life with minimal maintenance. Such high standards of quality contribute to the feeling of refinement and permanence experienced by tenant and visitor alike.

Your next building can share this same Sloan quality. Specify Sloan Flush Valves with complete confidence. Most people do.



**SLOAN VALVE COMPANY • 4300 WEST LAKE STREET • CHICAGO, ILLINOIS 60624**

*For more data, circle 119 on inquiry card*