

Progressive Architecture

April 1972, A Reinhold publication

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First National Bank, Aspen, Colorado

ARCHITECT: Caudill Associates, Aspen, Colorado

GENERAL CONTRACTOR: William F. Harwood, Inc.,

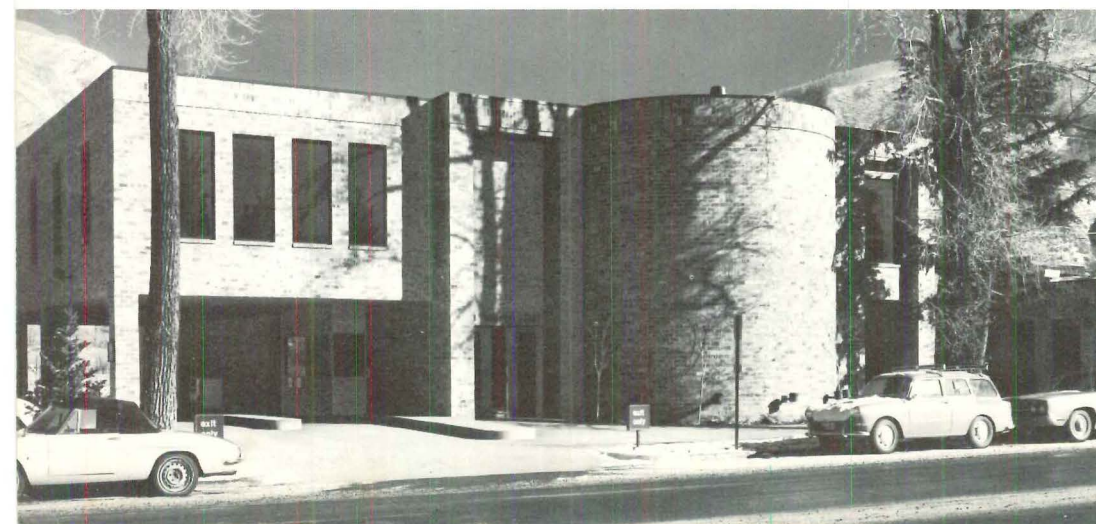
Grand Junction, Colorado

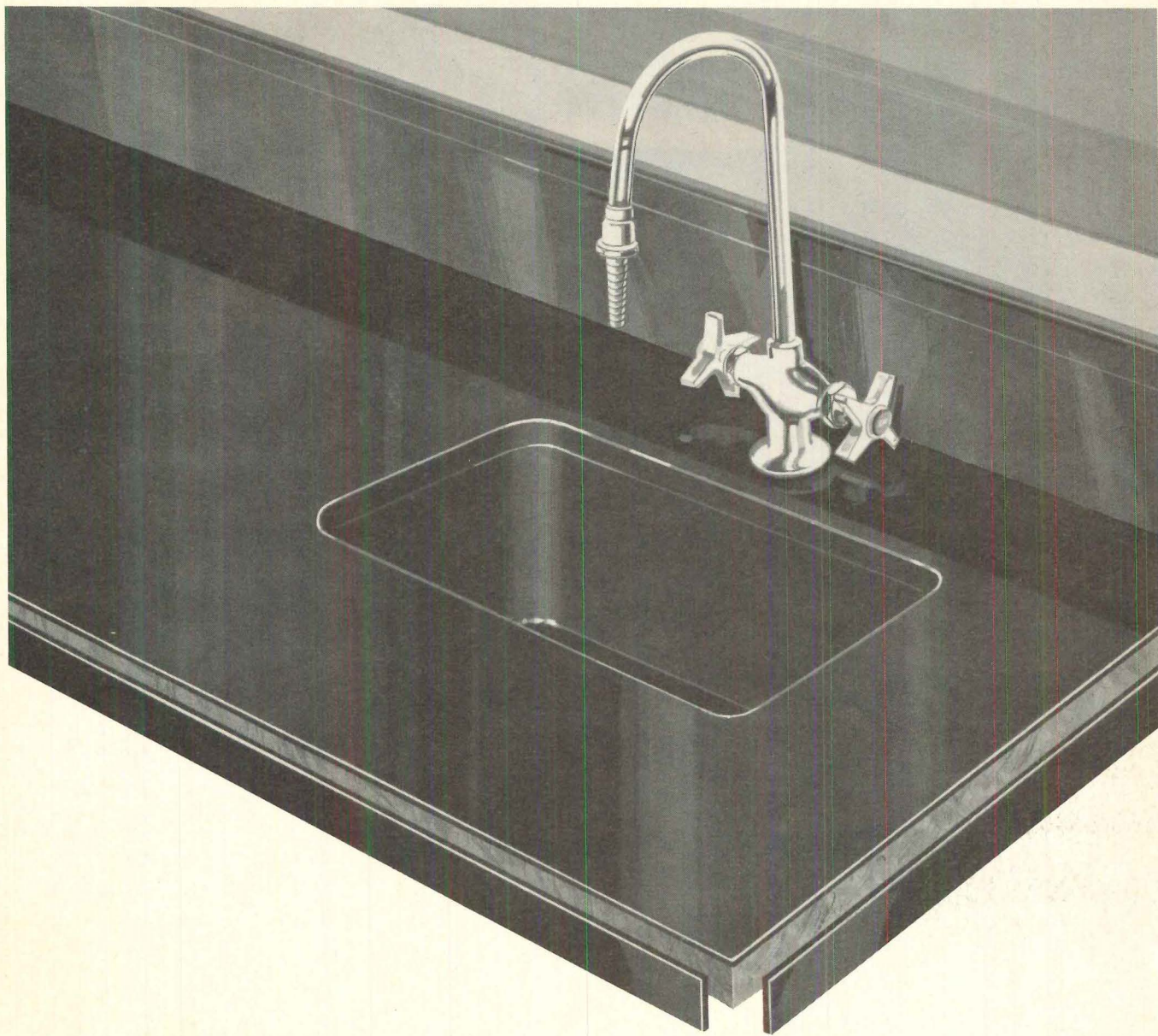
MECHANICAL/ELECTRICAL ENGINEER: Rice-Marek-Harral & Associates, Denver, Colorado

CEILING SYSTEMS CONTRACTOR: Acoustics & Specialties, Inc., Denver, Colorado

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April 1972

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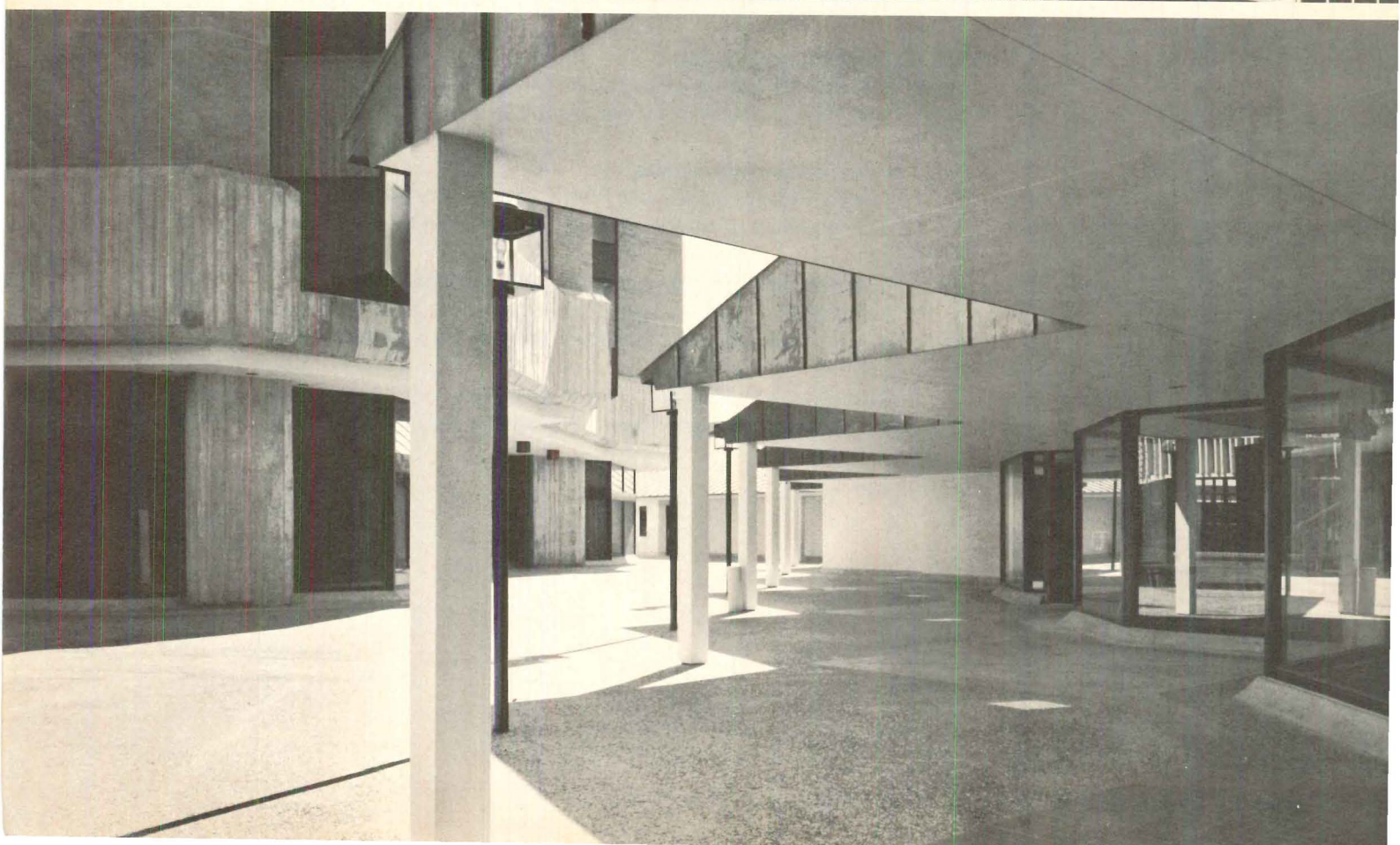
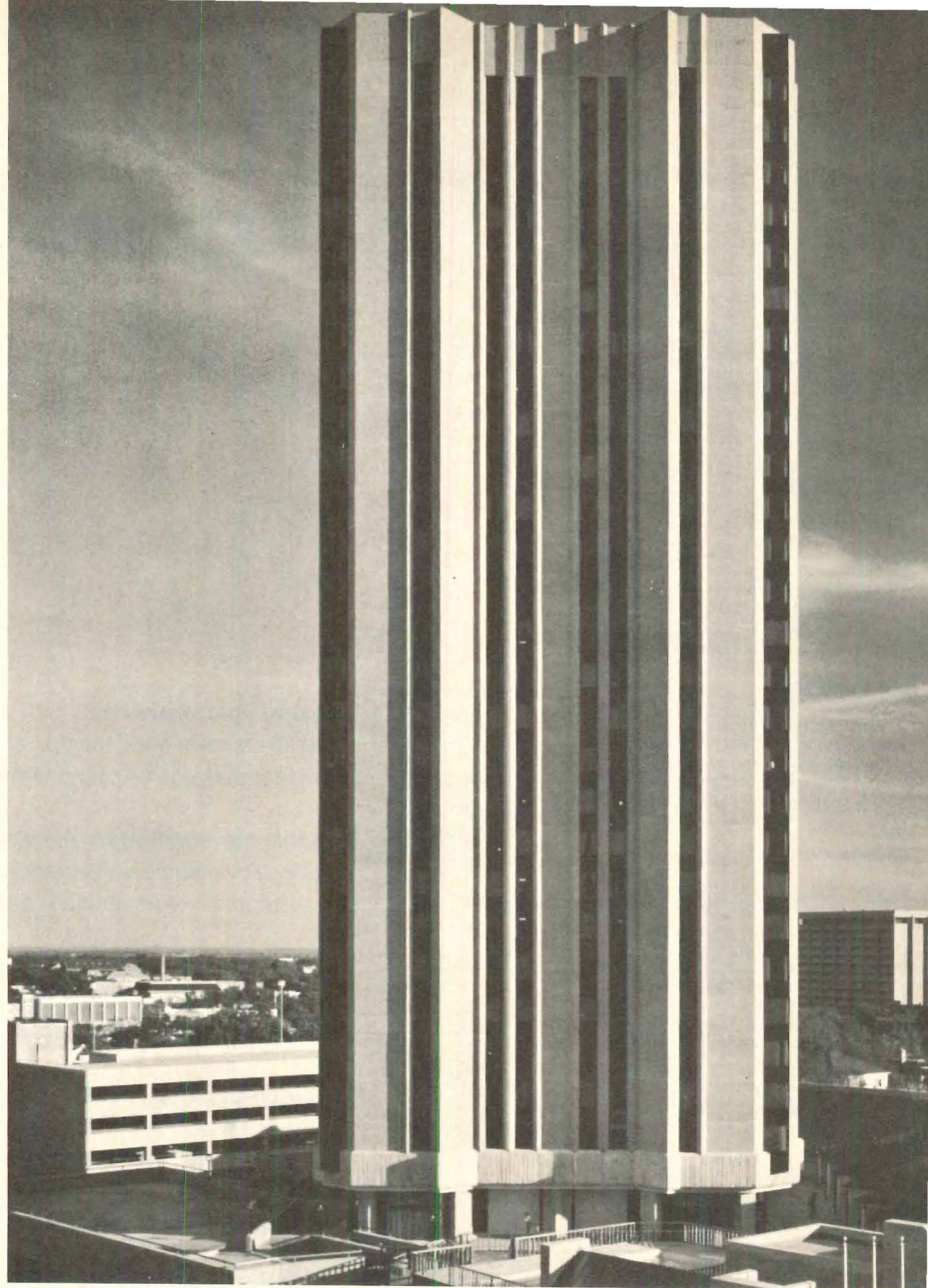
114 Materials and methods: Automatic heat and smoke venting

Author Robert J. Lyons explains how automatic heat and smoke venting works, why sprinklers alone are not enough and how fire protection fits into design

Cover: Office building at 127 John Street, New York City, showing scaffolding and banners along Fulton Street. Photograph: Robert Perron



DOBIE RESIDENCE HALL, UNIVERSITY
OF TEXAS, Austin—Architects/Engineers:
Daverman Associates, Grand Rapids, Mich.
General Contractors: Guy F. Atkinson Com-
pany, South San Francisco, Calif. Three
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Dover Delivers Elevators for systems-built buildings

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LUTHER TOWERS, Memphis, Tennessee. Architects: Walk Jones + Francis Mah, Inc., Memphis. Structural Engineers: LeMessurier Associates, Boston. General Contractor: ALODEX Corp., Memphis. Two Dover geared traction elevators, 200/250 FPM, duplex selective control, installed by Dover Elevator Co.

Views

Design awards '72

Dear Editor: When my January 1972 issue of P/A Design Awards arrived, I anticipated the usual collection of vogue forms. Thank you, for its content had a different context.

Your jury, especially the too long and lonely stands of Safdie, McHarg and others, is being of some influence to our profession. Your "No Awards, No Citations" may give direction and leadership to

those involved in the design and planning of our Eco-System.

Thank you also for your efforts in the October 1971 P/A, prefaced by your statement in your letter about this issue . . . "The Environment. A vital problem for the nation . . . And for the nation's architects . . . times have changed . . . we can no longer think of design for design's sake. Now we must think of design for the sake of the environment. *Design to sustain life in the face of exploding populations and dwindling energy sources.*"

I hope you will continue . . .

Tom J. Bartuska

Associate Professor of Architecture
Washington State University

Dear Editor: It is a shame that architects have learned to verbalize so well, for it appears they have done so at the expense of their ability to communicate graphically.

Without reference to the quality of designs, a review of the P/A Design Awards issues of six or seven years ago shows simple statements of programs and crisp graphic solutions which are readily comprehensible. The Awards issues of the past two years present design solutions in the

form of mass models, amorphous conceptual sketches, and a veritable torrent of seemingly unrelated verbiage. The jurors, too, seem to have fallen in love with words, and fail to do justice to their critical ability.

I hope that in the years to come we will see a return to architectural presentation in lieu of verbal rationalization.

Stuart A. Kessler
New York, N.Y.

Dear Editor: Before the schism between engineering and architecture further widens, please add some competent engineers to your awards panel in the future.

Surely the public deserves useful, effective and efficient architecture. Agreeing with oneself in redundant and meaningless rhetoric such as the flowery and affected comments of the awards committee only diverts attention from the real problems.

May I suggest that you solicit comments from your readers who may not agree with the awards selections. P/A needs feedback from the men who have to do more than dream up the concepts. Someone has to make them successful and effective and live with the problem ever after.

[continued on page 8]

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Unless the architectural profession turns its talents to logical and efficient endeavors, instead of pretty pictures without basis of reason, they will be limited to producing "artistic effect" only, which the AIA General Conditions limit their binding decisions to anyway. (Sect. 2.2.9)
Louis A. Warner, PE
Waterbury, Conn.

Dear Editor: We would like to express our appreciation to P/A for sponsoring the An-

nual Design Awards program. The competition not only provides a stimulus for us as professionals but more importantly provides a public service by endorsing the efforts of at least some of the designers and clients who are making significant attempts to improve our physical surroundings. We look forward to future P/A Design Award competitions.

Alfred W. French III, AIA
Minneapolis, Minn.

Dear Editor: I would pose one question to the design community after reading your 19th Annual Design Awards issue. What at-

titude do we assume in the creation of a built environment; a series of physical actions praised for "spirit," "character" and if they "smell good" before construction and use? Or a series of actions that are learning experiments, that wait the test of use and analysis before praise? I fear we are doomed to a flat learning curve until our profession accepts the latter position.
Richard C. Northrop
The Penn. State Univ.

Dear Editor: I often think it would be fun and beneficial to submit a building I am doing here in the Midwest, to your Annual Awards program. However, the limitation on submission inevitably prevents me from doing so. Do you really think the public and profession is served by not allowing buildings which are under construction? Some of the best work being done probably isn't being submitted. It seems arbitrary that in August one can only submit work designed but sitting still at that moment. Our office building and a small jail recently were both designed in January-February and almost finished with construction in December. Both, needless to say, don't qualify for submission.

William J. Voelker
Peoria, Ill.

(What makes P/A's Design Awards program unique is the very fact that it is limited to projects in the design stage which are judge solely on their design and not their execution. The rules state that August 31 is the deadline for submissions—the project must be under construction in the following calendar year. In the future, if fast track and other "instant" construction methods become common and comprise the design-bid-build-occupancy phase into a single year, we will have to amend the rule. Ed.)


Credit due

Dear Editor: The art work from our environmental education kits looked great on cover of the February issue and in the article, "Kid Stuff, (p. 62)." All of it was drawn by Emmanuel Stallman, and I think he deserves a lot of credit.
C. Richard Hatch
New York, N.Y.

Erratum



Dear Editor: The description of my dip on your March cover should, of course, read that my work is represented on the left, Peter Eisenman's work on the right.
Michael Graves
Princeton, N.J.

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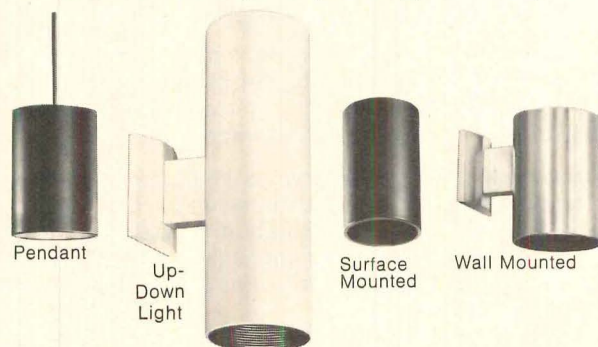
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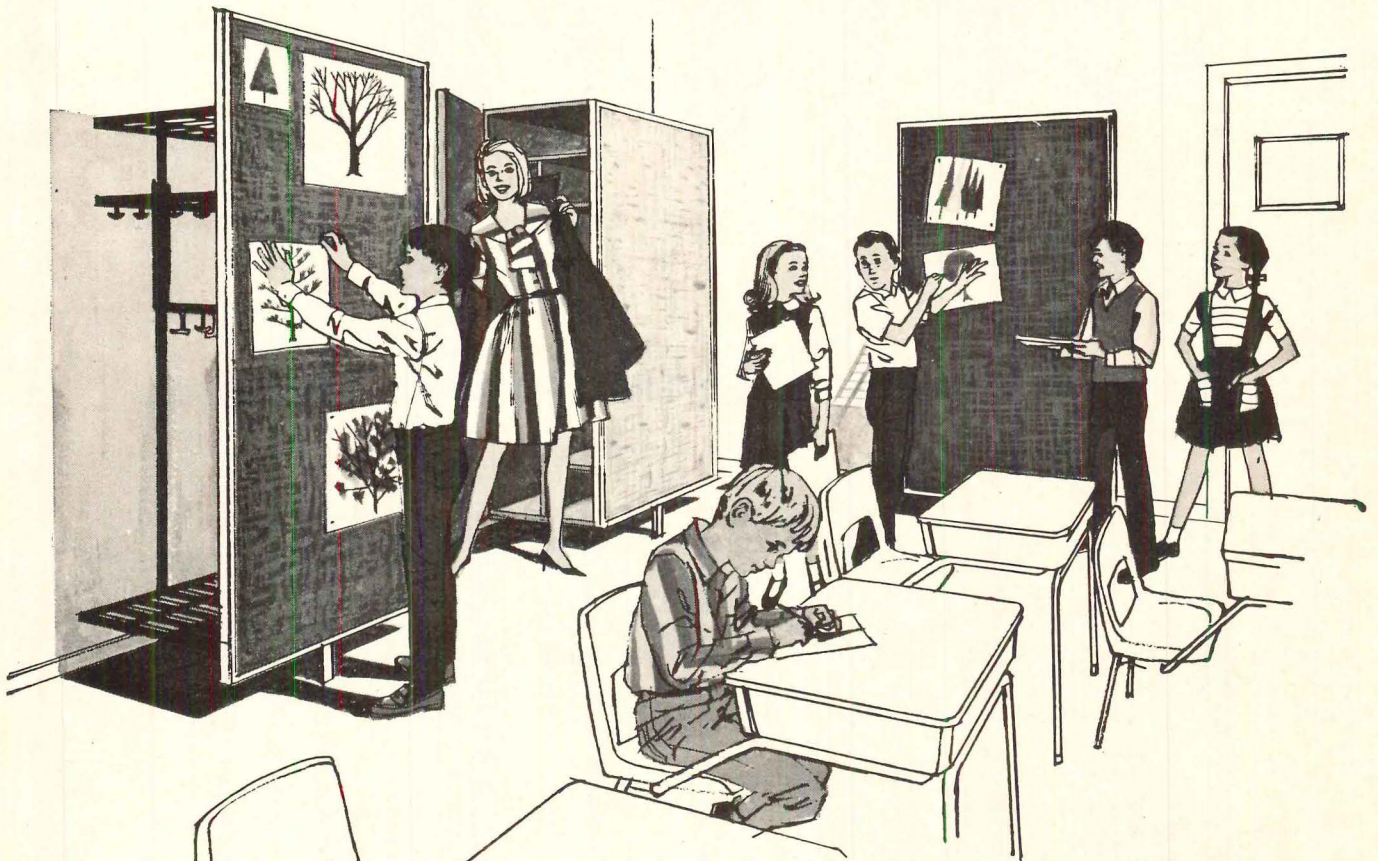
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ABILITY ?

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ROOFING BOND ?**

EXCLUSIONS ?

COVERAGE ?

COST ?

**OWNER
BENEFITS ?**

Answers to your Questions about the new Barrett roof inspection & service program.

Recently, we conducted a series of interviews with architects all across the country to determine their awareness of the advantages and benefits the new Barrett Roof Inspection and Service Program offers to building owners. The questions and answers on the following pages represent a composite of these interviews. We hope they will be helpful to you.

THE CELOTEX CORPORATION

Answers to your Questions about the new Barrett roof inspection & service program.

NO MONETARY LIMIT

Q *How does the new Barrett Roof Inspection and Service Program differ from the 20-year bond plan which has been so widely specified for so many years?*

A The most important difference is the amount of liability which Celotex assumes. The old standard 20-year bond limits the manufacturer's liability to a total of \$10 per square during the entire 20-year period. Under the new program, there is no limit to the amount Celotex will pay, during the entire period of the contract, to correct leaks due to causes covered in the contract. Let's use a practical example to illustrate the difference. You have a 20,000 square foot roof. A series of leaks develops and it is determined that the roofing manufacturer is to pay the cost of repair. Under the old bond plan, our maximum liability is \$2,000. When that \$2,000 has been expended, there is no further monetary liability, regardless of the bond issue date. Under the new contract, Celotex would pay for repair of all leaks covered, during the full period of the contract.

The new program also differs from the old bond plan in period of coverage, in cost, and offers additional inspection service.

Q *What is the period of coverage under the new program?*

A The contract covers a period of 10 years. It also gives the owner option to renew for an additional 10 years, if he makes recommended corrections and preventive repairs to the structure and to the roof, which our inspector determines are necessary to put the roof in satisfactory condition for continued good performance. This feature provides a valuable service which the

bond did not offer: at no cost, at the end of 10 years, the building owner receives a roof inspection and recommendations which conceivably could help him avoid costly trouble. He can then elect to renew or not renew the contract.

\$3 PER SQUARE FOR FIRST 10 YEARS

Q *What does the building owner pay for coverage under your new program?*

A Cost for the initial 10 years is \$3 per square. Cost to renew the contract for a second 10-year period will be two-thirds of the charge for the initial 10-year period in effect at that time.

Cost of the new program, for the initial period, is the same as the current cost of the old 20-year bond—yet the new plan provides additional inspection service and has no monetary limit on leak-repair costs. When compared to the cost of the bond and to the cost of independent inspection services—which do not provide monetary guarantee in case of leaks, or continuing inspection service—our new program is obviously the best investment of all.

Q *How does the owner benefit by renewing the contract for a 10-year period? Why not just make recommended repairs, if any, and save the cost of renewing?*

A If no problems are indicated, he may be saving money by not renewing. If he renews, however, he gets all the original benefits for another 10 years: unlimited manufacturer liability in case of leaks due to covered causes; free inspections should leaks occur; and free inspection and recommendations, on request, when alterations or additions are contemplated.

Q *What other services and inspections are included in the new program?*

A To begin with, on request, a qualified Celotex representative will review plans and specifications, attend pre-job meetings, and make recommendations. During application and after completion, inspections will be made and notice of inspection will be sent to the architect or owner. When the roof is two years old, another inspection will be made. And we'll make the 10-year inspection and recommendations, if requested, at no charge, even if the contract is not renewed.

COVERS MATERIALS AND APPLICATION

Q Does the Celotex liability apply to repair of leaks caused by faulty application, as well as to leaks due to defective roofing materials?

A Yes. The new contract clearly states that Celotex will pay all costs of repairs necessary to correct roof leaks resulting from errors in workmanship of roofing contractors in applying Barrett roofing membrane and flashing materials. It also covers leaks due to failure of those materials resulting from usual and ordinary wear and weather. This liability does not apply to errors in building design or construction.

Q Does your guarantee include expansion joint covers?

A Yes, it includes the Barrett Expansion Joint Shield when installed in conjunction with a roof that is covered by our contract. It does not cover any other expansion joint cover even though that cover is installed by a Barrett Approved Roofing Contractor on a roof where Barrett roofing membrane and flashing are covered. To our knowledge, Celotex is the only manufacturer offering a guarantee-type plan that includes an expansion joint cover.

Q If I specify a reputable brand of roofing materials, and the general contractor retains a reputable roofer, isn't that sufficient assurance of good roof performance? Why should my clients spend the additional \$3 per square?

A It is true that under those conditions you minimize the risk of leaks due to faulty materials or application. Our roofing materials are produced totally by machine under quality control methods, and there is very little risk of their failing. On the other hand, application of these materials is largely manual and the chance for leaks due to human error is far greater.

No matter how good the roofing contractor's reputation is, or how dedicated he is to doing a first-class job, one of his workmen can make an error, or fail to follow an instruction, or neglect to follow some requirement of the specification, and a leak can result. The Barrett contract protects the owner against cost of repairing leaks resulting from this situation.

As with most types of insurance, the buyer hopes he will not have to collect, but the nominal cost makes it a wise investment in protection.

OFFERS MOST RELIABLE PROTECTION

Q Does your on-the-job inspection insure proper application and adherence to specifications?

A Certainly the purpose of our inspections is to assist the contractor in making sure the roof is being applied as specified. No inspection, of course, can include every minute of time for every workman and every square foot of the roof during application. An error can occur on any roof, no matter how diligent the inspector. Under our program, chances for these errors are minimized in two ways: (1) the two-party inspections, ours and the contractor's, (2) the fact that only Barrett Approved Roofing Con-

tractors are authorized to apply our guaranteed roofs. Contractors must meet the highest industry standards to qualify for approval.

Q Why should the building owner buy an inspection and service contract to protect against the possibility of leaks due to faulty application? Doesn't the roofing contractor bear a responsibility for good workmanship?

A In some localities the roofer has a written obligation to repair leaks due to faulty application during the first two years after completion, but no liability of any kind after the first two years. Some roofers accept responsibility for their work for two years or even longer, but do not enter into a written agreement. In short, there is no standard industry practice. During a 10-year period, a roofing firm may change management and policies.

Experience has proved that the most reliable protection for the building owner is a long-term guarantee by an established roofing manufacturer. Barrett introduced the roofing bond in 1916, and all major manufacturers adopted the same type of plan. We have paid out many millions of dollars to owners of Barrett-bonded roofs for repair of leaks. This new Barrett Roof Inspection and Service Program is an updated version of the bond plan, with additional owner benefits.

Q One of our large clients has thousands of squares of built-up roofs installed annually. Wouldn't it be to his advantage to set up a \$3 per square reserve fund for possible repairs, rather than buy your inspection and service contract?

A It could work out that way. He may never have to spend any money for repairs due to faulty application or materials, and he would have saved the contract fee. On the other hand, one serious leak problem could wipe out his entire fund. What you are suggesting amounts to an underwriting plan with very little leverage. There would be no opportunity to spread repair costs against fees from a large number of owners as is normally done under insurance-type programs. Being his own underwriter could end up being a very uneconomical choice.

TYPE OF LEAKS NOT COVERED

Q What types of leak problems are not covered by your contract?

A The contract plainly states that Celotex is not liable for leaks or damage caused by: natural disasters such as hurricanes, hail or windstorms; or by structural failures; or by changes in building uses unless approved in advance by Celotex;

(CONTINUED)

THE CELOTEX CORPORATION

Answers to your Questions about the new Barrett roof inspection & service program.

or by additional installations on or through the membrane, or repairs to roofing or flashing membrane, after completion, unless accepted by Celotex. Nor is Celotex responsible for damage to interior, building contents, roof insulation or deck over which roofing membrane is applied.

Q. *How will it be determined whether a leak is due to errors in application, faulty materials, structural movement or other causes?*

A When we are notified that a leak has occurred, a Celotex representative will inspect the roof. The architect and owner may be present or represented. In most cases, the cause of leaks will be readily apparent. For example, leaks through openings in the plies in an area where there is no evidence of structural movement, or leaks through blisters which may have ruptured due to drying out, would be ascribed to improper application and cost of repairs would be paid by Celotex. If the trouble is due to structural movement, evidence is usually equally apparent. If a flashing has broken away from a wall in which there are severe cracks, the cause is obviously building movement and is not covered.

Q. *Do other roofing manufacturers offer this new-type contract?*

A A number of other major manufacturers offer inspection and service contracts that are close enough to the Barrett contract to qualify for acceptance in your "or equal" specification. The cost, periods of coverage, and renewal options are essentially the same. There is, however, one notable exception: the Celotex guarantee is the only one, to our knowledge, that includes an expansion joint cover—the Barrett Expansion Joint Shield.

OLD-TYPE BOND STILL AVAILABLE

Q. *Does Celotex still offer the old-type roofing bond?*

A Yes. Even though we strongly feel that our new Barrett Roof Inspection and Service Program is a far better program for building owners, we will continue to offer the bond as long as necessary from a competitive standpoint. Also,

many existing specifications calling for "bonded roofs" were written before the new program was developed, and Barrett Approved Roofing Contractors must be kept in position to bid these jobs.

IF ROOF INSPECTION AND SERVICE PROGRAMS WERE FREE . . .

chances are that architects and building owners would insist they be included in every specification. Therefore, the added cost would seem to be the determining factor in deciding whether or not guarantee-type coverage should be specified. *What is the added cost of the Barrett Roof Inspection and Service Program in relation to total building cost?*

	SCHOOL 2 floors 100 MSF	HOSPITAL 6 floors 180 MSF	FACTORY 1 story 100 MSF	OFF BUILDING 10 fl 200 MSF
Sq. Ft. Cost of Building	\$24.	\$45.	\$14.	\$1
Total Cost of Building	\$2.4 million	\$8.1 million	\$1.4 million	\$3 million

ADDED COST FOR 10-YEAR BARRETT PROGRAM

Total at \$3 per 100 Sq. Ft.	\$1,500	\$900	\$3,000	\$6
Per Sq. Ft. of Building	1½¢	½¢	3¢	3/10¢

*10-YEAR BARRETT ROOF INSPECTION AND SERVICE CONTRACT PROGRAM

The actual added cost for the Barrett Roof Inspection and Service Program is small. It is relatively insignificant in the total sq. ft. cost of the building. When consideration is given to the period covered (10 years) and the no-monetary-limit feature, the program is indeed extremely low cost protection.

We'll welcome your request to have a Celotex representative tell you more about the Barrett Roof Inspection and Service Program and supply you with data on Barrett roofing products and systems . . . "everything from the deck up."

CELOTEX[®]
BUILDING PRODUCTS

THE CELOTEX CORPORATION
Tampa, Florida 33607
Subsidiary of Jim Walter Corporation

BARRETT

ROOF INSPECTION AND SERVICE CONTRACT

NO. C000

THE CELOTEX CORPORATION, UNDER THE PROVISIONS STATED HEREIN, WILL PROVIDE INSPECTION AND REPAIR SERVICE TO THE BARRETT ROOF DESCRIBED BELOW FOR A PERIOD OF TEN (10) YEARS FROM DATE OF COMPLETION.

Owner: _____

Building Description: _____

Location: _____

Roof Specification No.: _____ Flashing Specification No.: _____

Area of Roof Under Contract: _____

Lineal Ft. of Flashing Under Contract: _____

Date of Completion: _____

Roofing Contractor: _____

COVERAGE

The Celotex Corporation will pay all costs of repairs necessary to correct roof leaks resulting from the following causes:

1. Deterioration of Barrett roofing membrane or Barrett base flashing resulting from usual and ordinary effects of wear and weather.
2. Errors or mistakes in workmanship of roofing contractor in applying the Barrett roofing membrane and Barrett base flashing.
3. Blisters, bare spots, buckles, wrinkles and ridges, in the roofing membrane.
4. Splits in roofing membrane or base flashing except as excluded below.
5. Damage to roofing membrane or base flashing resulting from extreme fluctuations in temperature.
6. Breaks in flashing strips over gravel stop or other metal flanges.
7. Slippage of roofing membrane or base flashing.

EXCLUSIONS

The Celotex Corporation will not be responsible for leaks or consequential damage caused by any one or combination of:

- A. Natural disasters including but not limited to floods, lightning, hurricanes, hail, windstorms, earthquakes, tornadoes.
- B. Structural failures such as settling, shifting, distorting, splitting or cracking of roof decks, walls, girders, partitions, foundations, etc.
- C. Improper application or failure of any component underlying the roofing membrane or base flashing such as deck, roof insulation, vapor barrier, etc.
- D. Changes in the original principal usage to which building is put unless approved in advance in writing by Celotex.
- E. Erection or construction of any additional installation on or through the roofing membrane or base flashing after date of completion unless installed in a manner prescribed and accepted by Celotex.
- F. Application of or repairs to roofing membrane or base flashing after date of completion unless done in a manner prescribed and accepted by Celotex.
- G. Under no circumstances whatsoever shall Celotex be liable for damage to interior, contents of building, roof insulation, roof deck or other base over which roofing membrane or base flashing is applied.

ACTION

In the event leaks from any cause should occur, owner shall notify Celotex promptly, confirming such notice in writing. Celotex will inspect the roof, and if cause of leak is within the coverage as stated above, Celotex

will arrange for repairs to be made at no cost to owner. If cause of leak is not covered, Celotex will not be responsible for cost of any repairs.

RENEWAL OPTION

At the end of the initial ten (10) year period, the owner shall have the option to renew this contract for an additional (10) ten years under the following conditions:

During the tenth year of this contract, if the owner of the building so requests, Celotex will make an inspection of the roof and issue to the owner a report on the condition of the roof outlining any and all maintenance work that should be done. This inspection by Celotex is free of charge and without obligation.

If the owner elects to exercise his option to renew this contract, he shall have the maintenance work de-

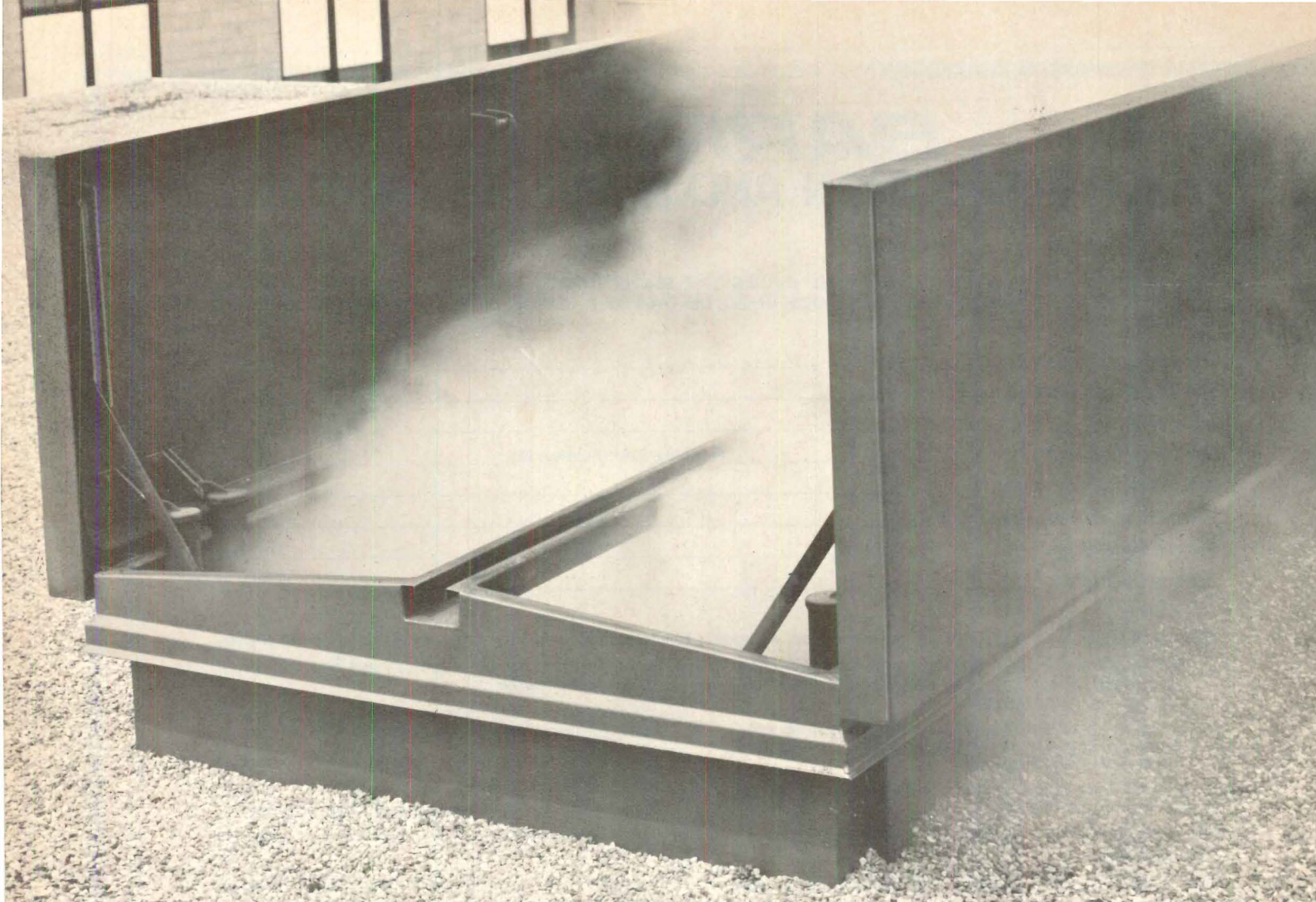
scribed in the report performed at his cost by a roofing contractor acceptable to Celotex and will notify Celotex upon the completion of this work. Maintenance work required must be completed no later than 90 days after expiration date of this contract.

Upon payment of a charge which shall not exceed $\frac{2}{3}$ of the then current initial service fee being charged by Celotex, the roof will be reinspected by Celotex and, if found to be acceptable, this contract will be extended for an additional ten (10) year period.

Celotex makes no guarantees of any kind, express or implied, except as herein stated.

By E. H. Franklin
Attorney-in-fact

The Celotex Corporation • 1500 North Dale Mabry • Tampa, Florida 33607
Subsidiary of Jim Walter Corporation



Your Automatic Fire Vent should do a lot more than just vent.

Certainly, installation of automatic fire vents on large, single-story buildings is vitally important protection against a catastrophic fire loss. Prompt venting, vertically through the roof, confines a fire and removes smoke for safer, more effective fire fighting.

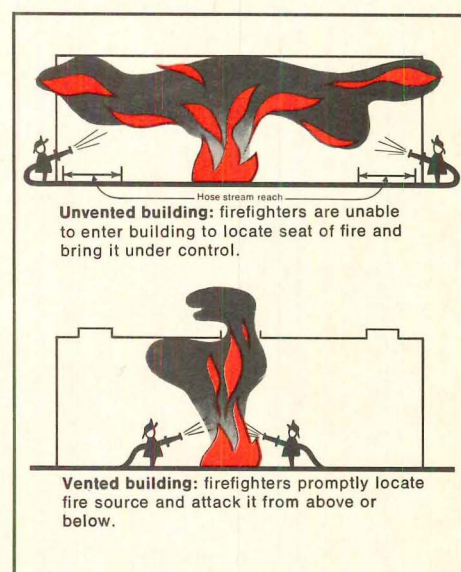
However, the right automatic fire vent for your building should do a lot more than just vent. Since the vent may be installed over critical work areas, costly machines, or areas where valuable merchandise or supplies are stored, it must be designed so it won't open accidentally due to wind or other conditions. It should be fully insulated and gasketed to seal out

rain and snow. For minimum maintenance, long life, and complete reliability, it should be ruggedly constructed with covers and curbs of not less than 14 gauge steel or 11 gauge aluminum.

At Bilco, we build such a vent—a vent that does everything you have a right to expect of it. And we back it with our reputation as the leading manufacturer of horizontal doors. Compare a Bilco Vent with any other on the market, and you'll see what we mean. Meanwhile, write for complete information and a free copy of the National Fire Protection Association booklet, "Guide to Smoke and Heat Venting."

Tested and Approved by Factory Mutual Research Corporation and listed by Underwriters' Laboratories, Inc.

How Bilco fire vents work



See us in SWEETS, or write for catalog.

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ASG Industries, Inc., has purchased the glass coatings division of Kinney Vacuum Company. This involves the vacuum deposition of metals on glass, a technique used in the manufacture of light and heat resistant architectural glass and transparent mirrors. The production facilities have been moved to Tennessee where ASG laminated glass and insulating units are manufactured.

Chrome, gold and silver reflective glass is being produced under the tradename REFLECTOVUE®. Transparent (one-way) mirrors will be marketed under the tradename DUOVUE®.

New literature and technical data are being prepared. Return the coupon, and you will receive the new material when available. In the meantime, please refer to your current Kinney literature and direct your inquiries to the nearest ASG sales office.

Atlanta, Ga., (404) 636-3001
 Boston, Mass., (617) 482-0663
 Chicago, Ill., (312) 693-2031
 Dallas, Texas, (214) 748-6391
 Detroit, Mich., (313) 547-6880
 Los Angeles, Calif., (213) 723-7171
 San Francisco, Calif., (415) 697-7244
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Please Send New Literature And Technical Data When It Is Available.

____ Reflectovue® (ASG Reflective Glass)
 ____ Duovue® (ASG Transparent Mirrors)

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Firm: _____

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City: _____


State: _____ Zip: _____



ASG Industries Inc.

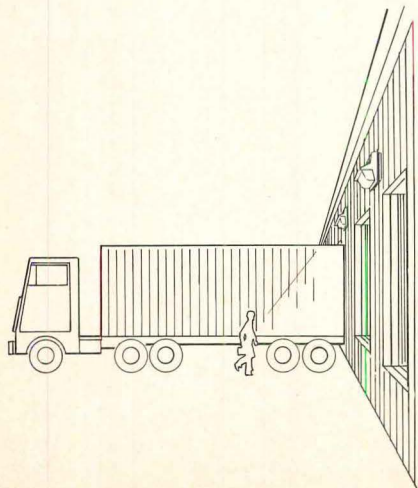
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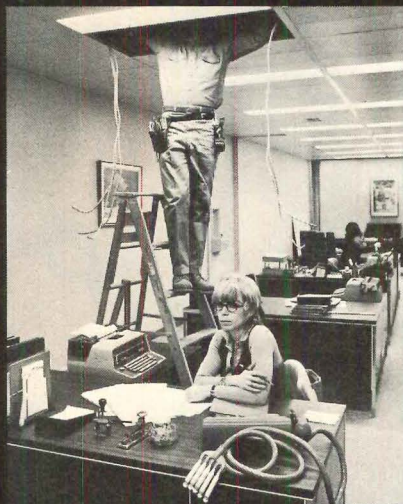
The trim design combines a cast aluminum housing with glass prismatic refractor that projects only 8-9/16" from the mounting surface.

Entire front swings open for easy access. Fins provide excellent ballast heat dissipation. Easily installed with bolts through rear housing. Available in incandescent to 300 watts, mercury vapor in 100, 175 and 250 watts.

Optional photoelectric control is concealed inside upper housing. Also optional are decorator colors, wire safety guard. For complete specifications and prices on the Landmark Side-Lite write: ITT Landmark Lighting, Southaven, Mississippi 38671.

LANDMARK LIGHTING ITT

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To accommodate business customers, last year we installed more than 6,000,000 telephones. And moved many million more.

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There's more than meets the eye!



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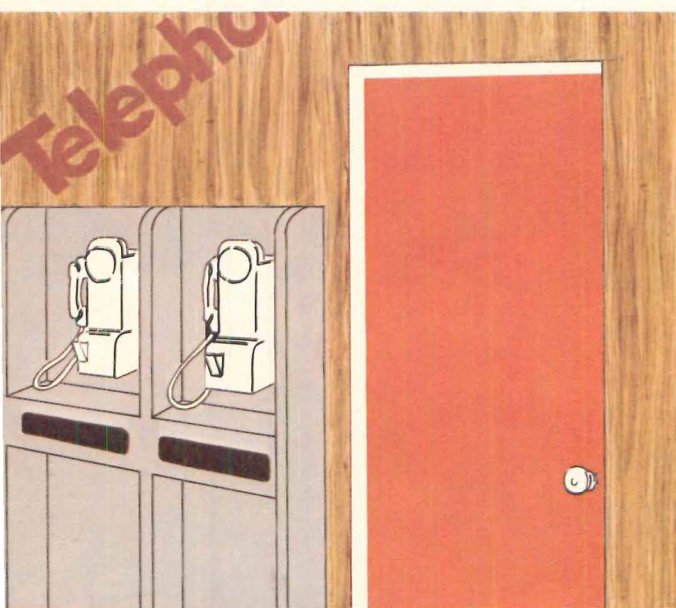
In high-traffic areas, what could be more natural than a tough, long-lasting surface.

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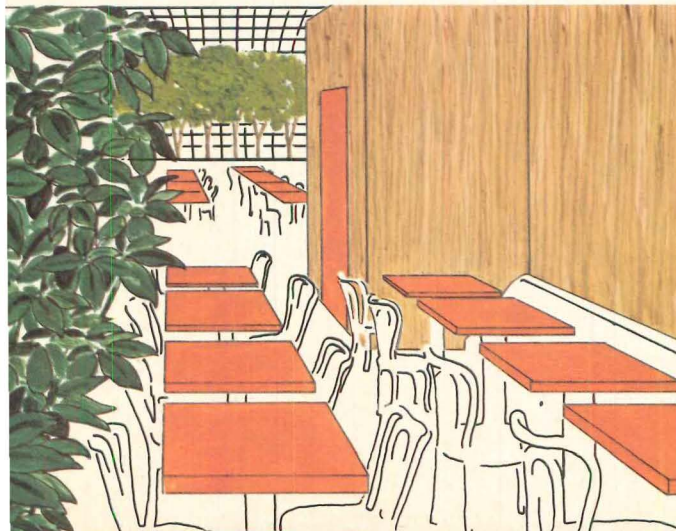
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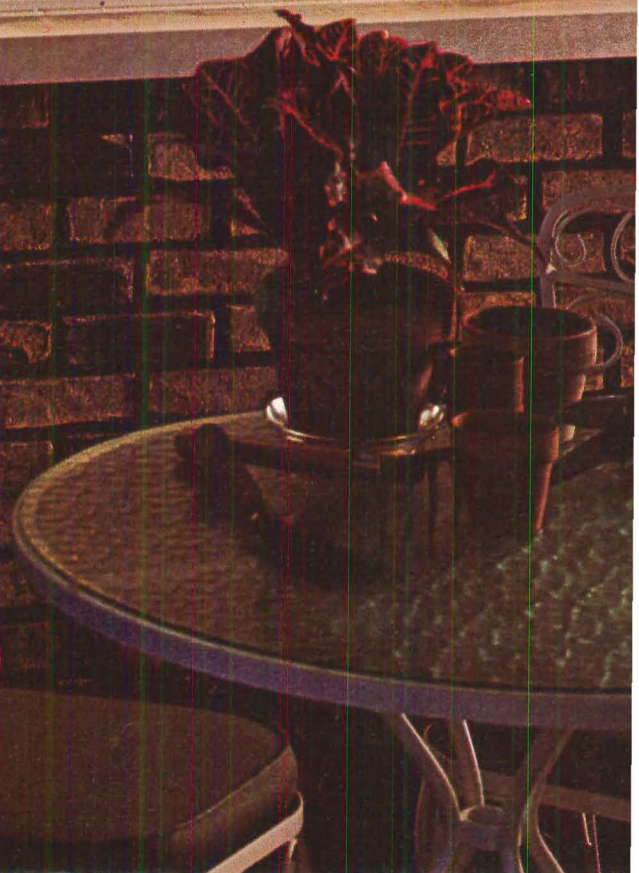
**When the chips are down,
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RALPH WILSON PLASTICS COMPANY • TEMPLE, TEXAS



Introducing the new Andersen Perma-Shield Gliding Window



his the window that has everything?

It's a fair question. After all, this new line of Andersen Perma-Shield Gliding Windows incorporates all our accumulated experience in window design and construction. We gave it a lot of thought, improved and refined it through many stages, and gave it thorough field tests before we were satisfied.

So we think that architects, builders and users will all be more than pleased with this, our latest window.

But does it have everything? Before you answer, glance down the summary of features below; send for more detailed information—ask for a demonstration, if you like. We think we've come close. See if you agree.

❶ Perma-Shield! No painting inside or out. Both frame and sash are stable wood completely covered with a rigid vinyl sheath. No corner joints in frame. Sash corners are welded to form leak-proof joints.

❷ Sill tank. For added weathertightness under severe conditions of exposure, an integral vinyl dual sill has been built in to drain any moisture to the exterior.

❸ Welded insulating glass eliminates need for storm windows. Snap-in rigid vinyl glazing bead eliminates glazing compound on exterior.

❹ Weatherstripping is rigid vinyl for maximum weathertightness... factory applied.

❺ Weathertight, vinyl-sheathed sash. Wood core factory treated with preservative for stability and insulation. Adjustable, chrome-plated steel glides in bottom rail for smooth, easy operation.

❶ Neat, trim frame is compatible with traditional, colonial or contemporary design. And it matches other Andersen Perma-Shield Windows and Gliding Doors.

❷ Screen is easy to install and remove from inside. White Perma-Clean® aluminum frame needs no painting. Screen strikes are part of exterior frame—no hardware to apply or lose.

❸ Weatherstripping of wedge-shaped rigid vinyl and neoprene on meeting stile reduces dust, air, noise, heat and cold leakage to minimum.

❹ Removable sash. Both stationary and operating sash can be removed for cleaning from inside by releasing securing screws. This safety feature prevents accidental release of either sash.

❺ Attractive handle operates spring-loaded rods for positive locking of windows at top and bottom. All factory installed.

Perma-Shield Gliding Windows are available in eleven basic sizes suitable for commercial and residential applications.

Like more information on Andersen's new Perma-Shield Gliding Windows? There are five ways to get it: from your Sweet's File (Section 8.16 An), from your Andersen dealer or distributor, by using the Reader Service Card in this publication, or by mailing the coupon.

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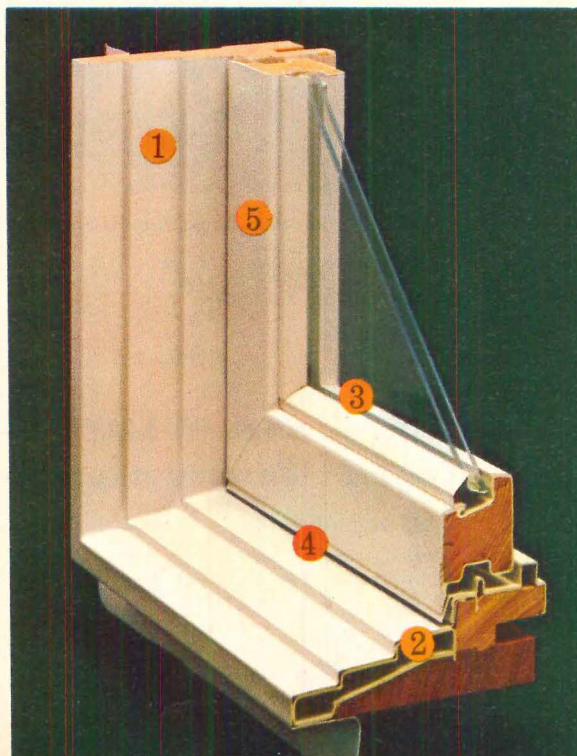
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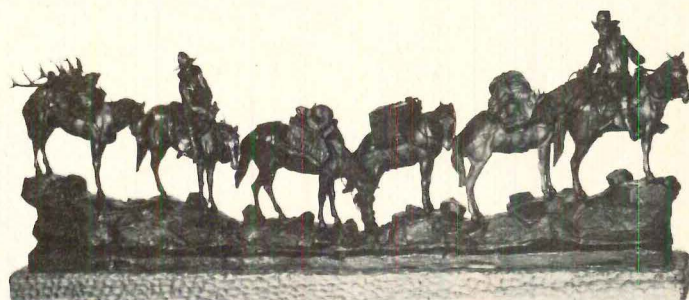
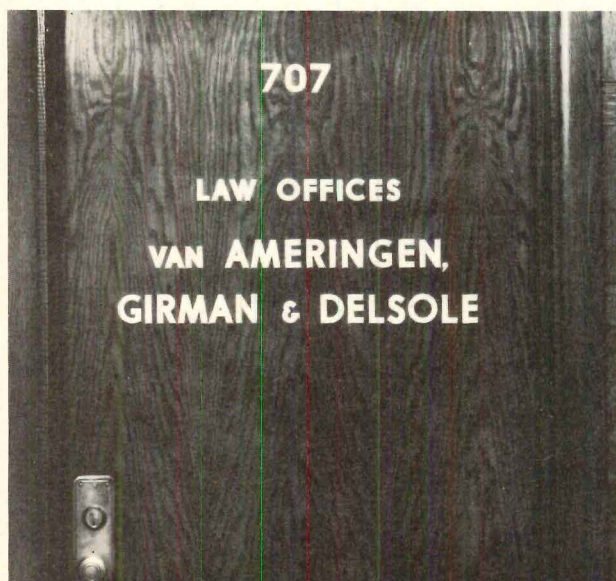
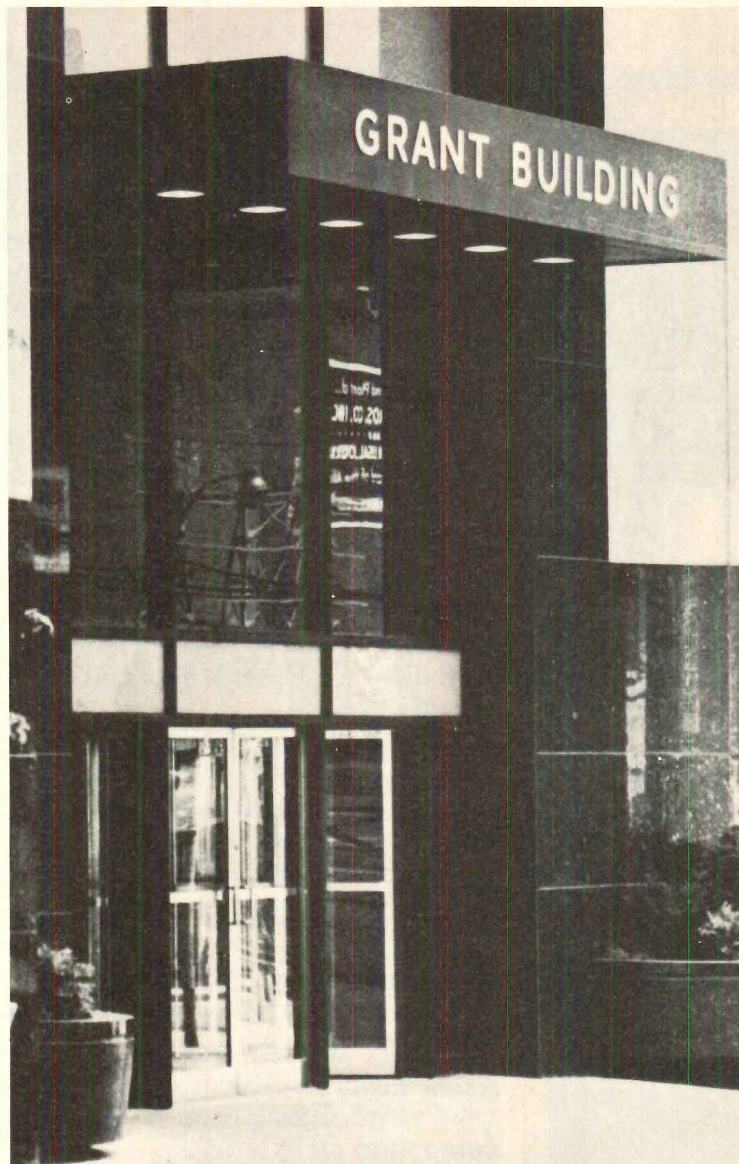
See us in Sweet's **S** Architectural Design File 10.14.

Great identification is the kind that puts across the proper image for you. That's our specialty—creating and producing identification that communicates.

The 39-story Grant Building in downtown Pittsburgh is an example. It's occupied by more than 200 legal and corporate firms. Each of these tenants is identified by the same style of metal lettering on their door—all produced by Matthews.

Matthews is your single source for identification in metal... for exterior and interior applications... handsome bronze or aluminum letters in a wide range of sizes, finishes and baked enamel colors; custom-cast trademarks, symbols, signs and tablets.

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"When you turn on 6000 faucets, you can't afford maintenance problems."

When you're one of the most luxurious living complexes in Miami Beach, everything's got to be just right. And that includes the faucet fixtures.

That's why Seacoast Towers installed Delta faucets—6000 of them. For one thing, Delta's sleek simplicity blended beautifully with the decorator touches that abound in Seacoast Towers.

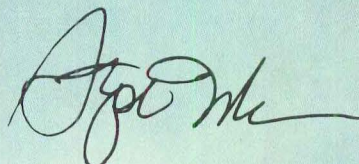
More important, they found that Delta faucets are virtually maintenance-free. Thanks to a patented rotating valve that eliminates the washer. And the maintenance and replacement costs that go with washers.

As Mr. Muss put it: "We're very happy with our Delta faucets. We put them in the apartments, cabanas, maids' rooms and laundries. And they've been practically trouble-free for eight years."

What Delta faucets have done for Seacoast Towers, they can do for you. Write Delta Faucet Company, a Division of Masco Corporation, Greensburg, Indiana 47240.



**Delta Faucets.
They're washerless.**



President of Alexander Muss & Sons, Inc.
Builders of Seacoast Towers.





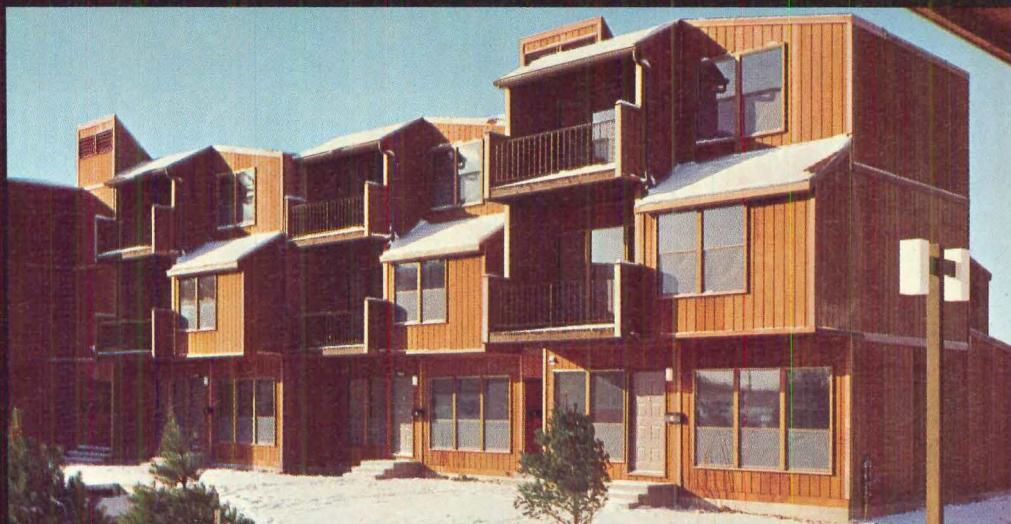
Reedland Woods School, Tiburon, Calif. Architect: Ron D. Young, Cupertino, Calif.

Corte Madera Branch, Marin County Library. Architects: Smith Barker Hanssen, A.I.A., San Francisco, Calif.



Redwood Plywood.

And a warm, inviting new look
for civic architecture.



Industrialized Housing, HUD's Operation Breakthrough prototype site, Kalamazoo, Mich.
Housing Systems Producer: Hercoform Mktg., Inc., Wilmington, Del.
Architects: Armstrong & Salomonsky, Ltd., A.I.A. Richmond, Va.



member when most American public buildings derived their design and impressive bulk from classical architecture? There are three examples of contemporary civic buildings that have lost the austere, impersonal "institutional look"—due in large measure to the use of California redwood plywood. Its warm, natural visual appeal is only the beginning of redwood plywood's virtues. Its clear heartwood face veneers are resistant to decay and the erosive effects of weather. It can take and hold a wide variety of finishes longer than any other wood. And its low flame-spread value established by Underwriters' Laboratories, Inc., allows redwood plywood

to be used in many applications otherwise closed to untreated wood products.

In actual construction, redwood plywood has other practical advantages. Its large panel sizes—4 feet by 8, 9 or 10 feet—make possible the economy and ease of modular installation. And the panels can be applied directly to studs—without building paper—thanks to redwood plywood's high insulation values.

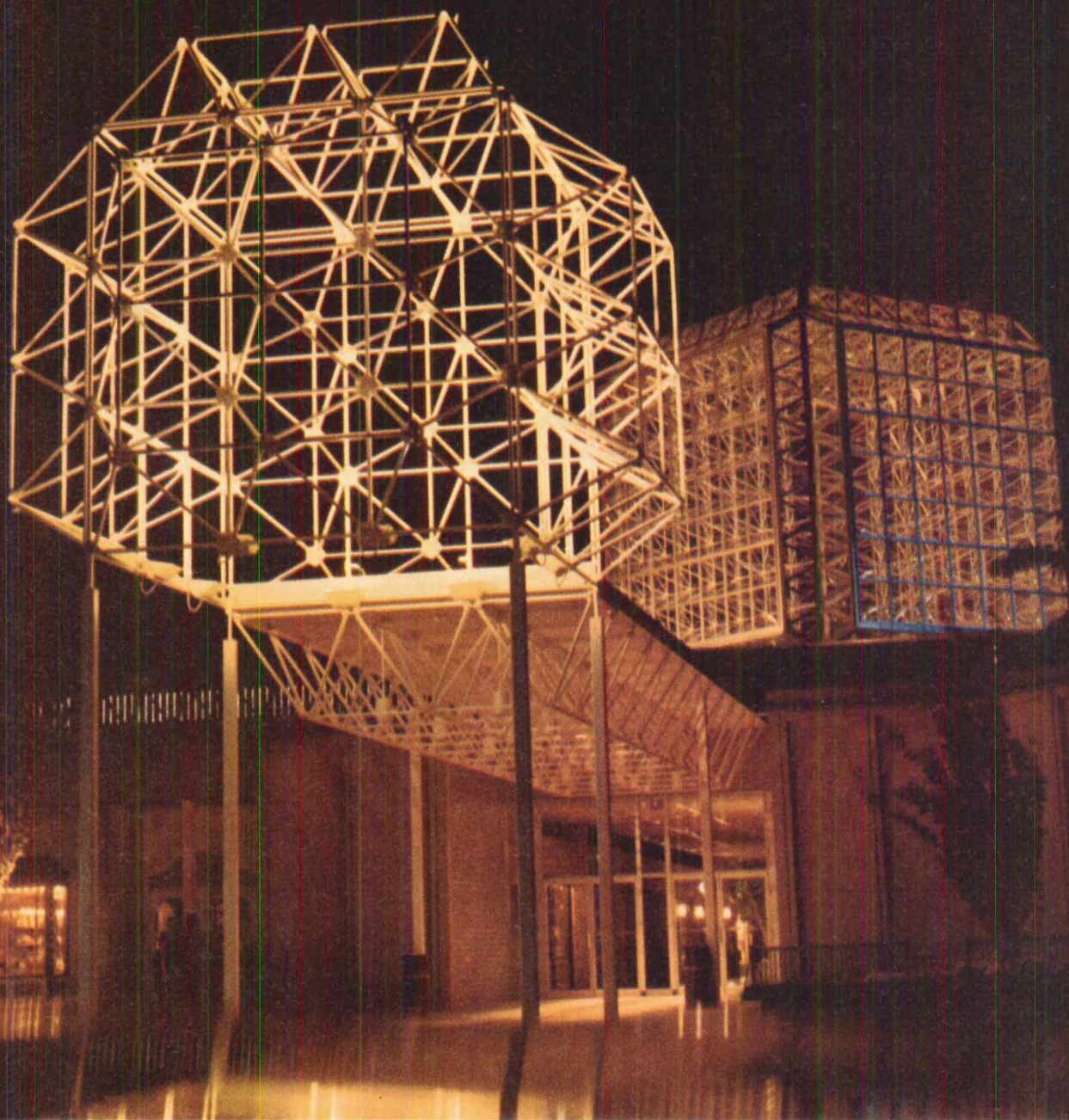
Beauty, economy, practicality—three reasons more and more leading architects are specifying redwood plywood in their plans for civic building projects.

CALIFORNIA REDWOOD ASSOCIATION

Write Dept. PI for specification and technical information on redwood plywood.

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Contractor: The Lathrop Company, Toledo, Ohio

COLUMBIA MALL Columbia, Maryland
Owner/Developer: The Rouse Company, Columbia, Maryland
Architects: Cope, Linder & Walmsley, Philadelphia, Pennsylvania
General Contractor: Whiting-Turner, Baltimore, Maryland

Space-Frame Structures by



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News report

British sculptor plans largest work for American building

For the main entrance courtyard of the S.S. Kresge Co. International Headquarters in Troy, Mich., British sculptor Michael Ayrton is creating what he says will be largest of the ten bronzes he has already done. The sculpture will consist of two bronze half heads, 9-ft tall, separated by a 15-ft-high sheet of reflective glass; the base of the sculpture will be 7-ft high, giving a total height of 22 ft. Ayrton estimates it will take six months to complete the casting and erect and assemble the completed work.

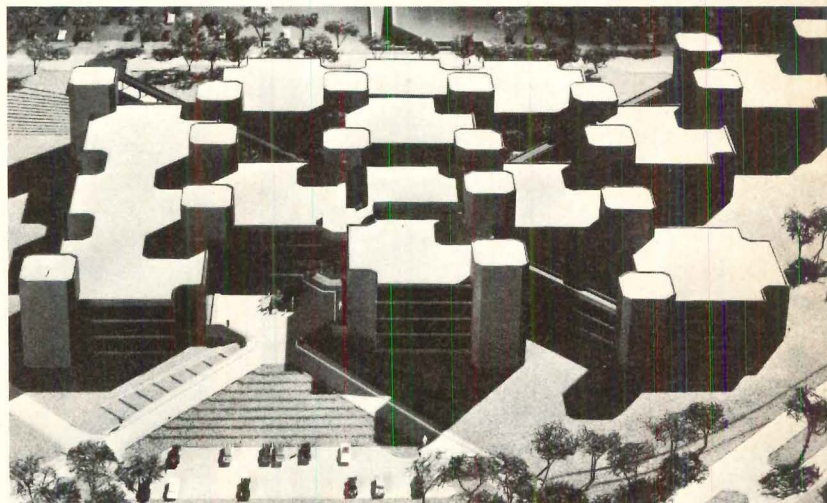
Each half head will be completed by its reflection in the glass; viewed from the side, each half head is broken up by carved niches in which are other abstract head forms. Not only will the sculpture reflect a gigantic head, says Ayrton, but it will "reflect a complex relationship of heads to one another, for while the highest and most important factor that any of us comprehend is the human head, it is the conjunction of heads that human beings relate and combine to formulate concepts.

The complex was designed by Smith, Hinchman & Grylls Associates as an assembly of building units, each two- to four-stories high, with 10,000 sq ft of area per floor. Each unit has its own mechanical and support services in an adjacent tower. Diagonal main corridors cut through the courtyards created by the arrangement of the building units. Weathering steel, red brown brick and reflective glass are used on the exterior.

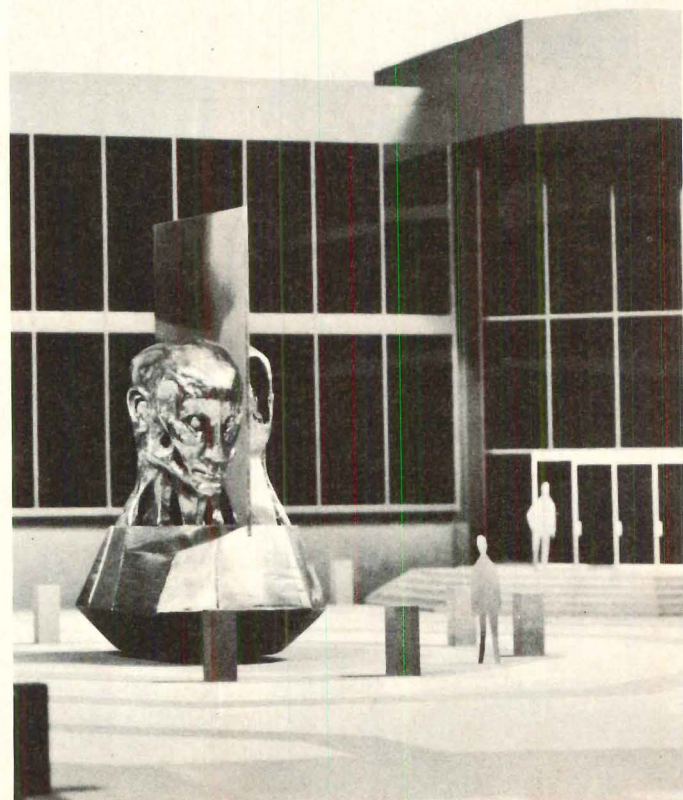
AIA Task Force report: reactions mixed, prospects good

"If the AIA is going to turn around, this is what's going to do it," one AIA watcher remarked not too long ago. He was referring to the first report of the Institute's Task Force on National Policy, a document that may indeed be a milestone in the AIA's progress from gentlemen's club to an active force for a better environment. For while the report contains few ideas that haven't been bouncing around the profession for the past few years, it does pull them into one proposed policy for urban growth that the Institute plans to actively promote on all fronts.

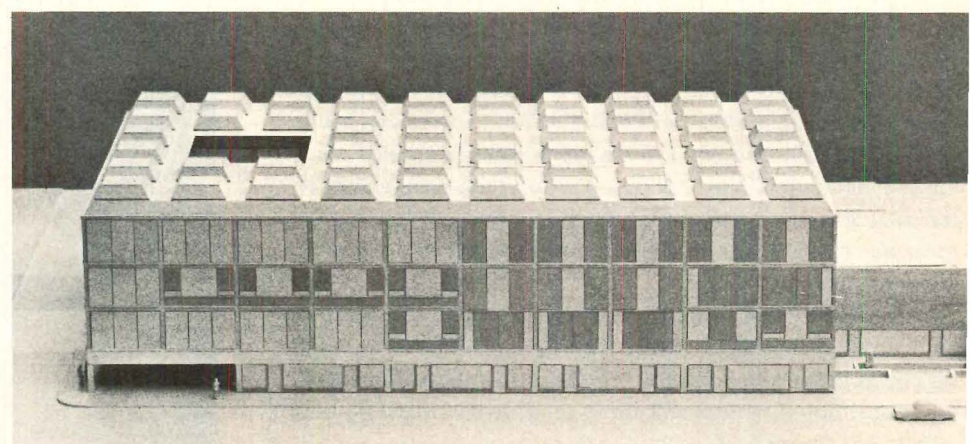
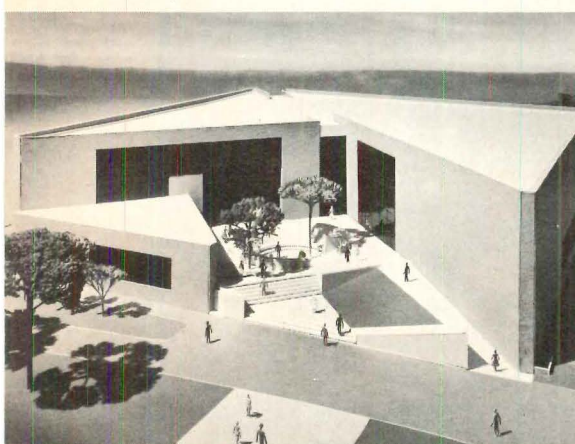
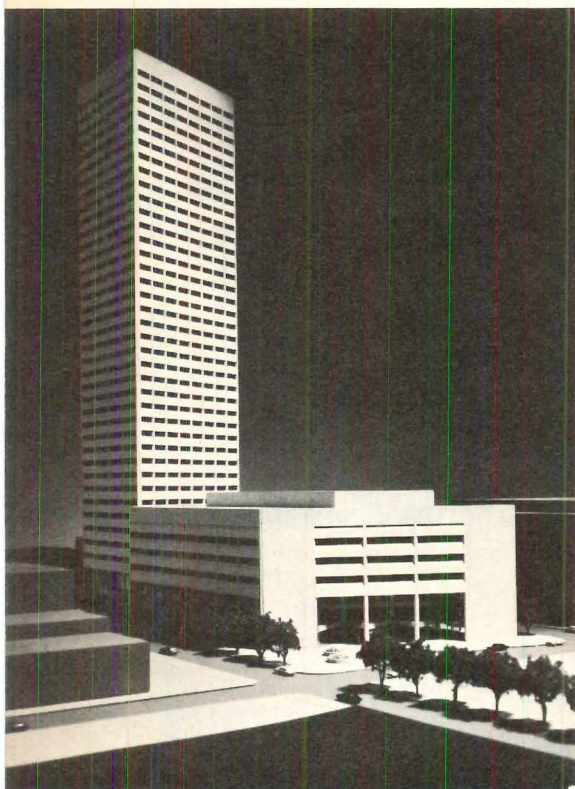
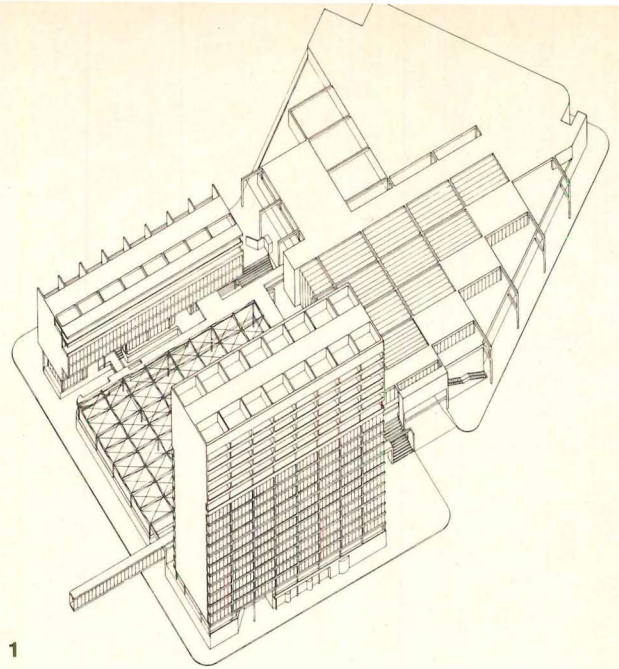
Immediate reaction within the AIA was mixed. While agreeing with the report in principle, individual members and chapters have made some specific criticisms. One has been that the report put too much emphasis on growth, sounding as if it [continued on page 34]



Sculpture for Kresge courtyard



Buildings on the way up



1 Town center proposed for Trenton, N.J. will combine housing, offices, public space, shops, department stores and parking. Buildings would provide some 211,200 sq ft of office space and 60 penthouse apartments overlooking 100,000-sq-ft central plaza covered by glazed canopy roof. Parking garage would be linked by an elevated walkway. Geddes Brecher Qualls Cunningham are architects for proposal.

2 Super block two blocks on a side will be site for office plaza and high rise tower to be built by United States National Bank of Portland, Ore. First phase will be U.S. Bank Plaza, a seven-story building including a three-story Galleria running the length of the building. Office tower would be built later. About one-third of the site is to be left open, with large landscaped area at one corner of plaza. Exterior of both buildings would be flamed granite; vertical columns would be spaced at 30-ft intervals. First phase office plaza would provide 450,000 sq ft of space, excluding parking; office tower could boost total space to 1.15 million sq ft. Architects are the Portland office of Skidmore, Owings & Merrill, with Pietro Belluschi as architectural consultant to the bank. Cushman & Wakefield are project consultants, and engineers are: Moffatt, Nichol & Bonney, Inc. (s); W.A. DiGiacomo Associates, Inc. (m,e) and Lerch, Bates & Associates (vertical transportation).

3 Shop courses are put on a par with arts and sciences on high school campus designed by Adrian Wilson Associates for Orange County (Calif.) Unified School District. Shop buildings—auto, wood, metal, electrical and construction—are laid out to allow docking of traveling trailers carrying shop equipment shared by other schools in the district. Campus also includes usual classrooms, multipurpose building with amphitheater, gymnasium and center for trainable mentally retarded. While campus is designed for student body of 2000, multipurpose building, amphitheater and gym have been separated from main group of buildings so they can be used by community during nonschool hours.

4 Design for college center at Monmouth College, West Long Branch, N.J., grew out of conversations with students. Sheathed in brown brick and bronze glass, three-story building will provide 77,500 sq ft of space, cost \$3.1 million. Architects are The Grad Partnership.

5 Concrete, glass and stainless steel exterior of Yale's Paul Mellon Center for British Arts and British Studies will enclose dual purpose—educational and commercial—building. First floor will be devoted almost exclusively to commercial shops; sunken court below street level will house cafe or restaurant. Exhibition areas will be lighted by natural daylight, and a long study gallery, adjacent to top floor exhibition spaces, will allow visitors to see paintings not on public exhibition. Main entrance will be at corner of building, opening into skylit, 40-ft-square lobby court rising height of building; public galleries circle court on each floor. Another skylit court begins on the second floor, over 200-seat lecture hall. Louis I. Kahn is architect.

6 Over 1100 students will occupy Brookland Elementary School in Washington, D.C. when new school replaces existing structure. Designed by Carl A. Ruppert and Associates for open space team teaching, school will provide 96,400 sq ft of space on four floors and later can be expanded by one floor. School's triangular plan puts open learning areas at outside with central core containing all-purpose room, teachers areas, restrooms and storage. Stair towers are at points of triangle. Structure is composite steel and concrete with oversize dark brick exterior walls. Site is in a high density residential area and adjoins 10-acre neighborhood park.

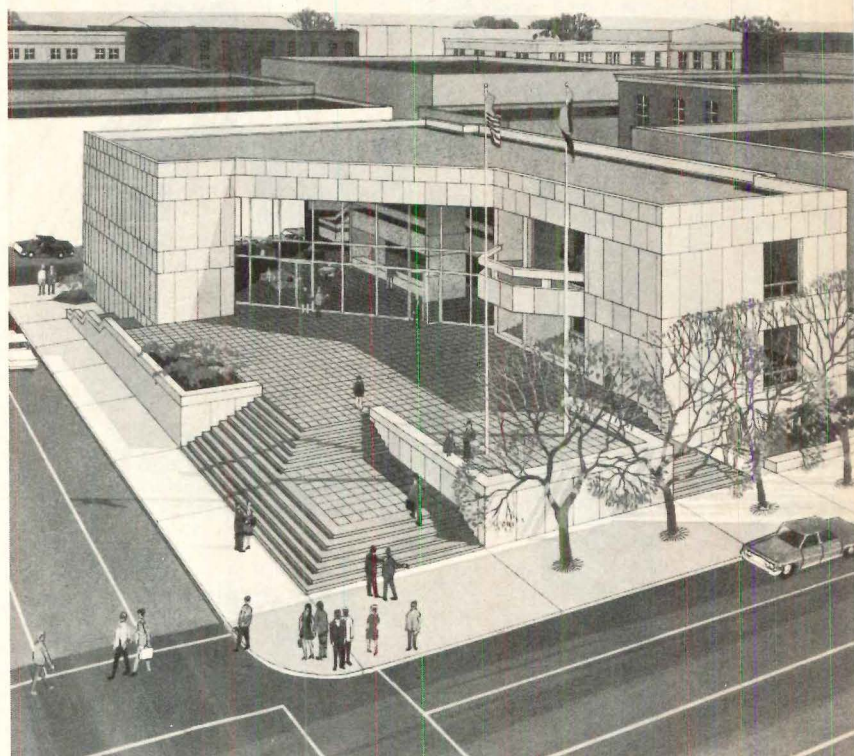
7 Two-story banking lobby overlooking raised landscaped plaza is feature of design for Guaranty Federal Savings and Loan Association of Galveston, Tex. Building provides 14,000 sq ft of space along with 10,000-sq-ft half basement parking area and drive-in banking window. Exterior is travertine with a traprock plaza and lobby area. Designed by Rapp-Tackett-Fash, building is scheduled for completion early next year.

8 Covered pedestrian street, skylit through a 90-ft-high atrium, is the heart of mixed-use building planned for New York City's East 57 St. Designed by David Kenneth Specter with the Office of Philip Birnbaum serving as consulting architect for apartments, building will include stores, offices, cafe and restaurant, health club and 35 floors of luxury apartments including two levels of penthouses and rooftop recreational area.

[continued on page 32]

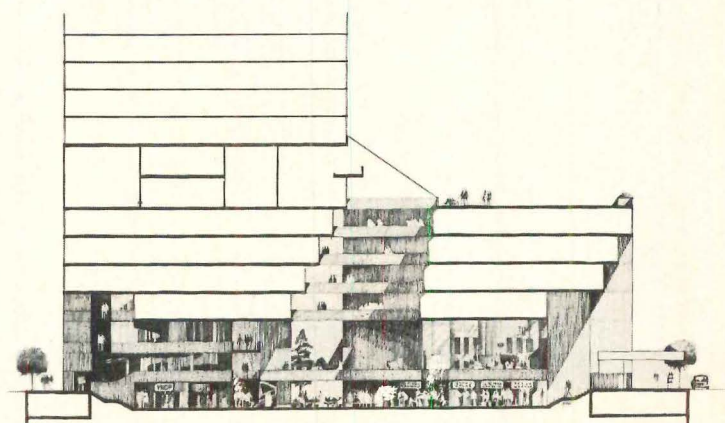


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9 Educational park, when completed, will replace Howard High School in Wilmington, Del. Designed to focus on job-oriented cooperative work programs, park will also provide basic education for some 500 students who will spend all day there. Other students will use facilities on part-time basis, busing back and forth from their regular schools in city and suburbs. Basic to Caudill Rowlett Scott plan for park is student concourse and pedestrian streets lined by glass-fronted workshops. In the core will be series of flexible indoor-outdoor spaces, planned on 30-ft module and system of premanufactured components. Total cost of Howard Educational Park is near \$30 million; facilities are to be open around the clock and open to community use.

10 In between a 40-story bank building and a 23-story hotel in the growing Louisville, Ky. Riverfront development, American Life and Accident Insurance Co. of Kentucky is putting its own office building—a five-story structure designed by Bruno Contarato of the Office of Mies van der Rohe. Sheathed in weathering steel and bronze glass, the building will offer 157,000 sq ft of space. The Riverfront project includes a 1600-car garage topped by 16 arcades of public space. The plaza has a pedestrian ramp at one side and monumental steps at the front of the building.

11 Master plan for Staten Island Mall calls for a 1.8 million-sq-ft enclosed shopping center, 1 million sq ft of office space and parking for over 10,000 cars. Two department stores already under construction will anchor the first phase of the project; between them will be a two- and three-level retail structure connected with a 200,000-sq-ft-office building. The rest of the office and commercial space is planned for another part of the site. Subsequent phases will add two more department stores and the office tower, along with additions to the mall. Welton Becket & Associates is architect for the mall and the Macy's store; Abbott Merkt & Co., Inc. is architect for Sears.

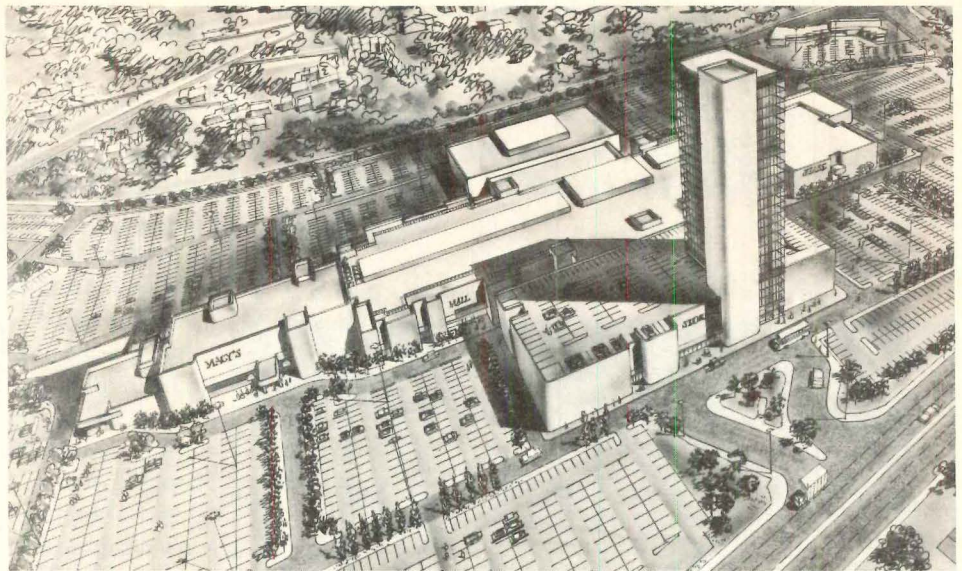
12 Prototype design for series of seven ice arenas for Ramsey County, Minn. calls for a building enclosure 108' x 240' x 20' high. Buildings will have concrete floors and walls of prestressed concrete panels; roof will be supported by steel pipe. Cost is estimated at \$360,000 each. Architects are Team 70 Architects, Inc.

13 First phase of 33-block Houston Center will be known as 2 Houston Center and will rise 40 stories above a 40-ft-high platform. First 3½ levels of the structure, along with two underground levels, will provide parking for more than 550 cars; garage roof will form main pedestrian level. An enclosed escalator will link this level with the street. The office tower and a six-story wing will be linked at the pedestrian level by a glassed-in air conditioned gallery two-stories high and 180-ft long. Bronze glass and matching anodized aluminum will be the exterior materials; corners of the tower will be rounded, and interior columns near the perimeter will be visible from the outside. Shops and boutiques will be included in the street and lower levels. Architects are 2 Houston Center Architects, composed of William L. Pereira Associates and the office of G. Pierce, Goodwin & Flanagan. Engineers are Walter P. Moore & Associates (s) and I.A. Naman & Associates (m,e).

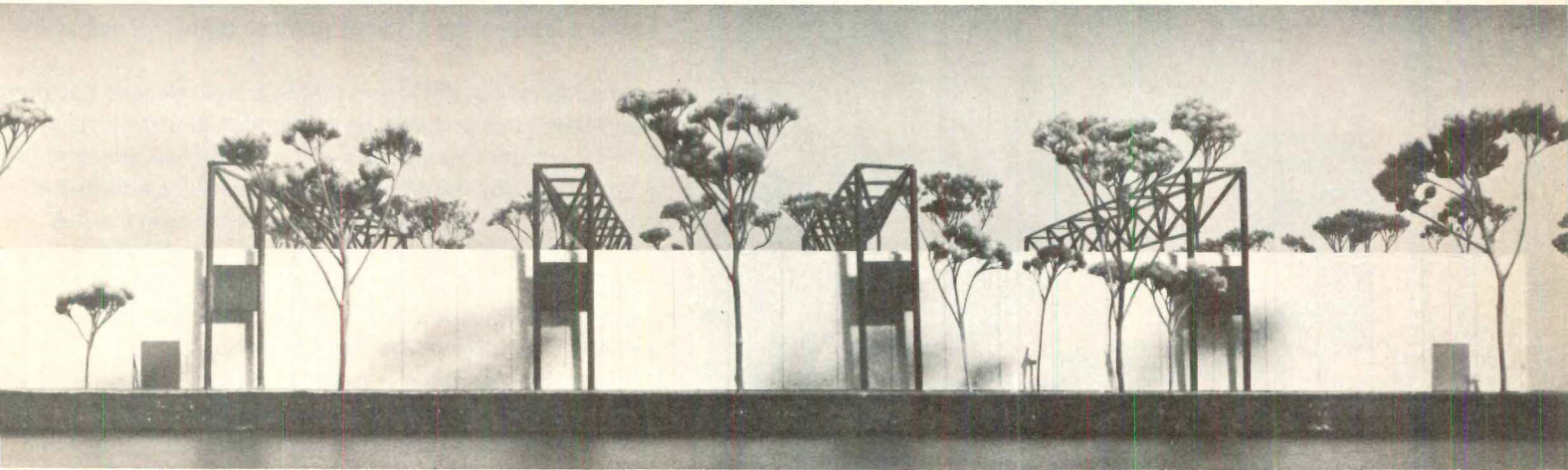
14 Columbus Occupational Health Center, Columbus, Ind. will include industrial hygiene services, facilities for treating occupational injuries and illnesses, and for physical exams of employees of local industries. Three types of medical spaces have been provided: enclosed spaces for examinations; semi-enclosed spaces, designed as alcoves with door-height partitions and folding screens, for physiotherapy, eye exams, cardio-pulmonary testing and dressing; open spaces for such activities as sight testing, weight and height recording, exercise, and nurses stations. The laboratory area is glassed in for hygienic purposes, but it is visually open to the waiting area. Medical functions are at the perimeter of the building, on three levels, surrounding a large continuous waiting area. Ramps lead from the waiting area to the various medical areas; circular seating pods are interspersed among the ramps. Interior materials include highly polished metal walls and textured concrete block; exterior walls are black reflecting glass and are intersected diagonally by a white textured metal skylight wall capped by a continuous skylight made of standard greenhouse parts. The 21,000-sq-ft-building can be expanded later if necessary. Architects are Hardy Holzman Pfeiffer Associates; engineers are Miller Tallarico McNinch Hoeffel (s) and Ziel-Blossom & Associates, Inc. (m,e). Robert A. Hansen Associates are acoustical consultants and Dan Kiley and Partners are landscape architects for the project.



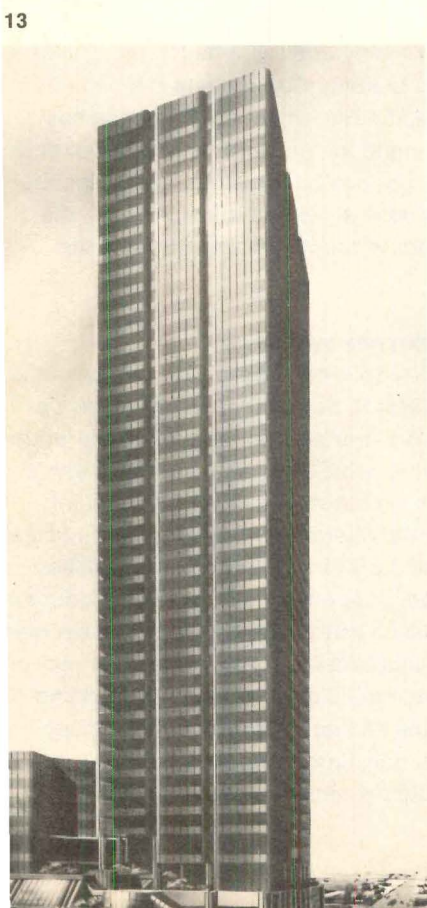
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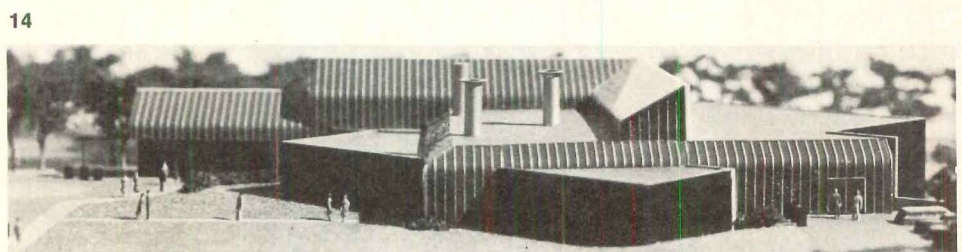
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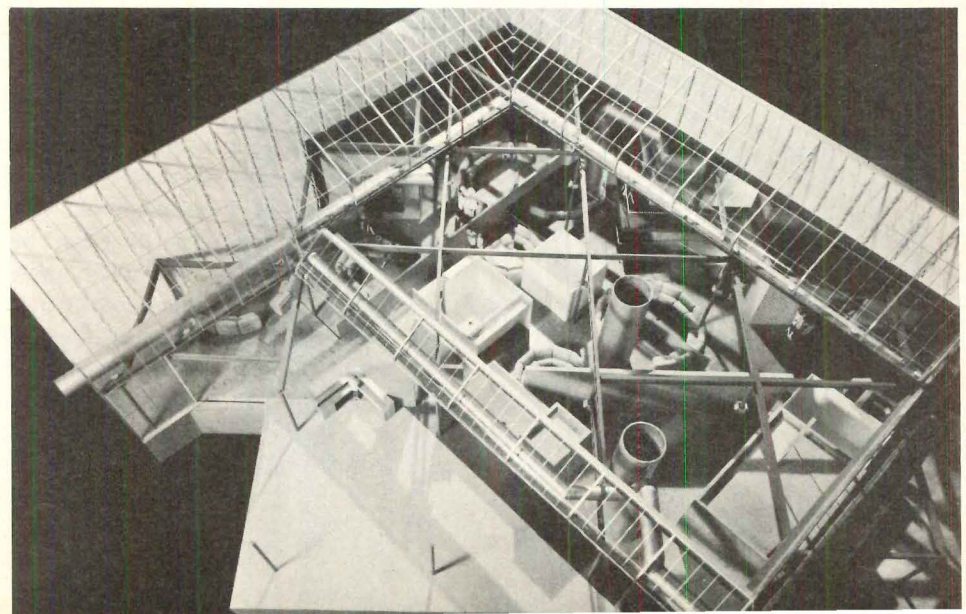
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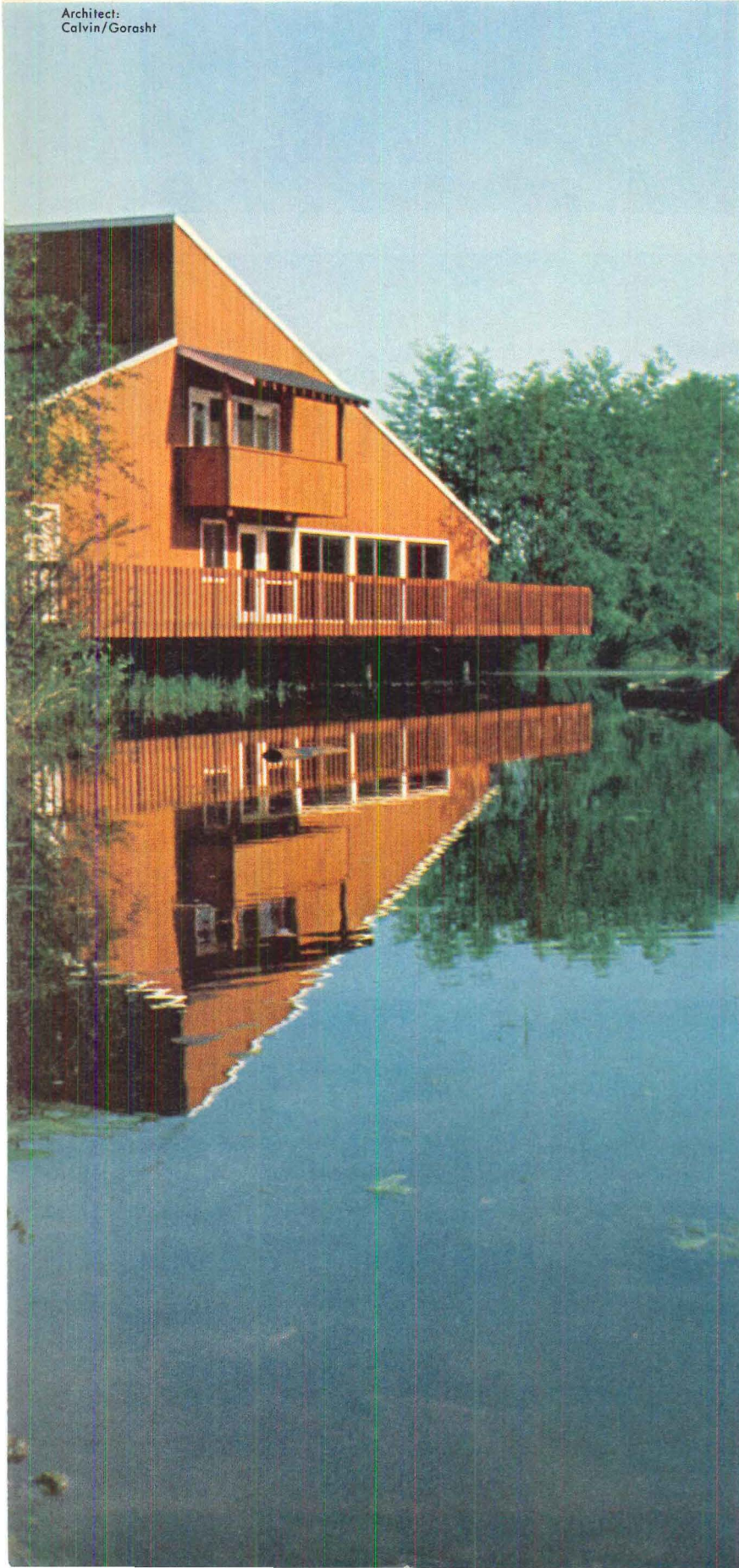
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Architect:
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News report continued from page 29

were in favor of continued growth; another bone of contention has been the "growth unit," criticized in terms of scale and validity as well as its awkward name. Racism and poverty were not dealt with specifically, some members feel, while others maintain that the proposed public control of land is against free enterprise. Some have labeled the wording too fuzzy and vague and the proposals politically unfeasible.

But specific criticisms aside, many chapters are going to Houston ready to vote for the report. Both the Southern California Chapter and the California Council AIA have endorsed it, with the reservation that there should be some discussion about the amounts of money mentioned. The New Jersey Society of Architects has also endorsed it, although there are a few disagreements with the wording. The New York Chapter, although at first strongly disappointed, feels that it should do all it can to get the report through, while offering what chapter president-elect James Polshek terms "constructive help."

In the meantime, the report that was first released has gone through two revisions, and by convention time it will have gained footnotes, illustrations and a "where we go from here" section. Thus, the report that will (probably) be adopted in Houston won't be the one originally published in the AIA memo. It will be in the same spirit however; the revisions should serve to make it more specific and answer some of the criticism of the past few weeks. Then, of course, it will probably be further revised from the convention floor.

One real danger at the convention is that those who feel the report is too conservative and those who feel it is too radical may find themselves voting the same way to defeat it. If that happens, says Task Force chairman, Archibald Rogers, AIA's "credibility" will be reduced. Prior conventions, Rogers says, have gone on record as favoring some sort of national growth policy, and many of the ideas in the Task Force report have already been given professional blessings.

AIA members aren't the only ones who have been giving the policy report a close reading. Copies were circulated to interested people on Capitol Hill, where the response has been favorable, according to the Institute. A large number of newspapers around the country have carried news reports, and favorable editorials have appeared in papers from the Christian Science Monitor to the Washington Post to the Piqua, Ohio, Call.

Cement shortage: no concrete answer yet

There's a cement shortage in the offing, says one cement company executive. Robert R. Salyard of the American Cement Corporation says the shortage, which will force producers to ration their output in some parts of the country within the next three years, will stem from the closing of cement plants that can't meet antipollution requirements, a minimum of new plant openings and a shortage of shipping facilities.

Almost \$500 million will be spent by U.S. cement producers during the next five to seven years, Salyard says, to meet new environmental control standards. It is a civic duty to do so, he said, but the cost will force the closing of another 18 domestic cement plants besides the 15 that have already shut down. While they were closing, only four new ones opened.

Another problem facing the cement producers is the

squeeze put on their available capital by low profits and high operating costs. "Cement products in 1970 sold for no more per barrel than they did in 1960," he says, "while all operating costs have risen sharply. In the same decade the cement industry's labor and fuel costs rose 90 percent." Higher cement prices, he says, would provide the needed profit boost to allow replacing, improving and expanding production facilities. The alternative is a shortage of domestic cement and greatly increased imports, already at an all-time high.

Louis Kahn to receive RIBA Gold Medal

On the recommendation of the Council of the Royal Institute of British Architects, this year's Royal Gold Medal for Architecture will be awarded to Louis Kahn. The presentation will be made at a special ceremony in London on June 13 by Alex Gordon, RIBA president.

The medal, instituted in 1848 by Queen Victoria, is given annually to "some distinguished architect, or group of architects, for work of high merit or to some other distinguished person or group whose work has promoted directly or indirectly the advancement of architecture." It was last given to a practicing American architect in 1961, when Lewis Mumford was the recipient. Other American recipients in recent years have been Buckminster Fuller (1968), Mies van der Rohe (1959) and Eliel Saarinen (1950).

Building team conference: money, labor, management

Money, labor and management will be the three focal points of this year's Second National Conference for the Building Team, which will follow hard on the heels of the AIA Convention in Houston. The AIA convention officially closes at the Albert Thomas Convention Center on May 10; the Building Team Conference starts that day and runs through the 12th.

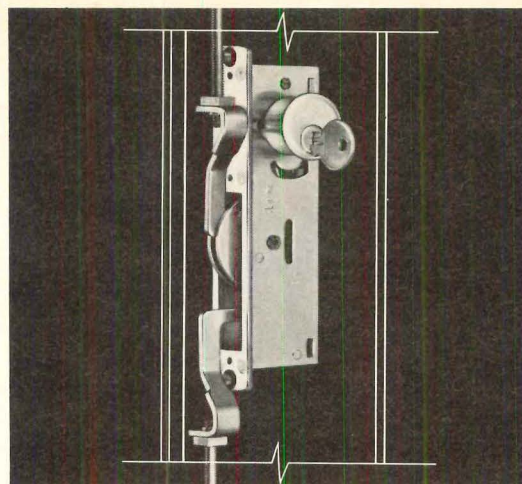
The 1000 owners, developers, architects, engineers, contractors and others who will attend the conference will be treated to an assortment of 60 speakers. The first day's session will include representatives of all parts of the Building Team, discussing the reasons behind the team approach. The second day will be devoted to six workshop sessions: putting the team together, what the owner expects, construction management, construction financing, accelerated project delivery and systems building will be the topics. Another set of workshops slated for that day and the next will deal with building codes, value engineering and life cycle costing, building systems, the proverbial piece of the action, legal liability and performance specifications. A third set of workshops will cover cost control systems building. The workshops are to be repeated to eliminate schedule conflicts. Also on the calendar is a panel discussion on labor problems and a reception and dinner.

AIA names eight honorary members

Two women and six men have been elected to honorary membership in the AIA for "distinguished contributions to the architectural profession, or to allied arts and sciences." The honorary memberships will be presented during ceremonies at the convention in Houston next month.

The new honorary members are: Luis Echeverria Alvarez, President of Mexico; Stanley Marcus, president of Neiman-Marcus, Inc.; Elliot Lee Richardson, Secretary of Health Education and Welfare; Laurence S. Rockefeller, president of the

[continued on page 38]



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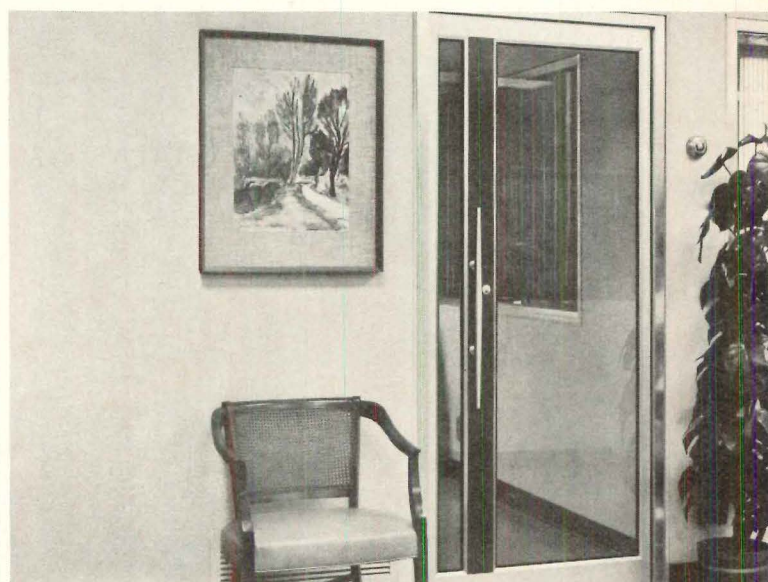
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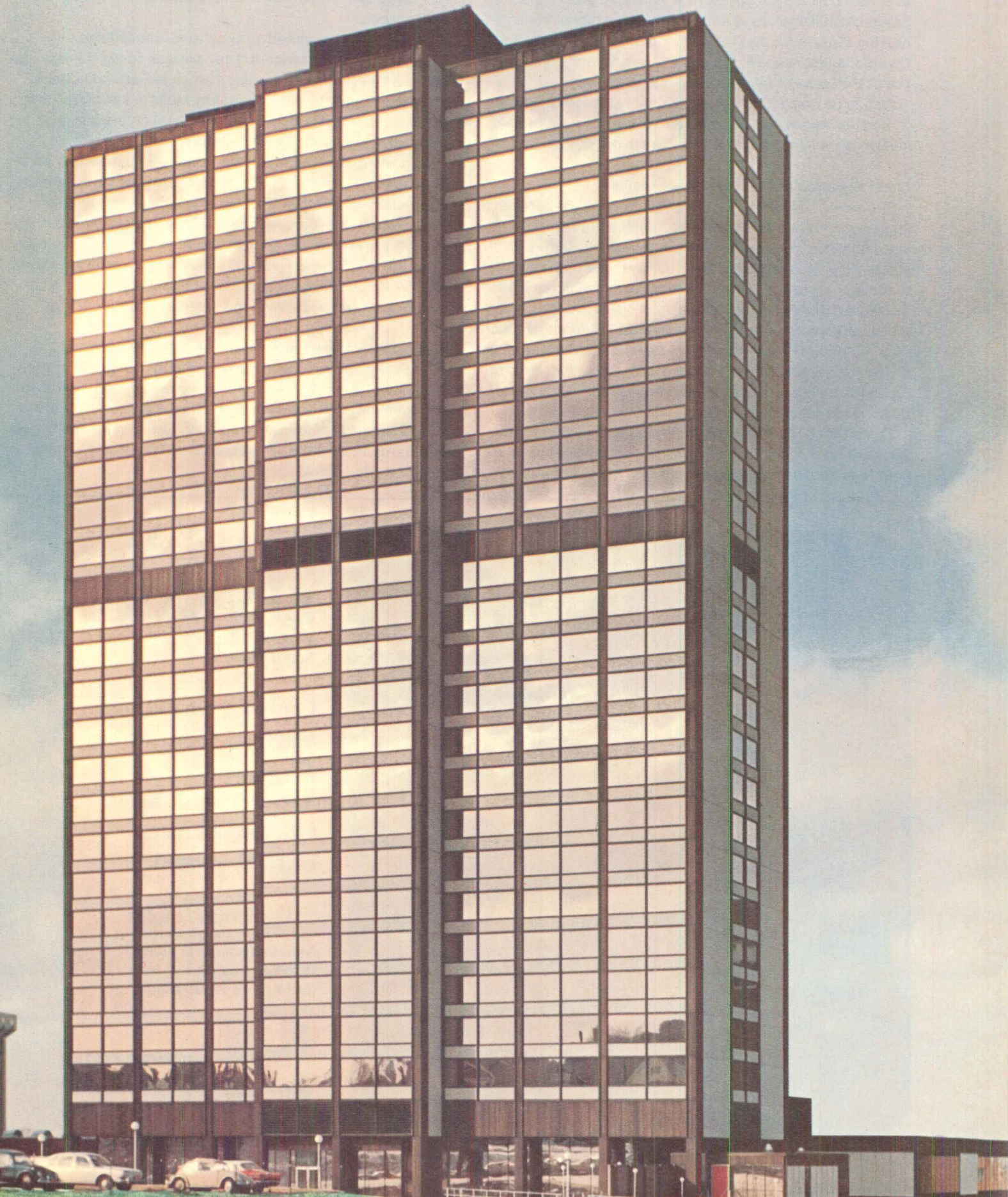
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American Conservation Association, Inc.; Rockefeller Brothers Fund, Inc.; Helen T. Schneider, executive director of the New Jersey Society of Architects; Beatrix Sebastien, director of school building services for the American Association of School Administrators; Sydney Steinborn, chief of the engineering division for the U.S. Army Corps of Engineers, Seattle Division; and Wallace F. Traendly, president and chief executive of McGraw-Hill Information Systems Co.

Also to be presented at the convention: The 1972 Edward C. Kemper Award, to David Norton Yerkes, for his efforts to involve more minority group members in the profession.

Fires: escape is not necessarily protection

Fire safety consultant, Richard Patton, has come up with a suggestion that he admits will be "rejected out of hand by the vast majority of those who have a responsibility for fire safety." It is "too revolutionary," he says, and "runs counter to too much tradition." What he proposed, described in his newsletter, *The Patton Report*, is that "stairwells can be completely and totally eliminated in buildings." Before that bit of "fire protection heresy" can be widely accepted, he says, fire protection experts will have to meet an intermediate goal of reducing the number of stairways required in certain types of buildings to a maximum of two.

The problem, as Patton sees it, is that stairways are often poor exit ways. The number of stairways is always based on floor area and/or number of people and travel distance to the

stairway; the distance down to ground level isn't counted. Thus, says Patton, a very tall building will have the same number of stairwells as a low-rise building; if everyone uses them at once, they become jammed and dangerous.

Another objection to stairways is that they are costly. They "may well be the highest cost useless item installed in high-rise buildings," Patton says, simply because they aren't rentable spaces.

With stairwells damned as expensive, unused and unreliable, what's left? Elevators. They are less costly, he says, because an elevator will cost less than an elevator plus stairs, and the complaints about fire safety faults in elevators—that they can trap passengers or deposit them on the burning floor—are really not that difficult to solve.

By splitting each floor into two zones with a one-hour partition, building designers and fire officials could move towards a two-stairway building, Patton says, with one stairway in each zone. The eventual goal would be no stairs, with the elevators providing the fire exit. Better yet, he says, would be to realize that "escape is by no means a really reliable answer to fire." A positive approach is what he recommends: "think of attacking and controlling the fire, rather than running.

AIA supports Department of Community Development

"A sound and essential move, and long overdue," is how the AIA views the proposed creation of a Federal Department of Community Development. The new department, proposed in a bill before the House of Representatives, would be largely built around existing HUD programs, but programs from other

[continued on page 42]



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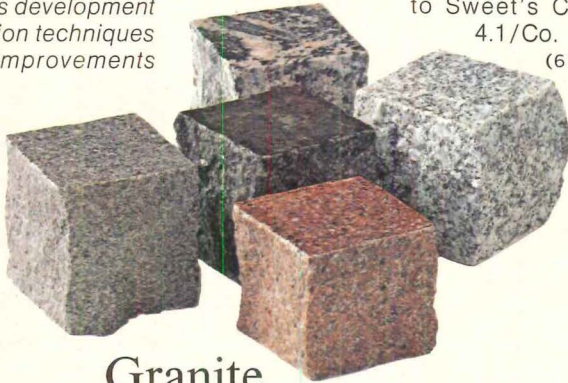
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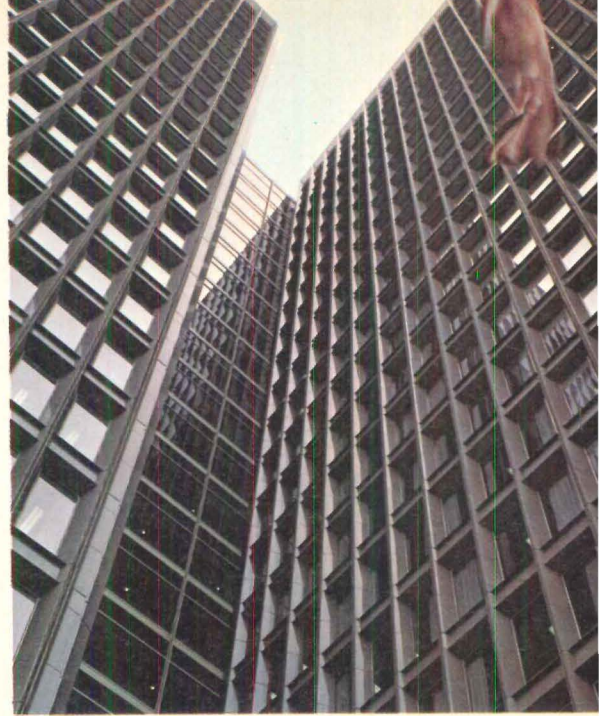
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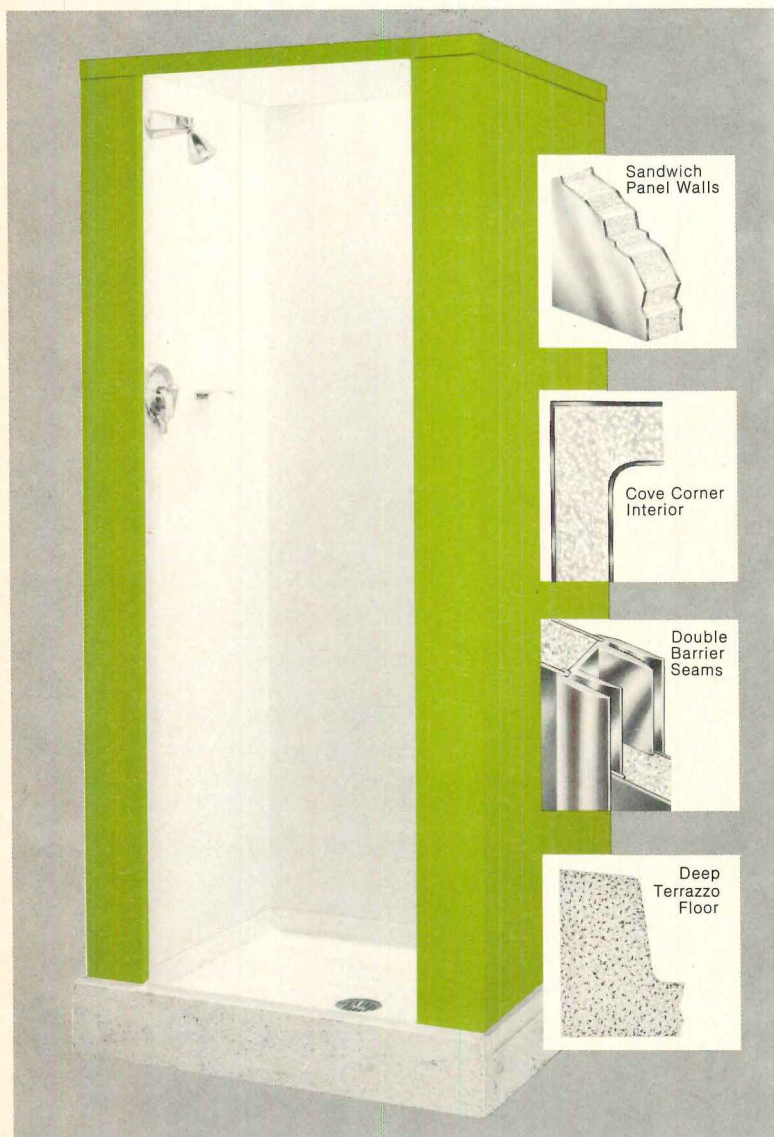
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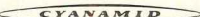
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News report continued from page 38

departments would be included. The Federal Highway Administration would be pulled out of the Department of Transportation, for instance, and the Economic Development Administration from the Department of Commerce; the Rural Electrification and Farmers Home Administration of the Department of Agriculture would be part of the new department.

AIA support of the bill was outlined by executive vice-president, William L. Slayton before the House Committee on Government Operations. He stressed the need to coordinate transportation projects and community development, noting that the Institute has long maintained that such projects could be used positively to shape and control metropolitan growth. Transportation systems, he said, along with water and sewer systems, are major forces shaping urban development; the new department would provide an opportunity to coordinate them within the context of community development.

Athens workshop offers summer session

A forum, a workshop and a summer session are three main objectives of the newly formed Workshop of Environmental Design in Athens. The workshop, according to director, Panos Koulermos, is independent from any other organizations and schools in Greece, and trying hard to stay that way.

As a forum, the workshop will hold public lectures and panel discussions on environmental problems, exhibitions and presentations and discussions of ideas and projects. The workshop side of the workshop will be for individuals wishing to join in interdisciplinary group studies of theoretical or real projects, or independent work under the guidance of the workshop. The first summer session is planned for this summer, Aug. 18 to Sept. 8; foreign as well as Greek students are expected. The focus will be on interdisciplinary studies and theoretical seminars. Further information on any of the programs is available from Panos Koulermos, director, Workshop of Environmental Design, Massalias Street 22, Athens, Greece.

Pittsburgh plans design competition for park

In conjunction with its Manchester Urban Renewal Plan, the Pittsburgh Urban Redevelopment Authority plans to hold a design competition for the proposed Manchester Street Park. Urban designers, architects, engineers, landscape architects and students are eligible; cash prizes of \$4000, \$2500 and \$1500 will be given.

The proposed park is to provide recreation areas and open space in the 170-acre urban redevelopment site on the north side of Pittsburgh. About 700 new housing units are planned for the overall project, along with 1300 rehabilitated units, and a neighborhood commercial and training center. Some \$27 million have been committed to the project.

Further information on the competition is available from the Planning Department of the Pittsburgh Urban Redevelopment Authority, 200 Ross St., Pittsburgh, Pa. 15219.

Los Angeles cathedral to be repaired, not razed

The decision of Cabot, Cabot & Forbes not to enter into the long term lease that would have caused the demolition of St. Paul's Episcopal Cathedral in Los Angeles (Architecture West, P/A, Jan. 1972, p. 44) left the Diocese no choice but to [continued on page 47]



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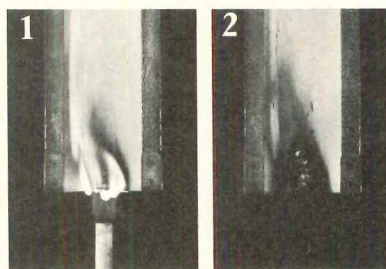


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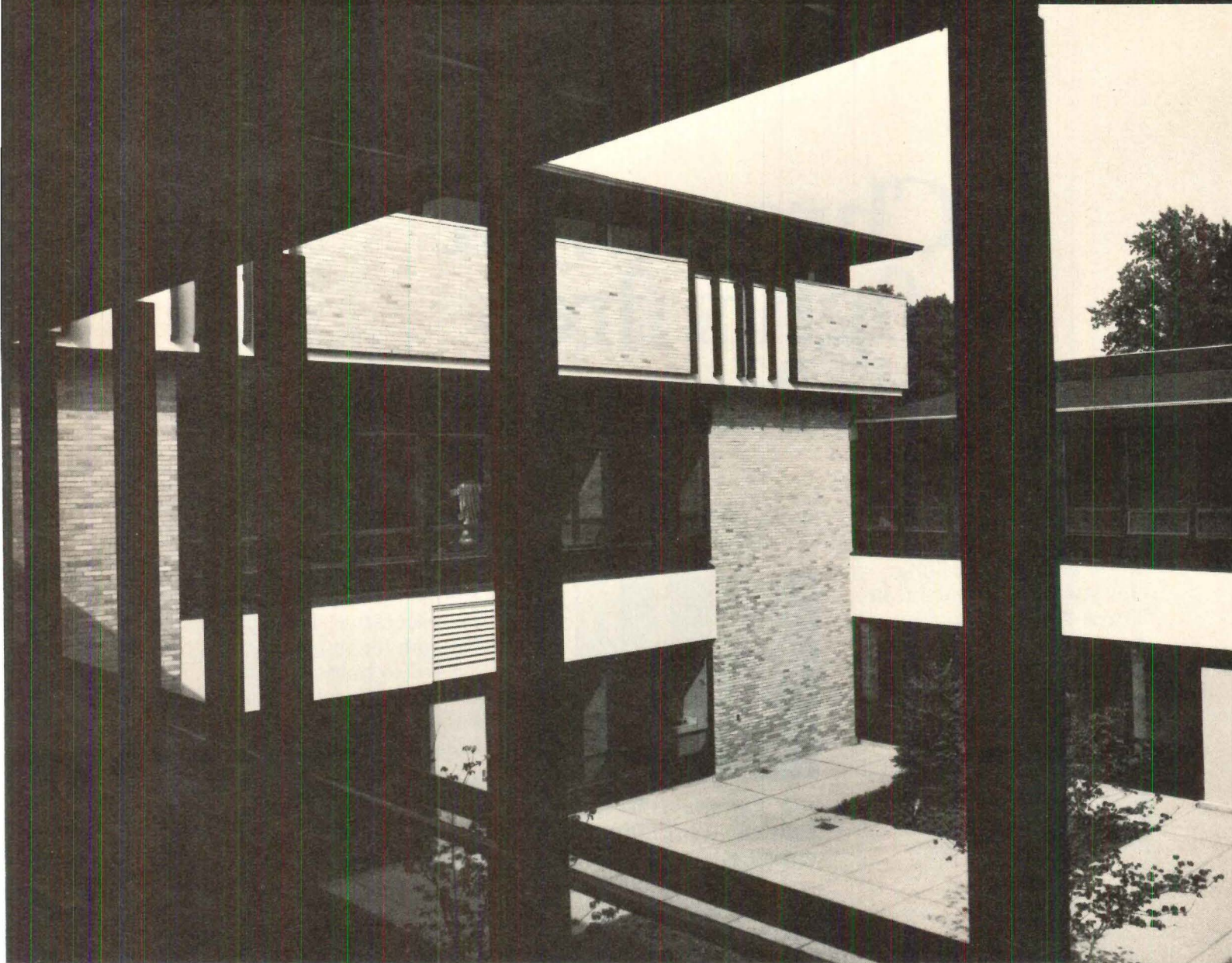


Photo by M. E.

St. Martin's Home for the Aged — conducted by the Little Sisters of the Poor, Baltimore County, Maryland

Architects: Gaudreau Architects, Baltimore, Maryland • *General Contractors:* R. S. Noonan Company, York, Pennsylvania

The concept of "bringing in the outdoors" guided the architect in the design of this handsome and very livable structure. Compatibility with the religious and daily living functions of the aged and a type of ventilation and hardware suitable for the occupants determined the architectural design requirements of the windows. Consideration of these factors prompted the architect to specify Hope's Heavy Intermediate Weatherstripped Steel Windows with clear lights above and hopper vents at sill. Through the large upper fixed lights, the outside scenery is pleasantly visible to both the elderly and the staff during the course of each day's routine. To obtain the desired color and the durability of a factory-applied finish, Hope's Ultra-Coat was

specified. This process includes cleaning by shot blasting to fabrication; zinc phosphate treatment in a continuous stage process; a prime coat of oven-baked epoxy alkyd; a spray finish coat of acrylic enamel applied in an automated electrostatic process and oven baked. Hope's Weatherstripped Windows with continuous Neoprene weatherstripping applied integrally rolled grooves combine the strength and rigidity found only in steel and have an air infiltration rate comparable to weatherstripped windows of any type. Hope's engineers worked closely with the architect from the initial design stage, and installation by Hope's own crews eliminated the problem of disresponsibility.

HOPE'S WINDOWS

Jamestown, New York 14701

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repair the 47-year-old Cathedral. Repairs, which had been ordered by the city's Building and Safety Department (the deadline had been extended twice), were minor and the Cathedral opened on Ash Wednesday.

The ultimate future of the property is unpredictable, at least for now. The glut of high-rise construction which influenced the Cabot, Cabot & Forbes decision is expected to last for another five years. Planners Wallace, McHarg, Roberts & Todd, commissioned by the city to study the central business district, recommend that the Cathedral be kept. And Francis Eric Bloy, the Episcopal Bishop of Los Angeles, who had favored the lease arrangement, retires at the end of the year, leaving future decisions to his successor.

Women in construction start womanpower program

The National Association of Women in Construction has started what may be its most far reaching program ever—a program aimed at helping more women qualify for better jobs in the construction industry. Starting with instruction in the basics of construction, the program would eventually include courses leading to college degrees, according to NAWIC president, Mrs. Bonnie Granger.

The first phase of the program is aimed at women new to the industry. It is projected as two 12-week short courses sponsored by the association's chapters; the courses would cover blueprint reading, material takeoff, terminology, equipment usage, bidding procedures, and would include visits to construction projects.

Phase II would be aimed at getting NAWIC members into specialized courses in estimating, marketing, finance, business law, labor relations, personnel management. The 26-week course would lead to a degree of Certified Construction Associate and qualify women for management jobs.

Applications are already being accepted for the third phase, according to NAWIC. This part of the program will reimburse members for the cost of college courses in subjects leading to degrees in architecture, building or engineering.

Behind the program are some statistics from an NAWIC survey: 7 of every 10 members felt that women seeking employment in the construction industry don't get the same consideration as men, when sex has no bearing on the ability to do the job; 85 percent felt that women get paid less than men for the same job; and 77 percent felt that women are not given the same consideration as men when it comes to promotions.

AIA sets up two new commissions

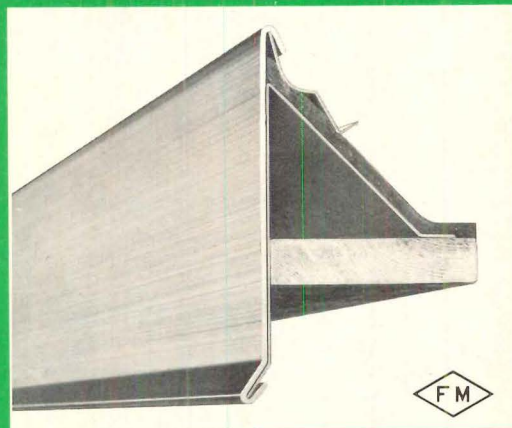
Two commissions recently established by the AIA will oversee government relations programs and direct activities in the area of the profession's responsibility. They bring to seven the number of commissions set up to advise the Institute's Board of Directors in important policy areas.

The Government Affairs Commission will work towards the enactment of legislation and government agency procedures affecting the architectural profession and its interest in social and environmental problems. Chairman is William Marshall, Jr.; members are Darrel D. Rippeteau, Hilliard T. Smith, Jr. and William A. Carlisle.

The Community Services Commission, chaired by Van B.

[continued on page 48]

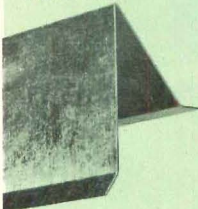
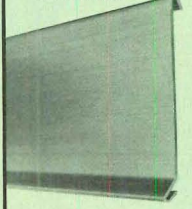
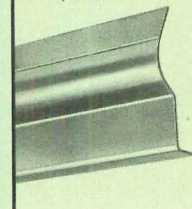
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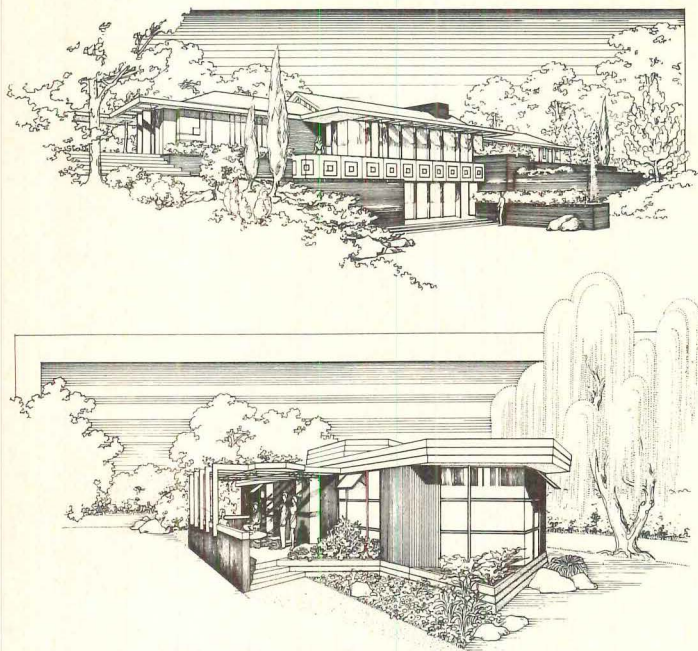
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Wright Foundation designs for National Homes

Bruner, Jr., will take on the role of the 1971 Task Force on Professional Responsibility to Society. Goals include greater community involvement in planning and design, better educational opportunities for the underprivileged, and better building procedures for building for the poor. Members are Robert J. Nash and Clarence H. Rosa.

National Homes makes Wright decision

Frank Lloyd Wright, at the beginning of this century, developed a system for manufactured housing; National Homes Corp. has been manufacturing houses for 32 years. Now the two have come together: National Homes has commissioned the Frank Lloyd Wright Foundation to design a full range of houses, ranging from \$4000 mobile homes to a luxury house priced above \$200,000.

The first completed models were shown at the National Association of Home Builders Show in Houston. One was a duplex townhouse, based on modular units 14 ft wide, providing more windows than usual and a balcony off the master bedroom; the other was a mobile house featuring an angular conservatory equipped with awning type windows to open up the interior space.

The full line of housing will include garden apartments, town houses, cluster developments and modular units for National's part of HUD's Operation Breakthrough. Besides designing the housing units, the Frank Lloyd Wright Foundation will also design the landscaping for the houses.

Mrs. Wright, who was on hand for the announcement, said her late husband had been convinced that the industrial process "put into an artist's hand could be a real benefit to our civilization in an artistic way." She said the Foundation took the commission because of her husband's belief that "selling houses at less cost means nothing at all to me. To sell beautiful houses at less cost means everything."

Another try at a bidding ban

A bill to require negotiated contracts for architectural and engineering services has been introduced in the Senate with bi-partisan backing. Co-sponsored by Senators McClellan (D.-Ark.) and Percy (R.-Ill.), the bill is similar to one passed by the House in the 91st Congress; although favorably reported by the Senate Government Operations Committee, the bill was not acted on when Congress adjourned.

Two AIA chapters open interdisciplinary centers

Interdisciplinary is as interdisciplinary does, and AIA chapters in two cities are joining forces with other related organizations in interdisciplinary projects. The Oregon Council of Architects not long ago opened new offices, which are shared with three other organizations, and the Philadelphia AIA chapter is one of five organizations behind the newly formed Center for Planning, Design and Construction.

In Portland, The Oregon Council of Architects, and chapters of the American Society of Landscape Architects, American Institute of Interior Designers and Producers Council all share office space. Each group has its own private offices, and there is a general reception area, a small conference room, a large meeting room and a library for everyone to use. The group hopes to develop design centers in nearby communities, and to influence development of the waterfront area.

The Philadelphia AIA chapter, along with local chapter of [continued on page 51]



Portland offices: landscape architects, gallery

the American Institute of Planners, American Society of Landscape Architects, Construction Specifications Institute and General Building Contractors Association, along with the T-Square Atelier of Philadelphia, has opened a center with both professional and public programs as its aims. The Center for Planning, Design and Construction will develop a technical library, referral services and research operations for both professional and public use.

North Dakota students, Texas lecturer, build ice structure

Using garden hoses, a vacuum cleaner and indoor water taps, a group of architecture students at North Dakota State University, aided and abetted by Wolf Hilbertz, a visiting lecturer from Texas, built a thin shell structure out of ice. Working in below zero weather, the students sprayed water on an inflated form to create the 20' x 10' x 8' structure.

Sheets of plastic were taped together for the form, which was inflated by a vacuum cleaner running in reverse. Overlaid with chicken wire reinforcement, the bubble was sprayed with water until a shell an inch thick was formed.

New town near Washington to boast people mover

To link the proposed new town of New Franconia with the Washington, D.C. Metro system, the planners and developers have included a 24-hour toll-free computer-operated "horizontal elevator" in their scheme. The people mover will serve 11 stations in the new community, making everyone in town no more than eight minutes away from the Metro.

The town, with a projected population of 39,000 people, will be seven miles south of Washington, near Springfield, Va. High-, mid-, and low-rise housing will be grouped around nine of the transit stations, putting 80 percent of the residents within 800 ft of a station, reducing automobile use and pollution. The town center will offer cultural educational, health and community services, and 5 million sq ft of office space will be built to house an estimated 25,000 workers. The developed area will cover 720 acres, or 40 percent of the 1800 acre site, leaving a large amount of open space.

The planning and design team for New Franconia includes William R. Jenkins, who has offices in Houston and New Hope, Pa., Omniplan Corp. and Earl Britton, formerly of Omniplan, as a consultant.

Off and running in Malaysia

Horse racing is horse racing, wherever you find it, but in Malaysia it's a little different. True, the horses run around the track and the one out front is the winner, but things are more rigidly organized than in the U.S. There are four race tracks, and races are held in a given sequence from track to track; off-track betting is provided at each course.

When the Perak Turf Club decided to rebuild, the project was more than just a grandstand. The management sponsored an international competition, won by Joyce Nankivell Associates, a group of Melbourne, Australia, architects. Their winning grandstand, ancillary buildings and master plan were completed in February.

The grandstand seats about 10,000 people; it is extensively air conditioned, and outside spectator areas are treated to a man-made breeze from air blower system. A central tower

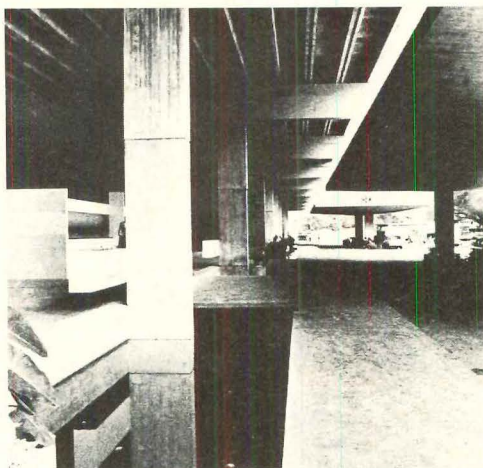
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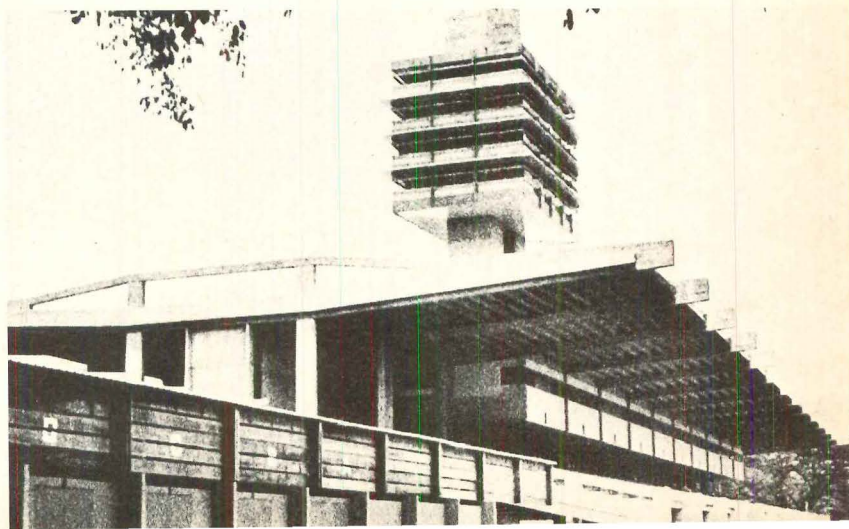
Thin shell ice structure



New Franconia's people mover



Grandstand for Malaysian race track





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and a concourse the length of the building contains stairs, elevators and escalators and mechanical facilities and rest-rooms. Entrances are canopied and flanked by pools and fountains.

The main structure is reinforced concrete, with balanced cantilevered beams spanning 190 ft. Roof and intermediate elements are precast concrete spanning between the main structural frames.

Spokane selected for Expo '74

By a unanimous vote, the 32 members of the International Bureau of Expositions approved Spokane, Wash. as the site for a 1974 exposition on man and his environment. The vote gives Spokane an exclusive on an international exposition that year, and on its environmental theme—Progress Without Pollution.

Now that the expo is official, the U.S. can invite other nations to take part in the fair by building national pavilions instead of depending on commercial firms to build them. Congress also is now allowed to consider giving its approval to building a U.S. pavilion.

Awards

A total of 15 structures earned awards of excellence for their designers in the 1971 awards program of the American Institute of Steel Construction. The awards went to: **Dukor Associates** (Pierce St. Apartments, Gilroy, Calif.); **Michael & Kemper Goodwin, Ltd.** (Tempe, Ariz., Municipal Building); **Vincent G. Kling & Partners with Ben R. Johns, Jr.**, associated architect (Richmond, Va., Coliseum); **Harrison & Abramovitz & Abbe** (U.S. Steel Building, Pittsburgh); **Robert F. Lavery** (Northway 10 Executive Park, Elnora, N.Y.); **McCue Boone Tomsick** (Alza Corporate Offices and Medical Research Center, Palo Alto, Calif.); **Albert C. Martin and Associates** (Parker Hannifin Corp. Irvine Facility, Irvine, Calif. and Sears, Roebuck and Co. Pacific Coast Administrative Offices, Alhambra, Calif.); **C.F. Murphy Associates** (Malcolm X College, Chicago); **Odell Associates, Inc.** (Burlington Corporate Headquarters, Greensboro, N.C.); **James Stewart Polshek and Associates** (Service Group, State University of New York, Old Westbury, N.Y.); **Skidmore, Owings & Merrill** (Rapid Transit Stations on Dan Ryan and Kennedy Expressways and John Hancock Center, both Chicago); **Conklin & Rossant** (Superbay Maintenance Facilities, San Francisco and Los Angeles International Airports); **Tennessee Valley Authority** (Paradise Steam Electric Generation Station, Unit 3, near Drakesboro, Ky.).

Personalities

George Anselevicius, Dean, School of Architecture, Washington University, has been appointed consultant to the Office of Foreign Buildings Operations, the Department of State.

John W. Dickey, associate professor of urban and regional planning at Virginia Tech, has been named head of the College of Architecture's Urban and Regional Planning program.

Arthur N. BecVar has been elected chairman of the board of the Industrial Designers Society of America.

Paul L. Blanton, associate professor of design architecture at the University of Idaho, has been named head of the Department of Art and Architecture at the university.

Thomas A. Kamstra has been elected a director of the Virginia Chapter of the AIA.

John H.V. Evans has been elected president of the Toledo Chapter, AIA, for 1972.

David Olan Meeker, Jr., AIA, has been confirmed Deputy Mayor of Indianapolis, Ind.

Robert H. Norris has been appointed to the six-man Texas Board of Architectural Examiners.

Cesar Pelli will hold the Charlotte Shepherd Davenport Professorship in Architecture and will teach at Yale University as Davenport Professor during this winter and spring.

Pratt Institute has announced the appointment of five members of its Board of Trustees. **Ulric Haynes, Jr.**, **John B. Hightower**, **Heidi Nitze**, **Jaquelin T. Robertson**, and **John L. Tishman**. **Seymour Chwast**, **Walter B. Langbein** and **Herman J. Jessor** have been honored by the alumni association of New York's Cooper Union.

Calendar

Apr. 6-7. Institute on fire protection in buildings conducted by the University of Wisconsin-Extension, Milwaukee.

Apr. 6-15. Two seminars on design and planning sponsored by The Graduate School of Design Association and The Graduate School of Design, Harvard University, Cambridge, Mass.

Apr. 13-14. Institute on innovations in working drawings conducted by the University of Wisconsin-Extension, Madison.

Apr. 16-19. Eighth North American Conference on Campus Planning and College Building Design, Urbana campus, University of Illinois.

Apr. 24-26. Second International Symposium on Lower-Cost Housing Problems Related to Urban Renewal and Development sponsored by the University of Missouri-Rolla, at Stouffer's Riverfront Inn, St. Louis, Mo.

Apr. 24-28. National Structural Engineering Meeting of the American Society of Civil Engineers, Sheraton-Cleveland Hotel, Cleveland, Ohio.

Apr. 27-28. Thirty-third annual conference of the Guild for Religious Architecture, Regency Hyatt House, Atlanta, Ga.

May-Aug. Series of seminars abroad sponsored by the Metropolitan Association of Urban Designers and Environmental Planners, Inc.

May 1-3. Fourth annual Apartment Builder/Developer Conference and Exposition, Anaheim Convention Center.

May 2-5. Symposium on the Performance Concept in Buildings, American Society for Testing and Materials Headquarters, Philadelphia, Pa.

May 4-5. Twenty-fourth annual National Engineering Conference sponsored by the American Institute of Steel Construction, Waldorf-Astoria Hotel, New York City.

May 7-10. 1972 AIA National Convention and Exposition, Albert Thomas Convention Center, Houston, Tex.

May 10-12. Second National Conference for the Building Team, Albert Thomas Convention Center, Houston, Tex.

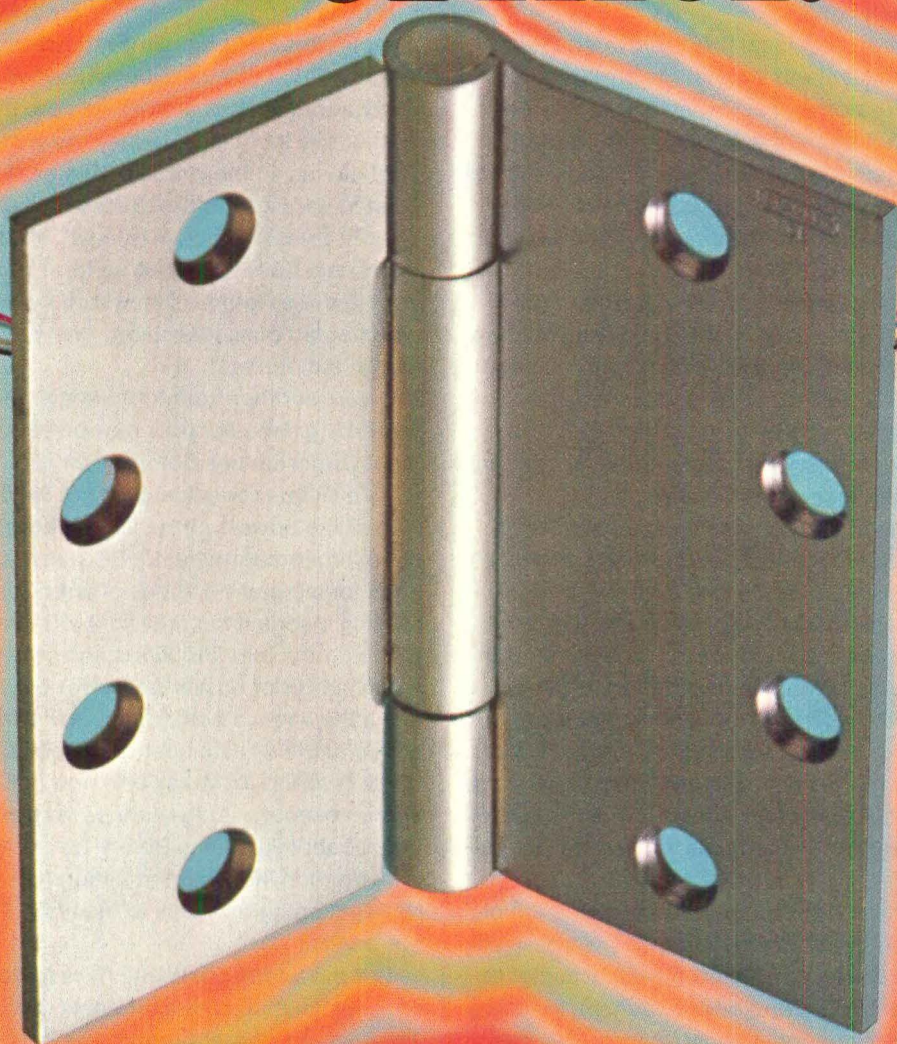
May 14-17. Conventions of the National Association of Housing and Redevelopment Officials and the North Central Regional Council of NAHRO, at the Convention Center, Cincinnati, Ohio.

May 18-19. Institute of expansion joints in buildings sponsored by the University of Wisconsin-Extension, Madison.

June 19-21. Sixteenth annual convention and exhibit of The Construction Specifications Institute, Minneapolis.

June 19-22. 65th annual meeting and exposition, Air Pollution [continued on page 56]

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Control Association, Hotel Fontainebleau, Miami Beach, Fla.
June 26–30. Systems Building and Industrialization in the United States, Massachusetts Institute of Technology, Cambridge.
July 3–20. Athens Ekistics Month, Athens Technological Organization, Athens, Greece.
Aug. 6–9. Seventh annual conference of the Society for College and University Planning, Sheraton-Biltmore Hotel, Atlanta, Ga.

Washington report

Antibidding forces trying again

There's a sharp difference in legal thrust between the Justice Department's adamant stand against the prohibition against bidding in professional ethic codes and the renewed effort to get some antibidding legislation through Congress. That difference could help the efforts of professionals toward legislation this year, although overall chances have to be counted slim, in view of Washington's preoccupation with politics this session.

In a nutshell, Justice makes the point that professional codes that forbid members (of AIA, ASCE, etc.) from bidding are a combination in restraint of trade. This argument, used against Civil Engineers, led ASCE to remove bidding restraints from its code of ethics and forced AIA, NSPE and other professional groups, many completely outside the construction industry, to re-examine their codes.

But Justice has advanced no arguments in the matter of whether, as good practice, architects or engineers should bid on contracts. For that matter, neither has Comptroller General Elmer Staats, whose report several years ago triggered the whole dispute. Staats simply told Congress that, in his interpretation of the laws on the books, federal departments must call for bids for all work over a certain small amount of cost, whether or not professional services are involved. In a years-long dialogue with professionals on this matter, Staats has repeated one point: his function is to interpret the law on money matters for Congress, not to make it or express philosophical opinions.

Hence there's some real steam behind the introduction of two new bills—HR 12807 in the House and S.3156 in the Senate. Both bills, strongly backed by the professional societies (principally AIA and Consulting Engineers Council), would require that federal agencies negotiate contracts for A-E services "on the basis of demonstrated competence and qualification . . . at fair and reasonable prices. . . ."

The House bill was introduced by Rep. Jack Brooks (D. Tex.), who is Chairman of the Government Activities Subcommittee of the powerful House Government Operations Committee; the Senate bill was introduced by the even more powerful John McClellan (D. Ark.), Chairman of the full Senate Committee on Government Operations. Brooks' bill is actually a repeat of a measure he introduced in the 91st Congress and managed to push through to House passage before it subsequently died in the last minute Senate adjournment rush. Formally backing the two bills is the "Committee on Federal Procurement of A-E Services," headquartered in Washington and composed of AIA, AICE, ASCE, CEC, NSPE and the American Road Builders Assn.

The action came in the midst of a flurry of action by professionals intended to support the idea that A-E's should not bid. The Board of Governors of the Professional Engineers in Private Practice (an affiliate of NSPE) ratified an action supporting the retention of bidding prohibitions included in NSPE's Code of Ethics. Robert F. Hastings, a past president of AIA and chairman of COFPAES issued a strong statement in support of the Brooks and McClellan bills. And in a related action, united protests of several engineering societies succeeded in retaining the status of "professional" for surveyors, after a federal Technical Committee on Standards had recommended changing surveyors to the "miscellaneous business services" category.

There were other developments in Washington that have direct bearing on professionals' methods of work, and on the most important function of estimating costs. In one action, the new Price Commission refused to permit construction contractors to pass along any more than 5.5 percent of the cost of pay increases (to their workers) to ultimate customers. That means, in the words of one contractor spokesman, that most major contractors (if they do more than \$1 million worth of work a year) will have to "eat" the difference between pay raises that have averaged up to 11 percent, and the 5.5 percent that the Commission will allow. "The answer for most," commented the spokesman, "will have to be reflected in higher bid prices."

On yet another front, the Senate finally chopped off a six-week-long filibuster over new powers for the Equal Employment Opportunities Commission with what actually turned out to be a victory (or at least a gain) for those who feared extension of the powers of the federal bureaucracy. In the bill (S 2515) finally approved, EEOC was given power to issue citations for alleged violations of antidiscrimination laws (including discrimination by sex), but the Commission must go to the courts for injunctions and other enforcement actions.

Advocates of further power for EEOC wanted, in effect, to make the agency both prosecutor and judge. The significance of the Senate's refusal to do so gave some heart to those favoring the many bills now in Congress to clip just such prosecutor-judge-jury powers now exercised by the National Labor Relations Board, long a thorn in the side of the construction industry. Indications were that, if any of the NLRB-clipping bills gets to the floor, Congress will go along there too.

And the added costs that have to be figured in, from now on, in estimating cost of projects, were coming clearer. The Associated General Contractors, busily gathering statistics from its more than 9000 member-firms, came up with some startling figures: at the moment, said AGC, at least 45 major projects (the majority of them in the heavy-construction category) are halted or held up by all-out attacks of "environmentalist" groups of many kinds. Total estimated cost of these projects—\$4.5 billion; total jobs lost—many thousands.

As to "safety costs," AGC reported that an Iowa city got a low bid on a sewer project 64 percent higher than the engineer's estimate. When it called in the consultant, he certified that the bid was accurate; it reflected the difference made by safety compliance procedures and higher wages put into force between the time the job was estimated and the time that bids were called. For hazardous jobs, said the engineer, compliance with new safety legislation would add up to 30 percent to cost on future bids. [E.E. Halmos]



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Architecture west

In a major breakthrough hailed by Los Angeles County Supervisor, Kenneth Hahn, as a new concept, the County Road Department commenced installation of 900 plastic shrubs and trees on 2.68 miles of median strips on Jefferson Blvd. in the Marina del Rey area. (Expressed in P.R.ese.)

Admitted Supervisor Burton Chace's deputy Bob Potwin, "They look scraggly now. The metal pipes aren't wrapped yet. When concluded it will be nicer."

Challenged Ronnie Boeltl of Avalon Gardens, Inc., national award winners for artificial floral installations, "Don't knock it unless you can come up with something better."

At the installation site, James R. Baker, custom buyer for Baker International of Phoenix said, "They look natural. They don't need water. We could use them in Arizona."

"Indestructible," said Hahn on TV. "Embedded in concrete and no way to be vandalized."

"The reaction was mixed," said Gorou Yamada of the County Road Dept. "We had calls from the Audubon Society in Boston and one from London. Then the Belgian Consulate here called for information."

Queried the Belgian Consulate, "Plastic what?"

Said a workman on the site who was spraying the gravel

with green epoxy, "This stays put." Added his companion, "From a fast moving car you can't tell it from grass."

Said the custom buyer of Baker International, "No watering, no fertilizing, no mowing."

The reaction grew less and less mixed. A letter writer to the Los Angeles *Times* irately called for "real trees and plastic supervisors."

Said Boeltl, "It's \$35,000 in artificial plants and it would have cost \$30,000 to pave with asphalt." The epoxy grass and plastic plants cost \$74,504, said the *Times*.

"It's experimental," said Chace's office. "The Road Department made the recommendation."

"We weren't in on the planning stage," said Yamada.

"We just vote the money," said Chace's office. "The Beautification Program began after the Westchester and Slausson median strips were painted green—easier to see at night. We were trying to find something acceptable. In this case there's a box culvert under the road. It was either plastic plants or leave it bare. The planters are about 1-ft deep."

"It's on the old tidal flats. When you water, the salt would leach through," said the Road Department.

The American Society of Landscape Architects offered to design free of charge planters that would take real trees.

"One need only be aware of the Civic Center Mall, the CNA Building or Pershing Square and remember that they are planted over vast subterranean garages."

Avalon Gardens seemed sure that it had hold of an idea whose time had come. "Beverly Hills has a plastic strip. The oil companies are taking it up. Denver is interested."

Said O.K. Industries of Santa Barbara, the contractor for the divider strips, "Mr. Krutzkampf is out of the city."

Three weeks after the first installations, signs appeared in the planting beds, "Stop these before they grow." There was no vandalism. No wind or hand had disturbed the astro-turf bark of the Phoenix *roebelenii*.

Meanwhile a more effective campaign was under way—a children's crusade of letter writing, individually and as class projects, to the supervisors. Hahn broke under the flood of letters about the trees and the birds. He announced that he was advising the road commissioner to stick to real trees.

[Esther McCoy]

Los Angeles: plastic trees, epoxy grass



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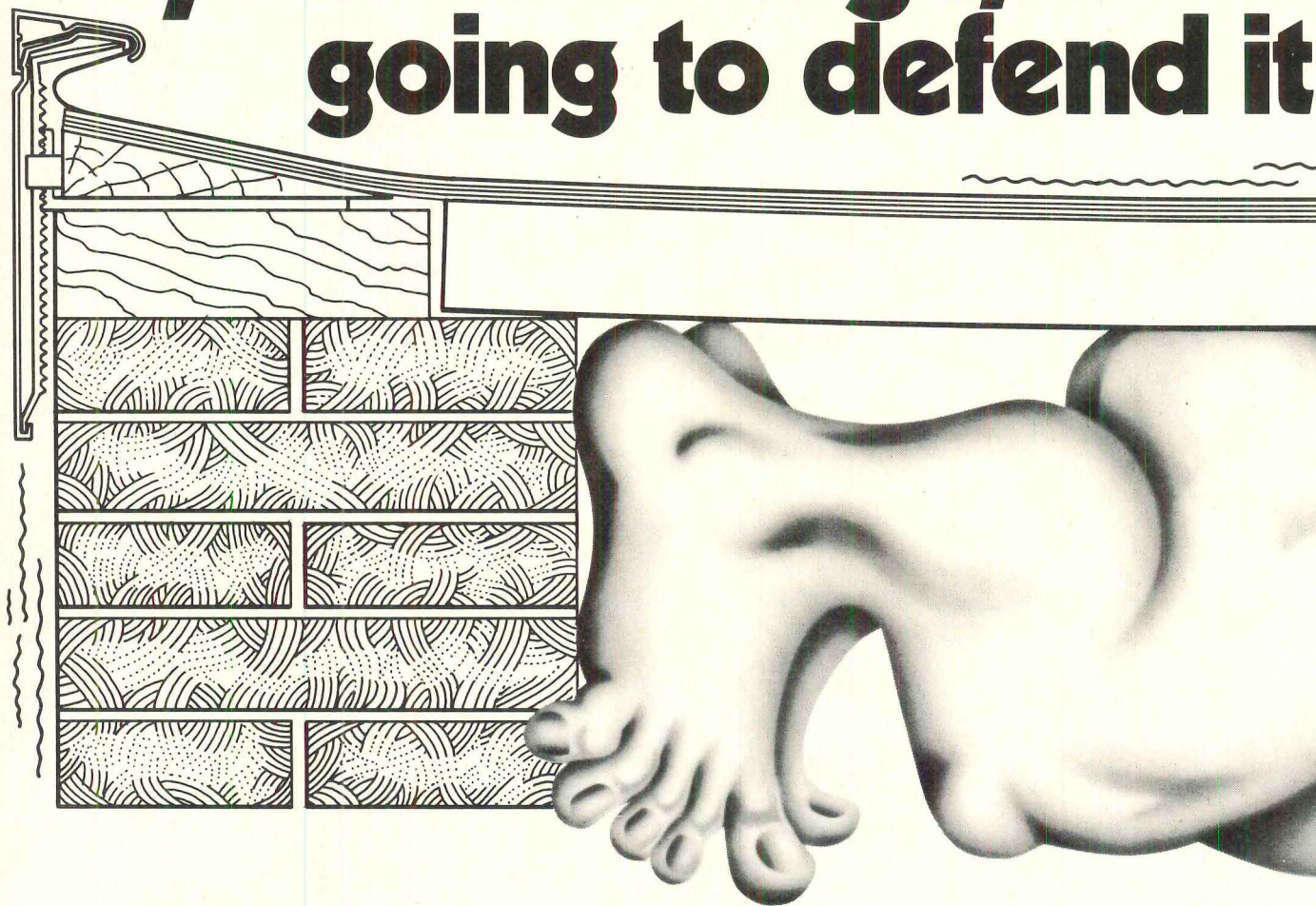
Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated. Choice of stainless steel, aluminum or galvanized. Easy to enlarge... easy to relocate. Refrigeration system from 35°F. cooling to minus 40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane sample. **Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.**



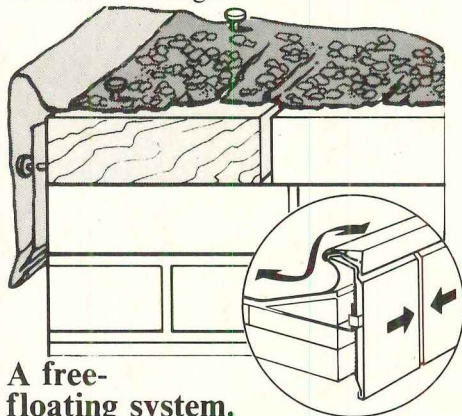
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Address all correspondence to Dept. PA-4

When movement attacks your roof edge, what's going to defend it?



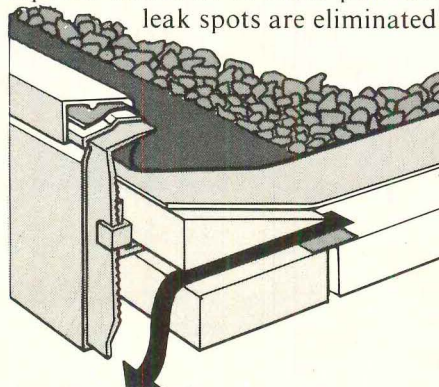
Everybody knows you can't stop the attack. For wherever you find two adjoining structural planes, you'll also find movement. Movement in different directions, at different rates, that makes nails pop, nail holes enlarge, joints open, etc. Any of which can cause leakage.



A free-floating system.

But now there's a beautiful defense against movement: Tremline, a unique free-floating fascia system that takes movement in stride like no other roof edging system can.

For other systems are static and have very little give. But the components in Tremline are free to move independently, without exerting strain on each other. So Tremline can absorb movement between the roof and wall. And keep absorbing it for years and years. There are no exposed fasteners so these potential leak spots are eliminated.



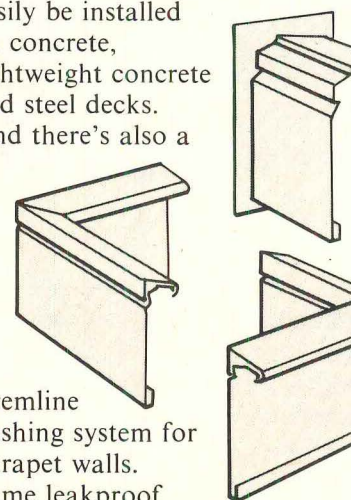
Built-in venting, too.

Tremline also allows perimeter venting of the roof insulation. Other edgings provide only partial venting, if any. And with the neoprene mem-

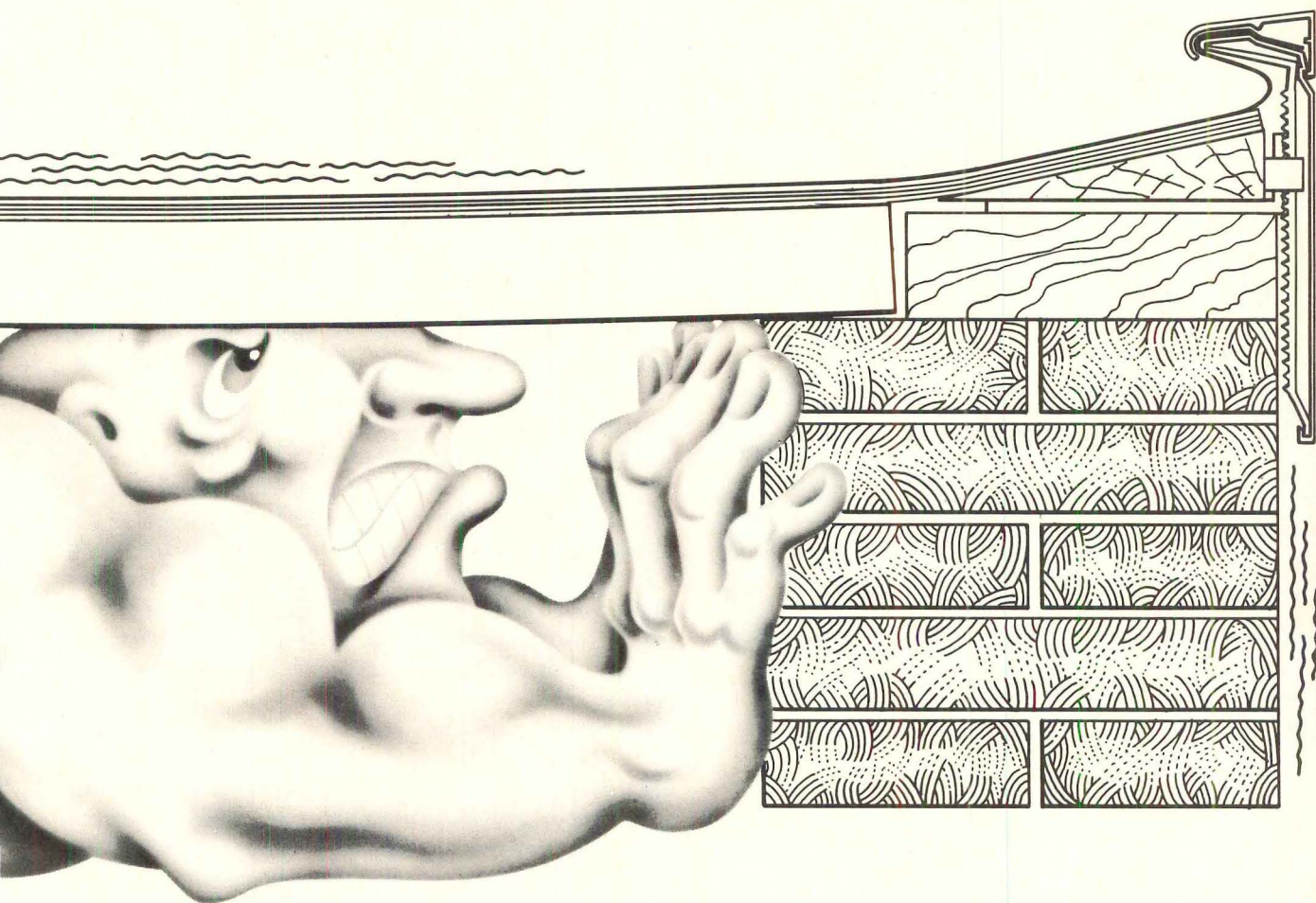
brane in position, you have an airtight broken weatherproof seal around the entire building edge. The membrane also acts as an expansion joint which absorbs roof movement.

A complete modular system.

Tremline is also versatile and adaptable. With its modular design, it can easily be installed on concrete, lightweight concrete and steel decks. And there's also a



Tremline flashing system for parapet walls. Same leakproof security, same easy installation.



And with Tremline, you get the complete system, from one responsible supplier. All necessary components are preassembled to meet conditions at corners, ends and transition points. So there's little to be tailed on drawings or fabricated for the job. Fascia is packaged in 15' lengths, 6" or 8" facings.

Architecturally beautiful.

Tremline is uniquely beautiful, too.

Gives a clean-line appearance to the roof edge. The extruded aluminum fascia comes in mill, anodized or custom-painted finishes, with slip joints every 15 feet. No ugly exposed fasteners. No oil canning.

Your contractor will appreciate another beautiful feature: its easy installation. It snaps together and self-locks, adjusts up or down in 1/16" increments. Which also makes for easy alignment and compensates

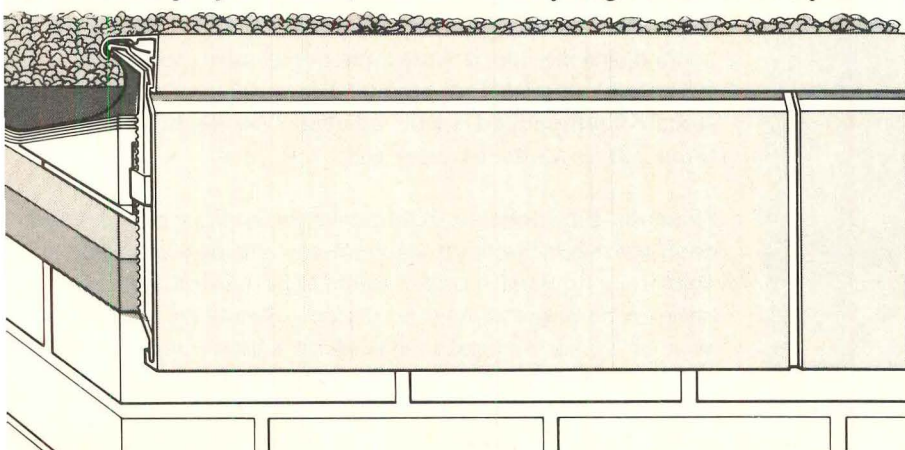
for most roof irregularities.

The Tremline/Alwitra Edging System is a patented product that has been proven in performance for more than seven years. It meets insurance wind requirements and is approved by Factory Mutual System. For more details, see your Tremco man.

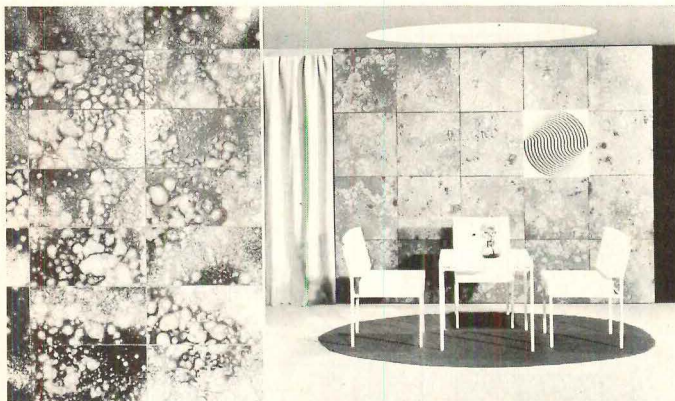
And if you have any caulking, glazing or waterproofing problems, he can help too. For over 40 years, our business has been solving these problems and providing top-quality leak proof systems and products, such as our job-proven sealants MONO, DYmeric and Lasto-Meric, and liquid polymer Tremproof waterproofing. The Tremco Manufacturing Company, Cleveland, O. 44104, Toronto 17, Ont.

TREMLINE/ALWITRA EDGING SYSTEMS FROM:

TREMCO
The water stoppers



Products and literature



Large size ceramic tiles

Large size ceramic tiles. From Germany come Keraion, large size glazed ceramic tiles that offer aesthetic as well as cost advantages. They are $\frac{5}{16}$ in. thick at approximately 4' x 5' in size—conventional tiles generally grow thicker as they grow larger—here thickness remains unchanged. The range of 41 colors are guaranteed fade- frost- and stain-proof; a special group of design tiles with unusual free-color patterns are the result of the preparation of the ceramic—there is no mechanical repetition in the color reproduction. Suitable for any tile-able interior or exterior; fixing methods include mortar adhesive (normal bed), mortar adhesive (thin bed), fixing with special adhesives and mechanical fixing. Tiles also can be factory precut, upon request, to sizes 2' x 2', 2' x 1' or 1' x 1'; also available in colors of user's choice. Amsterdam Corp. *Circle 101 on reader service card*

Fabric panel prints. Designed by Alexander Girard, fabric panels in 39 prints fit acoustical panels, tuner panels and flipper doors of this maker's Action Office 2 system. Graphic in character, in small or large geometric and pictorial designs, six are printed on linen, others on handwoven Mexican cotton; colors are bold, often against a white background. Rough cut, so they can be stapled directly to a wall or a panel, panels also come hemmed with rods at top and bottom, ready for hanging. Mounted they can be used as wall decor for hospitals, hotels and offices that still have walls. Squares are 47"x47"; rectangles range from 47"x16" (smallest) to 47"x76" (largest). Flame retardant to meet Boston Fire Code. Herman Miller Inc.

Circle 102 on reader service card

Big toys. Using a flexible system based on wood post and pipe components, these designers have come up with play area equipment that they define as an opportunity for the child "to experience himself." Proposals are developed according to specific budget and site criteria and submitted with scale models, without obligation. Northwest Design Products.

Circle 103 on reader service card

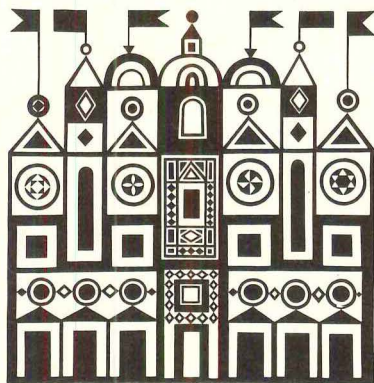
Environmental control system. Reportedly, this system can cut operating costs, conserve power and increase rentable space. Called Constantaire, it combines lighting, heating and cooling components into a single energy-integrated environmental system. It uses water-cooled or air-cooled lighting fixtures said to remove as much as 70 percent of the heat from lighting before this heat enters the room, thus reducing the load on, as well as the size of, air conditioning and air handling equipment. The heat can be dumped, stored, or redistributed when needed. A key component of the system is described as a modular double induction air terminal which mixes cool room air and warm air above with a constant stream of refrigerated-dehumidified air. Westinghouse.

Circle 104 on reader service card

Fire door. Described as an attractive, reasonably priced wood door that meets fire code requirements, this door stood up to rigid fire conditions in Underwriters Laboratories' test furnaces, receiving a 30-minute UL rating. Available in a variety of wood veneers in sizes to 4'x7'-6", it is guaranteed for life in interior use, for two years in exterior uses. Weyerhaeuser Co.

Circle 105 on reader service card

[Continued on page 69]



Fabric panel prints



Big toys

Bright ideas



Still specifying your washroom accessories from scattered sources? Then you probably haven't heard about Bradley's new systems approach for specifying quality washroom accessories. Bradley has just about everything for the washroom. Everything from washfixtures and showers to design-coordinated, recessed accessories. The expertly crafted accessories reflect the clean, functional lines of today's contemporary structures. And allow you complete design freedom. They also conserve space and reduce maintenance. Towel dispensers, waste receptacles, mirrors and shelves, and grab bars are only a few of the many accessories Bradley offers. Others include soap dispensers, napkin vendors and disposals, toilet tissue holders, seat cover dispensers, and related equipment. It's the complete line for institutional, commercial, industrial, and public buildings. From Bradley. The washroom systems specialists. Bradley Washfountain Co., Washroom Accessories Division, Dept. B, P.O. Box 321, Moorestown, New Jersey 08057.

from Bradley!

Leader in Washroom Fixtures and Accessories



THE OWNER OF THIS
BUILDING WILL
SAVE \$7,600 AND REALIZE
A 45% RETURN
ON HIS INSULATION COST!

...all because someone specified ZONOLITE Masonry Fill Insulation.

No wonder he's sold on the people who advised him to insulate.

It makes sense. Masonry walls need insulation even more than wood frame walls.

ZONOLITE® Masonry Fill is a water-repellent, granular vermiculite that improves the thermal performance of masonry walls up to 50% or more. It provides increased comfort through warmer walls and uniform temperature.

Year-'round savings quickly pay for this low-cost insulation. Typical average returns on the cost of insulating with ZONOLITE Masonry Fill range from 21% to 48% over a ten-year period.

Some examples:

A Boston office building with 10,000 sq. ft. of wall area. Insulation installed: \$1,700. Estimated ten-year savings: \$6,350 for heating, \$1,250 in electricity for cooling. A 45% average annual return on insulation cost.

The same building in Atlanta: \$3,500 savings, a 21% return. In Minneapolis: \$8,150, a 48% return!

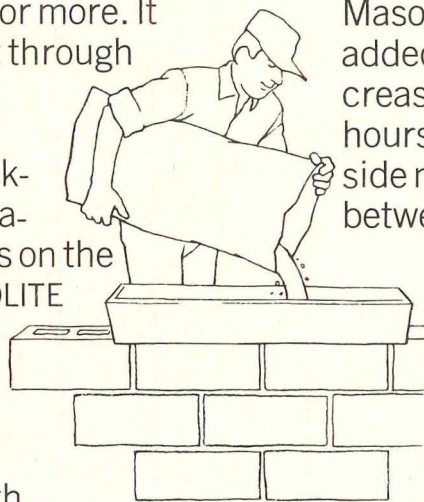
Reductions like these in fuel consumption can ease the nation's energy crisis, and reduce pollution caused by excessive fuel use.

In addition to saving money, ZONOLITE Masonry Fill Insulation provides added fire protection—actually increases fire resistance up to 6 hours, while helping to deaden outside noises and noise transmission between rooms.

It makes sense to recommend and specify ZONOLITE Masonry Fill. For more information, send the reader service card. Or, write today for brochure MF-164. It contains specific

cost data proving the savings ZONOLITE Masonry Fill Insulation offers your clients.

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Provides a virtually concealed installation. Outer frame has special drywall bead configuration ... covered and hidden when drywall cement is applied. Door panel finishes flush with wall surface ... is prime coated for easy painting to blend with wall.

It's the latest innovation from the makers of the popular Milcor access door line—doors designed to meet the specific requirements of a variety of wall and ceiling surfaces, and fire rated doors for special applications.

Get more information. Write for catalog 33-2 to: Milcor Division, Inland-Ryerson Construction Products Co., 4069 West Burnham St., Milwaukee, Wisconsin 53201.

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A member of the  steel family

newest Milcor[®] access door.

the door designed for drywall.



Products continued from page 62

Executive desks. Double pedestal desks and matching credenzas come with sleigh or full panel ends, are available in white oak or walnut. Hardwood House.

Circle 106 on reader service card

Modular tub-shower. Fiberglass reinforced plastic tub-shower unit consists of four components: tub, two end walls and a back wall section joined by a series of precision-molded positioning channels. One man should be able to install the system in less than 30 minutes once rough plumbing and framing are complete. The fixture, which measures 60"x32"x74", fits through door openings of most existing homes, is recommended for new construction and for remodeling. Comes in white and bone with a choice of six color panels that coordinate with bathroom decor: shelves for soap, shampoo and other bathing accessories are molded into the unit, which has a recessed cove at the base of the tub section for easier bathing of children. Owens/Corning Fiberglas.

Circle 107 on reader service card

Patterned paneling. Offering the look of wallpaper prints with ease of installation, maintenance and durability of prefinished plywood paneling, this patterned paneling creates an unbroken sweep of design in even large installations. Panels require no batten strips; the seams disappear into the patterns. Suitable for interior walls and ceiling, patterns include stripes, florals and antique glazes in range of colors; size is 4' x 8'. Evans Products Co.

Circle 108 on reader service card

Stone aggregate siding panels. Prefinished, structural siding/sheathing with a stone aggregate surface is made with various aggregate sizes and ultraviolet-stable colors. Using exterior grade plywood, fireproof asbestos board or Homasote structural insulating boards as substrates it comes in 4'x8', 10' and 12' sizes and can be ordered precut in shapes made to specific dimensions. Modular Materials, Inc.

Circle 109 on reader service card

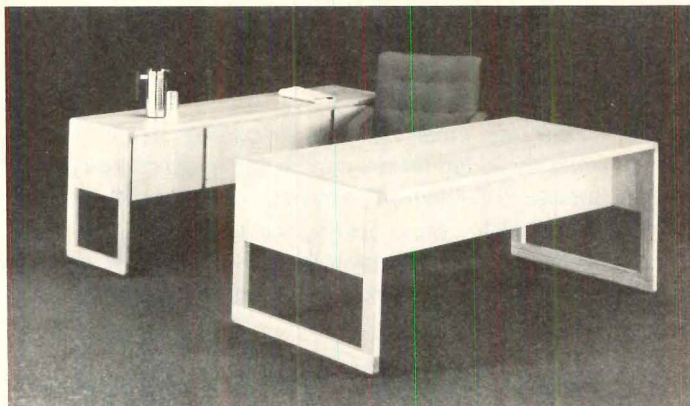
Aluminum panel ceiling. Suggested for use in lobbies, corridors, classrooms, pools and gymnasiums, this ceiling system is made of aluminum panels which are snapped into stringers for rapid installation and easy removal. A choice of lighting fixture combinations and a broad range of prepainted colors in the baked-on enamel finish are among the advantages given. Alcan Aluminum Corp.

Circle 110 on reader service card

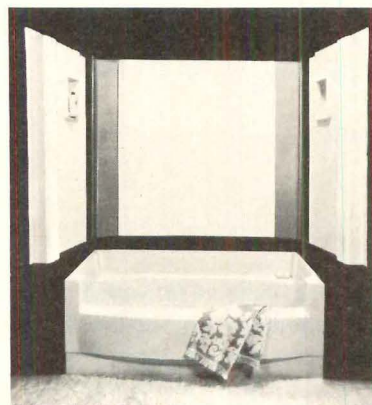
Fiberglass in the swim. A one-piece fiberglass above-ground pool with no leak-producing seams reportedly requires no excavation—only minimal digging for water and electrical connections. Kidney-shaped, it is 12'x25'x2½/5'; steps are built-in both outside and inside with a skim filtering system built into the steps. Available with or without a pool skirt; a small whirlpool therapeutic injector is included without charge. According to the makers the pool can be installed and ready for use in 72 hours. Swim Gard, Inc.

Circle 111 on reader service card

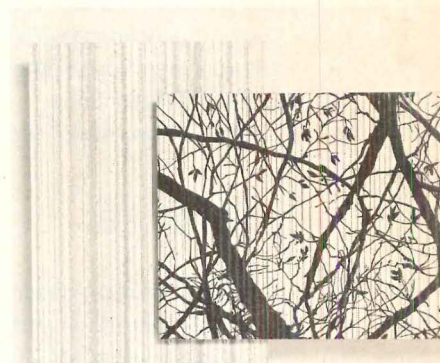
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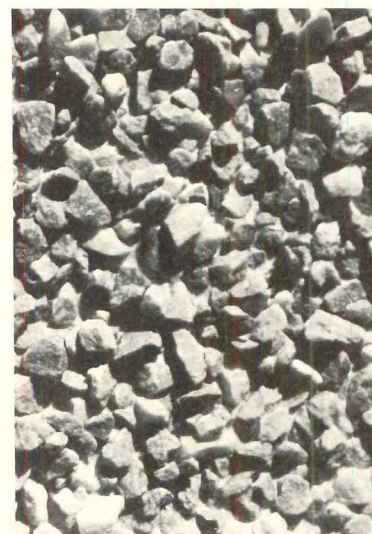
Executive desks



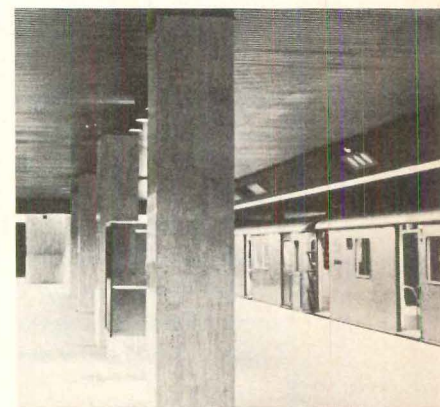
Modular tub shower



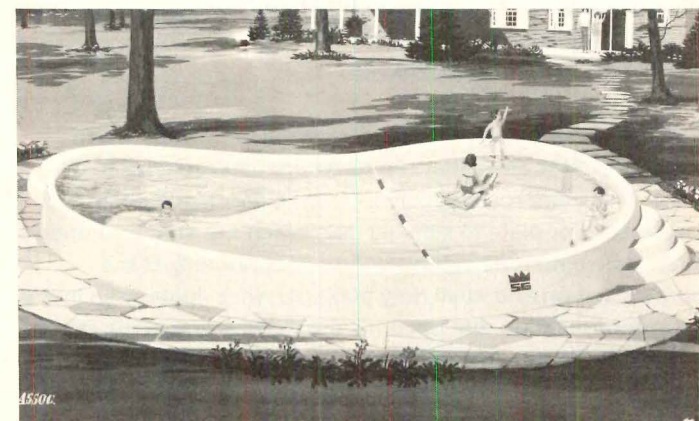
Patterned paneling



Stone aggregate siding panels



Aluminum panel ceiling



Fiberglass in the swim

Chiller-heater unit. Small tonnage, air-cooled gas chiller-heater unit is designed for residential and small commercial use for outside installation. The system is rated at 36,000 Btu cooling—90,000 Btu output heating; circulates chilled or hot water to a fan-coil-filter assembly located in an inside location such as an attic or closet. Arkla Air Conditioning Co.

Circle 112 on reader service card

Fiberglass shower floor. Weighing about 25 lbs, the tensile strength of this shower floor is equal to 2-in.-thick cement, and reportedly can be installed easily into any existing shower of standard size with a center drain. Described as rustproof and virtually impossible to break or chip. Manufacturer also offers a knockdown shower stall that should fit any home.

Delb and Associates.

Circle 113 on reader service card

Literature

Sealants. Booklet describes sealants suitable for varied design considerations and jobsite conditions. Among those offered are Synthacalk GC-5, a two-part Thiokol polysulfide base synthetic rubber sealant for application to any surface by gun, knife or trowel. Eleven other sealants are described for glazing installations, caulking and acoustical purposes in drywall or plaster wall installations. Pecora Chemical Corp.

Circle 114 on reader service card

Structural steel tubing. Welded structural steel tubing is available in a wide variety of sizes and gauges: in $\frac{1}{2}$ in. wall thicknesses, rectangles come 3"x2"x $\frac{3}{16}$ " to 20"x12"x $\frac{1}{2}$ ", squares come 2"x2"x $\frac{3}{16}$ " to 16"x16"x $\frac{1}{2}$ ". Special sizes available; also continuous lengths, splice-free and up to 80 ft. All tubing produced with mechanical properties that satisfy ASTM A500, Grade B Specification. Booklet gives sizes, gauges and tolerances. Welded Tube Co. of America.

Circle 115 on reader service card

Card data system for security. Brochure defines security control system designed for areas with multiple access points. Reportedly it offers excellent cost savings in security guard manhours, recordable cards, ease of maintenance and installation. Invisibly coded plastic card keys for personal identification are inserted into the reader, offering control for up to 30 access locations. Cardkey Systems.

Circle 116 on reader service card

Hospital emergency stations. Designed for installation in showers, baths and other rooms where emergencies may arise, these emergency stations have either a pull chain or a large actuator plate to simplify use. When the station is operated, repeating tone signals sound continuously at the nurse's station and at all duty stations, while lights flash in the emergency station, the patient's dome lamp and at other stations as well, until help arrives. The signals can be stopped only by resetting the emergency station. Stainless steel face plates, solid state circuitry. Ling Altec, Inc.

Circle 117 on reader service card

One-coat plasters. Walls to which this one-coat plaster has been applied can now be treated as any three-coat plaster wall due to proprietary adhesive and waterproofing ingredients which have been added to the gypsum or cement used respectively for interior or exterior walls. Field-tested and performance-proven, according to its makers, the plasters come in three forms: lime plaster, a hard white finish for interior masonry, sheet rock, porosity board; cement plaster for interior or exterior work where hard durable and waterproofing is desired; one-coat spray, a white or gray stucco waterproof finish plaster for exterior work. R-Matite.

Circle 118 on reader service card

Study carrel system. Called System 70, this group of study carrels is designed to mix and match, comes in three student positions: 30-, 36- and 48-in. Sizes can be mixed and combined in varied configurations; components lock into place. Teak plastic laminate is used for the vertical panels, off-white nonglare plastic laminate for desk tops, black steel legs. A range of accessories from convenience outlets to rear-view projection modules are offered. Howe Folding Furniture, Inc.

Circle 119 on reader service card

Rolling doors. Rolling metal doors, grilles and shutters are illustrated and described in a catalog which also gives specifications for each product, design alternates and details. Motor operators for the rolling doors, fire doors and fire grilles are featured as are rolling fire doors and fire shutters. Cornell Iron Works, Inc.

Circle 120 on reader service card

Lamps. Collection of lamps for contract and residential application is illustrated in this catalog. Ranging from table, wall, hanging and floor lamps to novelty accent lamps, all lamps are UL listed. Dunning Industries, Inc.

Circle 121 on reader service card

Sound control fabrics. Wall coverings described as achieving effective sound control thanks to Acoustex, a backing made of sound absorbing cellular foam. Fabrics come in a variety of colors and weaves; the "Acoustex" backing is available on its own in bolts ranging up to 999 yds. Design Tex West.

Circle 122 on reader service card

Kitchen cabinets. Brochure illustrates collection of kitchen cabinets in varied styles—provincial, contemporary, traditional, with specifications given. Other booklets available on bathroom vanities and wall units. Noblecraft Industries Inc.

Circle 123 on reader service card

Office accessories. Clocks, desk accessories, magazine racks, hat and coat racks, ashtrays and up to 90 items are featured in this 100-page catalog of contract accessories. Peter Pepper Products, Inc.

Circle 124 on reader service card

Instant wall. Lightweight structural steel panels which can be erected immediately are suggested to replace individual studs welded on the job site. A truckload of the load-bearing two-story panels, because of their light weight can be unloaded by only three men in about 45 min. Keene Corp.

Circle 125 on reader service card

Copper Sovent single-stack plumbing system. The new way to cut multi-story drainage costs.



Sovent systems can be designed in 3" diameter for low rise buildings and in 4" diameter for high rise buildings. In either case the builder can expect savings over conventional drainage systems.

The Copper Sovent single-stack plumbing system is a major construction breakthrough... yet it's really very simple.

In this new system, the soil and vent stacks are combined into one Sovent self-ventilating stack.

What you don't need any more is a separate vent pipe.

You get more square feet of income-producing space because the Copper Sovent system takes up less space in the walls.

Plus you can put fixtures, like island sinks, where you want them. Not where the old two-pipe drainage system forced you to put them.

And because the Copper Sovent system weighs less, you get more room in your structural load estimates.

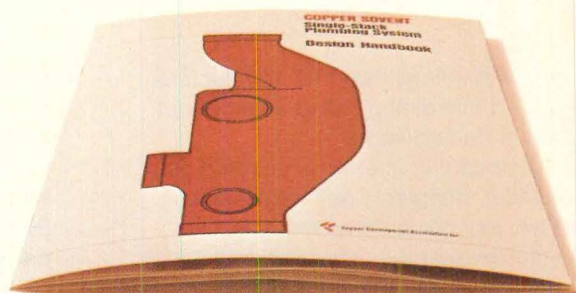
There's more room in your budget too because the Copper Sovent system is easier and cheaper to install.

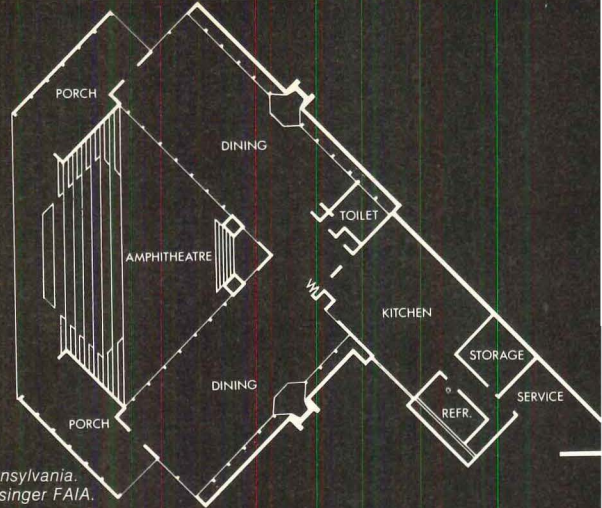
Since it was first installed in the Habitat Apartments at Montreal's Expo '67, the Copper Sovent system has been used in 30 high-rise buildings across the United States. And more than 70 additional major installations are being planned right now.

Couldn't you use more room or flexibility in your new building design?

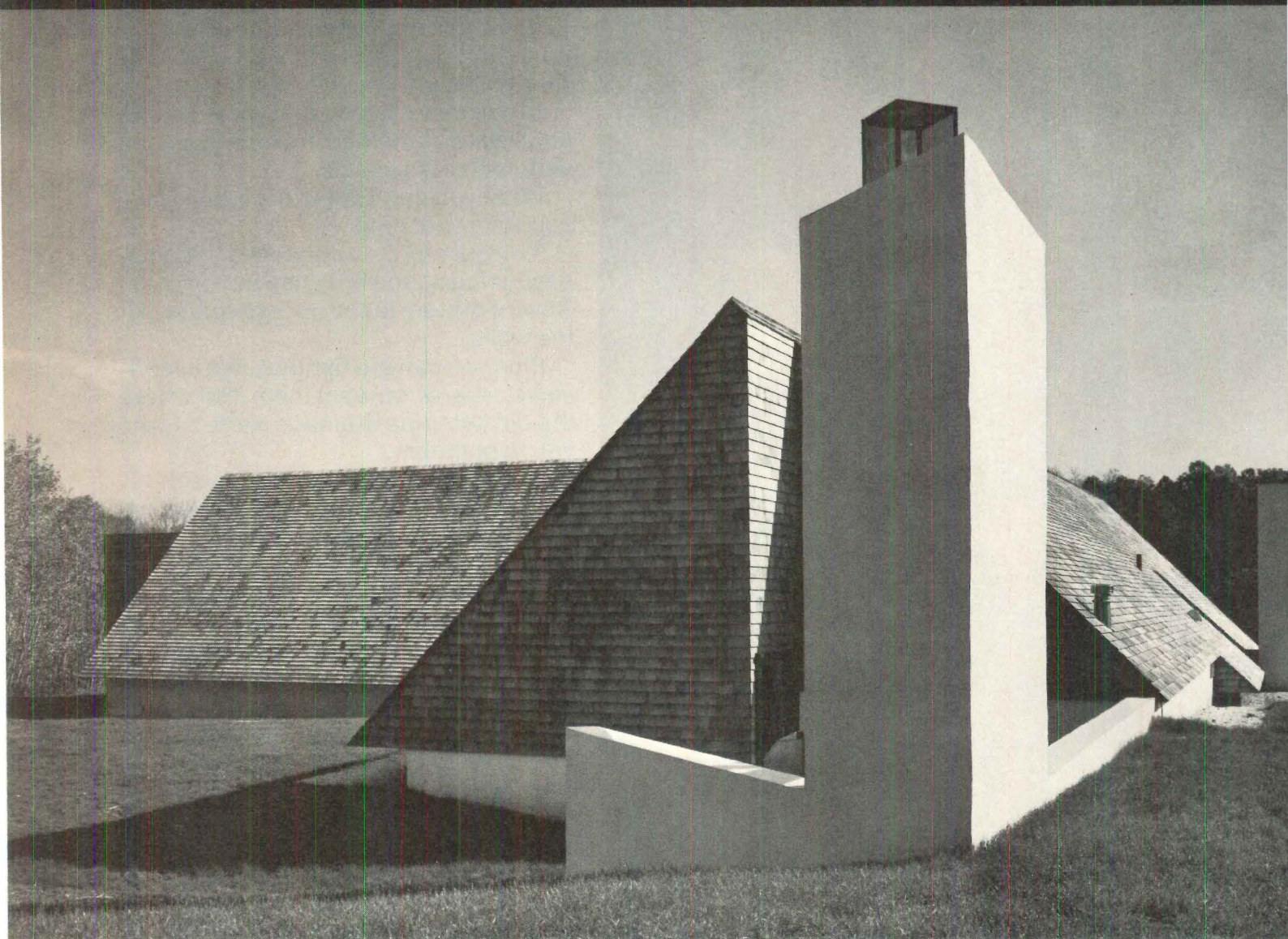
For a detailed design handbook on the Copper Sovent single-stack plumbing system, write us: Copper Development Association Inc., 405 Lexington Ave., New York, N.Y. 10017.

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Girl Scout dining hall, Quakertown, Pennsylvania.
Certigrade shingles No. 1 Grade, 18" Perfections. Architect: Frank Schlesinger FAIA.



Red cedar shingles make a dining hall a feast for the eyes.

Few buildings have the architectural vitality of this dining hall at a Girl Scout camp in Pennsylvania.

The building is entirely covered by red cedar shingles. They implement the two key design requirements: low maintenance and a non-institutional look. The shingles will remain maintenance-free

for decades. And their rich-looking, natural texture is always inviting, never sterile.

The value of cedar goes further. While expressing the excitement of the design, these shingles also help the hall blend effortlessly with other rustic buildings at the camp site.

For your next design, insist on the real thing: red cedar Certigrade shingles or Certi-Split handsplit shakes. They're worth it. For details and money-saving application tips, write: 5510 West Blaine Bldg., Seattle, Wa. 98101. (In Canada: 1055 West Hastings Street, Vancouver 1, B.C.)



Red Cedar Shingle & Handsplit Shake Bureau

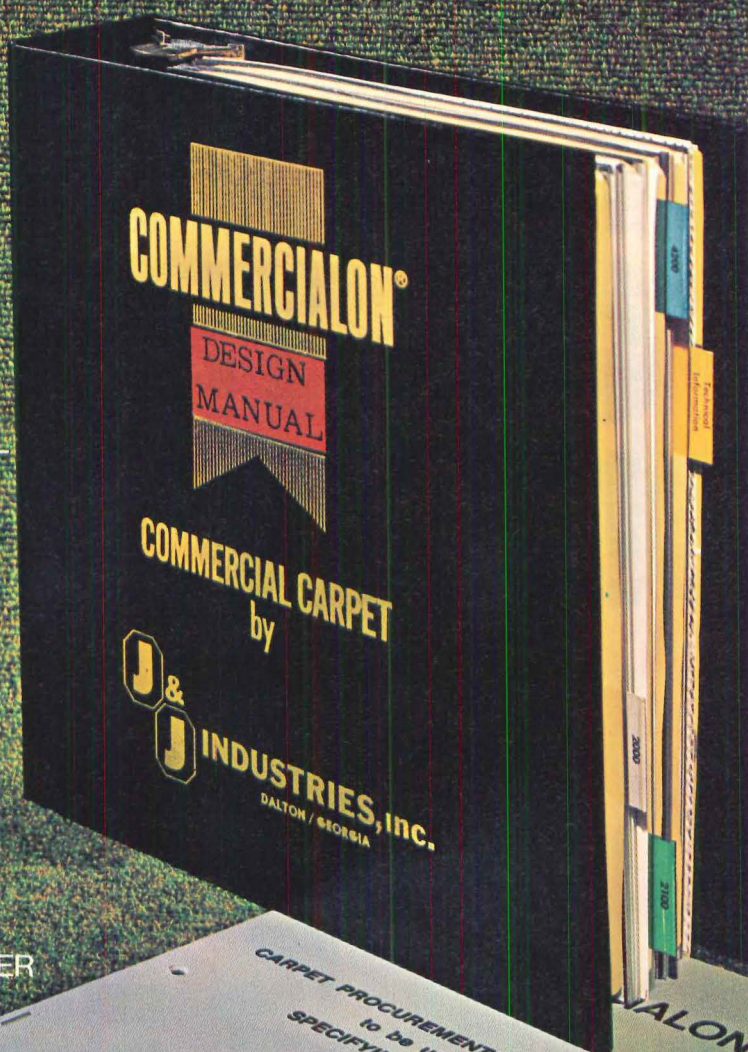
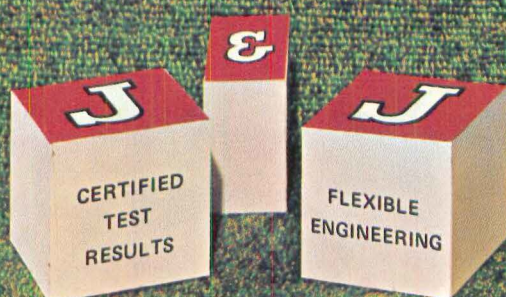
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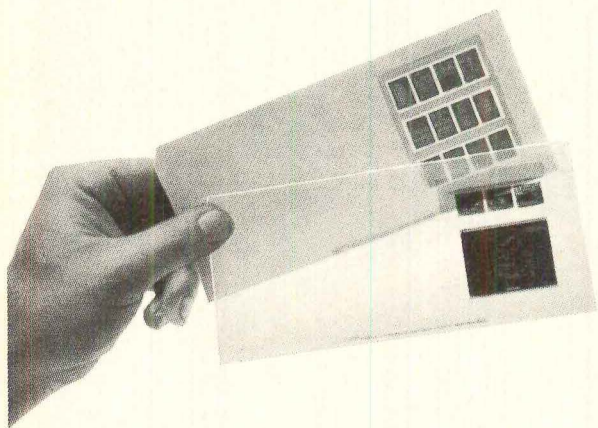
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On Reader Service Card, circle no. 343

Different floors in your buildings lead different lives. Some get walked on, spilled on, wheeled on and even dropped on.

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For example you might use a Royal Stoneglow tile for an especially heavy traffic area. It features very long wear and no-wax maintenance.

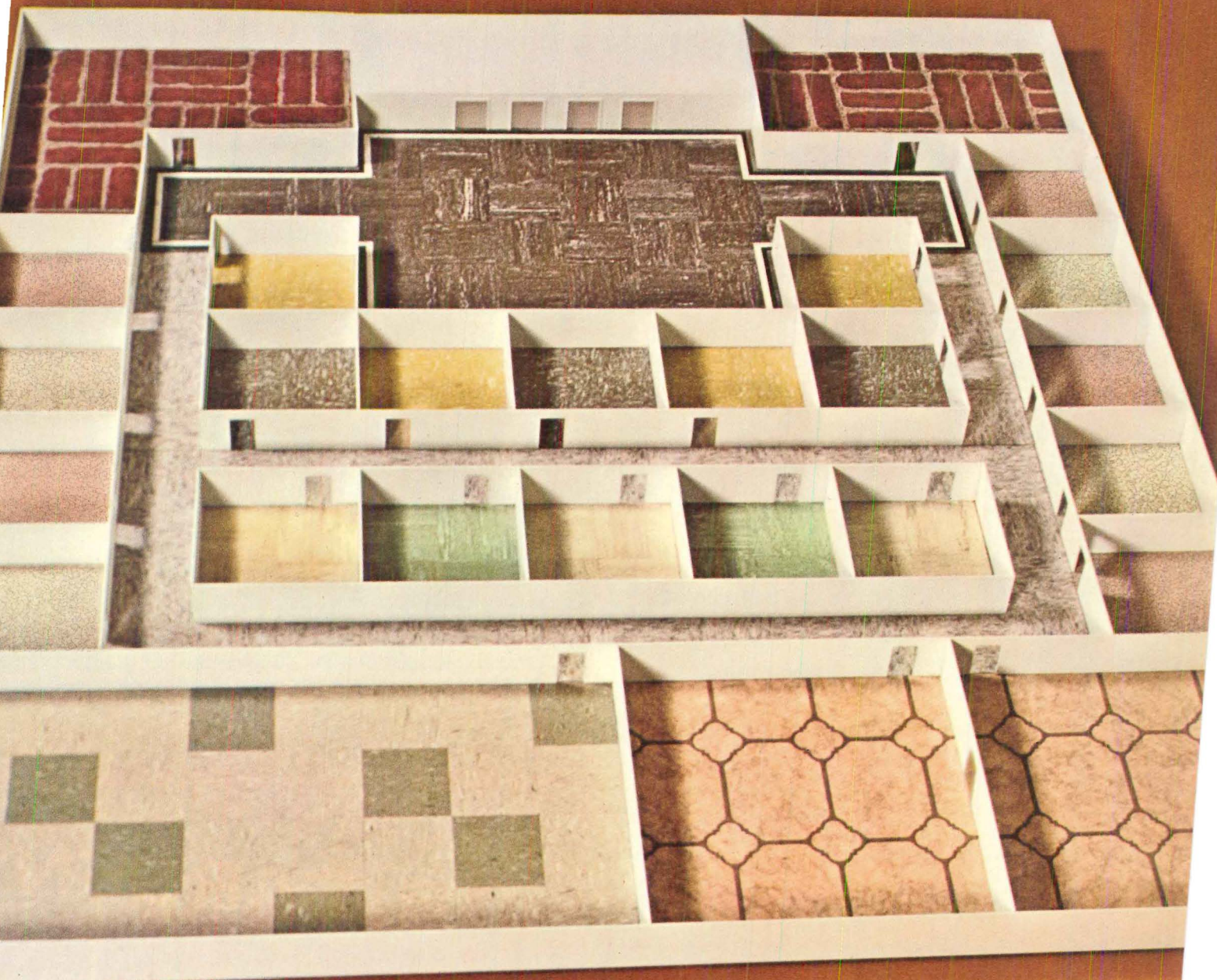
Then for a medium traffic area you might choose highly decorative sheet vinyl which now has interim Federal Specification Number L-F-001641 (GSA FSS). It wears well too, but features warmth and comfort underfoot. And like the tile it's fire-safe.

Your GAF Representative features such a broad line, that no matter what your needs are, he's sure to have the right style and color for you.

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Progressive Architecture

April 1972

What is too radical and too moderate, too comprehensive and too limited, too nebulous and too specific? Answer: the current report of the AIA's National Policy Task Force, entitled *America at the Growing Edge—a Strategy for Building a Better America*. All of these criticisms, and many more, have been leveled, with some justification, at this extraordinarily ambitious, highly complex report (for details, see News report, this issue).

A task force of five men, with various hybrid backgrounds in architecture, planning, social action and government, taking up a subject as unwieldy as national growth policy, could not have been expected to come up with a model of coherence or unity of purpose. In this case even the title sounds like an uneasy compromise.

That wouldn't matter much if this were just one more task force report for the files. But it is not. If it is accepted by delegates to the AIA Convention in Houston (May 7-10)—with some revisions based on membership response to the published draft—this report will set the objectives for an all-out AIA drive to influence the ways in which our man-made environment is expanded and rebuilt. And there are indications that government at all levels, facing an increasingly obvious environmental impasse, is now ready to listen. AIA committees are now regularly consulted when legislation is drafted in such areas as housing, transportation and community development.

The intricacy of the Task Force Report is largely a reflection of the complex process of environment-building, at least in this country, where the forces of private choice and enterprise operate within an incoherent network of government-established constraints and incentives. In an effort to deal with all the forces affecting growth—and decay—in our communities, the report makes proposals on a broad array of subjects: property taxes and income taxes, transportation planning and funding, land use controls, subsidies to low-income families, assignment of welfare and medical costs, stabilization of interest rates, etc.

There are major recommendations to offend almost every big special interest group—a proposal for public assembly of

land for development will arouse speculators and bankers; a proposal for states to "retrieve" land use powers from localities will antagonize suburbanites, and many urbanites as well; a proposal for reallocation of Highway Trust Funds will disturb the highway-automobile-gasoline bloc.

Conspicuously missing from the report, at least from the first published version, are references to the economic constraints on building—the most obvious of which is labor cost—which make it impossible for increasing percentages of U.S. families to get decent housing without some form of subsidy. Also missing is any reference to race, although "open occupancy" is repeatedly mentioned as an outcome—guaranteed we are not sure how—of the report's policies. Analysis of "constraints" and devices for "implementation" of policies are promised in further reports later this year.

Reactions to the report from across the country, covered in this month's P/A News report, indicate a generally favorable reception to positions that might have been considered subversive only a few years ago. Newspaper comments seem to reflect public impatience with crazy-quilt development, skyrocketing taxes and declining public amenities. For the first time in a major election year, rational control of development seems to be an appealing cause for candidates.

Will the AIA itself accept the recommendations of its own task force? Our interviews, up to press time, indicate that most delegates will go to Houston prepared to support the report. There will be much debate on details, despite the apparent consensus on substance. The report could come out of this discussion significantly improved, if delegates just keep in mind that they are considering a realistic program for lobbying, not an idealistic statement of principles.

Assuming the task force position is not seriously crippled by amendments or deletions from the convention floor—and that seems unlikely—it deserves the support of every delegate. And its recommendations deserve active support by architects back in their home states and cities; they deserve, in fact, the support of everyone who is looking for better *quality* in our inevitably expanding man-made environment. The alternative—truly unthinkable—is more of what we've got.

Looking up downtown

Entering 127 John Street is the most memorable part of one's journey to work. It is a fragment of the street scene, a city scale toy, meant to amuse the child in every adult

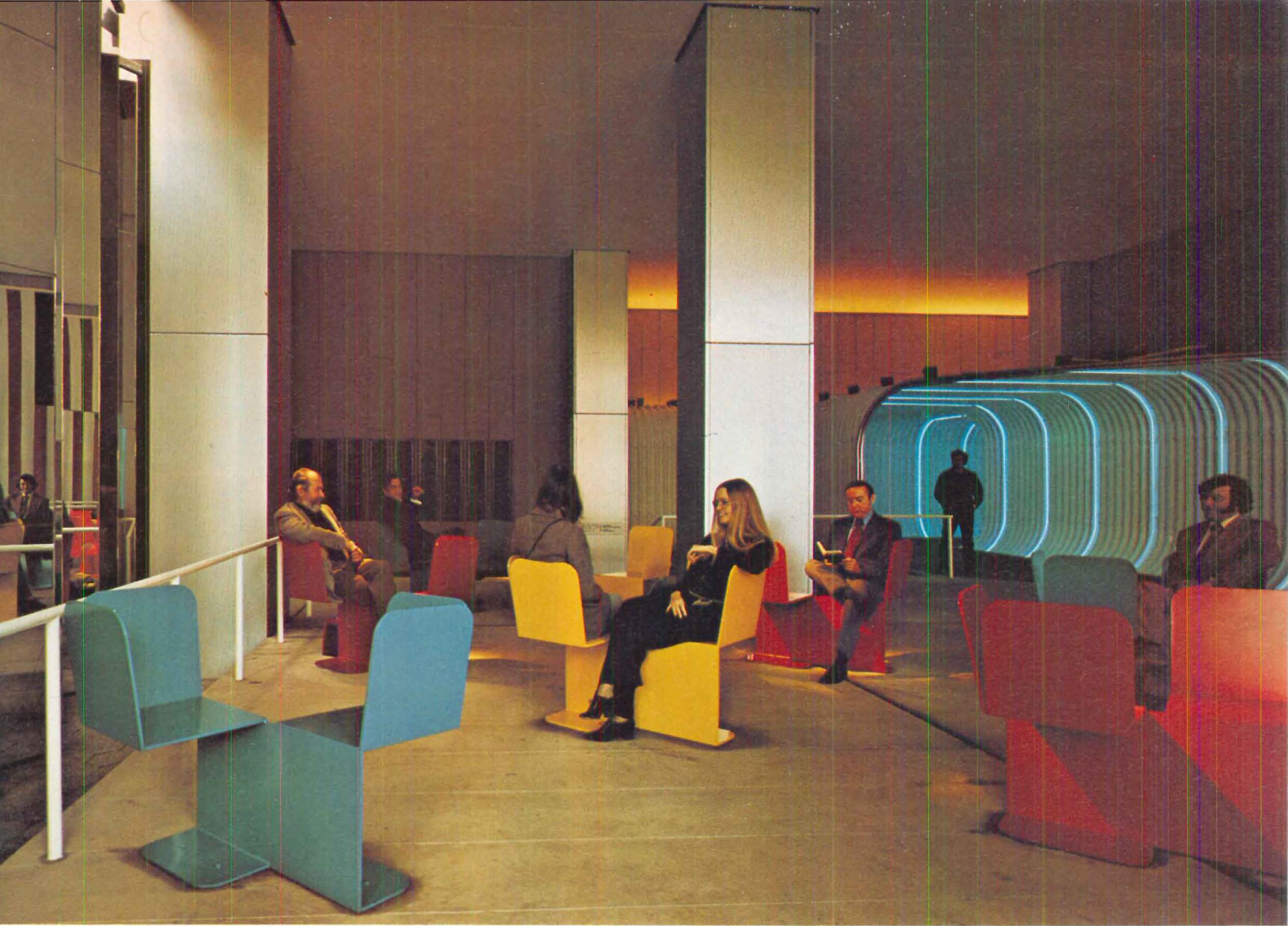
Owner-builder and speculative building are usually dirty words in the architectural vocabulary. One twenty-seven John Street is a speculative building and the William Kaufman Organization is owner-builder. One twenty seven John is the latest in the Kaufman buildings that started with "art in architecture"—a 1000-sq-ft Hans Hoffman on an elevator core—and has included a Sopwith Camel (P/A Mar. 71), a red swing, a babbling brook and a laughing vending machine. It is a progression that has gone from an attempt to put serious "art" in buildings to an attempt to make buildings for people: from people as spectators of objects to people as participants.

Architecturally, the building itself is not an issue. It is a curtain wall structure with maximized rental space—like any other speculative building—and as such meets the requirements of its owner. What is unique, however, is the attitude of the owner who feels that the building serves as a backdrop for people, people places and people activity—an attitude not present in bare concrete plazas and travertine lobbies. In their book *Interior Design*, Arnold Friedmann and John Pile describe the lobby of the Seagram Building as having "wonderful proportions" and as providing "an imposing entry to a distinguished building." One twenty seven John Street is neither imposing nor distinguished in the usual sense of those words. It is imposing because you can't forget it once you've been there and distinguished simply because there is nothing like it.

One twenty seven did not emerge as an idea that found a building. It evolved as a solution to a specific problem—that of moving people from the front entrance to the elevator lobbies located along the back of the building. The object was not only to psychologically reduce the travel time in reaching the destination, but also to make it the most memorable part of one's journey to and from work.

The trip starts when one enters the building under scaffolding hung with bright banners and, still outside, moves past bent metal love seats to the tunnel entrance. Once in the tunnel a short way, one must choose at an intersection to go to the high-rise or the low-rise elevators. Each arm of the tunnel ends in an outside lobby space. One continues through a





The plaza (above and left) with bent metal love seats is open to the street but sheltered by the building above. Scaffolding and banners signal the entrance along Water St. and provide shelter for outdoor seating on Fulton St. Plaza, tunnel and elevator lobby (below) were designed by Corcia-DeHarak.



Photo: Robert Perrin; top, above, far left, pg. 80 left

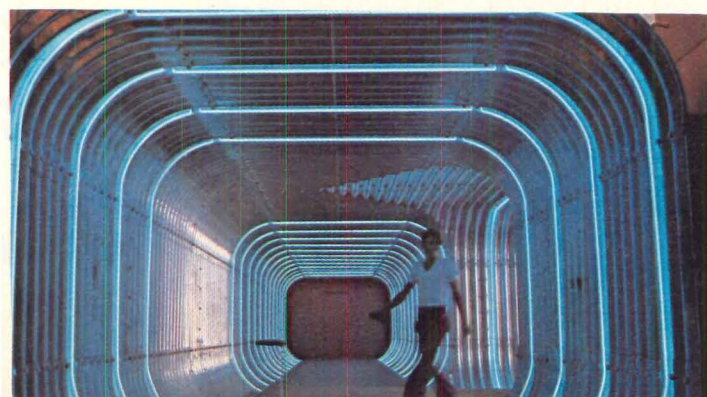
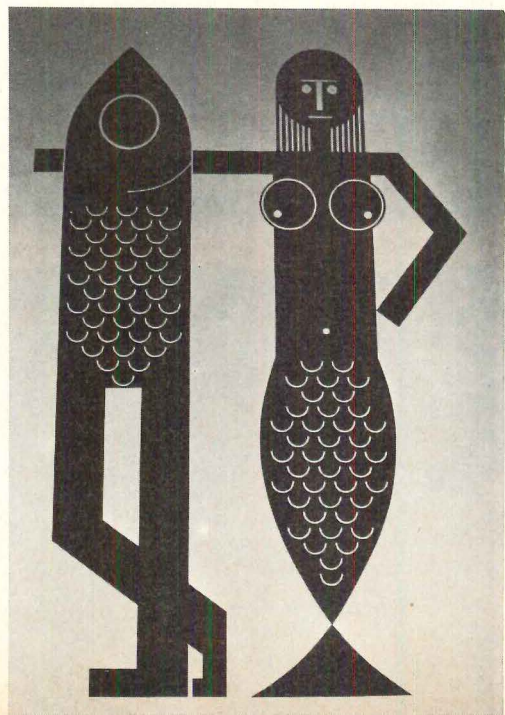




Photo: Rosette Vojdany

Sculpture likeness (above) of Melvyn Kaufman was removed when it didn't amuse the public. Mirrored walls cover the backs of two small buildings which share the site. Mermaid and Merman (below), a mural on Fulton St. is by Forrest Wilson.



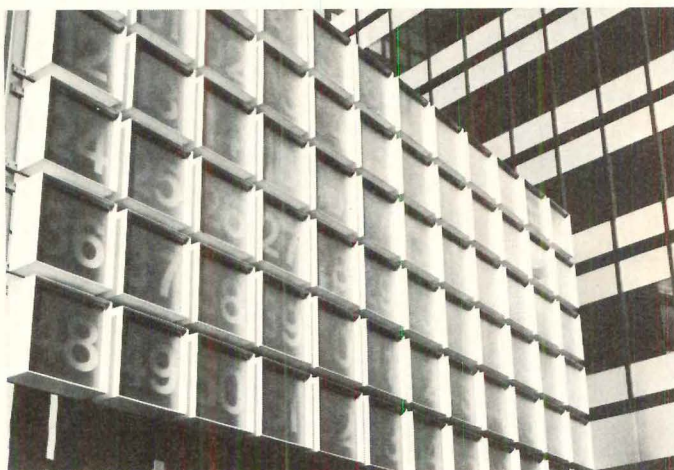
Looking up downtown

revolving door and into the lobby where any anxieties about the tunnel trip are put to rest by oriental rugs, warm lighting and gray concrete walls. There is something quiet and understandable about this space. The calm remains just long enough to seem real when the elevator arrives—an enameled red or blue cab with neon lighting—and, with a slight sense of resignation, one steps in.

There is a constant tension between familiar and unfamiliar objects. The revolving door at the end of the tunnel serves as image recognition, telling people that they are, after all, at an entrance to a building. But the reassuring image of the doors didn't seem to be enough reward. Middle management was very reluctant to rent space, according to Melvyn Kaufman, since the ground floor of the building didn't conform to their preconceived image of "imposing and distinguished"; their corporate image—as well as their own positions—seemed threatened. The tunnel became the tangible point of contention, and potential tenants asked that it be removed.

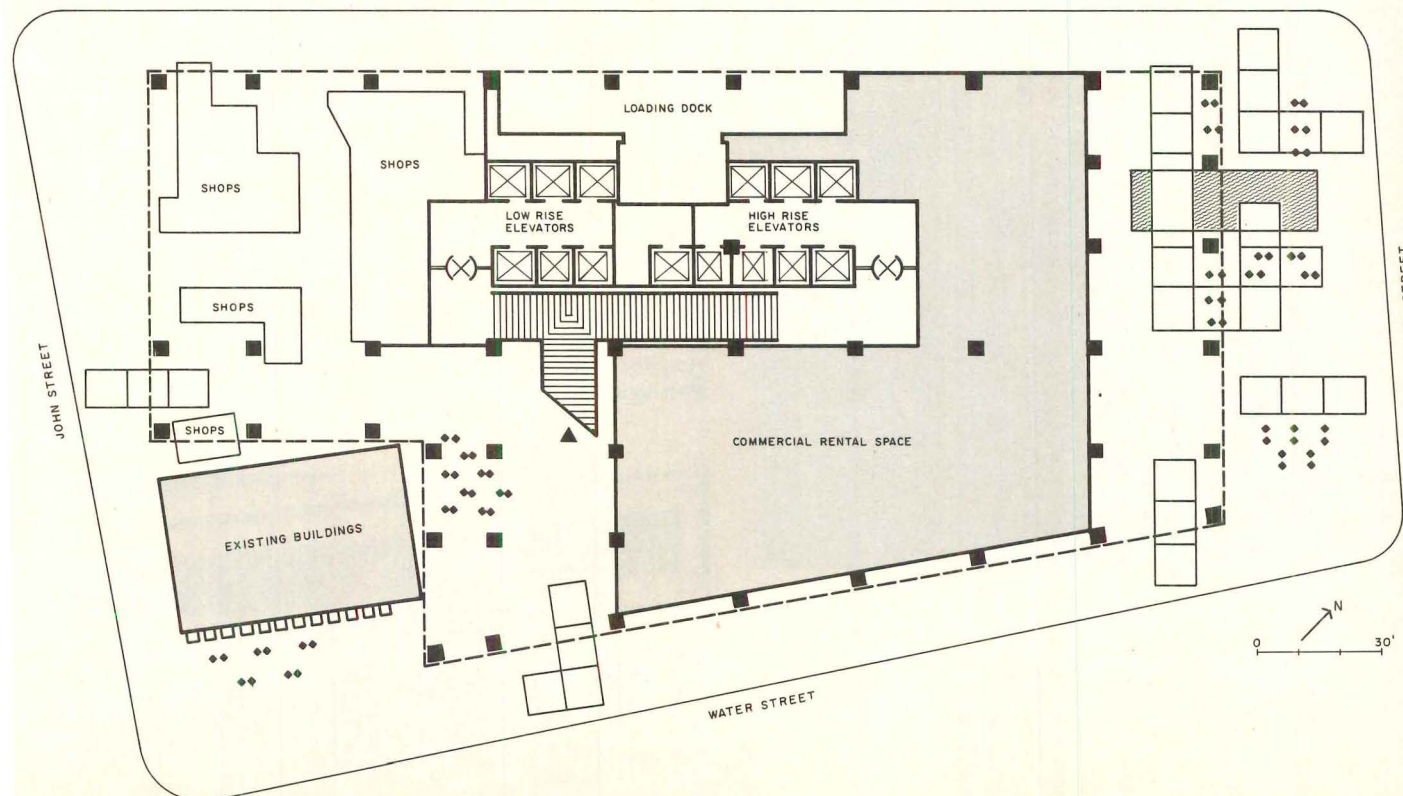
Activity is not limited to the ground floor. The seventh floor setback—interrupted because of two small buildings that could not be bought—contains a gravel mural of a cat chasing bird tracks on one side while the bird and three eggs are safely in the nest on the other side. The mural, constructed of colored roofing gravel, proved to be too complicated for the contractor to execute although scale drawings had been provided. The designer, Pamela Waters, together with several friends spent a day laying out the patterns with chalk, and the contractor was then able to lay the gravel. It wasn't a difficult task, just rather an unusual one for a roofing contractor.

Farther up the building at the 13th and 14th floors is the mechanical room. Visible through the clear windows, it is an animated, breathing and colored representation of the life



Banner (top) is a cartoon by Forrest Wilson. Clock (above) lights up the time of day in different colors.

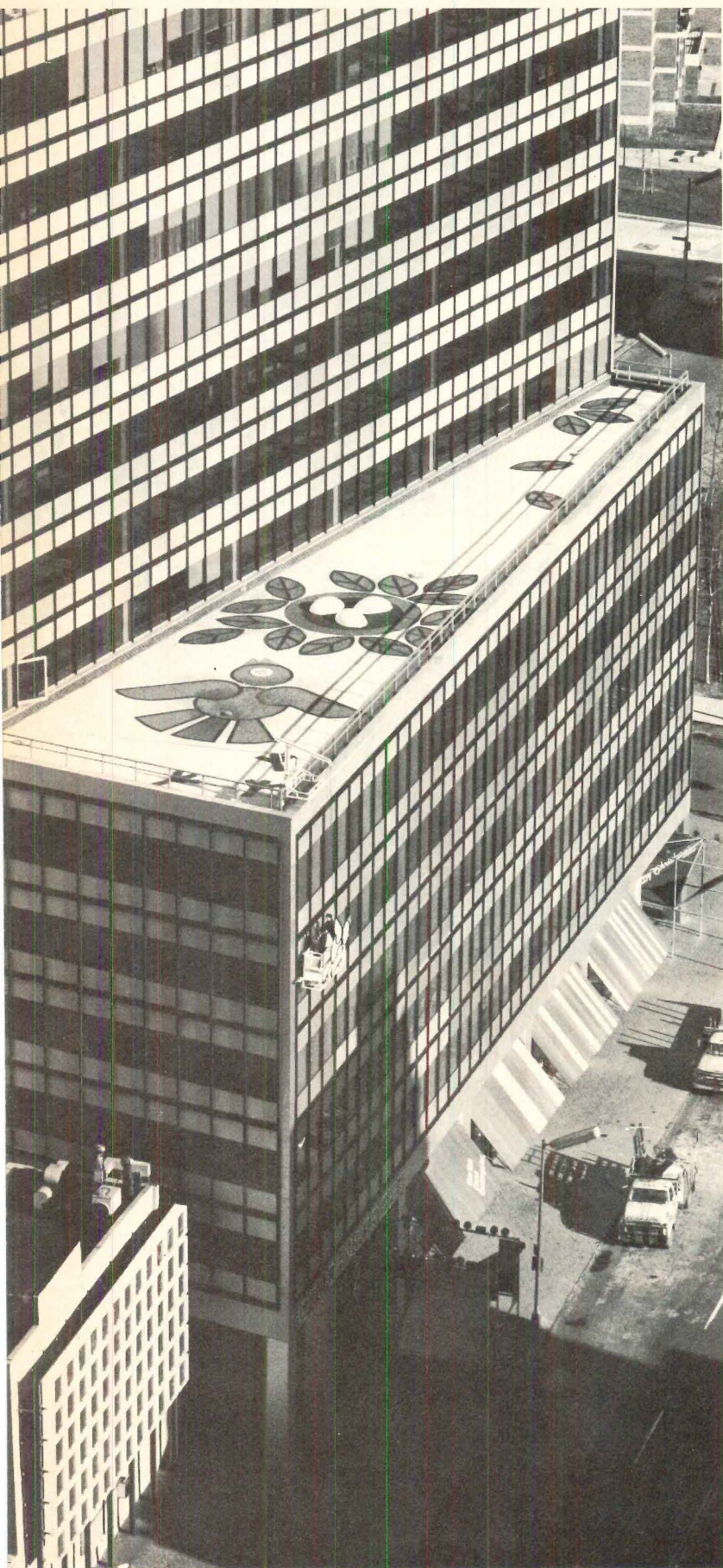
PEARL STREET



SITE PLAN

4-70 Downtown Architecture

21



Seventh floor setback (above) shows the gravel bird and nest with three eggs. Since the setback is not continuous, the cat on the other side of the building will never reach the bird. The wire mesh bird (right) covers the window-washing rig.

Looking up downtown

support system of the building. Toward the end of the day when the system lights up with strings of blinking colored lights one can sense the pulse of the building.

From the ground and the surrounding buildings the colors of the mechanical room are soft and subtle as seen through the curtain wall. The effect is one of illusion. On the interior, the massive pieces of machinery and pipes are an endless landscape of color and form that one walks through and under and around.

The roof of the building contains the rest of the mechanical equipment—cooling tower and water tank—and is a continuation of the same colors and lights. The three levels of happenings above the ground floor are meant for people working in the surrounding buildings. An elderly couple living across the river in Brooklyn Heights were so amused by the animated mechanical system that they finally came to see what it was all about. Kaufman, however, wonders when the owners of the surrounding buildings are going to do something to amuse his tenants.

As with the other buildings by the same owner, nothing is permanent. Tapestries, sculptures and any other transportable objects are often moved or replaced. One sculpture, "Another Day"—a wax likeness of Melvyn Kaufman—depicts a weary man slumped in one of the love seats on the plaza, briefcase at his side. It was amusing to those who knew Kaufman and provoked some humorous stories and encounters, but the general public did not find it the least bit funny. They saw too much of themselves in the weary man and so it was removed after some hostile reactions.

There are still unresolved design issues—the seating under the digital clock in an area so exposed and out of people-scale that no one sits there. Some design decisions don't work well, such as the sign at the intersection of the tunnel, and these will eventually be resolved. What really matters is that 127 John Street is an alternative to travertine palaces. Now, Kaufman feels, people have to make a conscious choice. The secretaries from the Bronx love it and so does the man who sits on the plaza calmly reading a book, pretending not to notice anything unusual. [SLR]

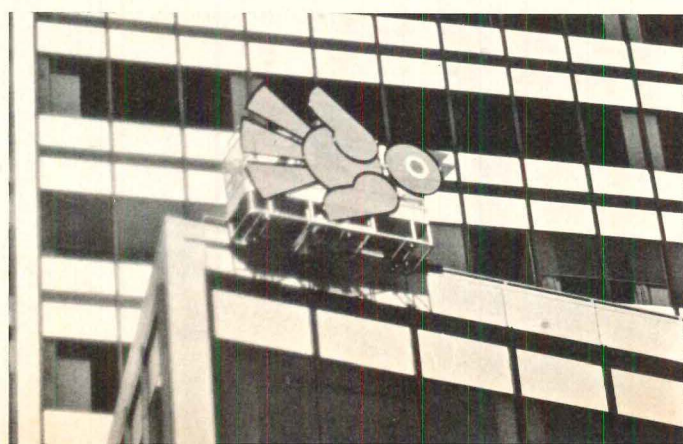
Data

Project: 127 John Street, New York City.

Program: to return the ground floor of the city to the people and to provide other visual amenities for those working in the surrounding buildings.

Designers: Rudi deHarak, Corcia-deHarak, ground floor entry and plaza. Pamela Waters, seventh floor set-back, mechanical room and roof top. Howard Branston, lighting consultant. Architect: Emery Roth and Sons.

Photography: Lee Ryder, except as credited.





Brightly painted mechanical room and rooftop are animated with strings of lights that depict the flow of air and water.



Spectacular solution for restricted site

Severe site restrictions could have dominated the design of a new college building in Central London, but the architects took advantage of the constraints

In London, as in most large cities, centrally located space for new buildings is an extremely scarce commodity. In fact, the situation may be worse in London. According to Tom Ellis, partner in the firm of Lyons, Israel and Ellis, architects of the new College of Engineering and Science for the Polytechnic of Central London, the English generally are not fast to turn over their land to the first buyer who offers a quick profit. In some respects, London benefits from this attitude because it does not encourage the disruptive, speculative building that so often damages the texture of an urban environment. In other cases, though, it can mean that the best available site for a new building may not be the most desirable site.

When Polytechnic officials began looking for a location for the new quarters of their College of Engineering and Science, they were only able to find one acceptable site in Central London that was within reasonable distance of the main school. The site, however, was far from ideal; severe restrictions had been placed on it. First of all, it was too small to accommodate adequately a major educational building, particularly one that required scientific and heavy engineering laboratories for 1000 students. In addition, building height restrictions had been put on the site in deference to a future hospital annex that is to be constructed across the street. Furthermore, the architects could not take advantage of the irregularly shaped site, due to a planning restriction stipulating that the axis of any new building follow the axis of the major neighboring streets. Thus, one corner was unusable.

On this 1.198-acre parcel of land, with its inherent constraints on the height, perimeter and axis of any building that might be built on it, the architects were expected to assemble all of the drawing offices, engineering halls, classrooms, lecture theaters, seminar and tutorial rooms and a 20,000-volume library for the college's departments of chemistry and biology, electrical, electronic and mechanical engineering, mathematics and physics. In addition, there were to be administrative and faculty offices, a dining room for 400, a kitchen; and underground, a computer center, heavy engineering laboratories and a parking area for cars.

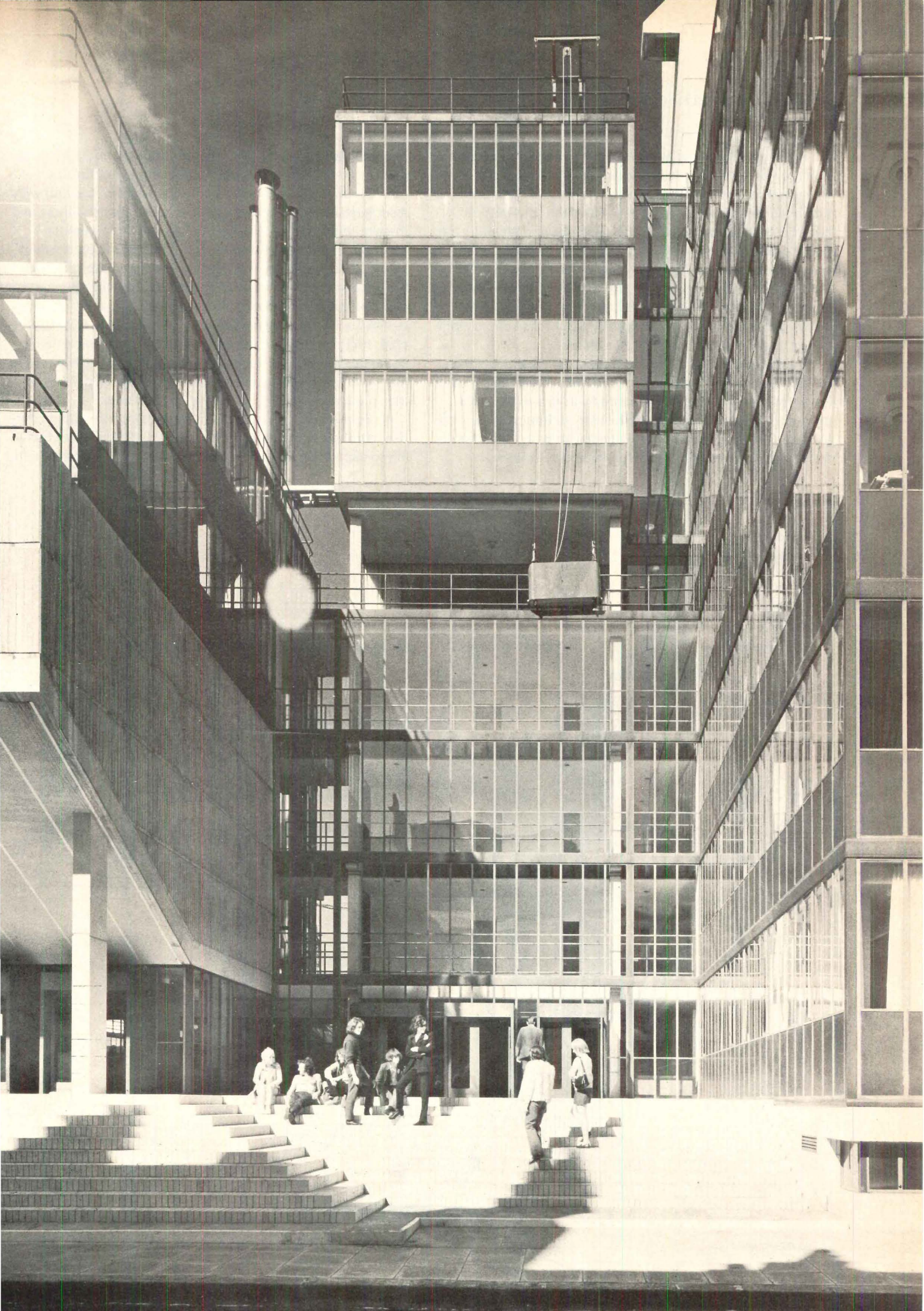
That these criteria could have been met at all on this site is no small triumph for the architects' sense of planning and design; that they were carried out without foisting a monstrosity on the city is a feat. But that they were done with such brilliance that the building has become a widely admired piece of architecture in London is proof that many kinds of building restrictions, if exploited in a positive manner, can be made to work to the advantage of good design.

Functions grouped into blocks

The building has been divided into three basic functional units: a three-level entrance concourse node that connects



The Polytechnic's new college of engineering and science is literally packed into every square foot of its small, restricted site. Stepping back of tutorial block, far left, provided the benefit of long, usable study terraces.



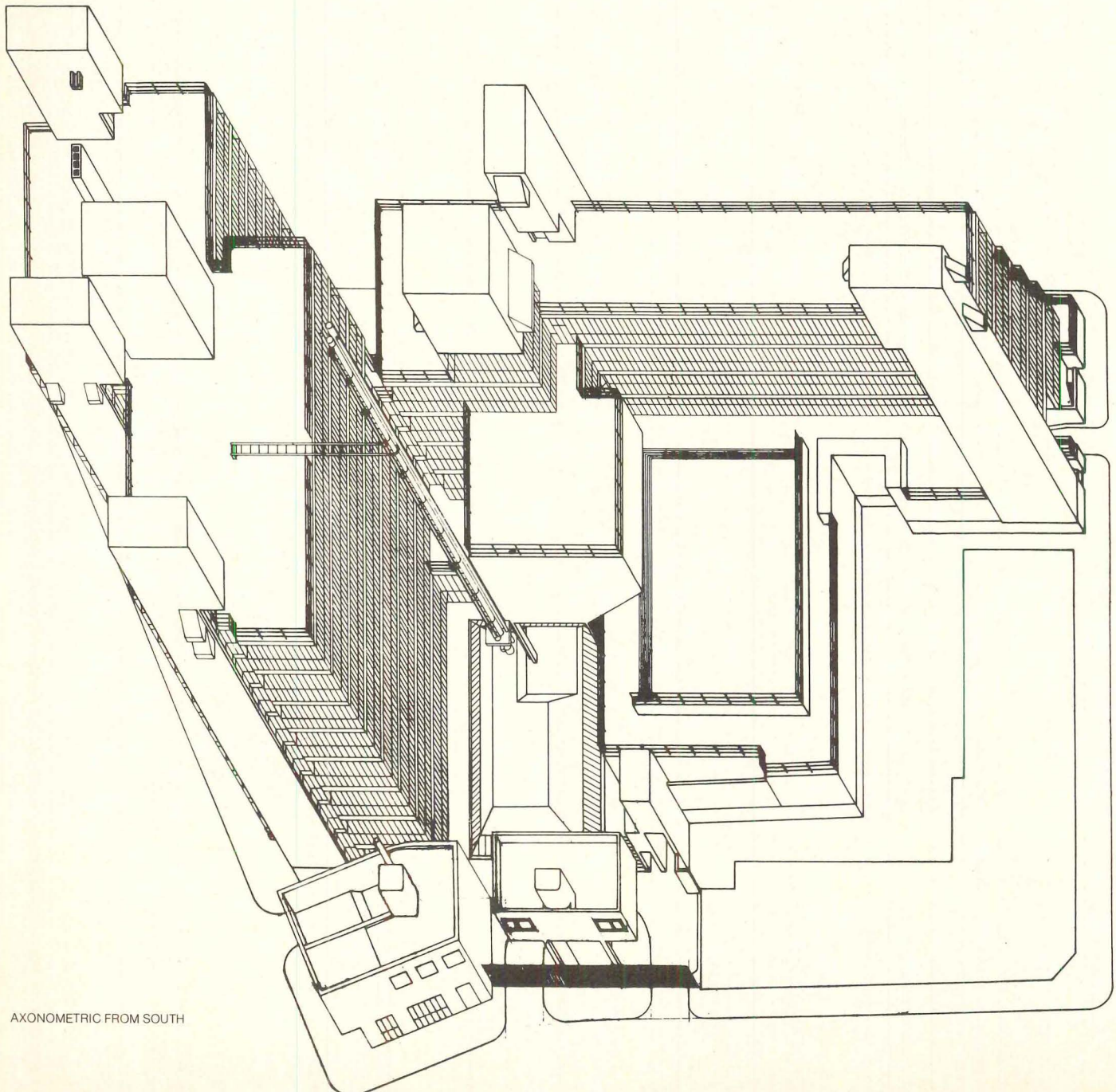
Spectacular solution for restricted site

all units, a tutorial block and a laboratory block. In their interpretation of the zoning restrictions, the architects have treated each unit in a different way. To provide light for the future hospital annex, successive floors of the tutorial block have been stepped back in 4-ft increments, and the entry has been recessed under the canopy formed by the floor of the small lecture theater. The laboratory block has been offset, or "cranked," as the English say, along the angled side street to conform to the building axis regulation. In accordance with the height restrictions, the laboratory block was kept to eight floors, and the tutorial block to four floors.

To achieve maximum use of the site, organizational planning of the building began soon after the site was acquired. In the early planning stages, a first brief was drawn up by the college, in cooperation with the Ministry of Education and the London County Council. The brief consisted of a detailed schedule of accommodation expressed only in terms of

square feet. The architects, working from the brief, then prepared a first sketch plan that showed only the disposition of the various departments in plan and in section, together with a suggestion for the organization of the communal areas and the circulation paths. Weekly briefing meetings were then held with the college's development offices and department heads, and agreement was reached on the juxtaposition of the various departments and on the sequence of rooms within each department. Through these discussions, a scheme was devised, with the cooperation of all departments, to schedule class hours and space uses so that many accommodations could be shared, and none would be duplicated. Ultimately, a planning policy was evolved whereby at least 80 percent of the space would be in use during school hours.

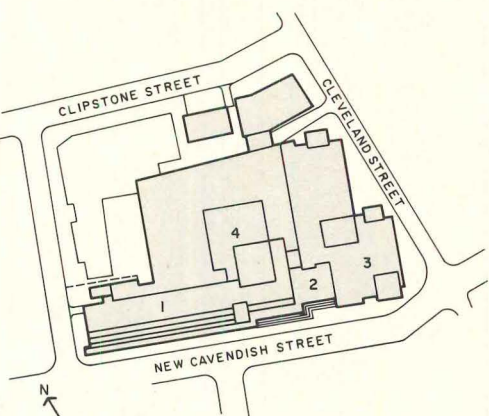
Inside the building, a single, main entrance circulation core rises through three floors and connects all parts of the building to each other through a series of suspended bridges. The



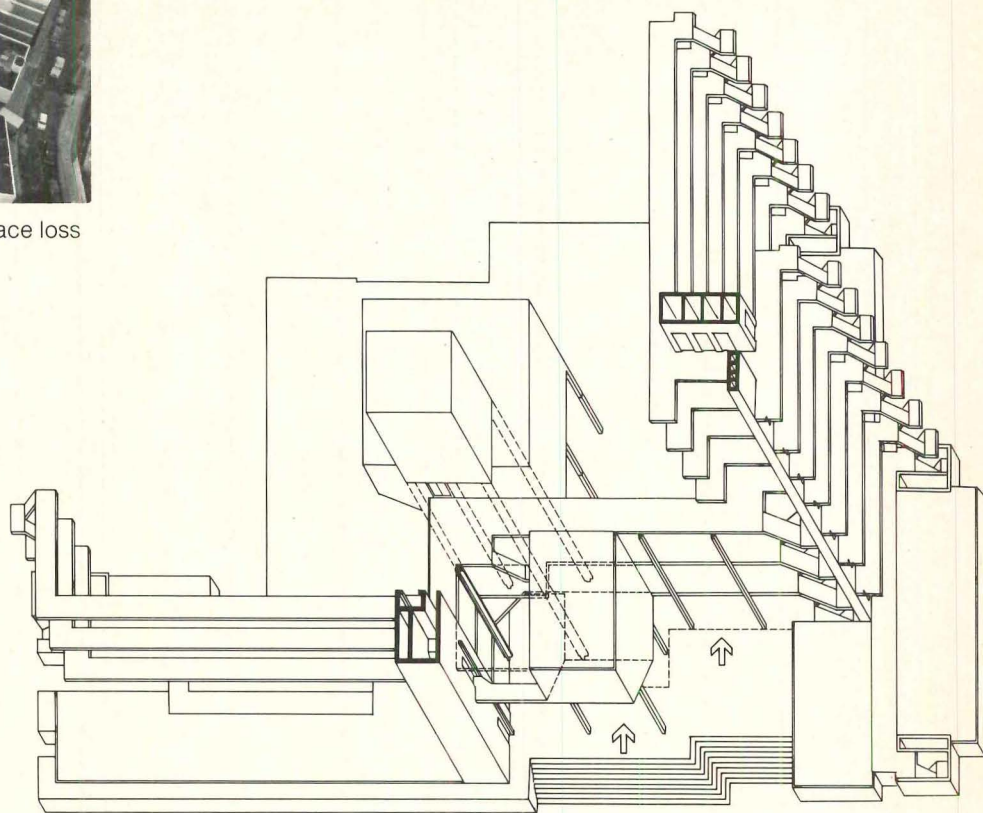
AXONOMETRIC FROM SOUTH



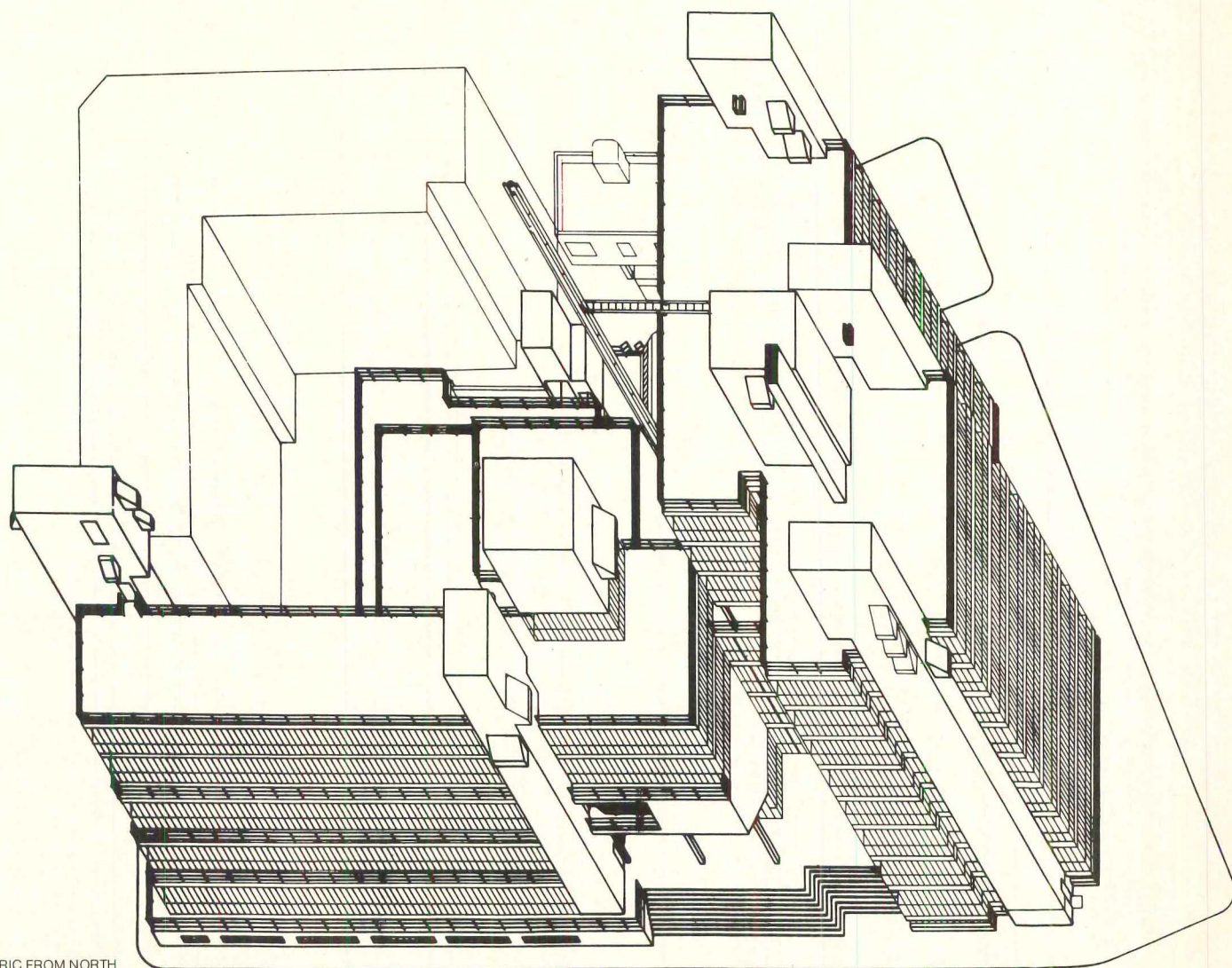
Conformity to street-axis regulation caused space loss through stepping back building.



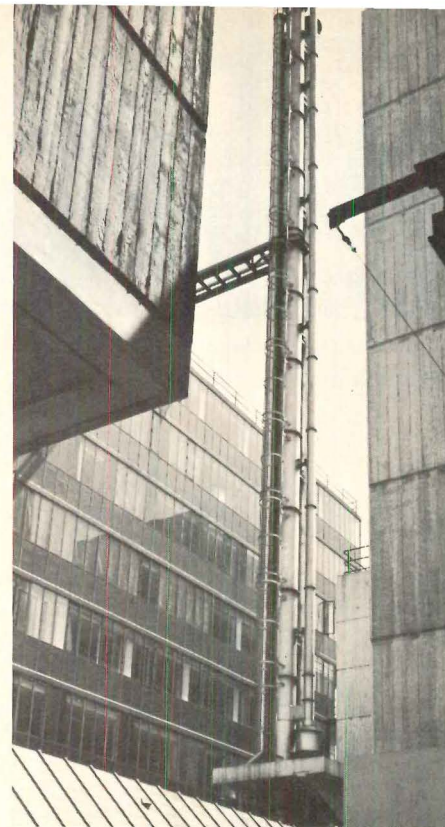
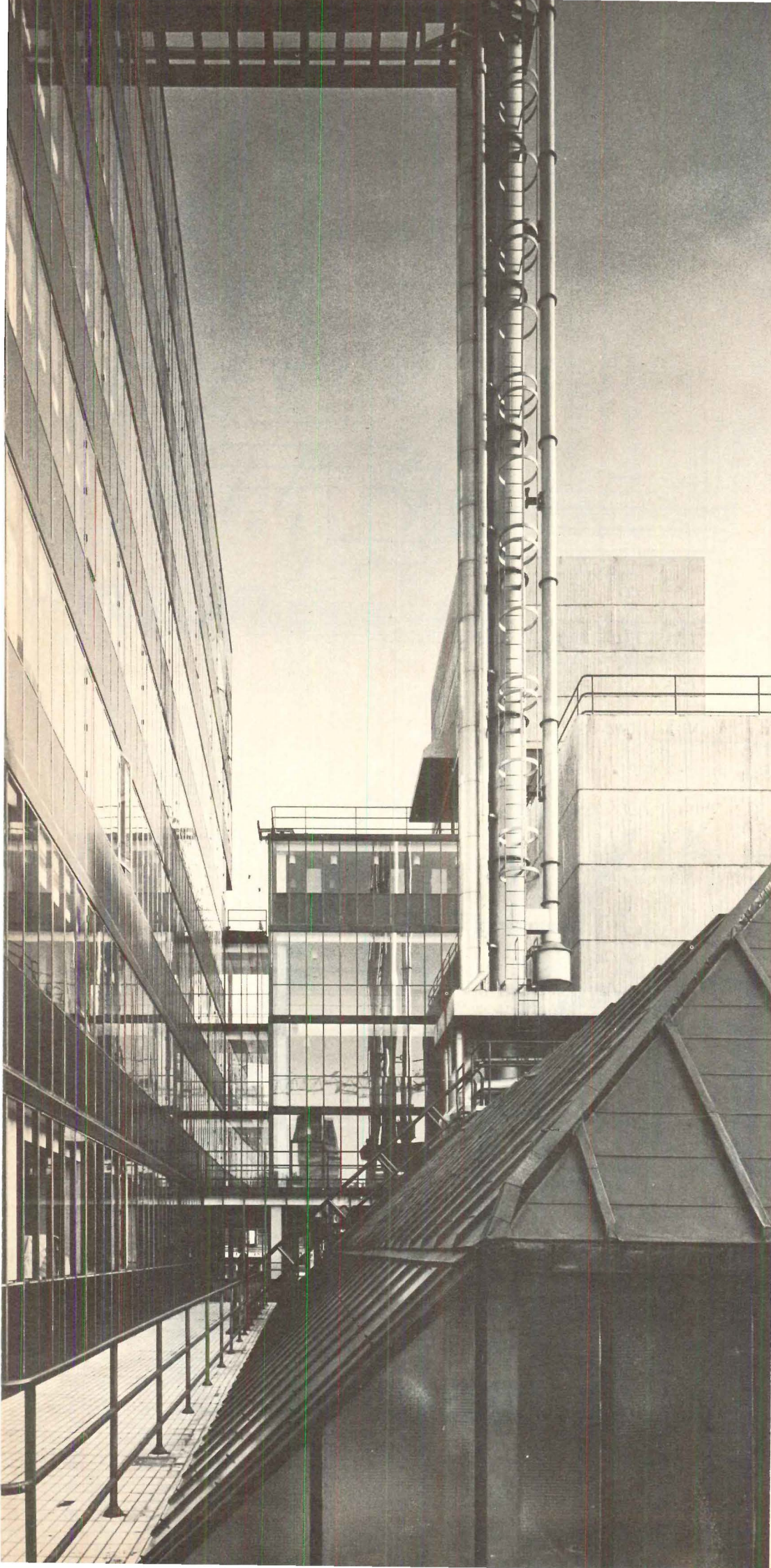
- SITE PLAN
- 1 tutorial block
 - 2 entrance
 - 3 laboratories
 - 4 lecture theater



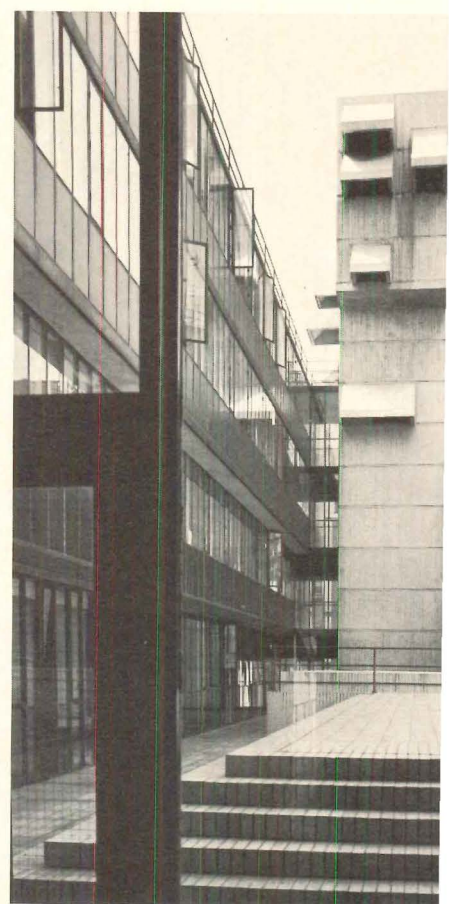
AXONOMETRIC SHOWING CIRCULATION



AXONOMETRIC FROM NORTH



Strength of bronze allowed use of very thin mullions, at a cost less than that of aluminum. Tiled dance deck, below, is on dining room roof. Terraced tutorial block is shown on facing page.



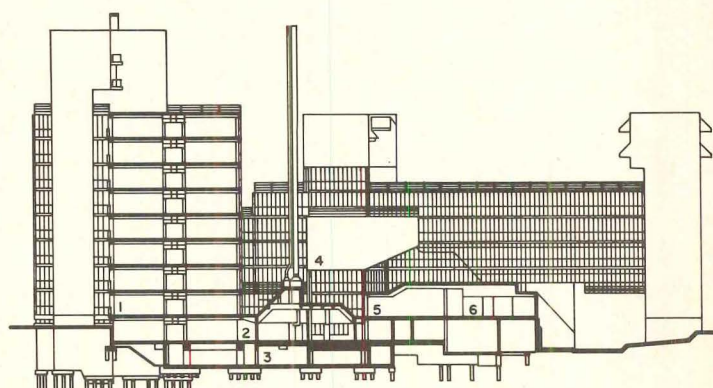
Spectacular solution for restricted site

height of the entrance node, coupled with its extensively glazed walls, metal pipe railings and white interior walls, gives an effect of extraordinary spaciousness, light and air to an otherwise relatively small space. Functionally, the space is further extended; a second-level bridge leads to a small outdoor terrace, and further on, it leads to a large two-level terrace on the roof of the dining wing.

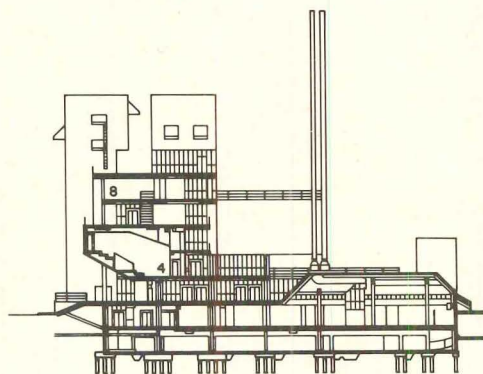
In the tutorial wing, the first floor is occupied by the student and staff commons rooms, and the floors above contain tutorial and seminar rooms. With each level except the top one successively stepped back in accordance with the zoning restriction, four additional, long, terracelike balconies have been created that are actively used for reading and study during the warmer months.

In the eight-story laboratory block, the setting back of one section, as required by the building-axis orientation, provided the opportunity to shorten corridors and to modulate the exterior mass of the largest portion of the building. In this block, all mechanical, electrical and plumbing distribution comes from the corridor ceilings into the individual laboratories.

The two auditoriums—one seating 200, and the other 75—are designed for what the architects call two-way acoustics—a speaker in any part of the room can be heard in all other parts of the room without any electrical aid. The architects pioneered this type of design earlier for the Wolfson Institute of the London Post Graduate Medical School; it has been par-



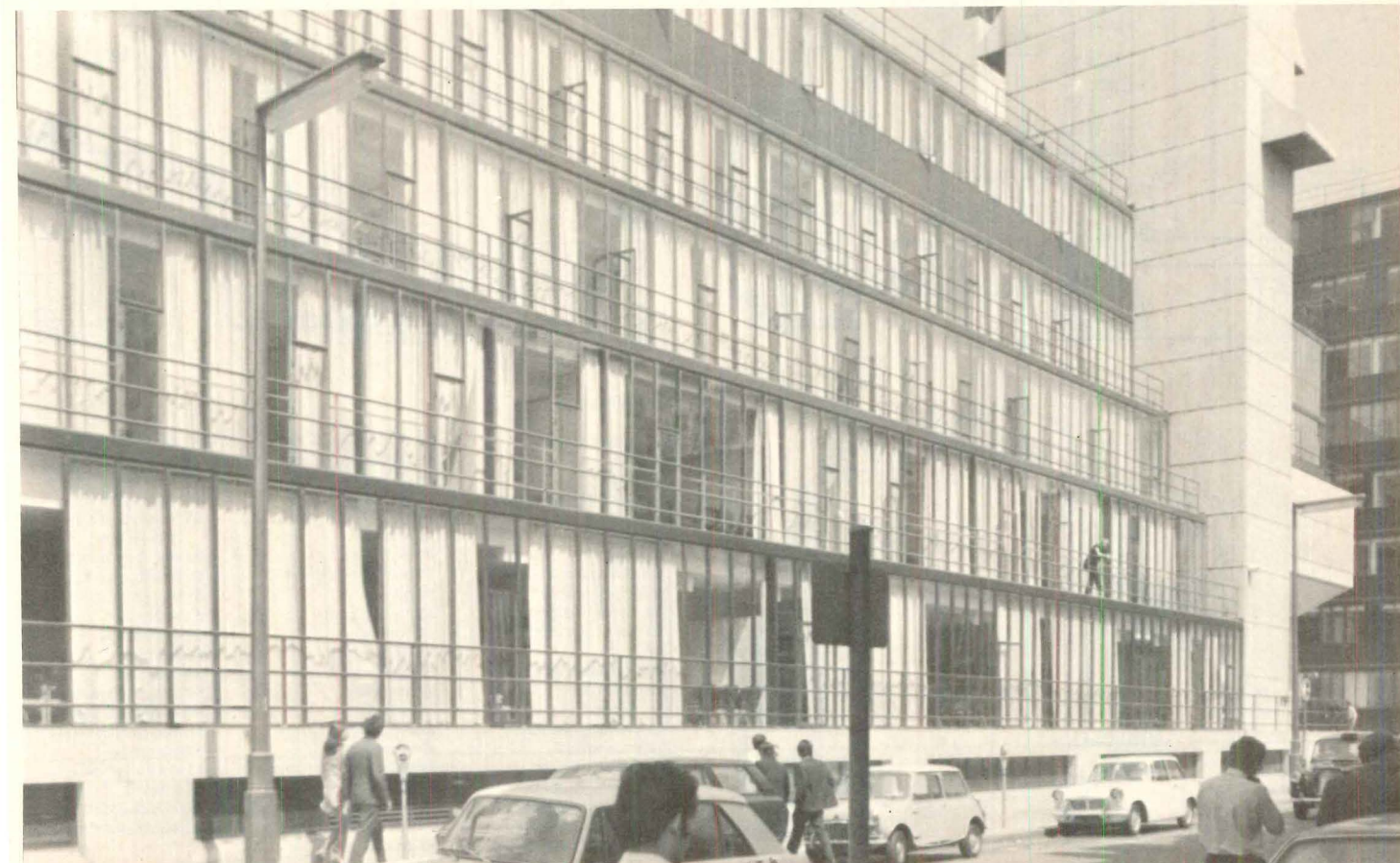
EAST-WEST SECTION

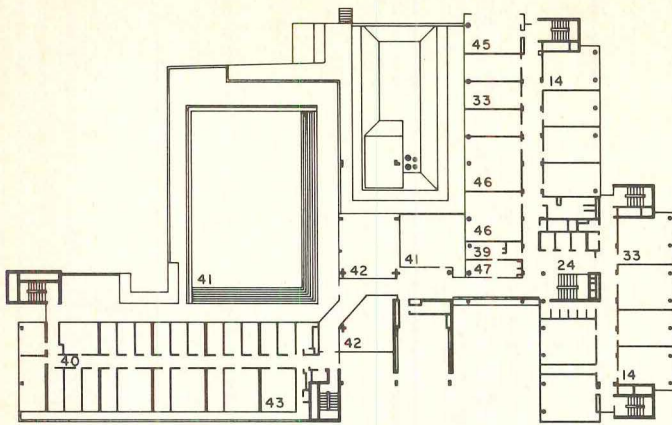


NORTH-SOUTH SECTION

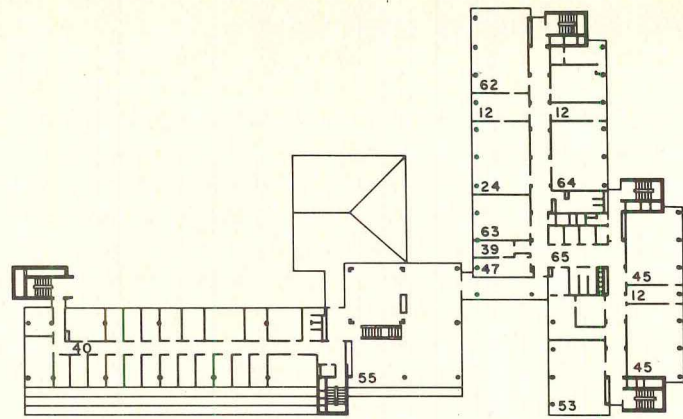
Legend

- 1 laboratories
- 2 thermodynamics
- 3 parking
- 4 lecture theater
- 5 dining room
- 6 kitchen
- 7 fluids laboratory
- 8 library

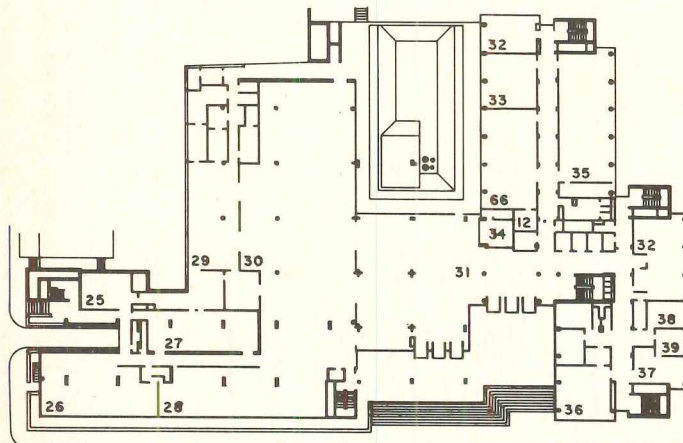




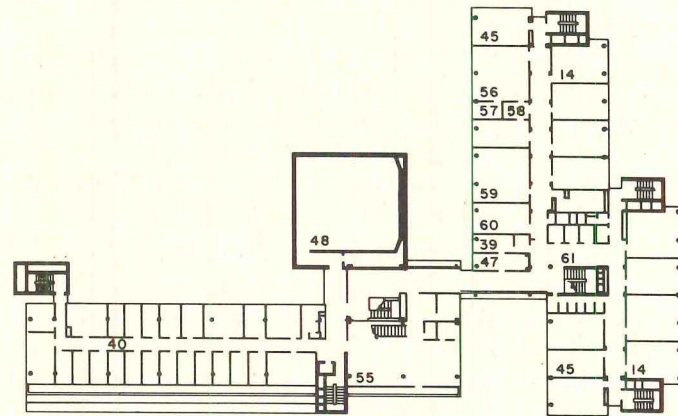
SECOND FLOOR PLAN



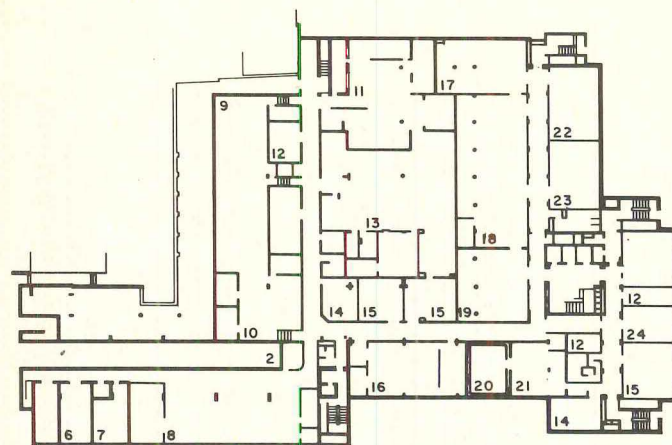
FIFTH FLOOR PLAN



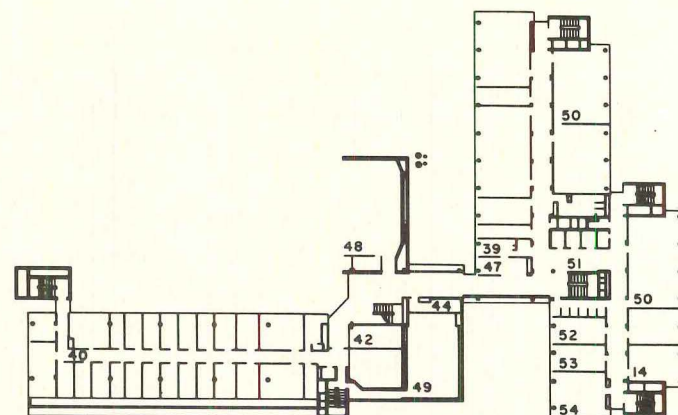
FIRST FLOOR PLAN



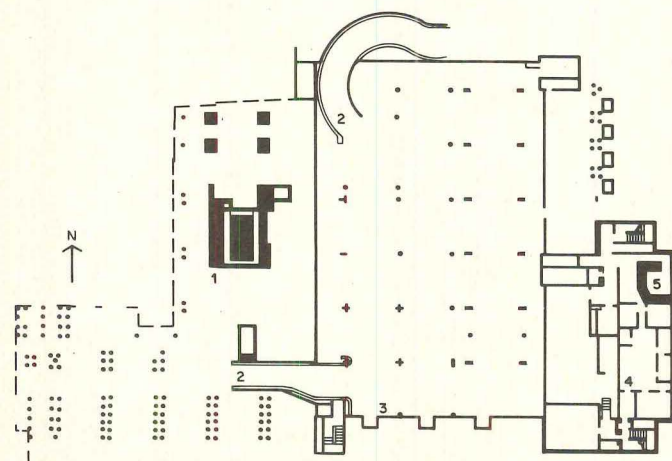
FOURTH FLOOR PLAN



BASEMENT PLAN



THIRD FLOOR PLAN



SUB-BASEMENT PLAN

Key to plans

- | | | |
|---------------------------|-----------------------------|----------------------------------|
| 1 machine bases | 24 electrical department | 47 departmental head |
| 2 ramp | 25 private dining room | 48 large lecture theater |
| 3 parking | 26 staff common room | 49 small lecture theater |
| 4 radioactive laboratory | 27 staff dining-room | 50 drawing offices |
| 5 cobalt 60 unit | 28 students common room | 51 mechanical drawing department |
| 6 transformer | 29 kitchen | 52 electron microscopes |
| 7 telephone | 30 dining-room | 53 physics project |
| 8 machine tool laboratory | 31 entrance concourse | 54 vacuum science |
| 9 fluids laboratory | 32 general | 55 library |
| 10 machine laboratory | 33 project room | 56 computers |
| 11 thermodynamics | 34 bookshop | 57 engineer |
| 12 store | 35 electronics | 58 supervisor |
| 13 materials laboratory | 36 board room | 59 calculating machine |
| 14 classroom | 37 principal | 60 analogue computer |
| 15 research | 38 registrar | 61 mathematics department |
| 16 metrology laboratory | 39 secretary | 62 magnetism |
| 17 transmission | 40 tutorial rooms | 63 electron physics |
| 18 electrical power | 41 terrace | 64 optics |
| 19 electrical machines | 42 open well | 65 physics department |
| 20 anechoic chamber | 43 technicians' common room | 66 telecommunications |
| 21 acoustics laboratory | 44 lecture theater store | |
| 22 electrical technology | 45 general | |
| 23 electrical measurement | 46 lecture room | |

Spectacular solution for restricted site

ticularly successful for lecture theaters where, even with amplification, one usually hears only the voice from the speaker's podium.

The decision to use a mechanical ventilation system with sealed glazing throughout the building, except in the tutorial wing, lowered costs because only one workable window had to be provided for each room to meet fire regulations. The glazed facades are based on a 2-ft module using a milled manganese bronze hollow section with expansion joints at 6-ft centers. The bronze was actually 10 percent less expensive than aluminum would have been because its greater strength allowed use of very thin mullions.

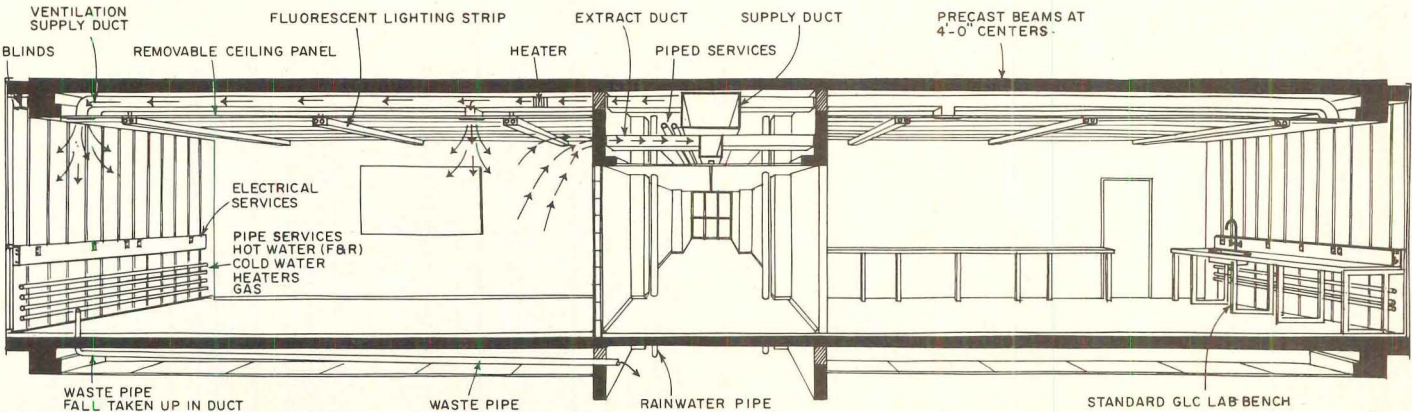
One final expense, which raised the total cost of the complex, was the construction of a public house to the rear of the laboratory block. When the college acquired the site, one of the many regulations required relocating the existing pub or else compensating the owner. This final restriction on the site did not become a problem to the architects; they simply included a pub in their plans and this, like the other problems, was turned into an asset for the benefit of the school. [DM]

Data

- Project:** Polytechnic of Central London, College of Science and Engineering, London, England.
- Architect:** Lyons, Israel, Ellis Partnership in conjunction with Michael Powell, I.L.E.A., chief architect. Tom Ellis, partner in charge.
- Program:** a new facility for an engineering and science college, organized so that all spaces could be used 80 percent of class hours, for 1000 students, with a total floor area of 160,000 sq ft.
- Site:** high density, mixed use urban block, irregularly shaped site in Central London with numerous planning restrictions.
- Structural system:** laboratory block of composite frame structure; tutorial block of reinforced cast in place concrete frame and precast prestressed beams; elevator towers, duct towers and lecture theaters of reinforced cast in place frame.
- Mechanical system:** oil fired boiler, convector heaters; plenum mechanical ventilation system.
- Major materials:** concrete frame and rough-board-marked panels, glazing and bronze spandrels set in bronze mullions, white plaster walls, cream colored tile on exterior surfaces.
- Costs:** Equivalent to \$4.5 million, or \$20 per sq ft.
- Consultants:** Edward Pearce & Partners, mechanical; F.J. Samuley & Partners, structural.
- Photography:** Brecht-Einzig.



Main circulation core rises through three floors and connects all parts of building through a series of suspended bridges, above. Auditorium, designed for two-way acoustics, below.



Distribution of services.

Blueprint storefront

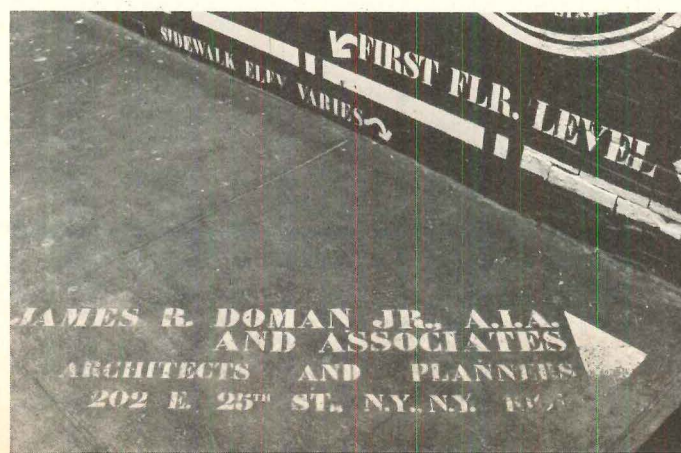
The biggest, brightest, most obtrusive neon sign may be the most noticed, but the sign on East 25th Street tells a lot more about the people in the building and what they do

James Doman and Associates is a firm of young architects and planners working mostly for the black community—housing, commercial facilities and day care centers. Much of the programming for their work involves talking with and observing the lifestyles of various groups because of a commitment to understand values and attitudes, and to design facilities which are appropriate to these needs. Doman, a contributor to the show of Black American Architecture sponsored by the New York Chapter of the AIA in May 1970, feels strongly that the black architect's education in a white man's world is in many ways limiting, and it is difficult for the black architect to break out of a white tradition and to find an expression for his own culture.

The building occupied by this group is one example of their commitment to the community. Their first concern was to make themselves known—who they are and what they do—to the residents of their street. Second was to tell the people just what was happening to the building which they had decided to alter after being there close to two years. The blueprint façade, designed by associate Glean Chase, solves both problems. The reactions range from amusement to anger, but most enjoyable for the architects are those people who are prompted to come in off the street to see what is going on. [SLR]



Detail photos (right) show the type of information written on the façade. Sign on sidewalk (below) is the only place amidst all the writing that the name of the firm appears.



Terraced city hall

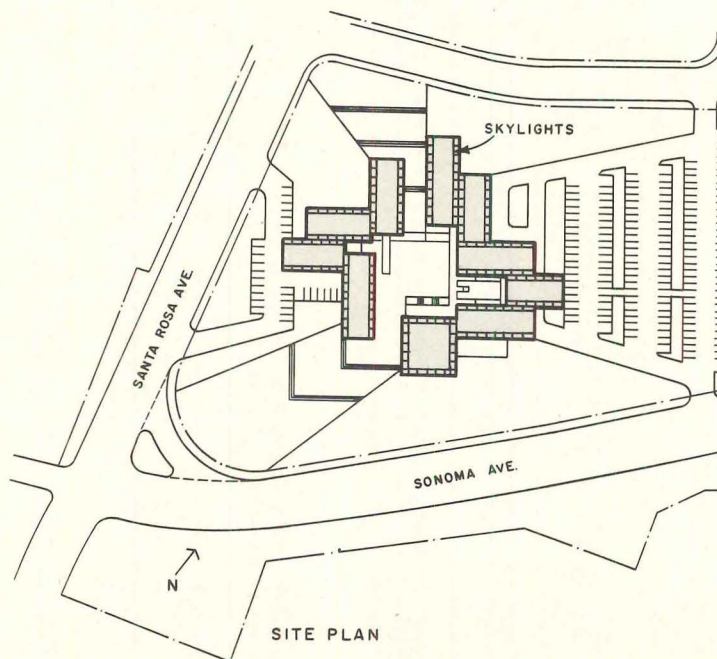
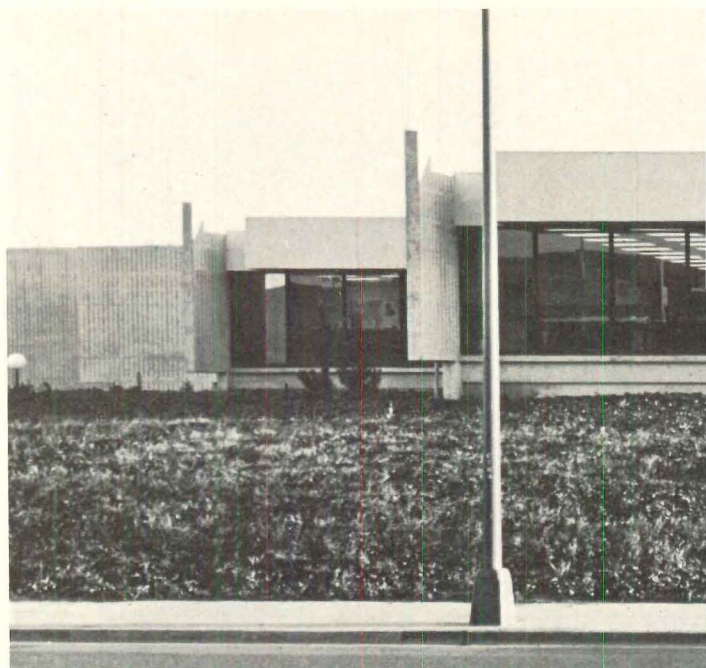
As part of its urban renewal program, a small city in California has completed a new civic center that is situated on various levels for easy future expansion

Although Santa Rosa, only an hour's drive north of San Francisco, was founded just over 100 years ago, its real growth began in the 1930s with the opening of the Golden Gate Bridge. After that, it took just a little over 40 years for the city to outgrow itself, as its population rose to 42,000 by the 1970s. But as early as 1950, officials in the city government realized that the old central business district could no longer adequately serve the community, and at that time plans were formulated for taking over 60 blighted acres adjacent to the downtown area for urban renewal. The area was to include new transportation, tourist, convention, cultural, shopping and business centers; 7 acres of the site were to be given over to the new civic center.

If it is unusual for a building to be constructed exactly as originally designed, it is almost unheard of that this happen when the client is a governmental agency. But that is what happened with the Santa Rosa Civic Center. A competition was held and the winning project, selected from 75 submissions, was the design by the San Francisco firm of DeBrer/Bell/Heglund & Associates. The entire civic center was constructed precisely as it was presented in the original scheme, except for a change of the seating arrangement in the council chamber.

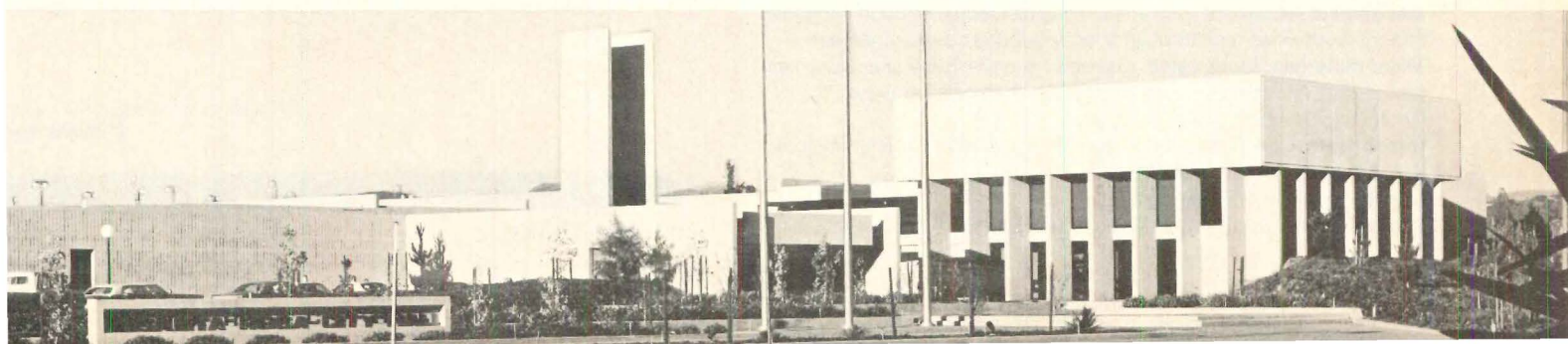
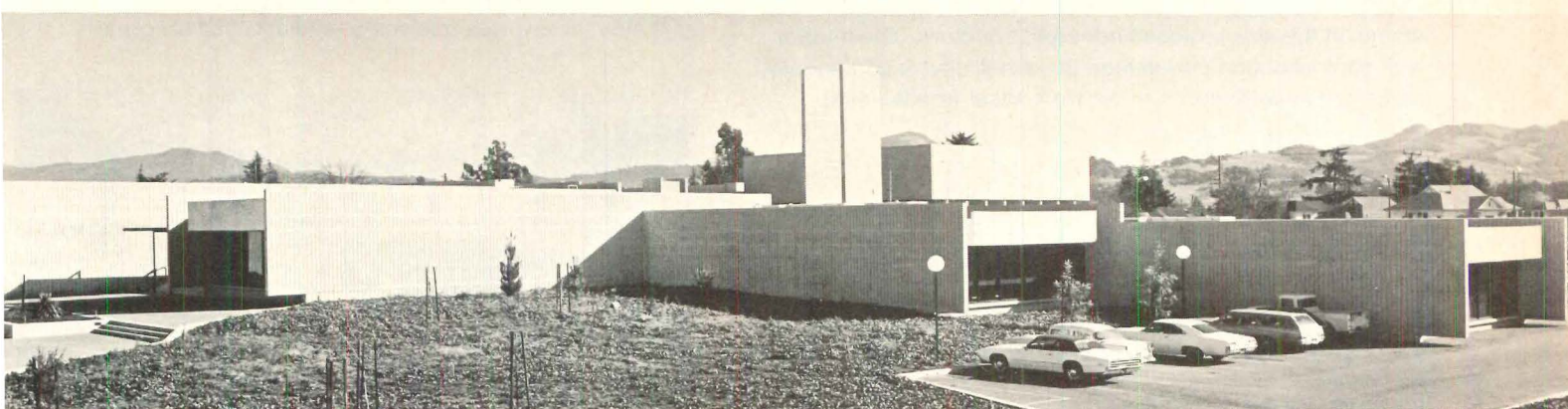
The 10 one-story wings surrounding a spacious courtyard house all city offices, including those for the mayor and his aides, plus the city bureaus of purchasing and finance. Also included are the departments of public works, building and fire prevention, recreation, planning and police. The building is constructed of reinforced concrete frame, with steel truss roof and poured in place concrete walls that have been sand-blasted both inside and out. While the extensive use of concrete often imparts a "heavy" feeling to a building, the center is surprisingly light and airy inside, for many of its outside walls and all of its courtyard façades have been extensively glazed with bronze solar glass. The interior is further brightened naturally by 1500 linear feet of continuous skylights running along the edges of each wing.

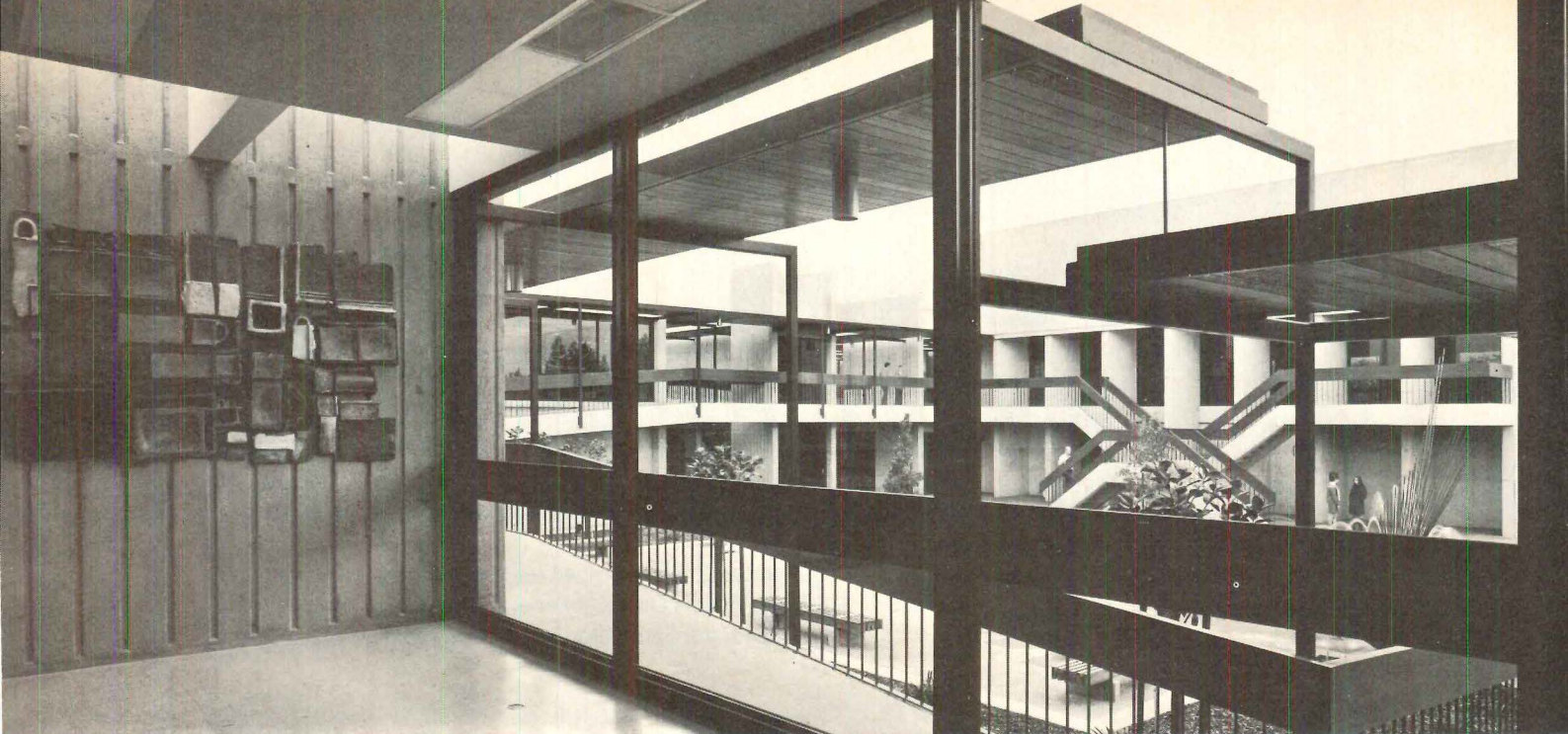
One problem the architects had to face was the preselected





On 7 acres of a large urban renewal site, the 10 wings of Santa Rosa's Civic Center are arranged on different levels around central courtyard. Plan leaves room for expansion.





Terraced city hall

site, which was completely flat and devoid of natural interest after the urban clearance operations had been finished. This ultimately turned out to be a blessing in disguise because it allowed the architects to modulate the land into various levels for the different wings of the center, and to create a design concept that totally encompassed the entire site. Identity and importance were given to each department by staggering the different wings on ascending levels around a central court. This scheme imparts richness and variety to the whole complex, and it also allows the future independent expansion of each wing, as required in the original program, so the center can increase by half again its present size. For the city itself, though, the grading provides the greatest advantage because it helps to obscure the on-site parking of more than 200 cars.

Throughout the interior the center has been simply, yet handsomely, appointed in warm colors so that the focus remains on the airy, exposed concrete structure. The interior, with sophistication uncommon in a small city, is additionally embellished with works of art from local artists. [DM]

Data

Project: Santa Rosa Civic Center, Santa Rosa, Calif.

Architect: DeBrer/Bell/Heglund & Associates.

Program: a city hall of 48,000 sq ft including adjacent surface parking for 200 cars, plus plans for phased expansion of an additional 24,000 sq ft.

Site: 7 acres in a 60-acre urban renewal site adjacent to the central business district.

Structural system: reinforced concrete frame, poured in place concrete walls, steel truss roof system.

Mechanical system: heating and cooling distributed through integrated ceilings in all wings, and through floor in stepped council chamber.

Major materials: sandblasted, exposed concrete frame and walls, steel roof trusses, concrete foundation and floor, bronze solar glazing.

Costs: \$1,711,000, \$30 per sq ft.

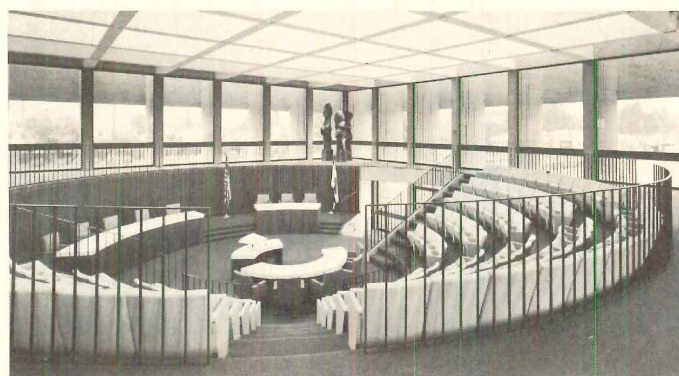
Consultants: Leland Noel, landscape; Yanow and Bayer, mechanical; GFDS Engineers, structural.

Client: City of Santa Rosa, Calif.

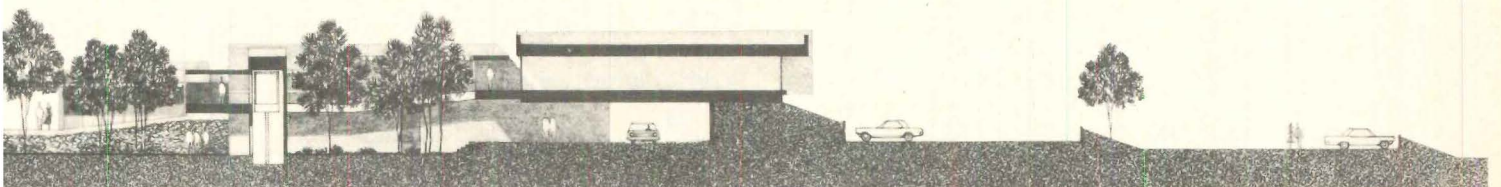
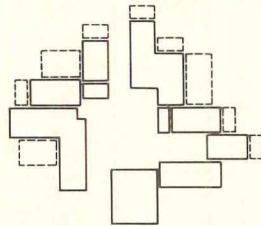
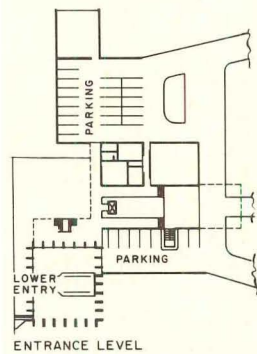
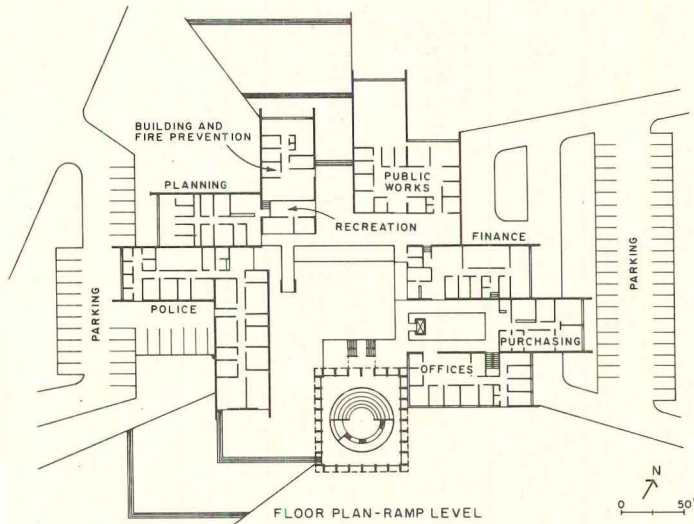
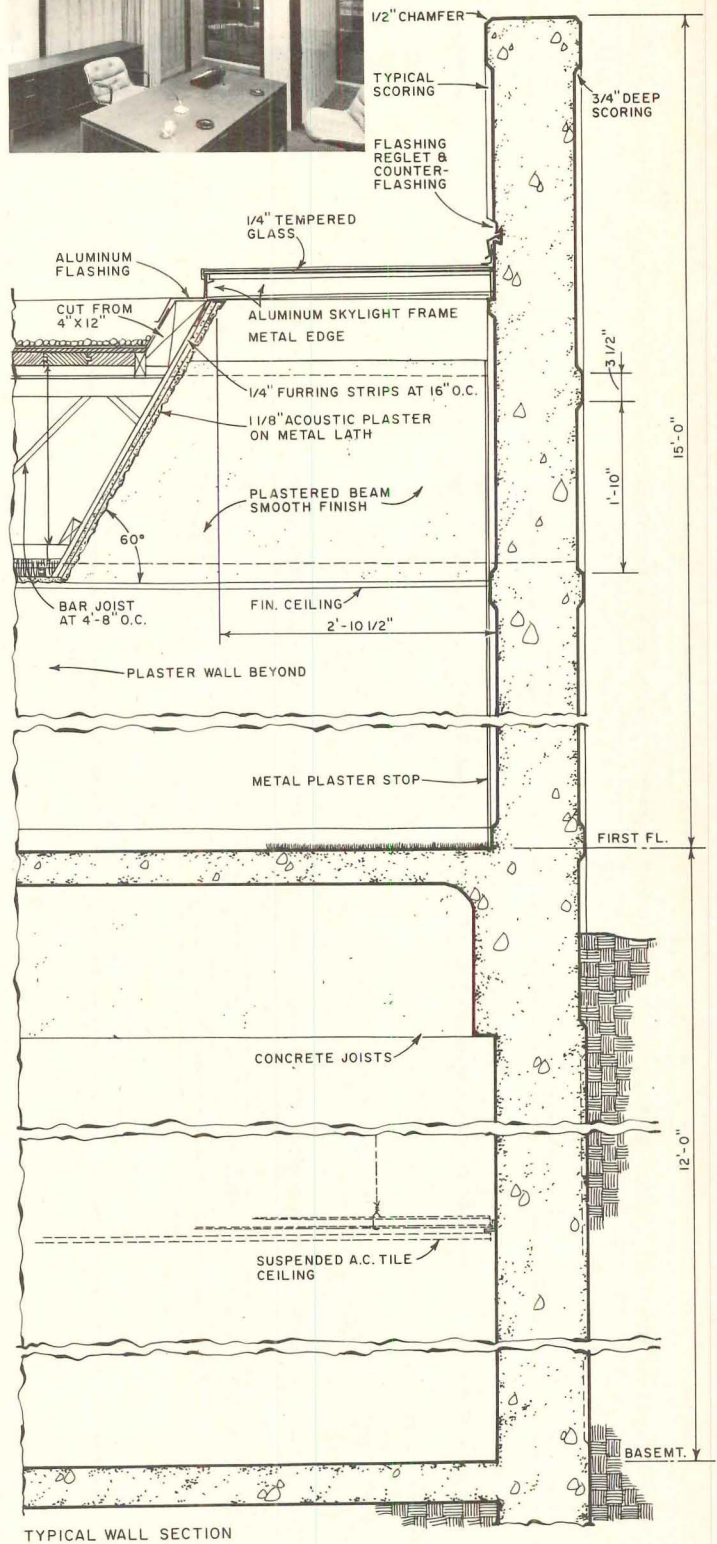
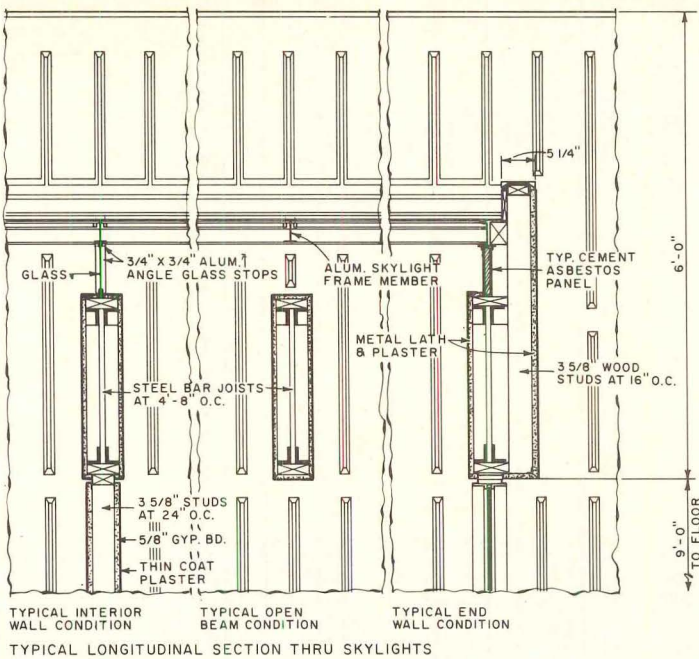
Photography: Ernest Braun, exteriors; Barbeau Engh, interiors.



Perimeter skylights and extensive bronze solar glazing flood interior with light. Circular seating in the council chamber, below, was sole design alteration in final plans.

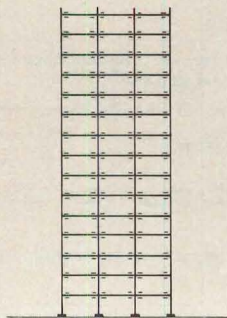


WEST-EAST SECTION



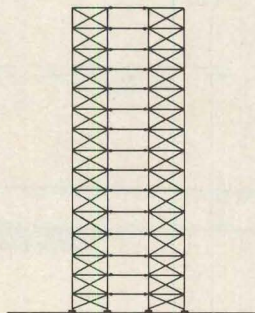
Drift in high-rise steel framing

John B. Scalzi



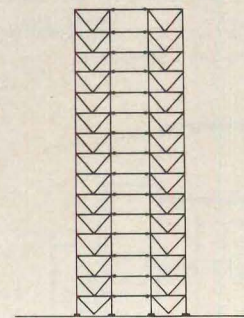
Wind connections

One of the early steel framing systems used to support gravity and wind loads is the technique of designing the girders for the full gravity loads and providing sufficient beam-to-column connections to resist the bending moments caused by the portal action of the frame when subjected to lateral loads. The end fixity thus provided to the girder is ignored in the selection of the girder size. Buildings of this era of designing with moment connections usually had reinforced concrete for protection of beams and columns, poured concrete floors, full story height heavy partitions and generally heavy curtain walls. These extra supporting components contributed to a reduction of the drift of the frame.



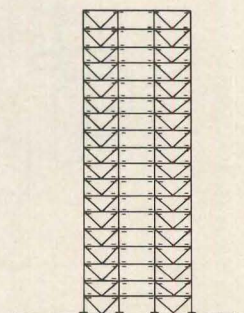
Diagonally braced bents, shear connections

Because the height of a building was limited by drift of the portal frame action, the next step was to develop the diagonally braced bents to resist the lateral loads on tall buildings. The truss action of the bent eliminated the bending in the columns and kept the drift value for greater heights of buildings within desirable limits. All connections of girders and diagonals are simple connections thus making fabrication and erection more economical than comparable moment connections for the same frame. The number of frames to be braced depends upon height and wind loads.



K-bracing, shear connections

Economies of direct loads in all members of the diagonally braced framework also lead to greater drift control by shortening the diagonals into a K-type bracing system. The shorter length of the K-type diagonals produces less elongation, and therefore less drift for a specific height. As a result, a taller building can be achieved on a given plot of ground.



K-bracing, moment connections

In order to achieve a stiffer structure, the beam-to-column connections may be made moment resistant, thus extending the aspect ratio of the building to a greater value. The plastic design concept uses the combined braced and portal frame configuration to achieve economies in material for certain buildings which do not have drift limitations. The dual structural system of plastic design effectively supports the gravity loads by portal frame action and resists the lateral loads by the rigid K-braced bays.

In this article the author presents a review of structural steel framing systems in which control of drift had a dominant effect on the resulting building skeletons

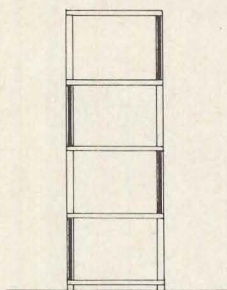
A prime motivating force behind the surge of taller high-rise buildings has been the need to satisfy demands for more office and apartment spaces. As buildings are built to greater heights, the aspect ratio (height/width) becomes larger making drift a major consideration. Economics of materials and labor have disrobed the building of its supporting components thus placing the burden of resisting all lateral movement on the structural frame.

To meet the challenge of satisfying architectural functions

as well as drift requirements, the consulting engineer has had to rely on his knowledge of advanced structural theories to develop new and varied framing systems. With the aid of the computer, he has been able to produce new framing methods that are uniquely efficient and economical.

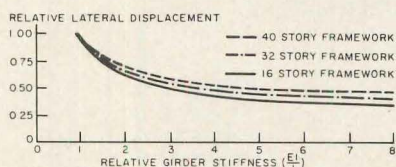
A general review of the various steel framing systems that have evolved to meet the challenge of greater building heights is presented for preliminary design considerations.

Author: John B. Scalzi is in the Research and Technology Department, United States Department of Housing and Urban Development.



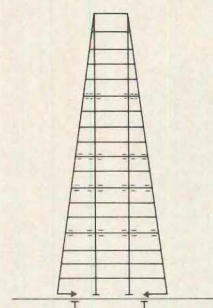
Staggered truss

A unique variation of the braced bent is the staggered truss system developed by the departments of architecture and civil engineering at MIT. The basic principle is the action of a trussed frame under lateral loads which practically eliminates the bending moments in the columns. Although the trusses do not lie in one plane, two adjacent trusses are considered to behave as one by the shear diaphragm action of the floor system. The floor must be capable of transferring the shears from the bottom chord of one truss to the top chord of the adjacent truss. As a result, the two adjacent frames may be considered to act together to calculate the drift of the building due to wind loads.



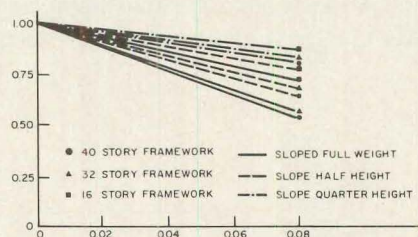
Lateral loads

Computer studies of a 40-story, 3-bay rectangular frame subjected to lateral loads indicated that increasing the column stiffnesses does not reduce the drift of the frame an appreciable amount. On the other hand, increasing the girder stiffnesses a small amount indicated an appreciable reduction in the lateral displacement of the frame. The study indicated that the reduction became asymptotic at a relative girder stiffness of approximately four. The optimum value of girder stiffness for economy appears to be in the vicinity of $1\frac{1}{2}$ to 2 where the slope of the curve begins to flatten out to the asymptotic value. The same general behavior was observed for a 16- and 32-story rectangular frame. The results indicated that it is more efficient to increase the girder stiffnesses than the column stiffnesses and that beyond a relative girder stiffness of approximately 2, a change in the geometry of the frame is advisable.



Tapered frame

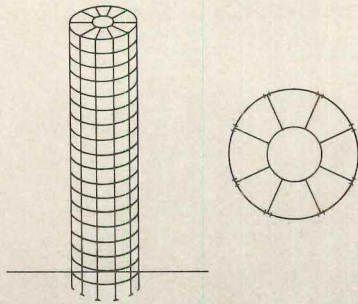
Most recent conceptual change in the geometry of a frame to reduce drift is the idea of sloping the exterior columns a slight amount. This technique enables a designer to build a higher building than a comparable rectangular frame for the same volume. The slope of the columns need not be too great to appreciably reduce the relative lateral displacement of the frame.



Height of slope

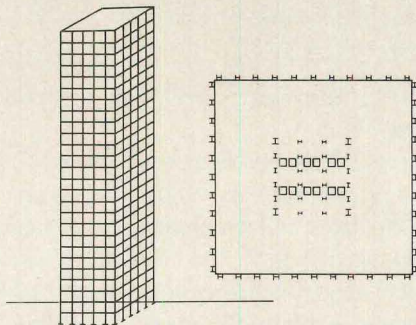
A computer study of three building heights of 16, 32 and 40 stories with 3 bays varying the sloped height from a quarter, to half and full height indicated that the greatest benefit resulted from the full height sloped columns. The 40-story framework indicated the largest reduction in the relative lateral displacement because of its greater height. A slope of 8 percent in the exterior columns produced a 50 percent reduction in the relative lateral displacement for the 40-story building.

Drift in high-rise steel framing



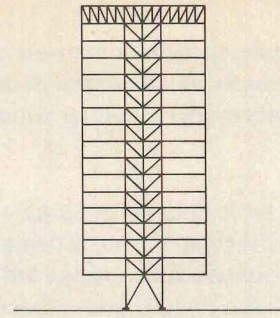
Circular framing

Another geometrical form of structural framing which is becoming more visible on the city skylines is the circular pattern of arranging the columns on the exterior face of the building. The spandrel beams are attached to the columns by moment resistant connections thus producing a three-dimensional or space structure. The rigidity provided by this configuration is likened to a tube with many openings, and as such it provides maximum stiffness to the structure. Another factor, not to be overlooked, is the reduction in the magnitude of the wind pressures permitted by building codes to $\frac{6}{10}$ or $\frac{8}{10}$ of the normal value for a circular building.



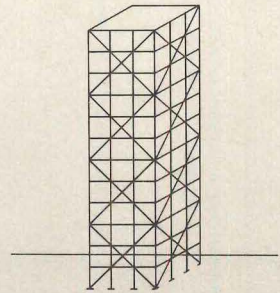
Square column pattern

A natural variation of the tubular concept for greater stiffness is the comparably stiff square pattern of arranging the columns. The exterior columns are usually spaced closely together to support most or all of the gravity loads and all of the lateral loads. The interior columns, when provided, assist in supporting their share of the gravity load but because of their location near the center of the tube they are not considered to participate in the resistance of the lateral loads. As in the circular pattern, the spandrels are rigidly connected to the columns in order to develop the three-dimensional behavior of the frame.



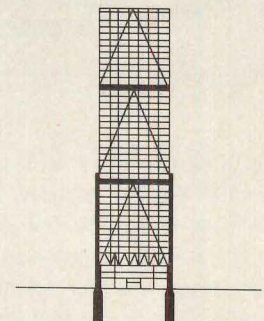
Core and suspended frame

For those buildings requiring an open court at street level, the concept of suspending the floors from a roof truss or space frame has evolved. The core may take one of the many stable forms of steel frameworks; such as a series of braced frames, if the building is rectangular in plan; or of a circular, or square core for the corresponding contour of the building. The core must resist all of the gravity and wind loads as if it were standing alone. The suspenders may be plates, rods or cables depending upon the number of floors to be supported and the type of connection to be made.



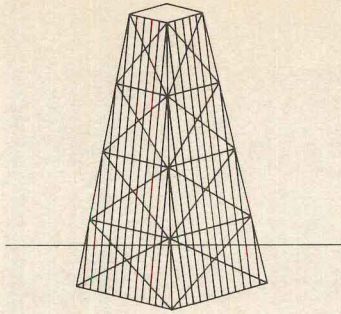
Trussed framing

When the aspect ratio of height to minimum width increases beyond the range of an economical consideration of a tubular type framework, the structure may be increased in stiffness by the addition of a truss system superimposed on the tubular frame. This combination of structural systems reduces the drift of the building to permissible values while permitting greater heights for the structural frame. As in the tubular concept, the exterior frame supports most of the gravity loads and all of the lateral loads. The spacing of the columns is essentially on the same basis as for the tubular concept. The size of the truss panels will vary with the proportions of the building.



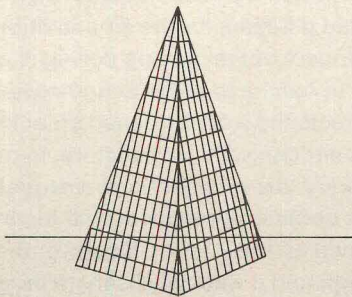
Trussed framing variation

The geometrical pattern of the truss system in a combined tubular and truss framework may vary according to the size of the building, the magnitude of the wind pressures and the architectural features of the exterior wall as influenced by the interior uses of the column-free floor space. With the aid of computers, many different configurations may be evaluated quickly for drift, vibration and total cost before making a final judgment. The structural efficiency of larger truss panels with diagonals or larger panels with K-type bracing may be easily studied by the currently available computer programs.



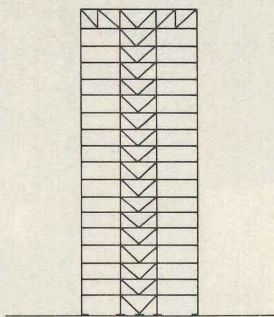
Inclined truss framing

For the exceptionally tall building with a very high aspect ratio, a combination of structural systems combined with sloping columns produces a structure which satisfies the architectural and engineering requirements. Drift and vibration may be kept within desirable limits by adjusting the column spacing, the truss configuration, and the degree of slope of the columns. Computers can play an important role in making the final selection of the structural system.



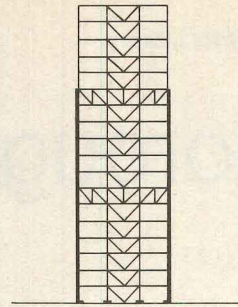
Pyramid framing

A variation of the truncated pyramid is the full pyramid. In this instance the sloped exterior walls are carried to a peak intersection. Although this configuration has not been used to any great extent, it does illustrate the advantage of combining structural systems and geometrical proportions to achieve a stiff structural frame, thus reducing drift and vibration due to lateral loads.



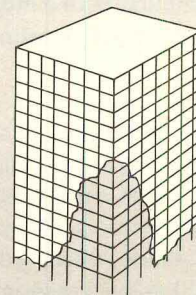
K-bracing tie downs

A relatively new concept of drift control has evolved which uses the technique of a cap truss on a core combined with exterior tie-down columns. The tie-downs are attached at every story and support gravity loads in addition to restraining the lateral movement of the frame. The action of the tie-down in conjunction with the cap truss restrains the bending of the core by introducing a point of inflection in the deflection curve when subjected to lateral forces. This reversal in curvature reduces the lateral movement at the top. The amount of reduction depends upon the relative stiffness of the core, cap truss and size of tie-downs.



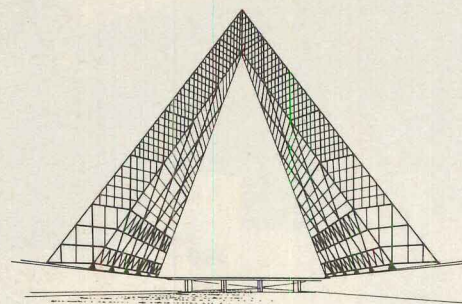
Cantilevered truss with tie down

A variation of the cap truss and tie-down concept is the idea of placing the stiffening trusses at various crucial locations in the height of the building. These stiffening trusses at intermediate height locations will perform the same function as the cap truss. Placed at such locations as the one-third, half or three-quarter height of the building, the stiffening truss floor also serves as the mechanical equipment floor. The amount of drift reduction is affected by the location, number and relative stiffnesses of the various components of the structure.



Shear resistant walls

A method to control drift of a building, yet not fully developed, is the concept of a shear resistant exterior skin covering. Although exterior structural frames may be designed as Vierendeel trusses, the curtain wall is neglected in the calculation of the deflection of the building. The assumption that the curtain wall does not contribute to the stiffness of the frame is based on the fact that most curtain walls are relatively light compared with the structural frame. Steel plate curtain walls have been used in several buildings and can be shown to assist in reducing the deflection of the frame. As studies progress, the curtain wall may soon be shown to resist gravity loads as well as lateral forces.



Omnibuilding

To serve the future population growth and the decreasing land surrounding our urban areas, Architect Stanley Tigerman has suggested an instant city (omnibuilding) over rivers or highways exploiting the air rights in order to provide man with more space for habitation. A structure of these proportions, 600 ft along the base of the pyramid and extending vertically to a point, can easily house an entire community. The stiffness of the structure is inherent in the size and geometry of the framework, thus resulting in little lateral movement or vibration.

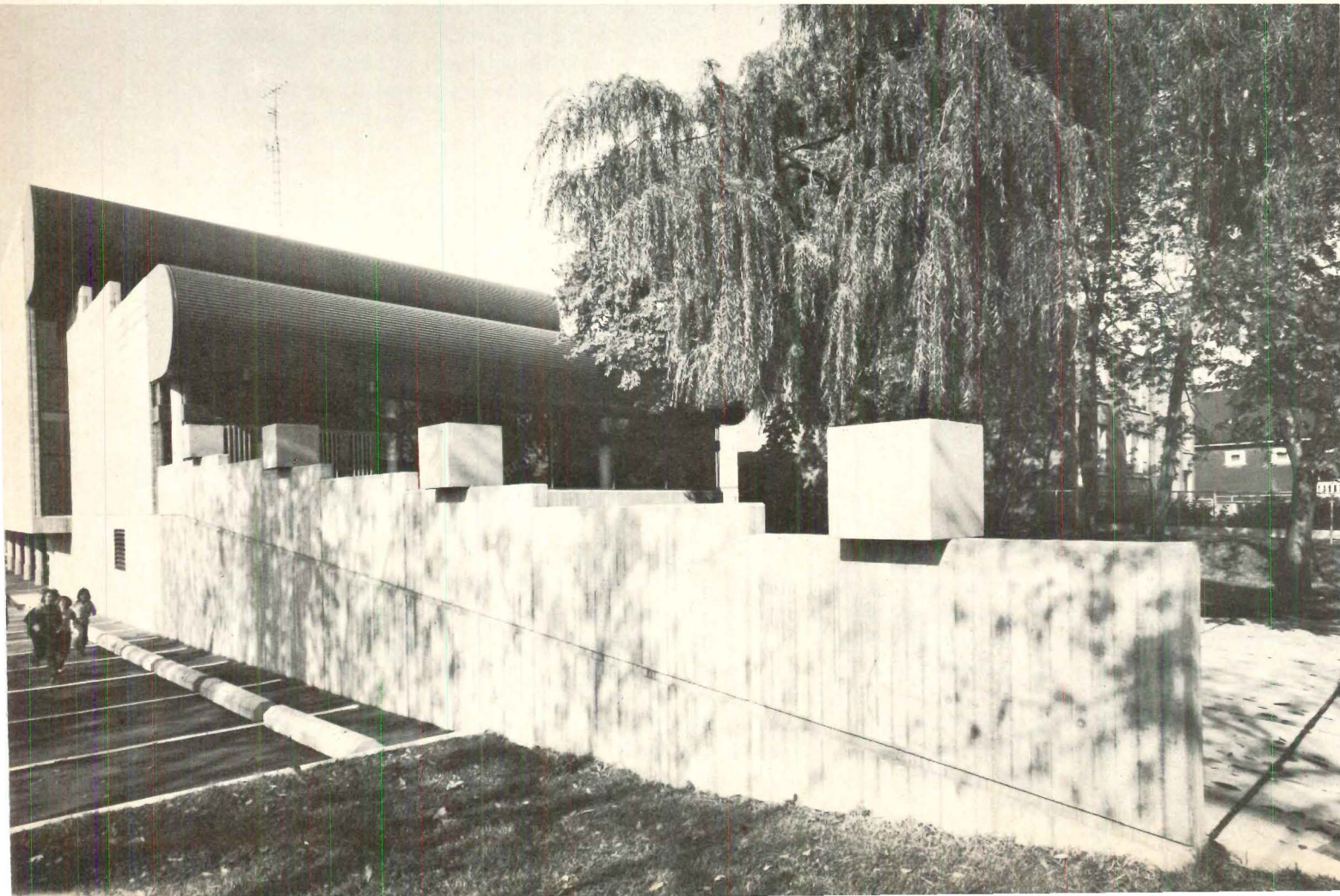
Scarborough's books

A curving red metal slat roof spanning two parallel block walls forms the enclosure of a multilevel facility for books and for the people who read them

Sited on a narrow strip of land between a shopping center parking lot and a low-rise apartment building, the Albert Campbell District Library is an introverted, top-lighted, multileveled structure that serves as a regional library for the town of Scarborough, Ontario. Designed by architects Fairfield DuBois of Toronto, the main resource area is one large open space on two levels. The dominant element of this space is the curving acoustical metal slat ceiling painted a red lead color which was chosen by the architect for its industrial

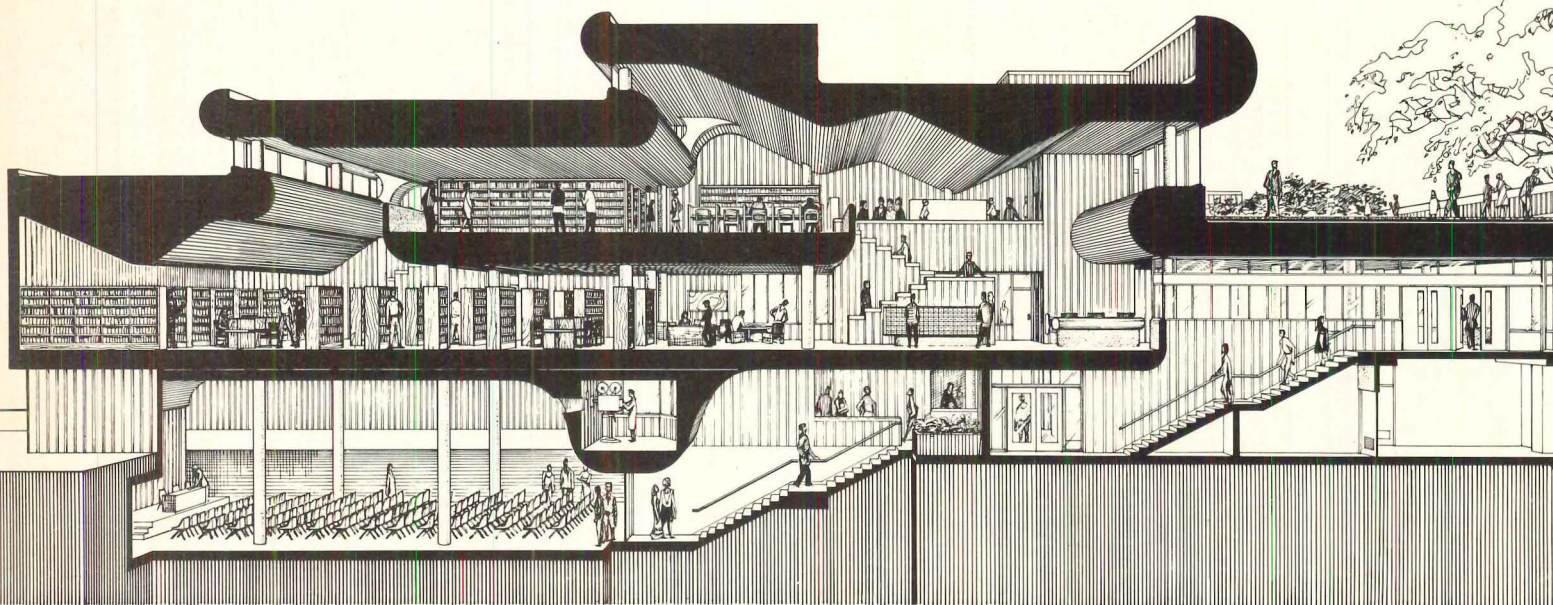
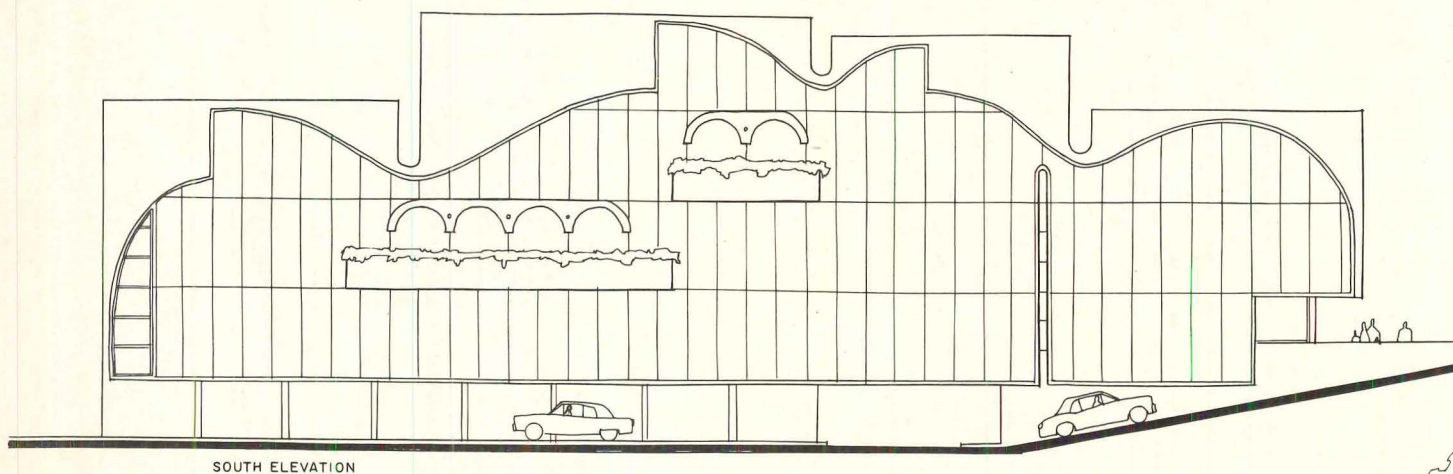
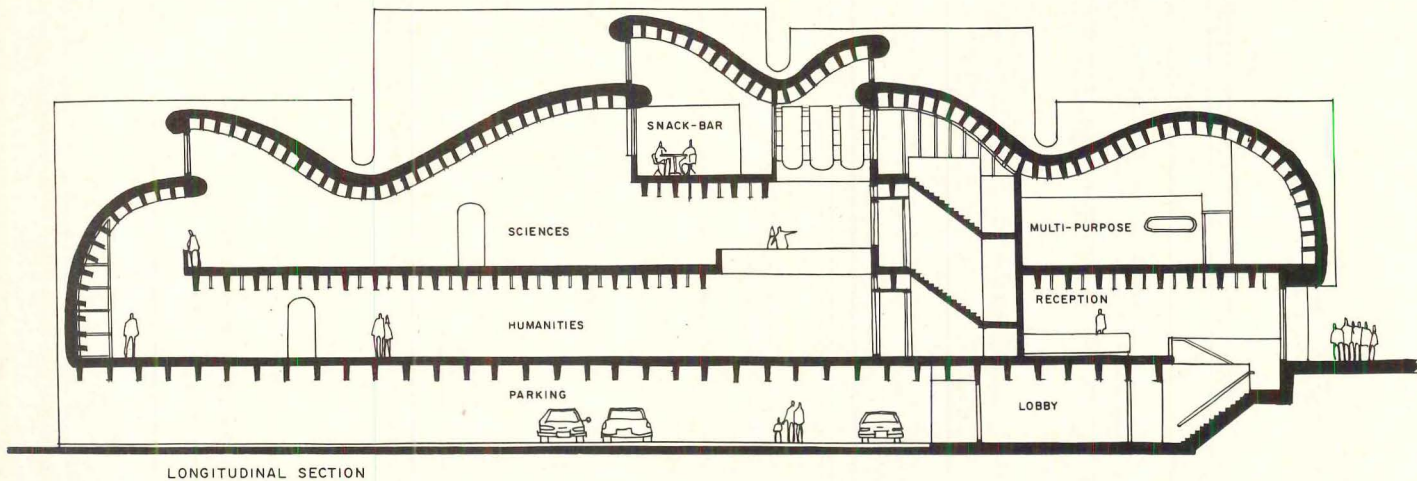
connotations and its warm contrast with the cool gray block. Integrated into the ceiling are fluorescent lighting fixtures as well as grilles and diffusers for the air conditioning system.

The visual concept of the curving ceiling is an influence from the works of Aalto and other Scandinavians which DuBois feels affects the work of Canadian architects more strongly than American style architecture. In preliminary plans for the library, the architect had designed the ceiling and roof as one continuous element with the mechanical system to be exposed on the interior. Costs for the exposed system were too high and it was necessary to modify the ceiling to allow for the inclusion of lighting and air conditioning ducts in the ceiling structure and use a standard built-up roof on the exterior. In an effort still to express the idea of a curving plane





Given a constricted site, the building is long and narrow with parking on one side. The tree and small grass area were preserved as the only available place for outdoor landscaping.



Data

Project: Albert Campbell District Library.

Architects: Fairfield DuBois; Macy DuBois, partner in charge of design; Erdmann Knaack, design assistant.

Program: district library, with a study capacity for 102, audiovisual facilities, multipurpose auditorium, multimedia collection of 150,000 items. Building to serve also as a community center with meeting rooms, films, snack bar and terrace.

Site: Scarborough (Toronto), Ontario, Can.

Structural system: reinforced concrete with 12" x 12" concrete block facing sealed with silicone.

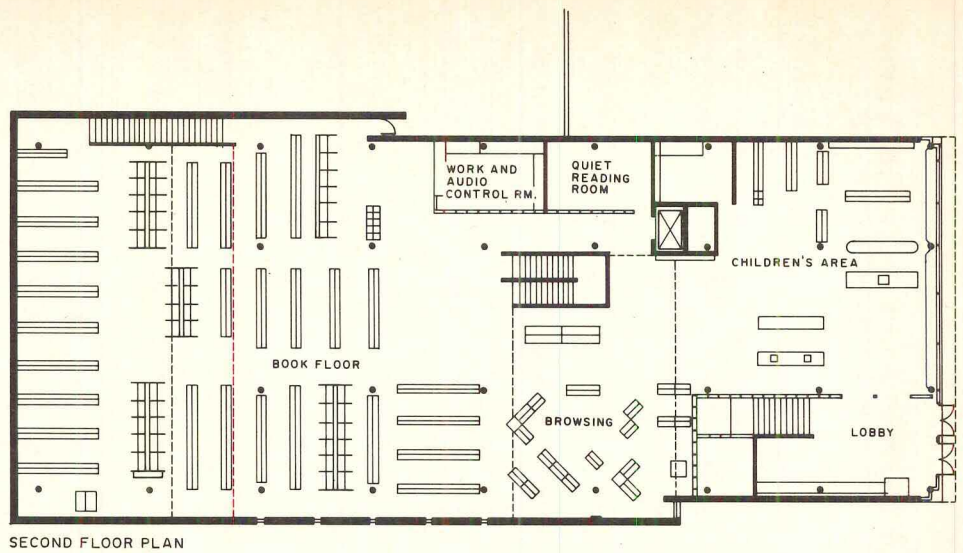
Mechanical system: electric force flow units.

Major materials: concrete block, metal slat fascia on exterior; carpet, wood, concrete block and metal slat ceiling, interior.

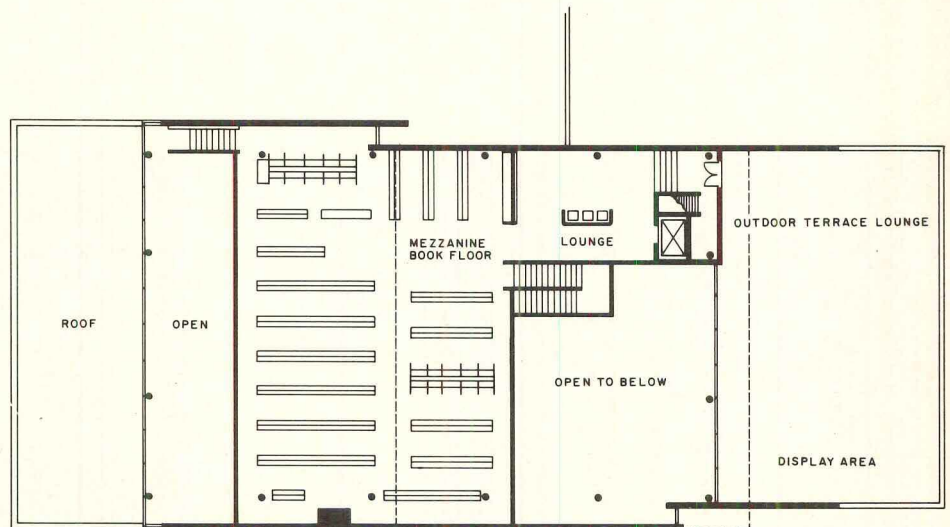
Costs: \$23/sq ft (building). Interiors contract \$84,000 (Canadian).

Consultants: interior designer, Sally DuBois; mechanical, G. Granek and Associates Limited; structural, Cazaly-Otter Associates.

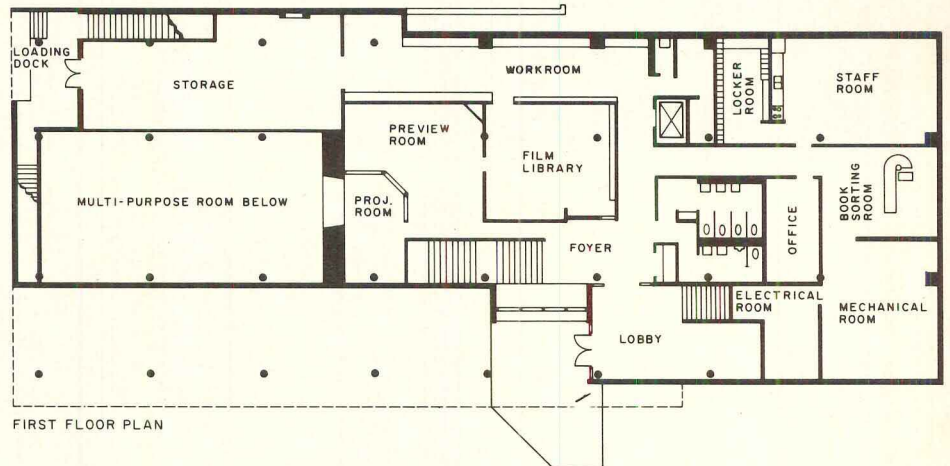
Photography: Robert Perron.



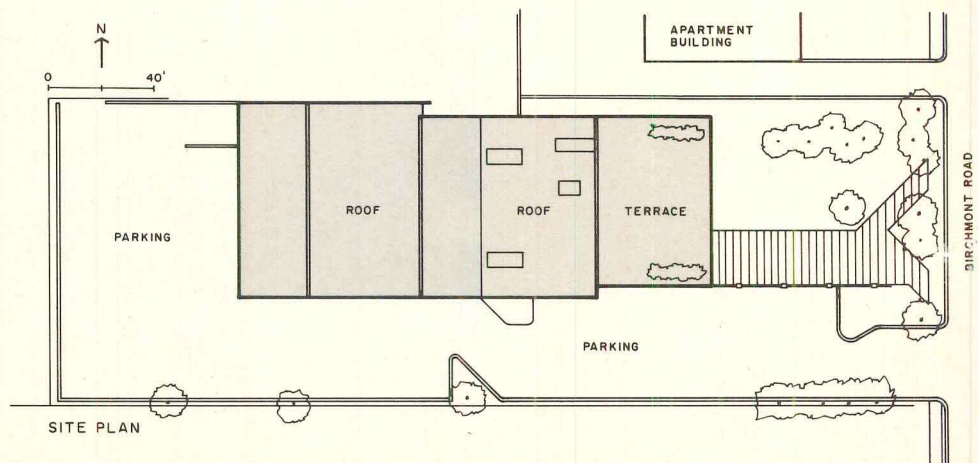
SECOND FLOOR PLAN



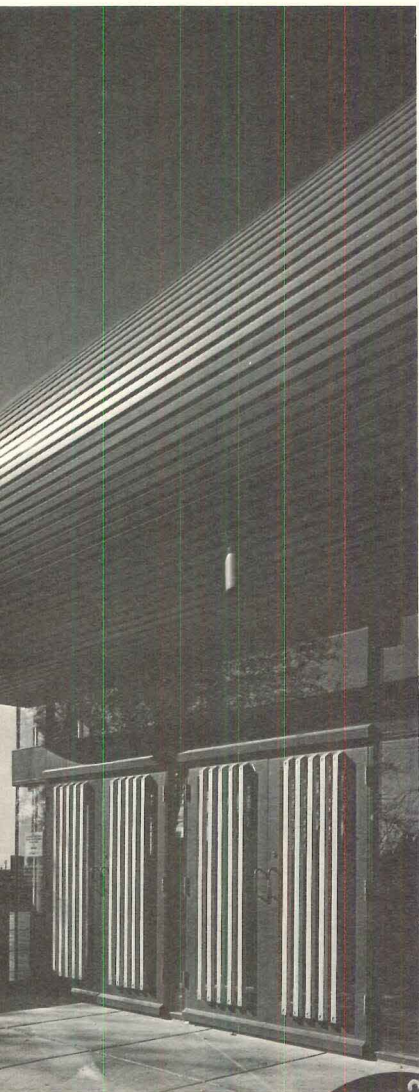
MEZZANINE FLOOR PLAN



FIRST FLOOR PLAN



SITE PLAN



Drawing at top left is a preliminary, design using the metal slat roof as one continuous element. As-built drawing, left, shows the modifications made to conceal the mechanical system in the ceiling, keeping the expression of the ceiling in the curved metal fascia.

Scarborough's books

between two parallel concrete walls, the ceiling is extended through the clerestories to form a curved metal fascia.

The facilities in this main area include stacks, periodicals, study carrels, a children's area, audiovisual resources—music, language, educational television—and a quiet room. Lower level facilities include a multipurpose room, projection facilities, staff rooms and storage. The open, two-level main space allows for expansion as the library collection grows from an initial 60,000 items to a capacity of 150,000. The building, however, serves not only as a library but also as a community center with places to hold group meetings, an auditorium for showing films and for other events, and an outdoor terrace with a snack bar for use when weather permits.

Furniture, designed by the firm to carry through the curved

idiom of the ceiling, is grouped informally within the two-story space and arranged to maintain maximum visual control from the desk. The warm color of the carpet, like the ceiling color, was a conscious attempt to contrast with the exposed block. Carpeting, which extends throughout most of the building, is brought up and wrapped around the balconies to soften the edges of the low concrete walls.

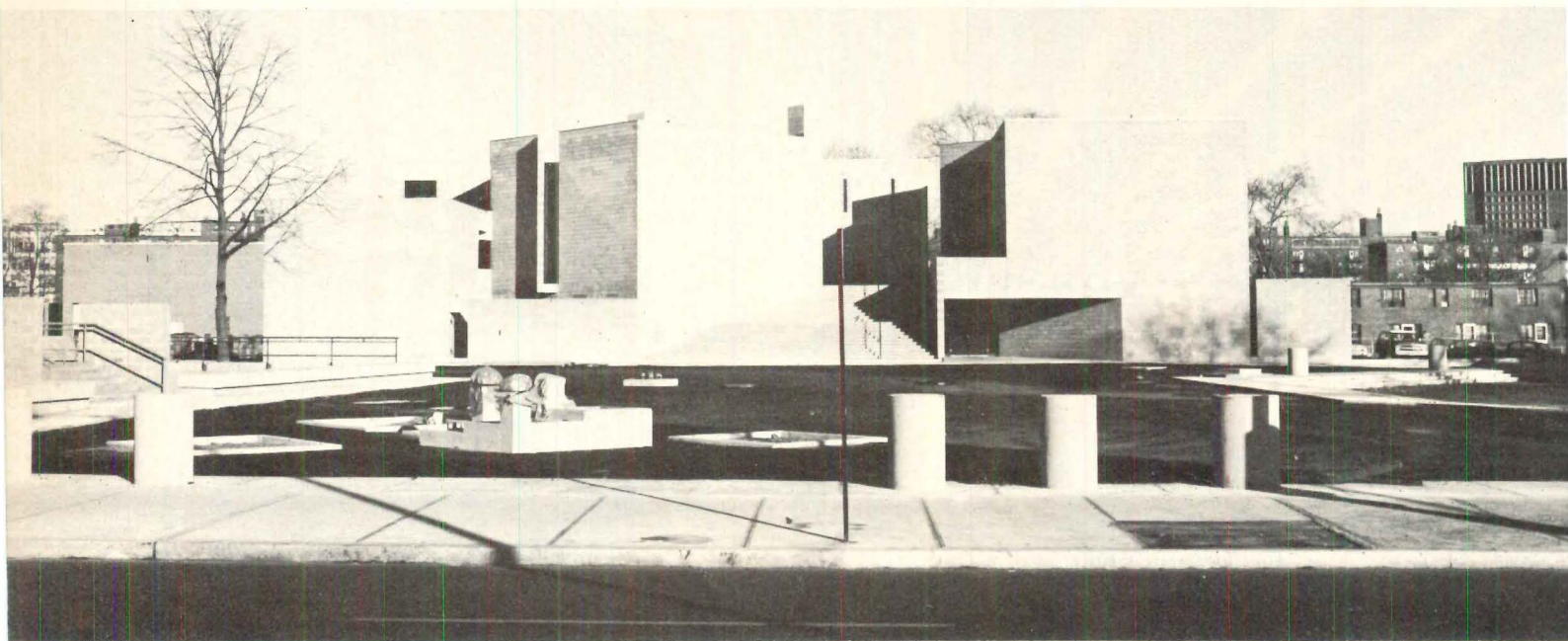
The Albert Campbell District Library is the second of two district libraries to serve the town of Scarboro. Organized on the concept of regional library service, the two district libraries are part of the Metropolitan Toronto Network which acts as a back-up resource for all district libraries in the area. In turn, the Campbell Library serves three neighborhood branches by teletype to speed exchange of material. [SLR]



Main reference and reading areas (right) are one large space with several levels. The auditorium (above) is used by the community for meeting, films, lectures and storytelling.



Urban community centers



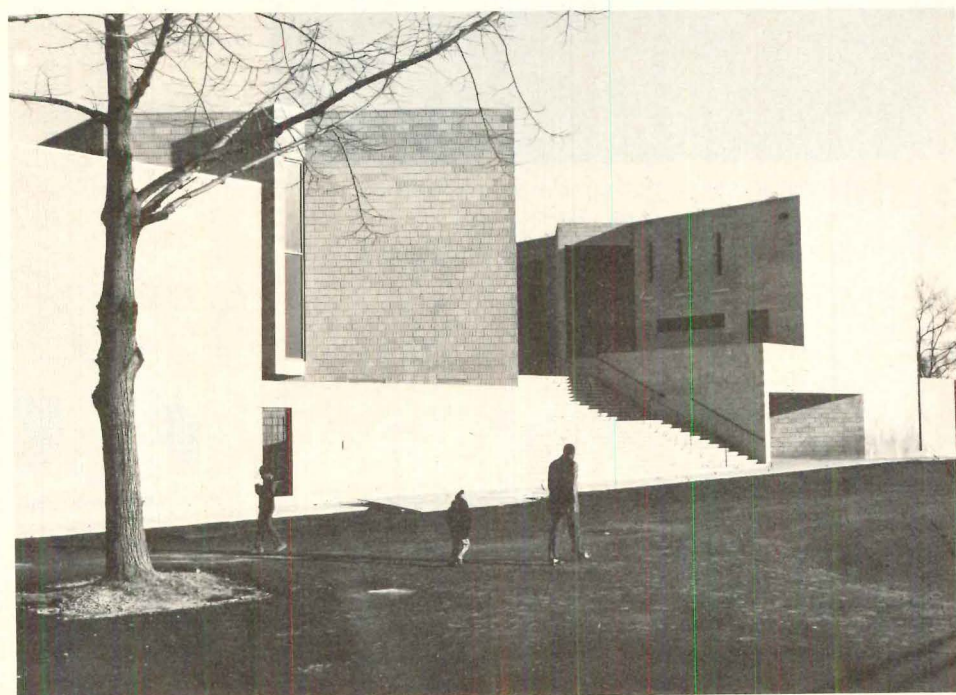
In an attempt to stabilize and provide a focal point for their neighborhoods, two community projects serve more than the recreational and social needs of urban areas

Community houses serve an urgent need in providing recreation for the urban poor whose resources are often limited by both lack of space and money. While the need for these facilities and the programs they provide is acknowledged by the community, what is often an issue is how such a building relates to the neighborhood, who designs it, who finances it and, finally, who runs it. The planning of both buildings presented here involved community members in programming the kinds of activities that were needed, but their relationships to their neighborhoods are quite different. The first, the Dixwell Community House/Neighborhood Facilities Building, was placed on a new plaza as part of a massive urban renewal plan in New Haven, Conn. In the second building, the Mt. Morris Park Recreational Facilities, the architects took advantage of existing New York City parkland which needed to be reclaimed for neighborhood use and sited the buildings

unobtrusively into the natural terrain.

The Dixwell Community House/Neighborhood Facilities Building is a combination of a settlement house founded in 1923 and a city-owned neighborhood service agency. As part of the Dixwell Project of the New Haven Redevelopment Agency, it received approximately half of its funding from a HUD grant. The rest of the cost was split equally between city and state funding, with a little over half of the city's share paid for by the community house through sale of its existing facility to the Redevelopment Agency.

The building is sited on the axis of a plaza created by design of the Redevelopment Agency as part of the renewal of Dixwell Ave., the main commercial strip of the black community. In addition to the Community House and Neighborhood Facilities, the plaza is the site of eight units of housing and a recently completed Congregational church. Directly across Dixwell Ave., on axis with the community building, is a row of commercial buildings and a new branch library, both constantly showing the effects of vandalism. The rest of the avenue exists in a transient state of honky-tonk bars, three-story wooden tenements and various visually aggressive com-



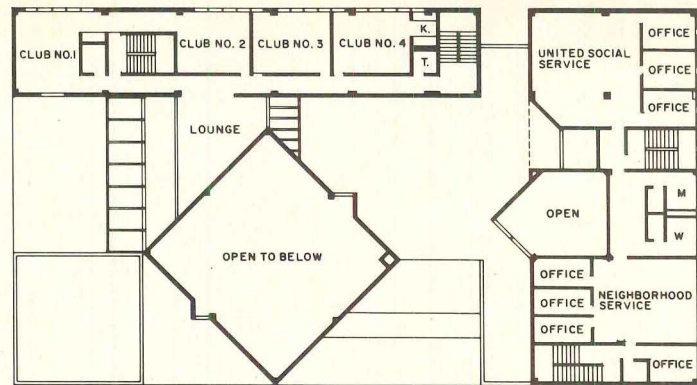
Façade of the Dixwell Community House and Neighborhood Facilities Building speaks more of anticipated vandalism than of community house or neighborhood services. Photo (left, top) shows the building on its asphalt paved plaza which will eventually have a token number of trees to help soften the unbroken stretches.



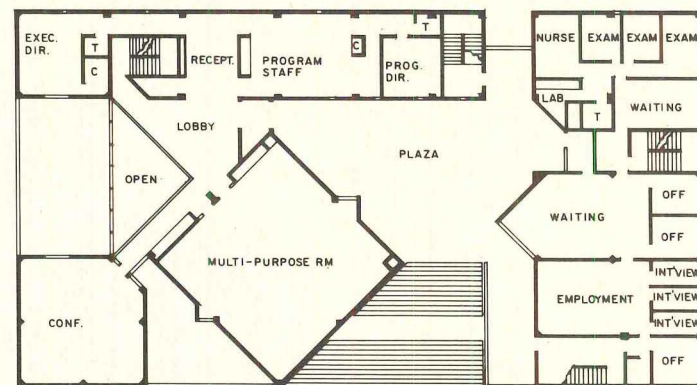
Main lobby of the Dixwell Community House is a three level space looking into an interior court through a glass wall that zigzags from the roof to the ground.

Data

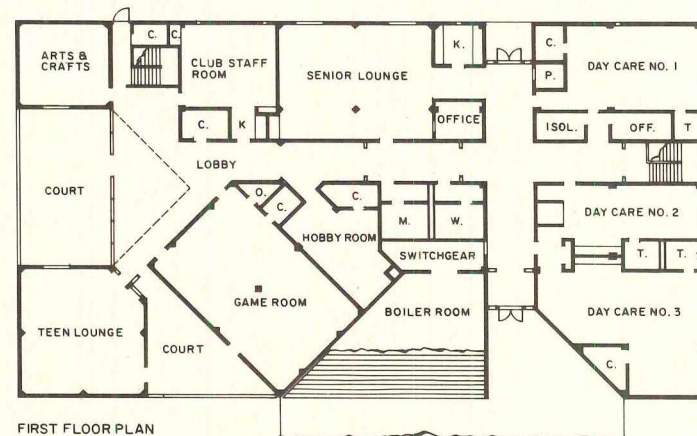
Project: Dixwell Community House/Neighborhood Facilities Building.
Architects: Herbert S. Newman collaborating with Edward E. Cherry.
Site: Dixwell Ave., New Haven, Conn.
Program: community oriented facilities for urban black neighborhood.
Major materials: scored concrete block, anodized aluminum and bronzed glass, exterior. Concrete block, paint, vinyl asbestos tile with carpeting in public corridors.
Structural system: steel frame on concrete foundations.
Mechanical system: forced air, oil fired heat.
Costs: \$700,000.
Photography: A. Wade Perry, Lee Ryder.



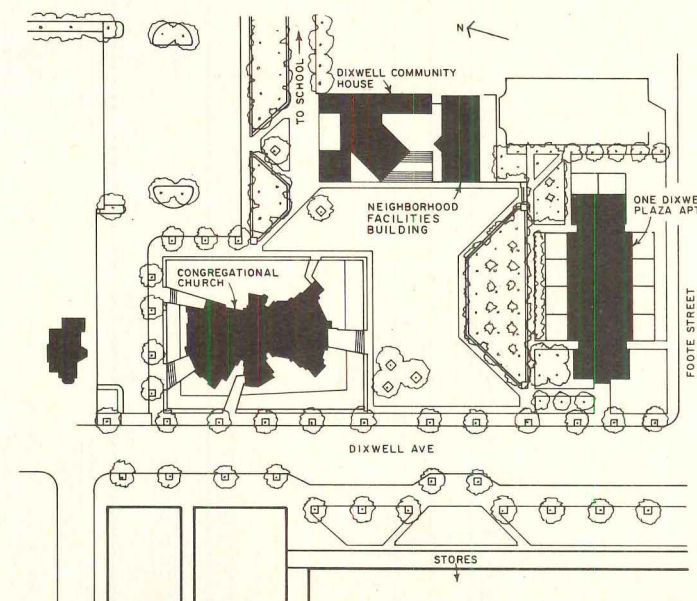
THIRD FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN



Urban community centers

commercial enterprises. Since the avenue, even in its decaying state, is the commercial spine for the community, the agency wanted to strengthen the avenue as a focus for the community by locating its "mini-city hall" and other neighborhood oriented facilities on a newly created plaza.

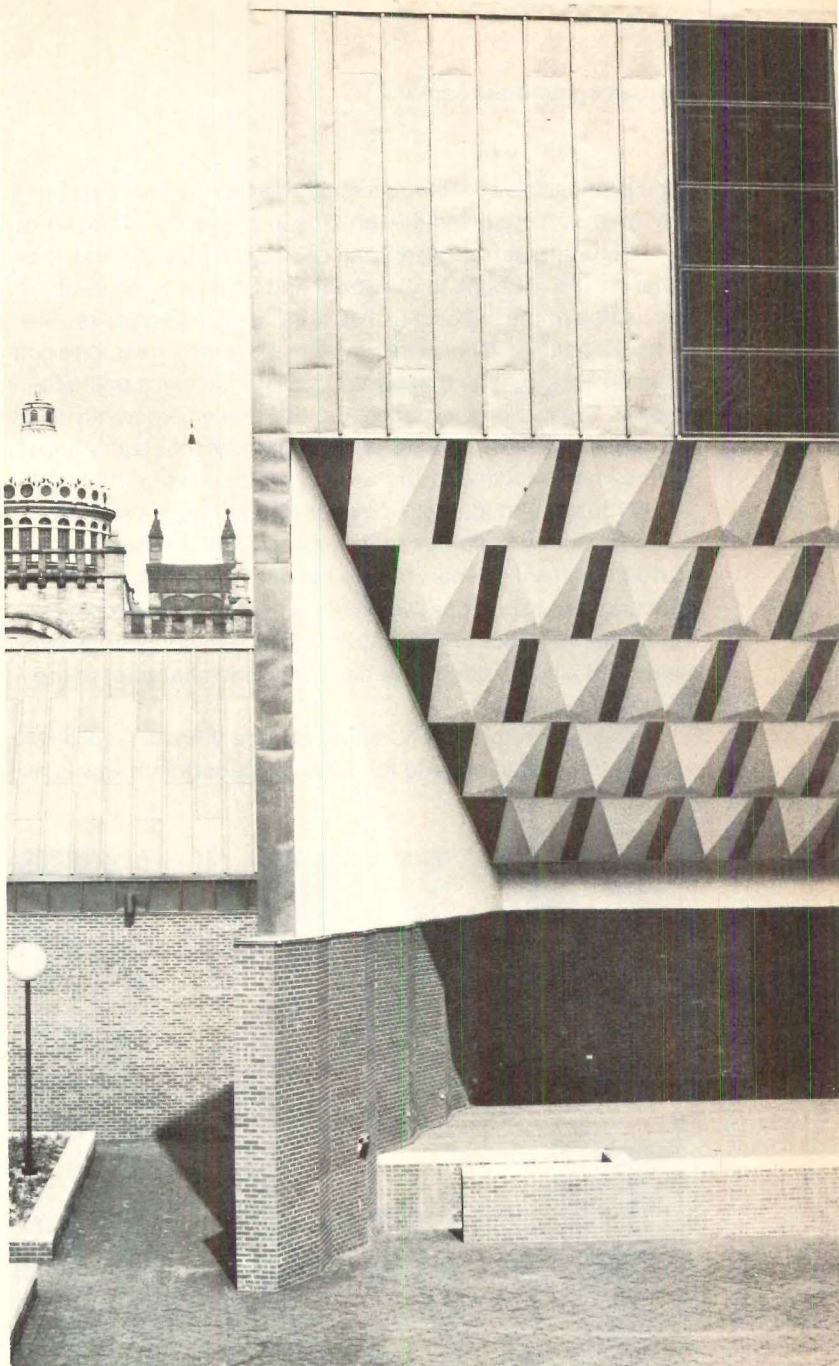
The fact that two separate facilities occupy one building is carefully articulated by having two separate forms joined by a common ground floor with a raised plaza. The building presents a manipulated, almost windowless façade which speaks more of anticipated vandalism than community house or neighborhood services. The main entrances to both wings are off the raised plaza but, because a formidable set of stairs presents an unclear destination from the bottom, the most frequently used entrance is the one at the side of the main stair. While the main stairs may not work functionally, they do create an image that is consistent with the agency's idea of a "mini" city hall.

Community House facilities include club, craft and game rooms, teen lounge, senior citizens room, multi-purpose room, board room and offices for program staff. The Neighborhood Facilities Building has three day care rooms with play yard operating under Head Start. Other facilities include credit union, employment services and social services.

Mt. Morris Park

Mt. Morris Park, a four-square-block area of New York City on axis with Fifth Ave. between 120th and 124th Sts. was typical of Beaux Arts landscape planning when originally laid out and built. It became infested with addicts, junkies and derelicts in the early 1960s and, in an effort to reclaim the park for badly needed neighborhood recreational use, the parks department approached the community for suggestions, all of which were built, except for a swimming pool. Richard Rogers was asked, and agreed to give money for an amphitheater, with money for the other facilities coming from the parks department.

Architects Lundquist and Stonehill were asked by Rogers if they wanted to be involved in the project and, after reviewing



Copper fascia (above) is the same material as that used on several domes in the area. View from the overlook shows the theater with the seating nestled into the side of the hill.



Urban community centers

the proposals and making suggestions to the parks department, they were given the job. The architects took advantage of the natural terrain and Beaux Arts planning by siting the theater with its back to the street and by placing the seating in the slope of the hill on axis between two curving stairs. The recreational facilities were incorporated into one building and placed between the theater and street to act as a baffle for noise. The facilities include a multipurpose community meeting room and exhibit area, dressing rooms for stage productions, rehearsal and music rooms, senior citizens, craft and club rooms, administrative offices and park maintenance. Two detached buildings house toilet facilities for audience and park use. Materials for the building—brick walls, copper roofing and asphalt pavers—were chosen not just for their easy maintenance, always a prerequisite in community facilities, but also to reflect and blend with the character of the surrounding area.

It seems that in the NYC building code there is no provision for outdoor theaters, and the building department was insist-

ent that there be exit signs as in all other theaters. The architect asked if it would be all right to post the exit signs on the tree trunks. Five years, three parks commissioners, two mayors and a building inspector later, the facilities were finished and in use. [SLR]

Data

Project: Recreation Center and Amphitheater for Mt. Morris Park.

Architects: Lundquist and Stonehill; Leroy Wilson, Bryant Conant, project associates.

Program: community and recreational facilities for urban ghetto area.

Site: Mt. Morris Park, New York City.

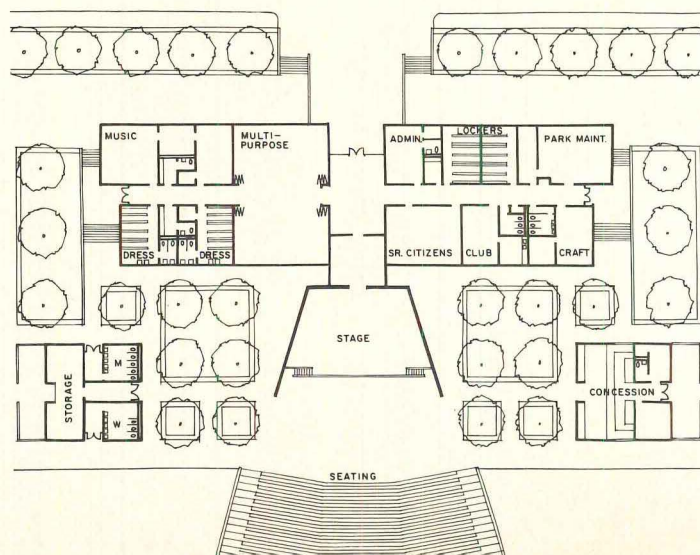
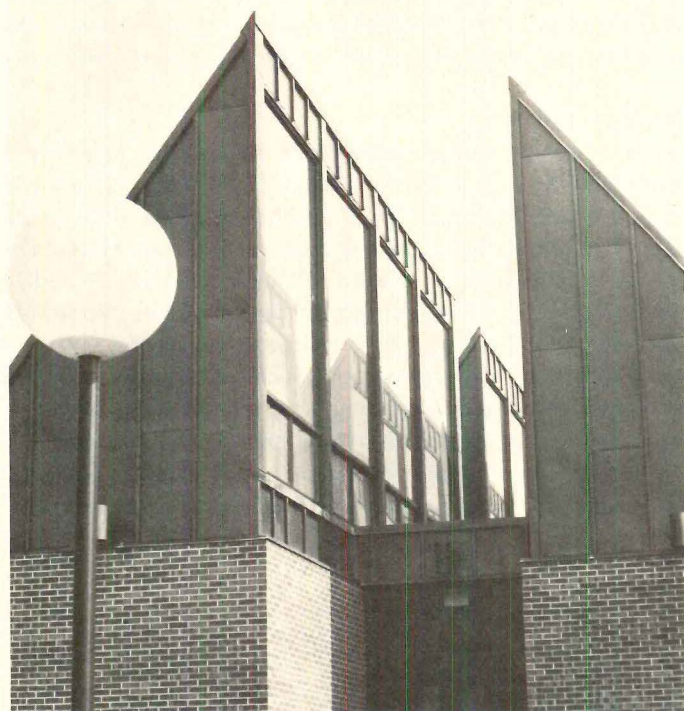
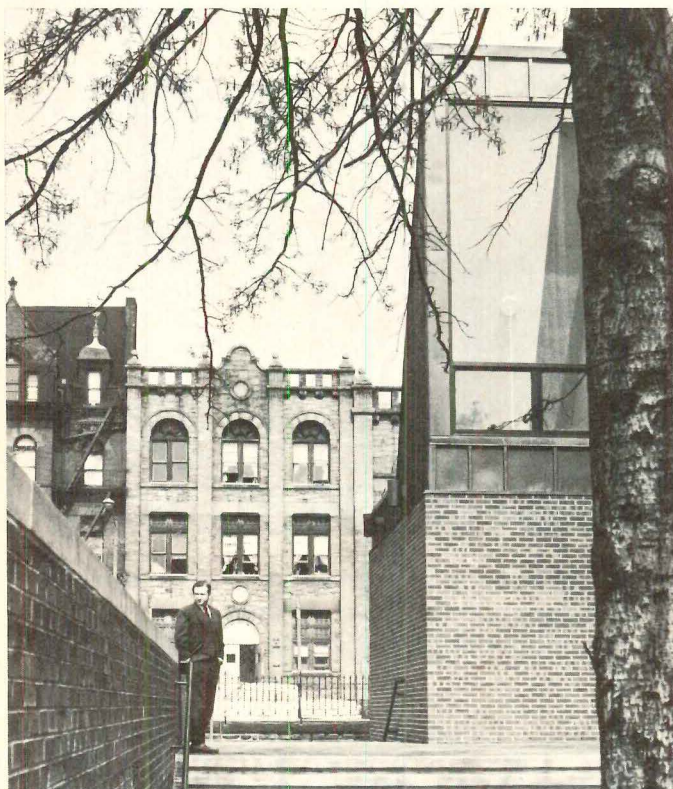
Structural system: masonry load bearing walls, steel trusses, concrete plank.

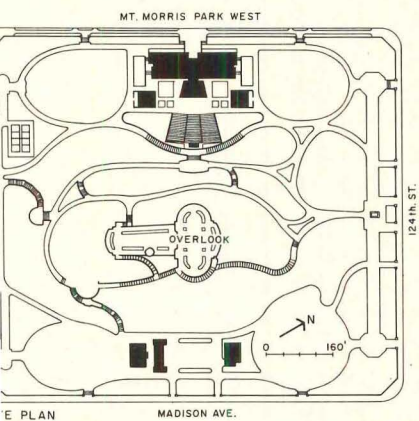
Mechanical system: forced air, oil-fired heat with provision for central air conditioning.

Consultants: Christopher Jaffe, acoustical; Werner-Jensen, Korst and Adams, structural and mechanical.

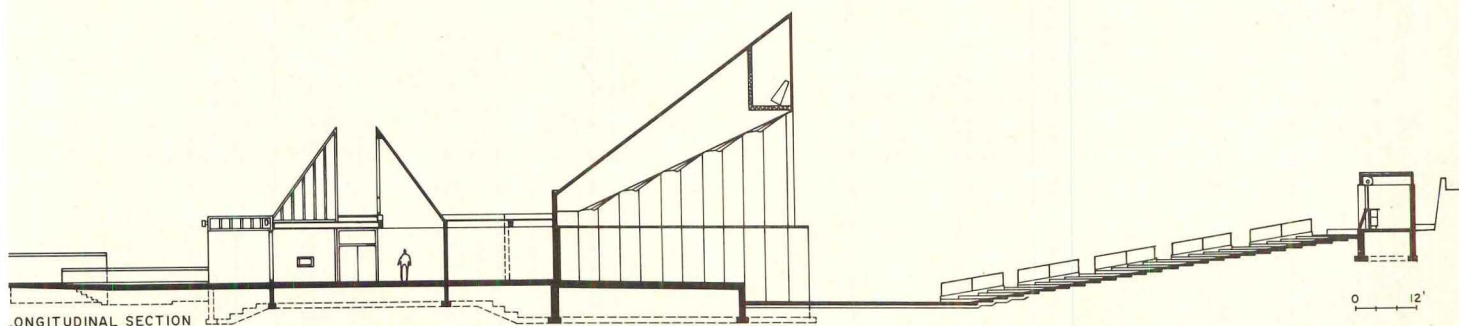
Costs: \$1 million.

Photography: Bryant Conant, Dudley Grey.





Views at left show the relationship of building material to the surrounding park and neighborhood. Rather than use bars to protect windows, the architects turned the skylights inward to avoid vandalism.



Automatic heat and smoke venting

Robert J. Lyons

In this discussion the author explains how automatic heat and smoke venting works, why sprinklers alone are not enough protection, why this method has not become standard practice and how fire protection fits into design

Automatic heat and smoke venting units help a fire department to accomplish the three basic tasks of fire fighting: locate the fire; open up the building to release heat, smoke and gases; cool the fire to below its ignition temperature.

When a fire starts in a vented and sprinklered building, here is what happens: 1) Heat or smoke from the fire activates the automatic vents and the sprinklers. 2) Smoke, heat and hot gases vent through the roof instead of spreading out beneath it. Sprinklers cool the fire more quickly because total Btus trapped in area are less. 3) Fire does not tend to spread horizontally because heat and smoke rise toward opening. 4) Firemen arriving on scene can locate the fire by spotting vent emitting smoke. Firemen climb on roof, aim hoses down vent opening and add water to quench the flame. 5) Firemen entering the building have a clear view, can find the fire quickly and put it out.

Why sprinklers alone aren't enough

There are fashions in technology, as well as design, and for some reason the fashion in the U.S. has been to regard sprinklers as a necessity and vents a luxury. In Great Britain the opposite tends to be the case. Buildings not sprinklered are often vented.

In fact, the two have a synergetic effect, neither works well alone, but both work superbly together. Venting relieves excess heat, reduces the sprinklers' job and prevents the activation of more sprinklers over locations other than the area of conflagration. However, without sprinklers, venting can only inhibit the spread of fire, not extinguish it.

A sprinkler system's inability to cope alone with a hot, contained fire is demonstrated by a comparison (made by the National Fire Protection Association, see table) of the amount of heat generated by the burning of contents that might be

found in a typical factory, warehouse or store, and the failure of a normally functioning sprinkler system to absorb that heat.

Theoretical study and scale model tests conducted by the Illinois Institute of Technology projected that optimum venting could be expected to release 80 percent of the heat from a fire. If this figure is correct, the combined action of sprinkling and venting would be sufficient to extinguish the hottest fire (45,000 Btus per min per sq ft) tabulated in NFPA A-502.

It is a fact of life that businessmen are accustomed to taking business risks and will seldom pay for anything that doesn't pay for itself—unless they have to. If smoke venting is to become common practice, some authority will have to make it profitable or mandatory. Let's discuss profitability first.

Financial considerations. Of all the businesses that suffer a major fire, according to statistics, 43 percent are permanently forced out of business—not because of the loss of property, which is usually insured, but because business is interrupted, orders are cancelled, customers switch to a competitor and don't return, and employees drift away.

This danger should provide sufficient incentive to the businessman to prevent fire damage at almost any cost. But businessmen are used to risk, and many are not convinced that any product is really going to reduce the damage done by fire. Certainly most architects have had experiences with clients whose chief interest in a sprinkler system is how quickly it will "pay for itself" in lowered insurance premiums.

Unfortunately, the insurance companies haven't yet made rules that make smoke venting "pay for itself." Many will give credit for vents in unsprinklered spaces, but no credit for vents in sprinklered spaces. While it appears that insurance companies are now more convinced of the need for vents in sprinklered spaces, they may feel that they just cannot take anything more off the premiums. If they required both sprinkling and venting, the small premium reductions would no longer provide sufficient incentive to businessmen to pay for any form of automatic fire fighting equipment.

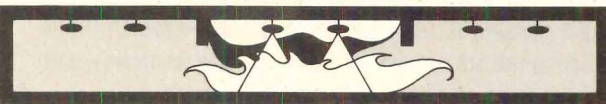
Most clients will gracefully accept the financial burdens of meeting legal requirements, if only because they know their competitors must do the same. At present, the decision whether to require venting rests with individual architects, building owners, fire marshals and insurance company and rating bureau engineers. For the protection of nearby structures and the lives of occupants and firemen, heat and smoke

Author: Robert J. Lyons is Director of Product Design, The Bilco Company, West Haven, Conn.

Without venting



Fire starts.



Fire spreads horizontally, smoke spreads to draft curtains, sprinklers open.



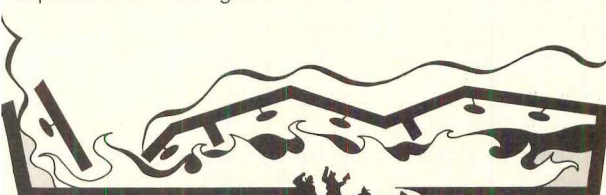
Fire already under draft curtains, more sprinklers open, unburned gases accumulate.



Building is effectively smoke-logged. All sprinklers are open, including many not over flames. Water pressure is reduced over flames. Heat is beginning to melt steel structure.



Firemen arrive, break windows. Sudden inrush of air causes "back draft" explosion of unburned gases.

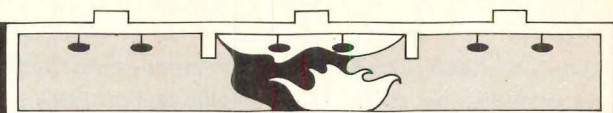


Firemen attempt to enter, hose stream will not reach fire. Smoke blocks view. Firemen dare not attempt to cut holes in roof for fear of collapse.

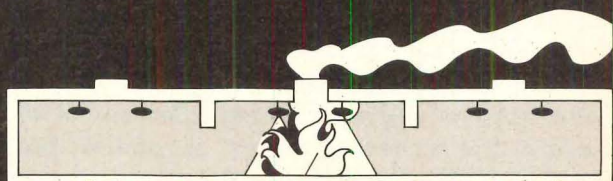


Fire out. Building destroyed.

With venting



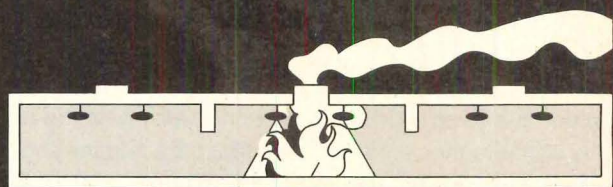
Fire starts.



Vent opens, sprinklers open, smoke and heat vents.



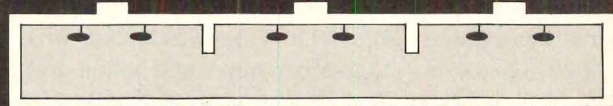
Fire contained, smoke continues to vent.



Condition remains essentially the same.



Firemen arrive, climb on roof, point charged line down open vent on fire. Others enter through door, fight blaze from floor.



Fire out. Building spared.

venting should be written into law and strictly enforced as are other measures necessary to protect life and property.

How to design

Size and spacing of vents and the spacing of draft curtains are determined according to the NFPA by the heat release occupancy classification. This is determined by what operations are performed or goods are stored in the building. Different types of industrial uses are classified in Section 1 of NFPA's "Guide for Smoke and Heat Venting" as Low Heat Release, Medium Heat Release and High Heat Release Occupancies. The occupancy classifications of other types of buildings (convention halls, shopping centers, etc.) can be inferred by analogy. NFPA's design guidelines are as follows:

Smoke vent sizes recommended by NFPA are 16 sq ft or greater, but not less than 4 ft in any dimension.

Smoke vent ratio—ratio of vent opening to floor area—recommended by NFPA is: low heat release occupancy—1:150; moderate heat release occupancy—1:100; high heat release occupancy—1:30 to 1:50.

Maximum spacing between vents recommended by NFPA: low heat release occupancy—150 ft; moderate heat release occupancy—120 ft; high heat release occupancy—75 ft to 100 ft.

The vent operating mechanism recommended by the NFPA is one that is "automatic in operation to eliminate the uncertainty of the human element" and that "the release should be relatively simple in design and independent of electrical power since electrical services may be interrupted by fire."

Both the Underwriters' Laboratories and Factory Mutual Research Corporation, the testing arm of the Mutual Insurance Companies, have in recent years established standards for automatic heat and smoke vents. Notable requirements are that the vents should open when subjected to a 10 psf snow load, and remain closed against a 30 psf wind uplift. Both of these organizations make labels available to vent manufacturers whose products pass their tests. Overall vent construction and such items as insulation and gasketing are left to the discretion of the individual manufacturer. Also, the testing laboratories must make a judgment that each manufacturer's design is such that adequate control in manufacture can be maintained, to insure that every labeled vent will be the same as the particular unit that was tested. This is a difficult engineering judgment to make and, in the present state of the art, the experience and reliability of the manufacturer should be heavily relied upon.

There are several elements of vent design that are extremely important, and an architect should be certain they are met. They are:

1 *A dampening device on the operating mechanism* to prevent the cover from springing open and tearing the vent loose from the roof and possibly endangering the lives of firemen standing nearby. A force capable of lifting a 10 psf load can cause considerable damage if not controlled.

2 *A frictionless release mechanism* that "dumps" the cover rather than pulling away a catch that is wedged against the cover and which uses the full force of the cover operating mechanism rather than a separate spring. A vent is tested only once every six months, even under ideal conditions, and

structural shifts, variations in snow loading or temperature differential caused by a fire or ordinary weather conditions can cause a cover to jam unless the releasing mechanism is positive. The release mechanism should also be designed to insure that the covers cannot be closed unless the fusible link is in place. A positive latching mechanism is also important to prevent the vents from opening from vibration (as might be caused by a traveling crane or other machinery).

3 *Rugged construction*, using heavy gauge steel (14 minimum gauge is recommended for the cover and sides), will prevent wracking and possible failure to open.

4 *Insulation, gasketing and built-in cap flashing* are necessary to prevent heat loss and leaks. Some smoke vent covers are uninsulated or have the operating mechanism outside the vent and below the cap flashing, so that it is impossible to bring a weathertight base flashing up under the cap.

Testing of venting units. Testing immediately after installation would seem logically to be an architect's responsibility in his specifications. Such tests should include both manual operation and removal of the fusible link to be certain the vent covers will open in event of fire. He should also recommend a follow-through testing program, opening each vent every six months.

Spacing of draft curtains. In large open areas, draft curtains are essential, even in sprinklered properties. Curtain boards help confine banked up heat within the curtained areas and speed the operation of automatic sprinklers. In the case of flash fires, draft curtains keep heat from spreading throughout the building and opening sprinklers unnecessarily.

Draft curtains must be made of a noncombustible material and must extend down from the ceiling for a minimum depth of 6 ft. Around special hazards the depth should be 12 ft and, where a high ceiling is involved, the curtains should preferably extend down to within 8 or 10 ft of the floor.

The distance between draft curtains in low and moderate heat release occupancies should not exceed 250 ft, and the curtained area should be limited to 50,000 sq ft. In high heat release occupancies, the distance between draft curtains should not exceed 100 ft and the curtained area should be limited to 10,000 sq ft. In sprinklered buildings, draft curtains should be located so as to separate sprinkler systems.

How venting works in practice

In large open areas in one-story buildings, the NFPA guidelines for positioning vents should be followed. In multistory buildings and buildings broken up into many small rooms, such as schools and office buildings, it is obviously impossible to vent every space. In multistory buildings, vents should be placed at the tops of stairwells and shafts. In buildings broken up into many rooms connected by corridors, vents should be placed over corridors, since the corridors provide a path for fire spread but must be kept clear as the means of egress.

The number of small fires quenched as the result of smoke vents operating in the U.S. and abroad testifies to the fact that fires *remain* small because automatic venting prevented them from spreading. There is no record, to my knowledge, of a major fire occurring in a building that was equipped with automatic heat and smoke vents.

Inadequacy of sprinklers to quench fire unassisted by venting

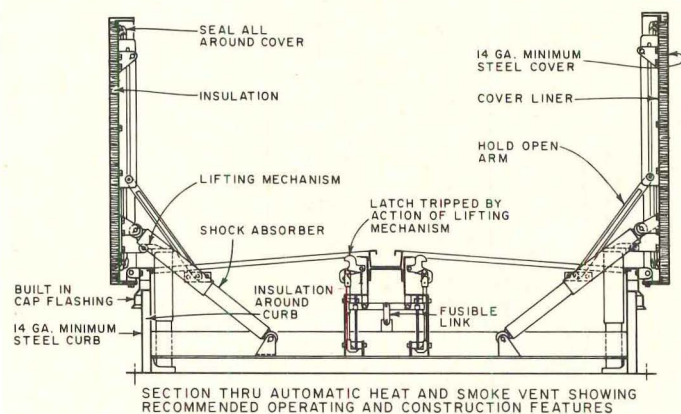
Table from A-502 (NFPA) with heat absorption figures from A-504 added

Material	Heat release	Heat absorption achieved by sprinklers alone
Gasoline	British thermal units per min per sq ft of floor area	Btus absorbed per min per sq ft of floor area by .33 gal per sq ft per min sprinkler discharge
Wood pallets in pile 8 ft high	10,000	
Simulated packed stock, piled to provide an 8-in. chimney effect between piles 8 ft high	25,000	
	16,000	
Same, piles 12 ft high	45,000	9064

A-504. The extinguishing action of water is based upon its absorption of heat raising its temperature and evaporating it into steam, thus reducing the temperature of the burning gases below the autogenous ignition temperature. One pound of water applied at 50 F and evaporated into steam absorbs 1133 Btu. One gal contains 8 lb. Therefore, one gal of water would absorb 9064 Btu. Assuming a density of 0.33 gal per min per sq ft for sprinkler discharge, and ignoring the water which runs off onto the floor, only $\frac{1}{3}$ gal of water

is discharged per sq ft of floor area; this quantity is capable of absorbing 3021 Btu per min.

Reproduced here are excerpts from "Guide for Smoke and Heat Venting 1968," published by the National Fire Protection Association. The table from A-502 has been enlarged to include heat absorption figures from A-504.



Typical was a fire which broke out at 8 p.m. on a Sunday in the boiler room of Wilkinson Sword, Ltd. when, by the time the fire was discovered and the fire brigade arrived, an estimated 35 minutes had elapsed. Because automatic heat and smoke vents had opened, the dense smoke from the burning oil had cleared sufficiently to enable firemen to approach and extinguish the fire without masks. No structural damage had occurred, and the plant was in full production at 8 a.m. the following morning. Compare this with McCormick Place which also caught fire at night and burned to the ground at a loss of \$35 million.

The building industry is an antiquated industry, ranking slowest—50 years—of all industries on Buckminster Fuller's scale for time elapsed between technological development and implementation. Hopefully, the latter half of the 20th Century will see that pace somewhat speeded up by better education and faster, broader communication.

The adoption of automatic heat and smoke venting will have to be carried out on all fronts, in the building departments, fire departments, insurance company rating bureaus and, most importantly, by an aware, informed and concerned architectural profession.

Building code requirements for this equipment should be adopted throughout the country. Architects should work on a local and state level for their adoption. Fire marshals, too, should work for the adoption of formal code requirements and, until formal adoption is achieved, insist on the incorporation of automatic heat and smoke venting in all plans and buildings they inspect. This has been achieved in New Haven, Conn. where the fire department requires that all buildings, including one-family houses, be vented. Venting in one-family houses may be manually operated but all other occupancies require automatic venting.

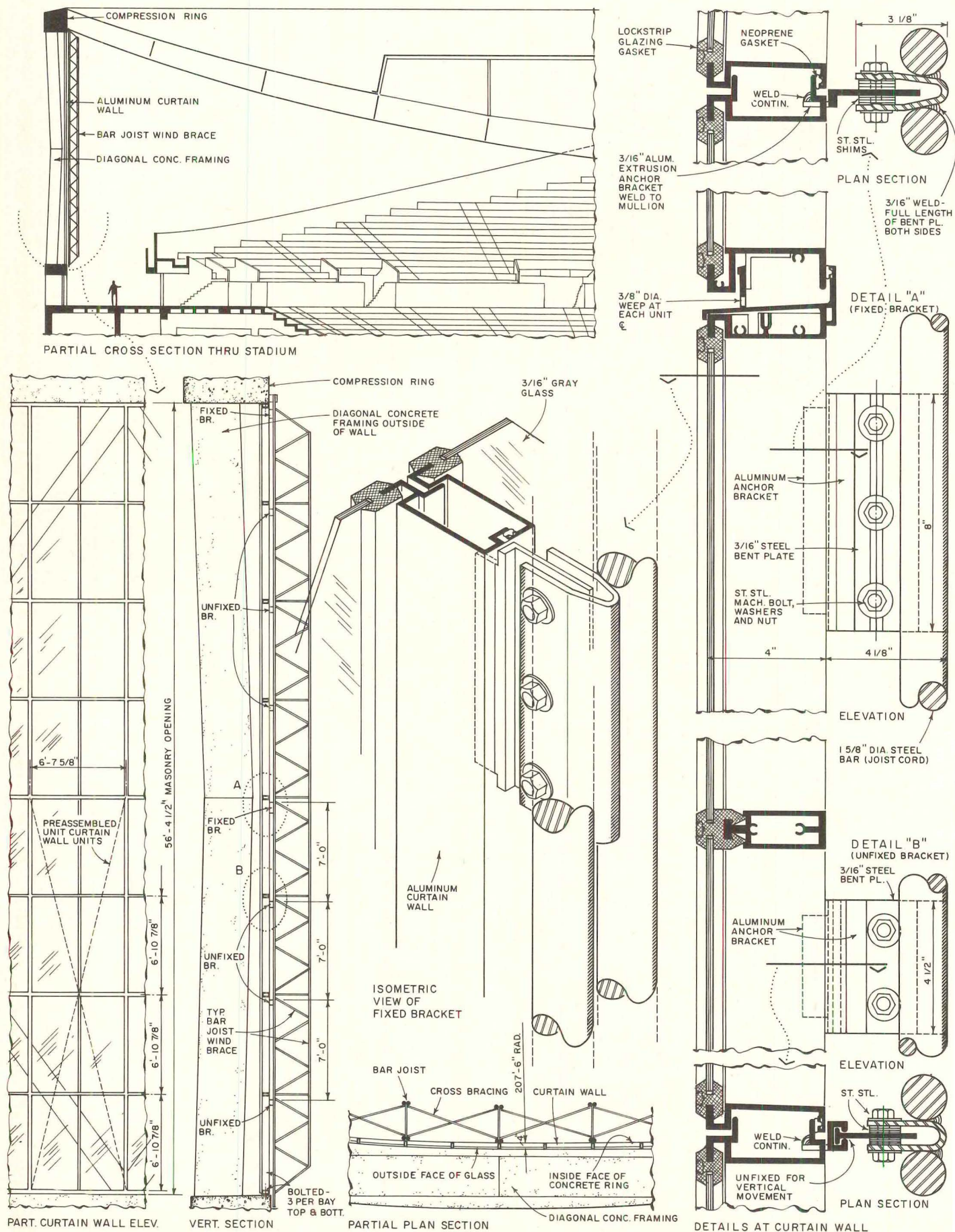
All plans to be filed with the New Haven Building Department must be examined and passed on for venting and other fire protection and safety features by the New Haven Fire Marshal or his staff before they will be reviewed by the Building Department. Since automatic heat and smoke venting is, above all, a life-saving device, it should be regarded as the duty of every fire marshal to see that venting is incorporated, at least, in all occupied buildings.

Insurance companies and rating bureaus should encourage the use of vents through premium credits given for venting. It is an indication of the current attitude of most stock company rating bureaus toward venting that credits are given for sprinkler systems, fire extinguishers, even buckets of water, but not for venting.

Manufacturers of heat and smoke vents must so design and test their products as to ensure that they will operate properly and provide long, trouble-free service.

Most importantly, perhaps, architects should consider the need for automatic heat and smoke venting and avail themselves of the knowledge and expertise of long established manufacturers in the field. Ultimately, fire protection is a design problem, and regardless of building codes, fire marshals' policies or insurance company rating practices, the integrity of a building and the safety of its occupants are the architect's concerns.

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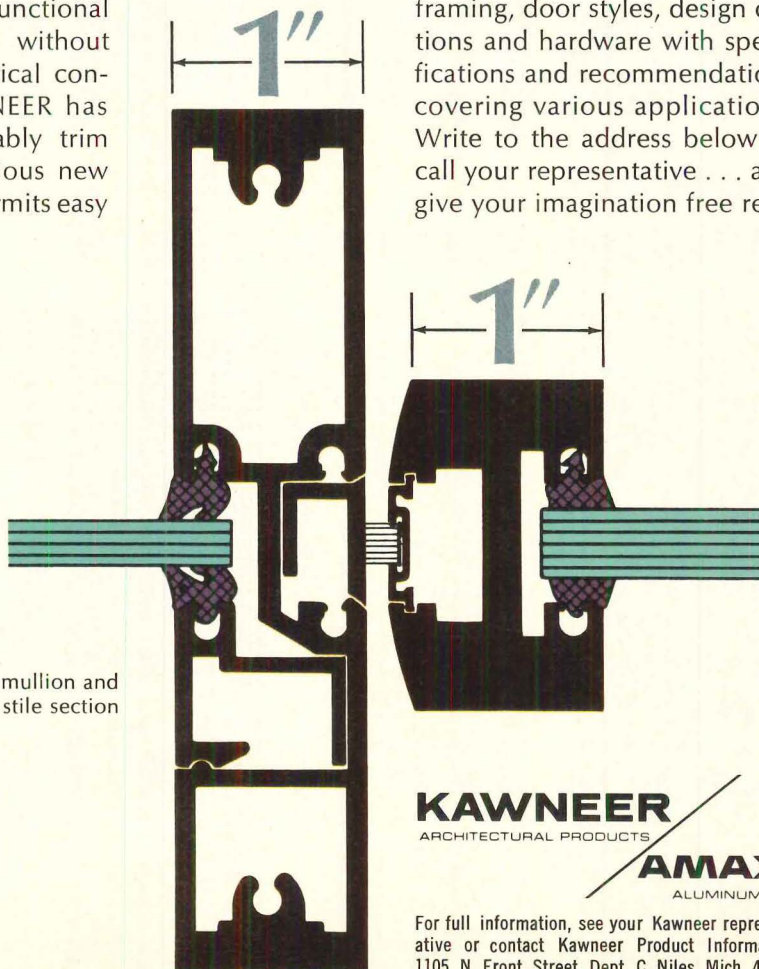
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Fire safety in high rise buildings

Charles E. Schaffner, PE

This progress report on fire safety measures in high rise buildings cites the activities of the Mayor's Advisory Committee in New York City and its accomplishments to date

This past year has seen a growth in interest in better fire safety measures throughout the country. The Mayor of New York City appointed an advisory committee on fire safety in high-rise commercial buildings on Feb. 16, 1971; the General Services Administration of the Federal government held conferences in April and October; and the city of Chicago held similar conferences in May and December.

The approach of the Mayor's Advisory Committee is an interesting case history. The Committee itself is composed of a broad representation of the construction industry as well as representatives of the City Administration and the New York City Council. Two members of the Committee also serve as chairmen of fire safety committees for the New York Building Congress and the New York Real Estate Board. Thus the Mayor's Advisory Committee was constituted to achieve the best possible input and hopefully to ensure the broadest support for its recommendations, with rapid legislative enactment by the City Council.

At its first meeting, the Advisory Committee agreed on a plan of operation that included the appointment of a staff committee chaired by the author. This committee met twice weekly and gradually worked through a complete review of all aspects of the fire safety problem. These might be classified under the broad headings of prevention, notification, evacuation and fire control and fighting. Through all run common threads of education, design and construction quality.

The Committee has attempted to devise a fire safety system based upon the following principles:

- 1 Occupants and operators of buildings must be prepared to cope with fire.
- 2 Fire Department must receive earliest possible notification.
- 3 Communication with occupants is essential.
- 4 Mass evacuation is impractical and unnecessary.
- 5 Affected elevators must be sent immediately to the first floor and used thereafter only under control of the fire department.
- 6 The size of a fire must be controlled by measures taken in advance of any fire situation.
- 7 Smoke must be controlled.

The detailed recommendations of the Committee were submitted to the Mayor on Nov. 15, 1971. He has submitted the recommended legislative package to the City Council. After public hearings and Committee review the Council will take the necessary legislative action. There is no way of predicting when or in what form such action will be taken.

In general the proposed changes apply to buildings classified as Occupancy Group E (office buildings) which are more than 100 ft high. Many of the ventilation and compartmentation requirements apply only to office buildings which have air conditioning systems serving more than one floor.

The requirements which follow are proposed to be retroactive except in those areas where alternate solutions are given for existing buildings. Now in effect: 1) Fire Safety Plan covering occupant education, participation and evacuation. 2) Advisory Bulletin on Building Contents including furniture and furnishings. Proposed requirements include:

- 1 Fire command station in lobby.
- 2 Two-way communication system.
- 3 Interior fire alarm system tied to Fire Department.
- 4 Detectors for smoke, fixed temperature and products of combustion.
- 5 Partitioning of open areas (7500 sq ft base).
- 6 Control of smoke through the use of smoke shafts or pressurization of stairwells.
- 7 Automatic recall of elevators, equipping them with fireman's control and protection of interlock.
- 8 Control of stairwell doors.
- 9 Sprinklering of showroom space exceeding 7500 sq ft.
- 10 Relief from items 5 and 6 if sprinklers are used.

Although the Committee's charge was limited to office buildings, many of its findings are applicable to other types of high-rise buildings. It is expected that applicable measures will eventually be extended to such buildings as hotels, apartment buildings, schools and hospitals. One example of this is Chicago, where fire deaths occurred in an apartment house; as a result Chicago has increased door closure and elevator requirements for apartment houses and is continuing to study other buildings.

Owners of all types of buildings should give serious consideration to implementation of the relevant recommendations at this time in order to provide appropriate fire protection for their occupants regardless of present legal requirements. Implementation of these recommendations should result in a significant reduction in the severity of fires and consequently in less injuries and deaths as well as less property damage. How rapidly this is achieved will depend upon the cooperation of the owners of existing buildings. The Committee has recommended periods of one to ten years for compliance depending upon the specific requirement.

Owners of existing buildings must proceed carefully since necessary alteration requirements will depend to a great degree on existing building systems. Thus, each existing building is an individual case requiring study to ensure that the owner achieves the maximum degree of protection for minimum cost and minimum disturbance of tenants.

Author: Charles E. Schaffner, PE, is a Vice President of Syska & Hennessy, Inc., and Chairman of the Mayor's Advisory Committee on Fire Safety in High-Rise Buildings in New York City.

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Criteria for curtain walls

Harold J. Rosen, PE, FCSI

The past two decades have seen a growing use of glass in new buildings. This article points up the growing need for curtain wall criteria, and reports on the content of a new wind load design document as well as on studies of glass strength and gaskets

The greatly expanded use of glass in modern architecture as well as the use of various sealants and lock-strip gaskets during the last 20 years requires new and expanded criteria for efficient performance of curtain walls. More detailed information is needed on the behavior of wind forces, resolution of wind loads on specific buildings under design, negative wind loads generated by the height and shape of the structure and surrounding buildings, pressure differences to be used in testing for water penetration, design loads for glass in metal frames and in gasket frames and cycled temperature testing for thermal properties and condensation.

Essentially, the problem can be divided into two categories, one having to do with an analysis of the forces acting upon the structure, i.e., wind loads, water penetration, air infiltration and temperature; the other having to do with the test procedures to evaluate the performance based on the foregoing criteria.

Wind pressures, derived from wind velocities, are based on the probability of occurrence of high wind velocities obtained from the statistical analysis of wind velocity records supplied by the U.S. Weather Bureau. Maps showing contours of the fastest mile of wind in mph at 30 ft above ground for 50-year periods of recurrence have been developed and are referred to in many building codes. As taller structures were developed it became apparent that some of these data were inadequate. Other factors that influenced actual wind loads on buildings included location, such as densely populated areas, suburban areas and localities with long fetches as well as building shapes. The latest NAAMM document WL-10-67 "Design Wind Loads" illustrates best the current thinking on the determination of wind loads on buildings.

This document takes into account gust factors, shape factors, geographical location and building heights. For unusual buildings, it is recommended that scale models be placed in wind tunnels to be tested along with surrounding structures to ascertain more realistically the actual wind pressures gen-

erated by the highest recorded wind velocities. Significantly, these wind tunnel tests disclose that on the leeward side, negative or suction pressures result which can be from 1.5 to 2.5 times the positive pressures applied.

Glass strength is another area for concern. Glass does not behave as a true engineering material. Strengths have been determined on a statistical basis as a result of full-scale test results. While the term "factor of safety" is applied in tables relating to glass strength, this term, in relation to other engineering materials, is really a misnomer. Actually there is a correlation between the "factor of safety" and the probability of failure at full design load. At certain specific design loads, a given number of lights of glass may experience failure. Most glass strength charts are based on a 2.5 factor of safety. At this safety factor there can be 8 failures in 1000 lights at the design load. Most building codes will accept glass designed on this basis.

For H-type lock-strip gaskets, it has been determined that, in some instances, rollout of glass will occur from the gasket frames at wind loads slightly below the design loads. For spline type lock-strip gaskets, rollout will occur above the design loads. More definitive information must be developed by manufacturers to establish more realistic data and criteria.

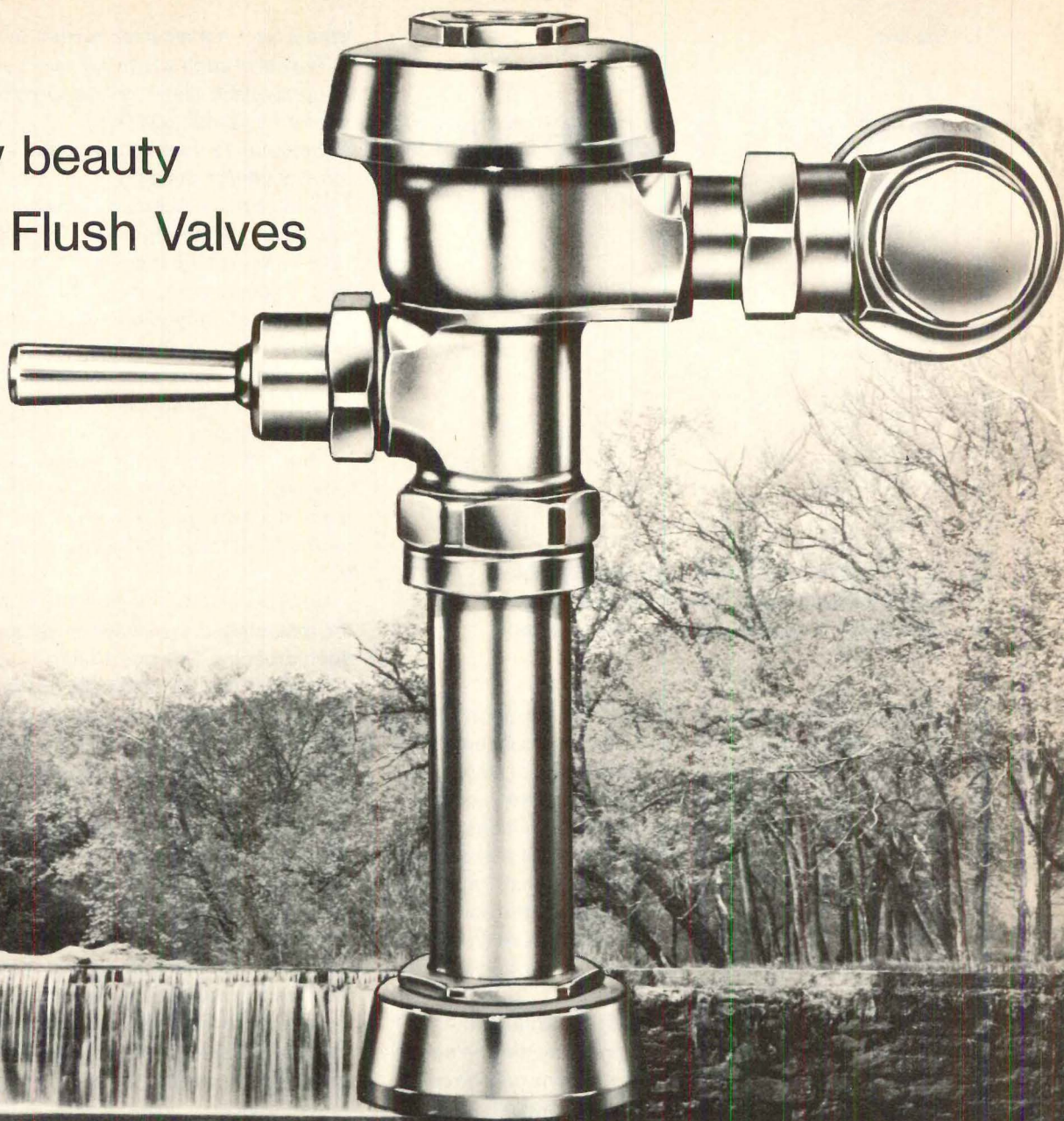
Laboratory tests have been developed over the years to check water and air infiltration, structural adequacy and thermal performance. Test methods have changed as more knowledge has been gained and correlation between test methods and field exposure has been examined. Generally, a custom designed window wall is laboratory tested to determine whether or not the proposed design can perform under the simulated environmental conditions and, in addition, the test provides a check to see if improvements can be made in the design.

There are, at present, different sets of test methods for air and water infiltration and for structural performance. One group is a set of standards developed by the National Association of Architectural Metal Manufacturers and the other is ASTM test methods. The NAAMM Standards are contained in TM-1-68T "Methods of Test for Metal Curtain Walls." The ASTM Test Methods are ASTM E 283 "Standard Method of Test for Rate of Air Leakage Through Windows"; ASTM E 331 "Standard Method of Test for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Air Pressure"; ASTM E 330 "Standard Method of Test for Structural Performance of Exterior Windows, Curtain Walls and Doors Under the Influence of Wind Loads." There are no standards for thermal cycling tests.

There are some variations as between the NAAMM test methods and the ASTM test methods. The last major symposium on Curtain Wall Testing was conducted by ASTM in February 1959. A new symposium is being planned and it should help focus on the changes that have taken place and the current state of the art with respect to determination of wind loads, glass strengths, gasket design and test methods.

Author: Harold J. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.

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Restrictive covenants

Bernard Tomson and Norman Coplan

A case is cited which demonstrates that restrictive covenants can limit land use more than zoning legislation can, a significant fact for the architect

Restriction on land use is commonly effected through zoning legislation. Such legislation is based upon the concept of the "police power" of the community, a concept that stems from the inherent power of a municipality to protect the health, safety and welfare of its inhabitants. Such restrictions, however, have definite limitations and where these are exceeded, the zoning law will be stricken as unconstitutional. Thus, for example, a zoning ordinance which prohibited the construction of a school or a church in a residential area will not be enforced on the ground that such an ordinance violates the Constitution.

Where the applicable zoning does not or cannot constitutionally restrict land use to the degree that may be desired by a land owner or developer, restrictions may be established by enforceable covenants which are entered into by the owner and a purchaser of the land. If such land restrictions are incorporated in the deed of transfer, they will bind subsequent owners of the land, as these covenants "run with the land."

Commercial developers of residential sites have used this technique to reassure prospective buyers that the neighborhood they buy into will not deteriorate in the near future. The common objective of these deed restrictions is to prevent any future owner from functioning to the detriment of the neighborhood. Where the restrictive covenants are inconsistent with public policy, they may be found invalid. Thus, for example, the U.S. Supreme Court has ruled that restrictive covenants which bar the ownership of the land to persons of a particular race are unenforceable. Where, however, public policy is not involved, covenants running with the land may provide a limitation of land use more restrictive than that of applicable zoning legislation.

Although churches and other institutions may not be barred under zoning laws from residential areas, the courts of several states have ruled that a restrictive covenant "running with the land" will be enforced to prohibit such an edifice in a residential area. The courts of Illinois, Georgia, Missouri, Ohio, Texas, Pennsylvania, Michigan, Oregon, Kansas and

others have upheld such restrictive covenants.

Typical of such a legal decision is the recent case of *Poughkeepsie, New York Congregation of Jehovah's Witnesses vs. Booth*, 323 N.Y.S. 2d, 181, in which the court was called upon to determine whether a religious body could construct a church building on land which it had acquired that was subject to a restrictive covenant to be used only for "residential and farm purposes." The religious body made the novel and esoteric argument that a church or house of worship is generally known as the "House of God" and that it is a residence of the Supreme Being where His followers come to worship Him and, therefore, the land use involved is residential in nature. The court, in rejecting the contention that a church is a residence within the meaning of the restrictive covenant, stated:

"The argument, in our opinion, is not 'theological' as characterized by the defendant, but rather tautological. The defendant's rejoinder, we believe, merits quotation: 'It might be retorted that God dwells in the hearts of all men and required no house to hold Him.'"

More prosaically, the religious body also contended that the restrictive covenant was ambiguous, and, therefore, unenforceable. The court said:

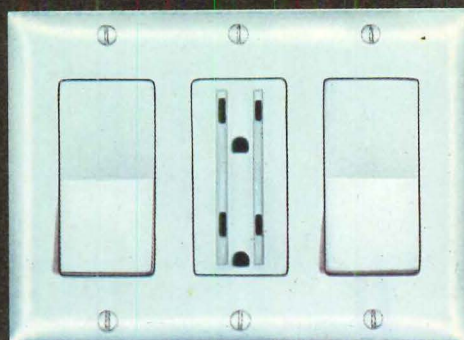
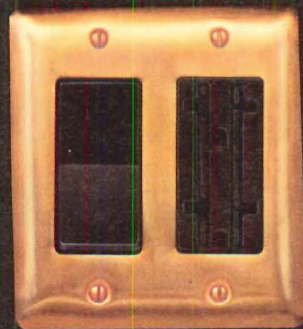
"We find that the restrictive covenant is not ambiguous. To seek to enlarge upon its unmistakable language limiting the use to 'residential and farm purposes only' so as to include a church is to ignore clear language. However laudable and necessary may be the plaintiff's purposes, we do not believe they warrant or justify denying defendants' their legal rights. Whether such uses are to be limited to residential and farm, or to residential or farm, is of little solace to plaintiff for the intended use comes within neither category; hence, whether the language is alternative or conjunctive is of little moment."

Another argument presented by the religious body was that neighboring property owners should not be permitted to enforce the restrictive covenant so as to bar a church edifice and that the enforcement of such a restrictive covenant was against public policy. The court, in rejecting this contention, quoted from an opinion of the late Mr. Justice Cardozo, who commented:

"Neither at law nor in equity is it written that a license has been granted to religious corporations, by reason of the high purpose of their being, to set covenants at naught. Indeed, if in such matters there can be degrees of obligation, one would suppose that a more sensitive adherence to the demands of plighted faith might be expected of them than would be looked for of the world at large. Other owners may consent. One owner, the defendant, satisfied with the existing state of things, refused to disturb it. He will be protected in his refusal by all the power of the law."

An architect can be held liable for damages if he designs a project which does not conform to the requirements of the applicable zoning ordinance. It is equally important that the design professional be made aware of restrictive covenants which may affect the use of the project site, and the burden of this investigation should be placed upon the owner.

Authors: Bernard Tomson is a County Court Judge, Nassau County, N.Y. AIA. Norman Coplan, Attorney, is Counsel to the New York State Chapter of the AIA.



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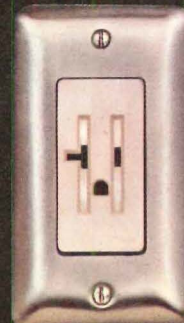
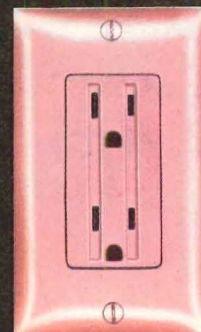
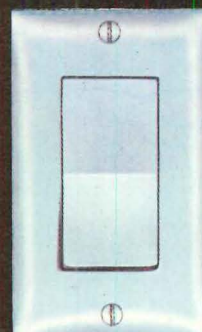
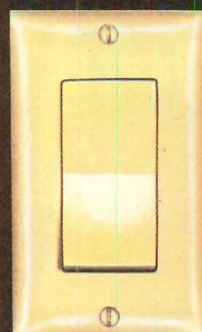
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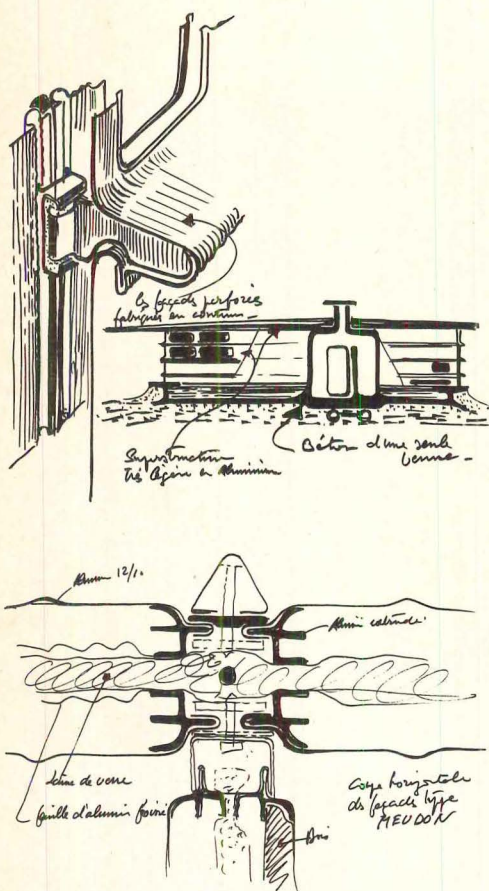
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Prefabrication: Structures and elements



Jean Prouvé. Edited by Benedikt Huber and Jean-Claude Steinegger. New York: Praeger Publishers, 1971. 212 pp. \$25.

Reviewed by Robert LeRicolais, an engineer who, in 1935, was awarded a medal by the French Society of Civil Engineers for a paper on stressed skin structures. Today, 77 years young, he is a senior fellow at the University of Pennsylvania, where he teaches advanced structures to graduate students in the Dept. of Architecture.

Jean Prouvé's book recalls the misfortunes of a would-be architect-industrialist and, in so doing, portrays France after World War II when the powerful industries considered building a menial service. Then, as now, "decision making and marketing" seemed to be the stuff of big business.

This was indeed an incredible period, a time when the life and truth of architecture were sinking fast. I remember a Frank Lloyd Wright exhibit at the Ecole des Beaux Arts, *Quai Malaquais* (the same exhibit had been shown in Philadelphia some months before). One institute member, speaking confidentially (he thought) to another was overheard to remark: "Do you really think this is serious?" World War II had left France not only in economic trouble but also in a kind of intellectual panic.

The admirable tenacity of Jean Prouvé, well expressed by Le Corbusier, was based on profound convictions, observations and considerable manual capacity. His work should have been the only reasonable transition between the over-stuffed historical and archeological teaching method used traditionally at the Beaux Arts school and the spirit of modern architecture as it was spelled out by Le Corbusier.

If I had to choose the best moment in

Prouvé's accomplished career, I would certainly choose the moment when his intuition pushed him towards what is generally called the thin shell system of construction. Though popular with aircraft manufacturers, this type of structure was still ignored by house builders and little used in either the plywood industry or the sheet metal industry. Later on, Prouvé had another near miraculous idea: the introduction of the aluminum folded plate

a roof system, called "*Bac d'aluminium*." His powerful simplicity of purpose hinged at what has always been Prouvé's obsession: fascinated with tools, he concentrated his creative power on a single object. As he puts it: "In industry, concerted action results in a finished article and a client. In the field of building, a multiplicity of uncoordinated operations develop within conflicting organizations."

When I hear all the brouhaha that surrounds industrialized housing, I suspect it would have been better for Jean Prouvé to have come to this country and solve the problem. The French people are far from being the nomads that Americans are and they respect only what is constructed "*dur*," which means masonry walls. It is regrettable for France that Prouvé was given an opportunity in the area of mass housing.

In public buildings, however, he was given a chance; the most important is the Palais des Expositions at Grenoble. In spite of its light appearance the building has a nondimensional scale, for which explanation may be the solid web truss supporting the secondary structure. It is eloquently shown in this book, which, by the way, is remarkable for its superior pictorial quality.

[Continued on page 140]



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Progressive Architecture continues its new advertising feature called 'Details from the industry.' Indexed for filing under the Uniform Filing System adopted by the AIA, CSI and Producers' Council, these pages may be removed and saved for future reference to various methods of fabrication, joining and protection. On the following pages are found advertising information and detail data from Otis Elevator Company.

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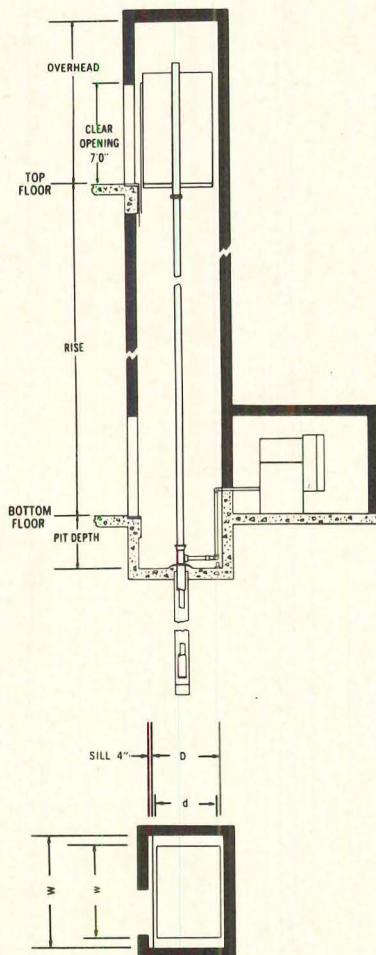
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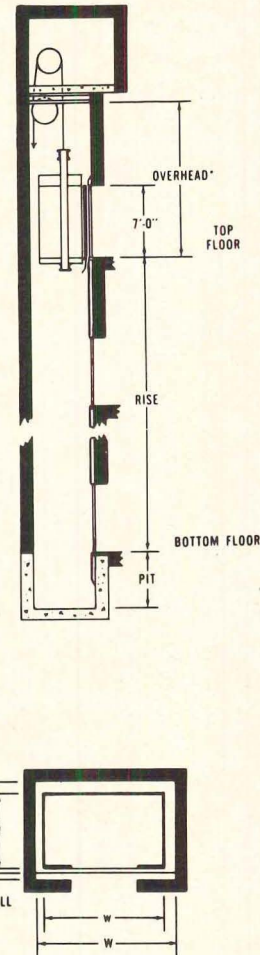
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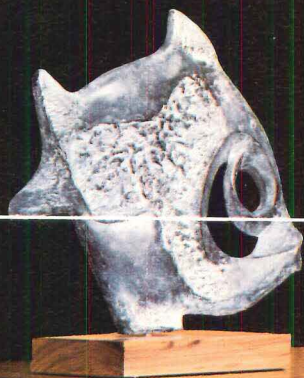
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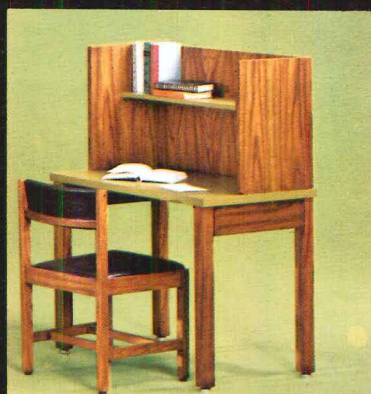
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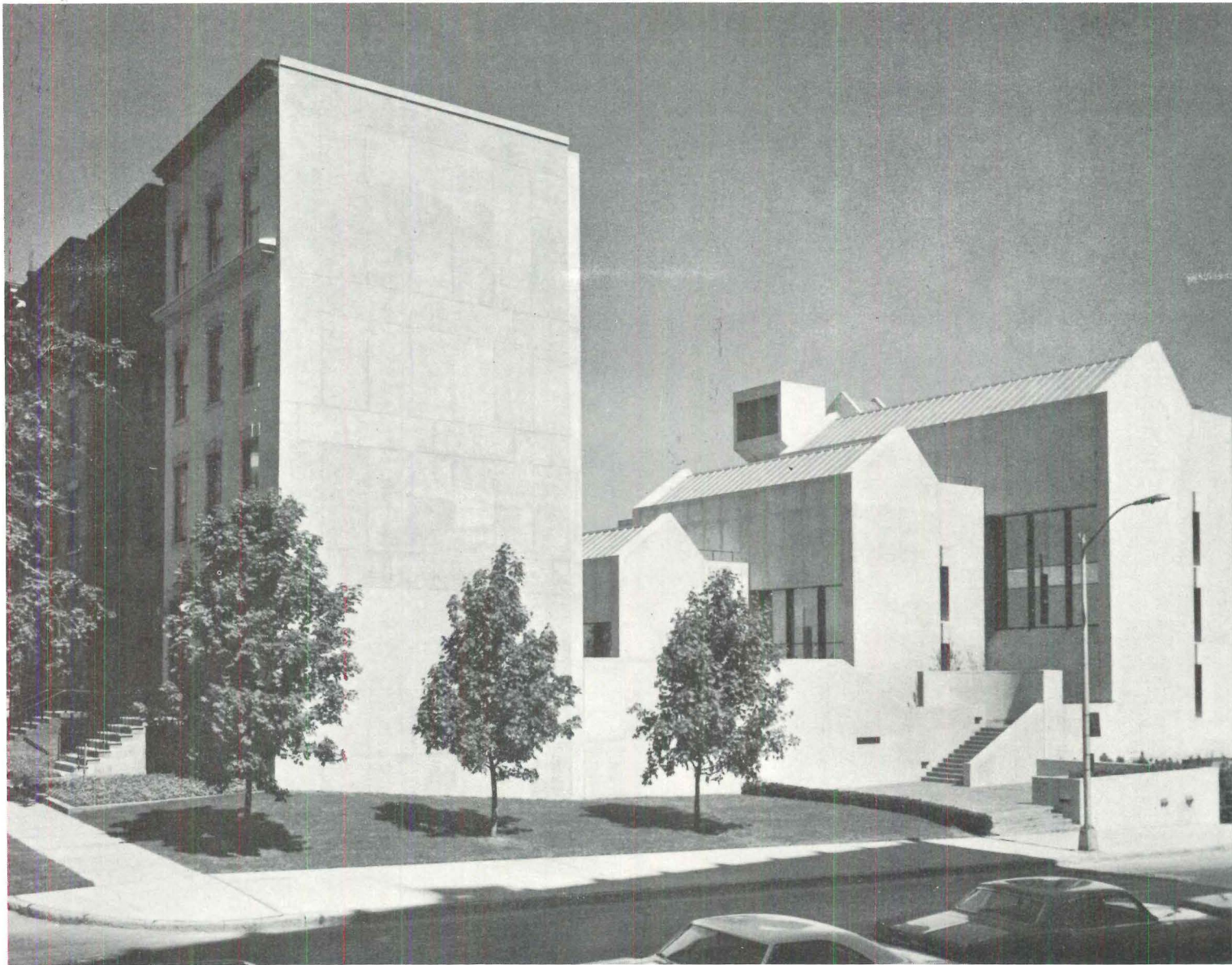
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Headquarters, New York State Bar Association, Albany, N.Y.

Architects: James Stewart Polshek and Associates, New York, N.Y.

Photographer: George C.

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As a superbly gifted stylist, Prouvé had a remarkable impact on the movement of young architecture. His influence was great at the Union des Artistes Modernes (U.A.M.) headed by René Herbst in the Mallet-Stevens House, and his course at the Arts et Metier school was followed by crowds of enthusiastic students. I do question whether his slightly paternalistic attitude will prevail in these hard periods of confrontation. Agreed—never more than now do we need action instead of talk, but we might also consider that action is another way to escape thoughts, and today we need both.

To return to the book, it is compiled of Prouvé's interviews, lectures and manuscripts with a plentitude of drawings and photographs. It presents his theories, his work and his philosophy developed over 50 years of research into new and influential forms of architecture.

How to Have Air Conditioning and Still Be Comfortable by Herbert L. Laube. Birmingham, Mich.: Business News Publishing Company, 1971. 244 pp. \$7.95.

Reviewed by William J. McGuinness who is a mechanical engineer and partner in the firm of McGuinness and Duncan Engineers. Mr. McGuinness is a former contributing editor to P/A.

This objective appraisal by an outstanding expert tells where we are, how far we have come and what still remains to be done on the subject of indoor comfort. The hard look he takes at the "state of the art" dispels the myth that all air conditioning problems have been solved.

With the expressed purpose of drawing comfort and air conditioning more closely together, Herbert Laube has written a great book, presumably for the layman. This is a very disarming ploy for a work that can be read with interest and great benefit by professionals in diverse fields; the building owner, architect, engineer, utility company executive, equipment manufacturer, financier, maintenance contractor, the technical committeeman of ASHRAE and that professional guest—the building occupant.

Herbert Laube worked in some of the first cooling installations in the 1920s after which he was vice president and export manager of the Carrier Company's International Division. During this assignment he visited over 80 countries in many of


which air conditioning had been unknown. For more than 20 years after 1946 he was president of the Remington Corporation, now the Climate Control Division of the Singer Company. Presently, he is actively lecturing and consulting here and abroad.

Drawing on this unusual and varied background, the author has traced the development of indoor climate control from the time of his early collaboration with Willis Haviland Carrier to its present sophisticated state. He has high praise for the skill of engineers in evaluating thermal loads and in the design of specific systems, but some misgivings about the engineer and all of his aforementioned colleagues in the selection of suitable methods of coping with the many different circumstances of outdoor climate and building occupancy.

In the book a comparison is made of comfort factor, first cost and operating cost of various systems including: fully centralized, semicentral (decentralized cooling), decentralized heat recovery, pipe fan-coil, semicentral (central cooling two-pipe induction, four-pipe fan-coil, air multizone, special heat recovery three-pipe fan-coil, four-pipe induction, usual

[Continued on page 148]

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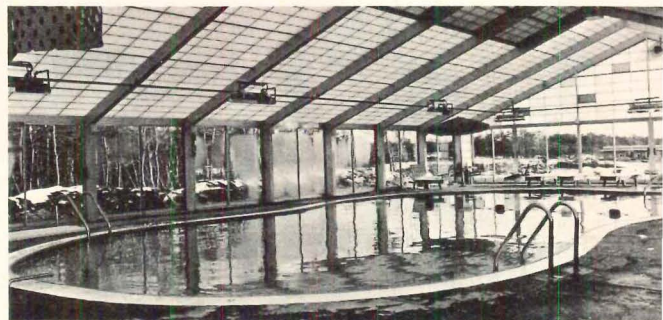
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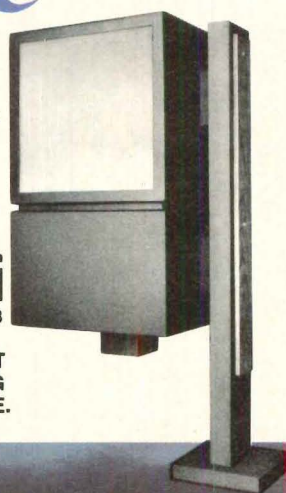
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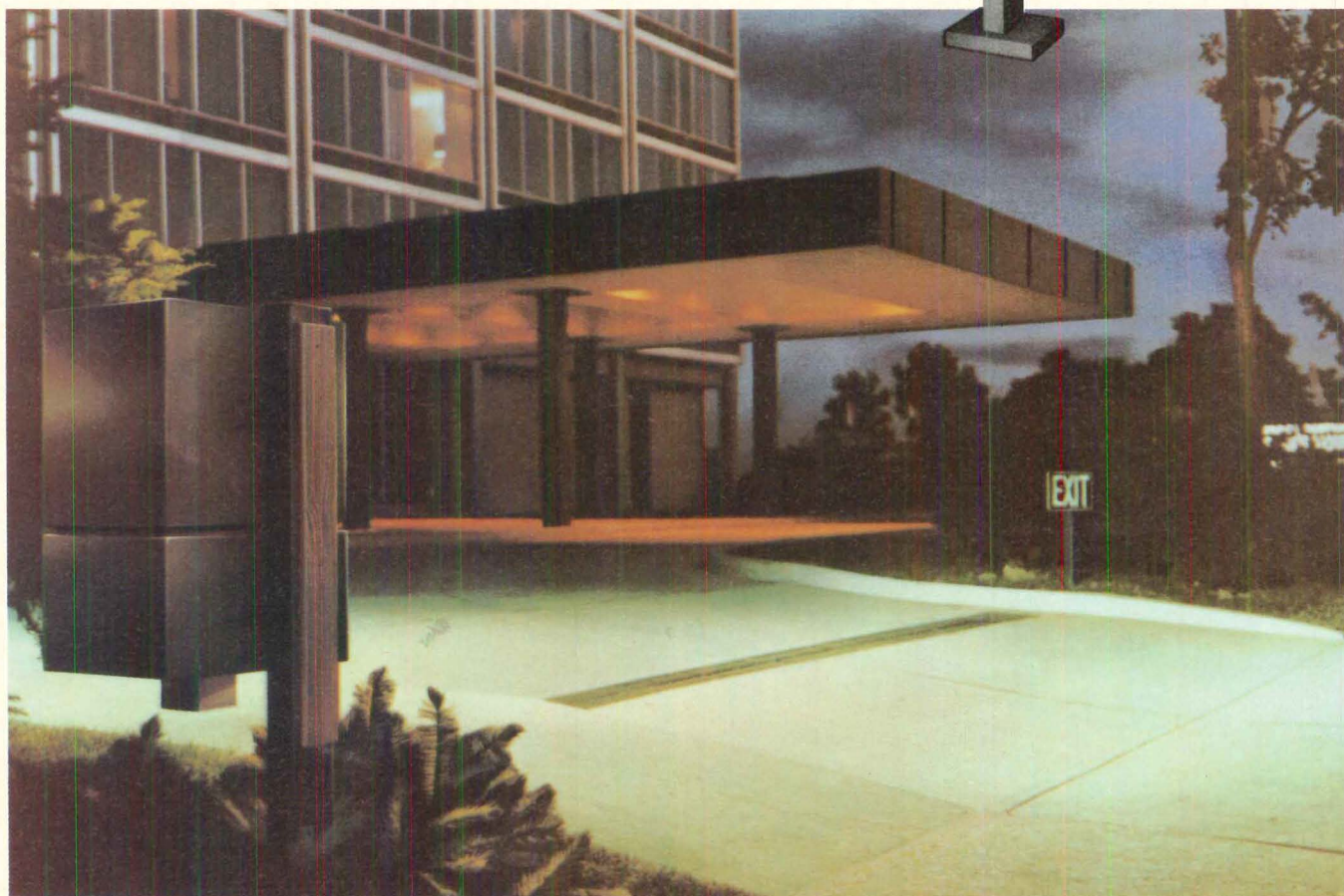
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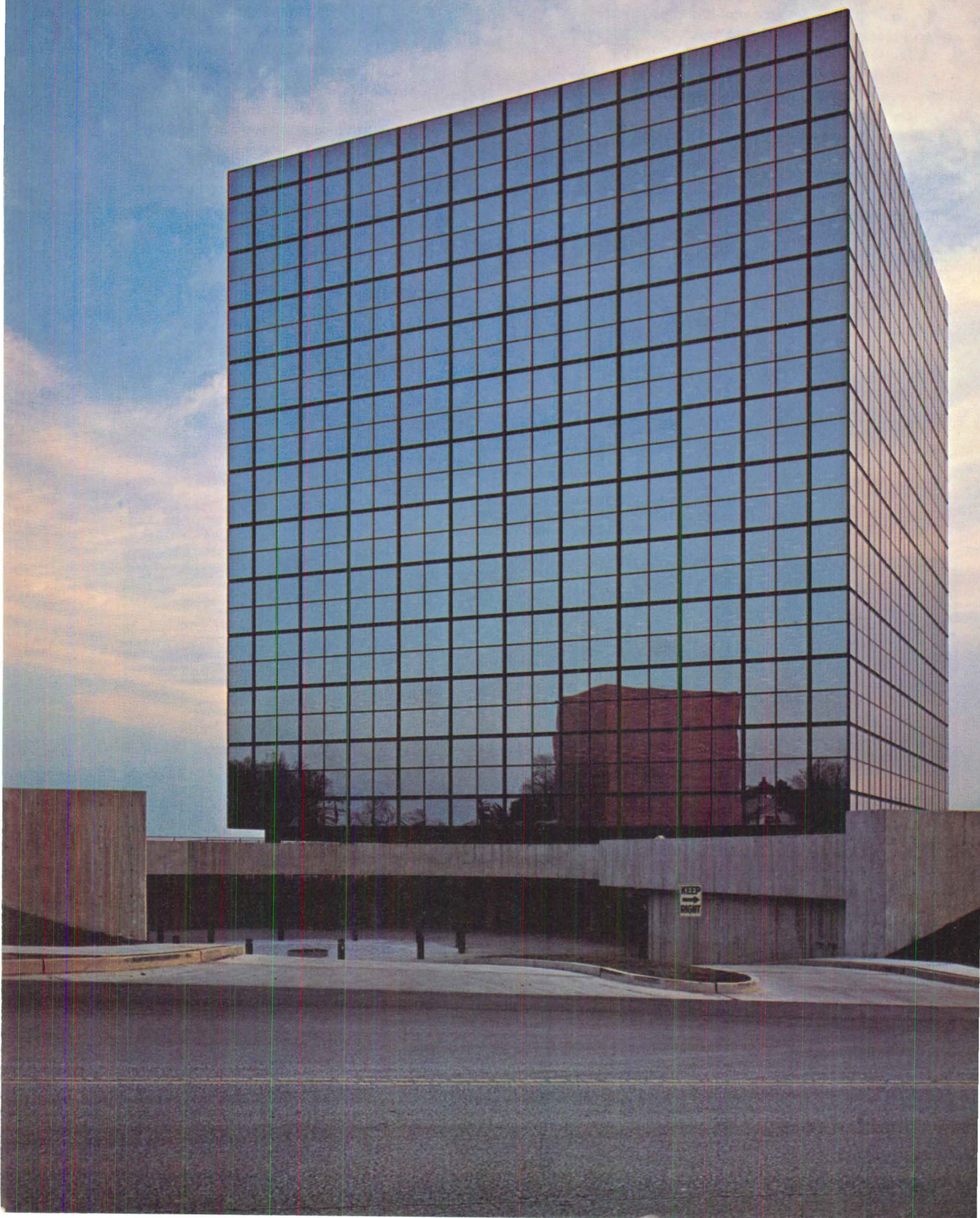
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GENERAL CONTRACTOR: Cogswell Construction Company, Baltimore
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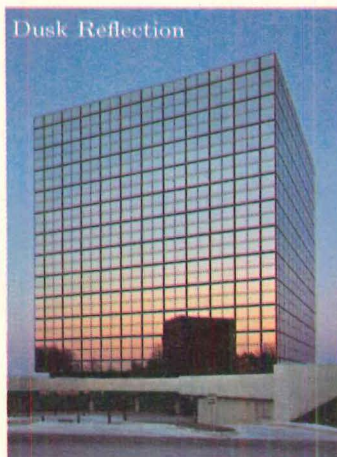
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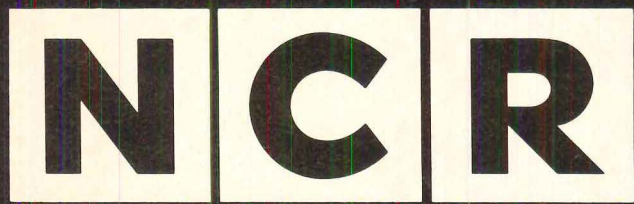
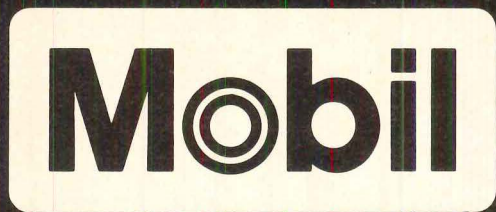
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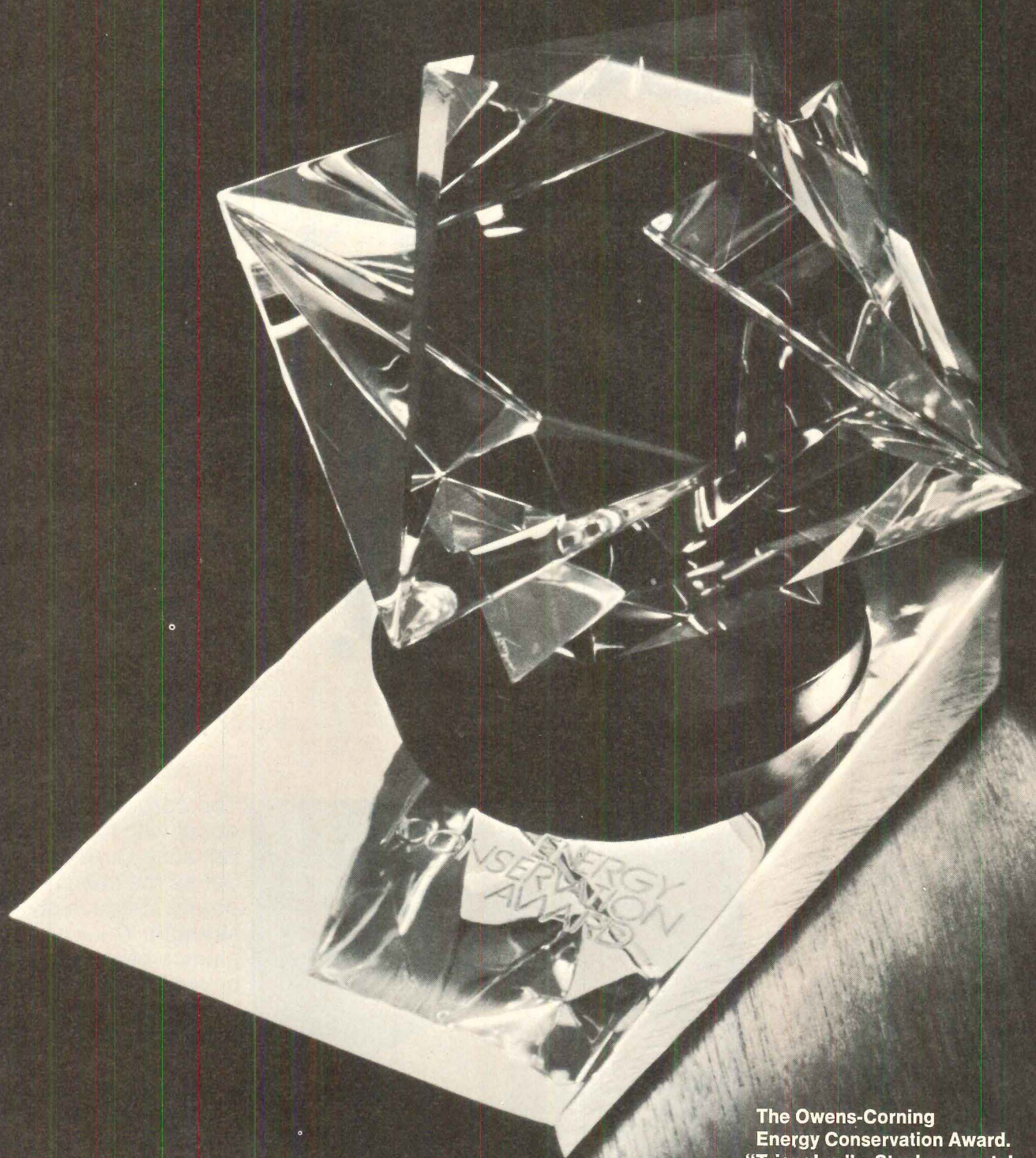
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Show our Awards Jury a building design that doesn't waste energy—and you could win one of the three Energy Conservation Awards Owens-Corning will present this year.

The Awards Jury will be looking for three things: Creativity. Originality. And designs that save energy.

We're running this program because of the urgent need to conserve energy. Too many buildings waste energy and contribute to environmental pollution.

By offering Energy Conservation Awards, we hope to stimulate new designs and ideas for conserving energy. We also want to honor the architects and engineers who do the best job of designing buildings and mechanical systems that save energy.

The winning combination of energy-saving ideas could be in the building you're working on now.

Who can enter. All registered architects and professional engineers practicing in the U.S. are eligible. As individuals. Or in teams. But to qualify, your entry must be a commissioned building project—in the design process, under construction or a completed structure.

The use of Fiberglas* products is not an entry requirement.

The Awards. The Awards Jury—outstanding

professionals in the fields of architecture and engineering—will present an award in each of these categories:

Institutional—schools, hospitals and government buildings, for example.

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

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Equal emphasis will be given to all entries in each category, regardless of project size.

Winning architects and engineers will receive a Steuben crystal sculpture—the multi-faceted polyhedron shown on the opposite page. The firms and building owners associated with the winning entries will receive Steuben plaques.

Send for entry details now. Completed entries must be submitted by August 31, 1972, so that winners can be notified in September 1972.

For a brochure giving complete details, contact your local Owens-Corning representative. Or write: Owens-Corning Fiberglas Corporation, Energy Conservation Award Program, Fiberglas Tower, Toledo, Ohio 43659.

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Much stress is laid upon the need in large buildings to provide the possibility of both heating and cooling at all times of the year. The effects of people-concentration, high level lighting intensity and solar gain through glass are considered. The author, in referring to some central systems for large spaces as "group therapy," points out the frequent shortcomings in the control in small rooms.

Selection of his own comfort level by the occupant of such rooms in dormitories, hospitals, hotels, motels and private offices is most important and not always achieved in the systems selected.

Of great interest to building owners is an excellent section on trends in fuel and energy costs and the ultimate resources in these commodities.

Pictorial Dictionary of Ancient Athens by John Travlos. New York: Praeger Publishers, 1971. 590 pp. \$70.

Any architect seriously interested in the

architecture, topography and history of ancient Athens, and anyone contemplating a trip there, will find this book a treasure of information. Scholarly in its approach—the author has spent over 25 years studying and excavating in Athens—it is superbly illustrated with photographs, drawings, maps and plans. An architect by profession, John Travlos has been recognized for his reconstructions in Athens and for his archaeological excavations in several Greek cities.

Mr. Travlos is described in the Foreword as "having an incomparable knowledge of the ancient remains, both those which still stand above ground and those which have been unearthed; it is excavated remains, in particular, that must be represented in a pictorial dictionary one aim of which is to document the topography of Athens..."

The book is large in size as well as information but is a far cry from the usual cocktail table art book. Divided into 38 alphabetical sections, it is essentially a historical/archaeological dictionary covering the period from 3000 B.C. until A.D. 300, with many references to later times as well. It offers a wealth of historical and physical detail—the important ancient

sites, buildings and monuments in the city from temples and private houses to aqueducts and fortifications and includes related sculpture too. A brief text introduces each section.

Despite our admiration for the fine quality of this book—the stock, the beautiful, clear photographs—we do question its popularity at \$70, a price well beyond the purse of most individuals, architect and archaeologist. It was prepared in collaboration with the German Institute of Archaeology, the organization that collaborated the preparation of the *Pictorial Dictionary of Ancient Rome*.

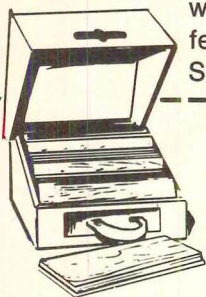
Contract Design. Edited by Ben Hellman. Croton-on-Hudson: Contract Books Inc. 1972. 129 pp. \$14.95 postpaid.

Any architect working in the field of contract design should keep this volume at his right hand. Defined as "a comprehensive guide to the design/planning/furnishing of commercial/institutional interiors" it offers a practical analysis of methodology and procedure. A wide variety of jobs and installations are covered including offices, hotels and motels, country clubs, stores [Continued on page 154]

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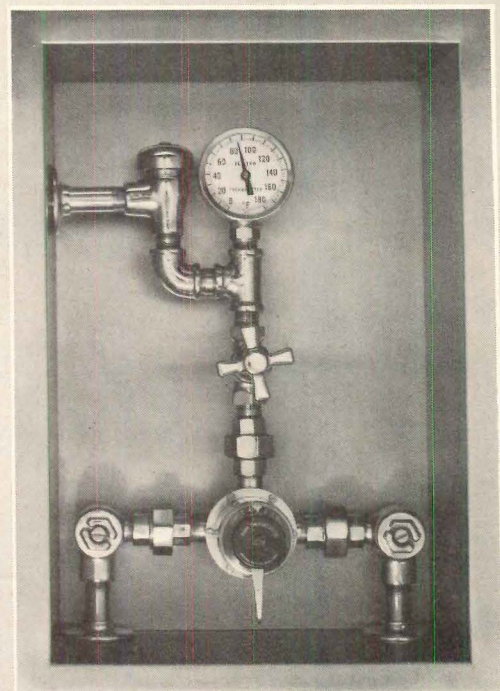
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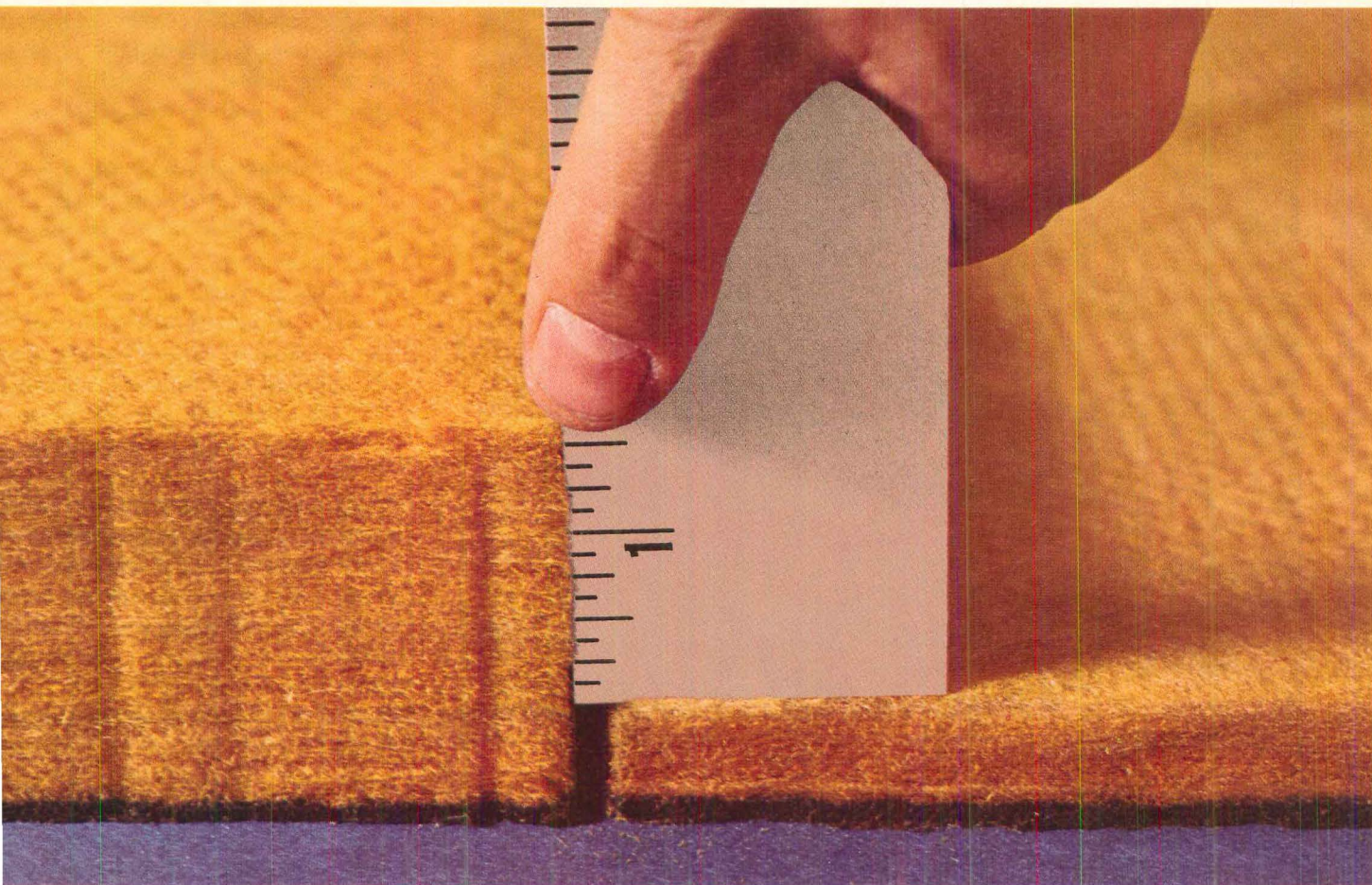
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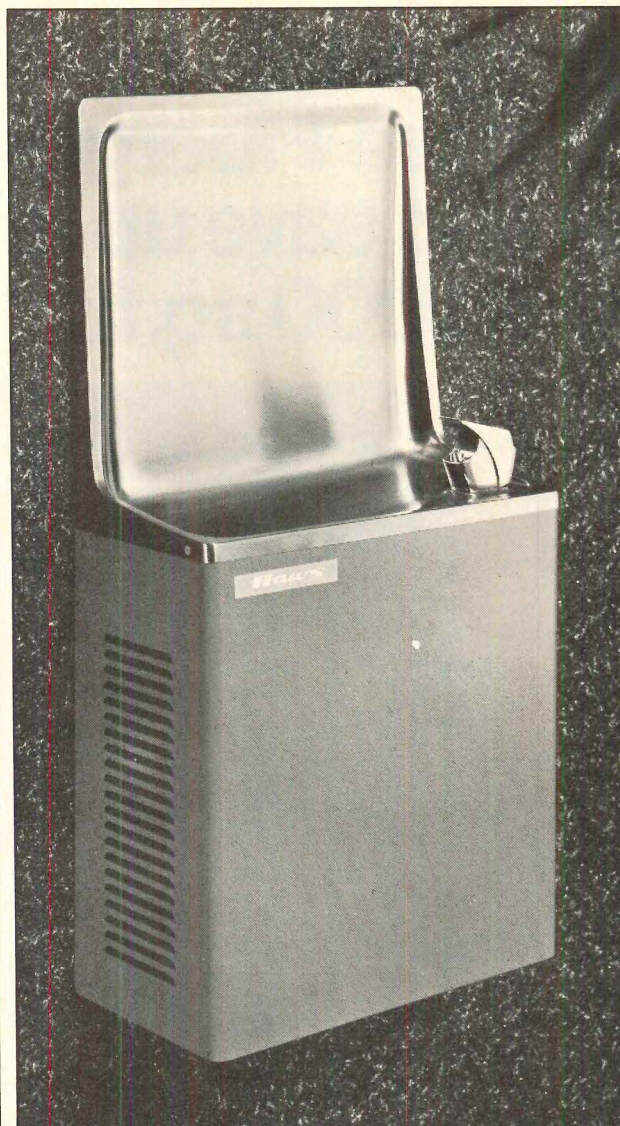
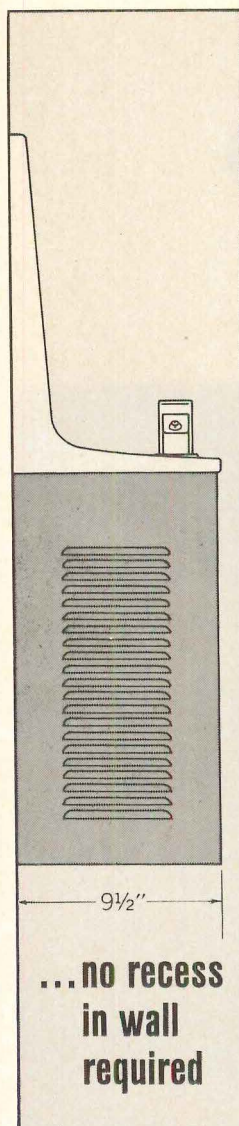
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Books continued from page 148

and shopping centers, geriatric housing, schools, colleges, libraries and hospitals. Contributors include such leading commercial designers as S.J. Miller, Lawrence Lerner, John Van Koert, Lynne Montgomery, Charles Winecoff, Robert Duffy, the Quinlan Rynne Team and others.

The book discusses such basic areas as working with the client; developing a budget; establishing fee structures; space studies; design presentation; a guide to materials, furnishings, lighting, floor covering; field work and final detailing.

The Ultimate Highrise by Bruce B. Brumman, Greggar Sletteland, the Bay Guardian Staff and 52 other arch skyscraper foes. San Francisco Bay Guardian Books, 1971. 255 pp. \$2.95 (paper).

"San Francisco's Mad Rush Toward Sky ..." is the subtitle of this exposé titled *The Ultimate Highrise* and described as "The ultimate in anti-highrise handbook." With no-holds-barred, the book claims to offer economic and political evidence on the plans of major business and labor leaders to transform San Francisco into a West Coast Manhattan Island within the next 20 years—a goal the writers view as a plan to destroy the "last lovely city."

Based on a 12-month Guardian investigation into the economic/aesthetic/political effects of highrise/high density development in San Francisco by a team of researchers, the book offers "the first comprehensive study of the true cost of skyscrapers" and reveals the "secret plan" of the Chamber of Commerce, and the relationship among land/development/real estate interests, key city officials, the redevelopment commissions" and their resulting policies of Manhattanization.

Although a look at the contents page appears to offer a good clue to the content and attitudes of the book, witness: "A History of Skyscrapers—38 Manhattanization Clues; the Secret plan to Blitz SF Neighborhoods ... Redevelopment: Bulldozing for the Poor, Welfare for the Rich ... What happens when the Earthquake Hits (with a list of doomed buildings)," and, although the cartoons by Louis Dunn are nasty and funny, this is essentially a serious book about what these authors view as a serious problem. Their goal is to organize the community and beat BART and the Redevelopment Urban Design Plan. The final section [Continued on page 160]

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Six specifiers talk about the APA[®] glued floor. The quiet one.

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Frank Burton Wilson, AIA, Total Concepts Corp.,
Torrance, Calif.

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Ralph Howey, The Howey Co.,
Charlotte, N. C.

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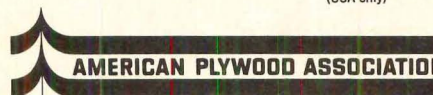
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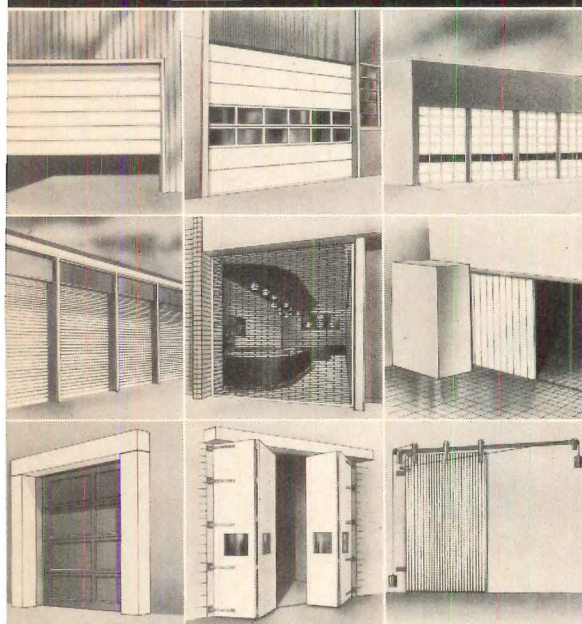


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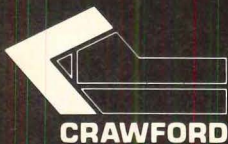
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Books continued from page 154

offer "A Citizen's Guide to Land/Power Structure Research" and "A Roster of Neighborhood Conservation Groups."

Documents

[The documents listed below are available from the associations and agencies cited. Request for such documents should be directed accordingly.]

The Rise of Broadway II. Film by Portland Cement Association: 18 minutes; sound and color. A/V Communications Section, PCA, Old Orchard Rd., Skokie, Ill. 60076. Rental, \$5 per week.

The construction of a seven-story apartment building using a site-cast, stack-slab building system is the subject of this film. The building was completed in nine months; after the foundation was cast, erection of structural components took only 17 working days.

Improved Health Facilities for your Community. Director of Community Projects, New York State Health and Mental Hygiene Facilities Improvement Corp., 44 Holland Ave., Albany, N. Y. 12208.

A state-financed program for constructing, modernizing and expanding health and health-related facilities for cities and counties in New York State is described in a 12-page booklet. It details how communities can apply for state funding and for assistance in design, building, equipping or renovating such health facilities as hospitals, county infirmaries, nursing homes, clinics and health centers. State assistance for the financing and construction of voluntary, nonprofit hospitals is also discussed.

Introduction to Today's Ultrahigh-Strength Structural Steels—STP 498. American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103. 26 pp. \$3.75.

Those features that distinguish the ultrahigh-strength steels from other classes of high-strength constructional steel are defined in this publication. Various families of ultrahigh-strength steel are discussed in terms of composition, mechanical properties, forms available, forming characteristics and weldability; the steel families discussed include medium-carbon low-alloy hardenable, medium- and high-alloy hardenable, hardenable stainless and cold rolled stainless.

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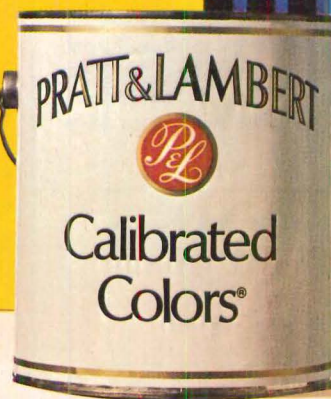
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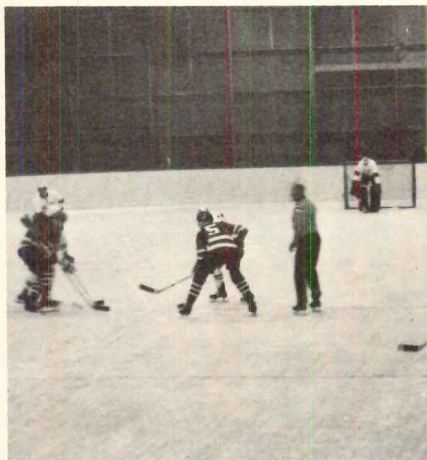
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Notices

Appointments

C. James Appleton, III, AIA, and Tung C. Cheng, AIA, have been named partners of Saunders, Pearson & Partners of Alexandria, Va. The firm will now be known as Saunders, Pearson, Appleton & Partners.

James B. Redford has joined Myrick-Newman-Dahlberg, Inc., Dallas, as a specialist in planning and environmental design.

Robert O. Little has been elected executive vice president and a board member of Wm. B. Ittner, Inc., St. Louis, Mo.

David C. Birdsell and Ronald L. Sable, CSI, have been made senior associates of The Nolen and Swinburne Partnership, Philadelphia. Joseph A. Zadlo, RA, and Melvyn B. Jacobson, RA, have become associates.

Ian Kenneth Carter has joined Robert L. Barnett, AIA, Architect & Associates of Beverly Hills, Calif. as an associate architect.

Gerald E. Ervin, Donald E. Evenson and Russell D. Haisley have been promoted to principals and directors of the corporation of Hall and Goodhue, San Francisco and Monterey, Calif.

Richard Sharpe, FAIA, Architecture, Interiors and Urban Design, of Norwich, Conn., has appointed Frederick C. Biebesheimer III, Padmakar Vasudeo Karve and Jonathan B. Isleib associates, thus changing the name of the firm to Richard Sharpe Associates.

Raymond Kipust has been named a partner of Arthur L. Spaet and Associates, Consulting Engineers, New York City and Stamford, Conn. The name of the firm is now Arthur L. Spaet and Associates.

Gjeltten, Schellberg and Associates of Forest City, Iowa and Rochester, Minn., is now Gjeltten, Schellberg, Johnson, Stadsvold and Brust, Architectural Design Group, Inc. Robert L. Johnson, AIA, has become a full partner in the Forest City Office and Byron D. Stadsvold, AIA, is now a full partner in the Rochester office. Frank E. Brust, AIA, a new principal, will join the Rochester office.

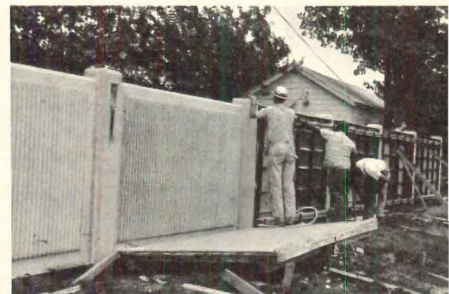
William W. Caudill, FAIA, has been named president of Caudill Rowlett Scott, Houston-based architects, planners, engineers.

Wendell R. Morgan, Jr., AIA, has been named director of design of Ritchie Associates, Inc., Chestnut Hill, Mass.

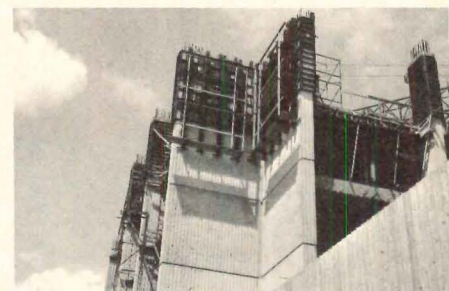
Robert L. Bailey has been named a participating associate of Skidmore, Owings & Merrill, Portland, Ore.

[Continued on page 170]

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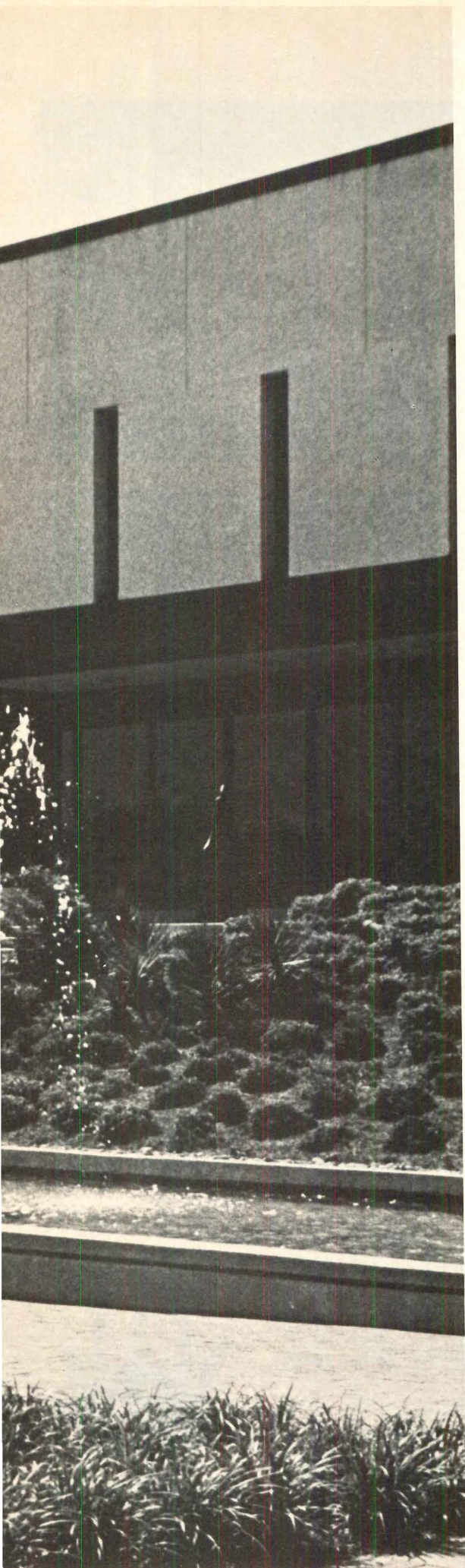
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unlimited design
flexibility.**





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make 128,000 square feet
of building deliver thousands
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Before designing your next building, ask your electric utility company how *the electric climate* can help you save money for *your* client.



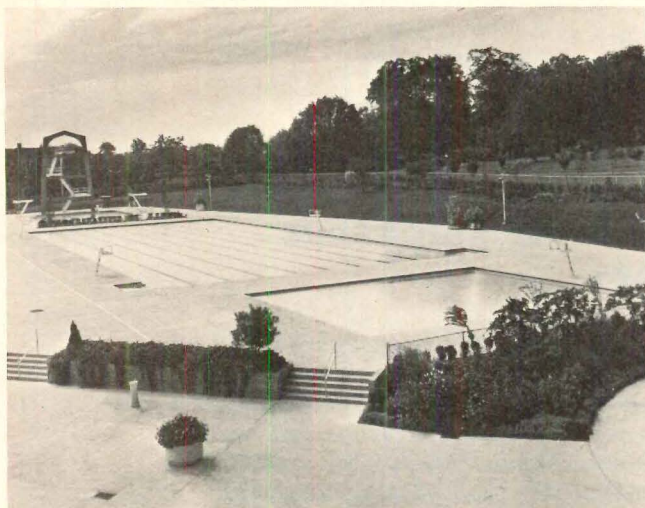
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Electric Energy Association, 90 Park Avenue, New York, N.Y. 10016

The Paddock Swimming Pool System



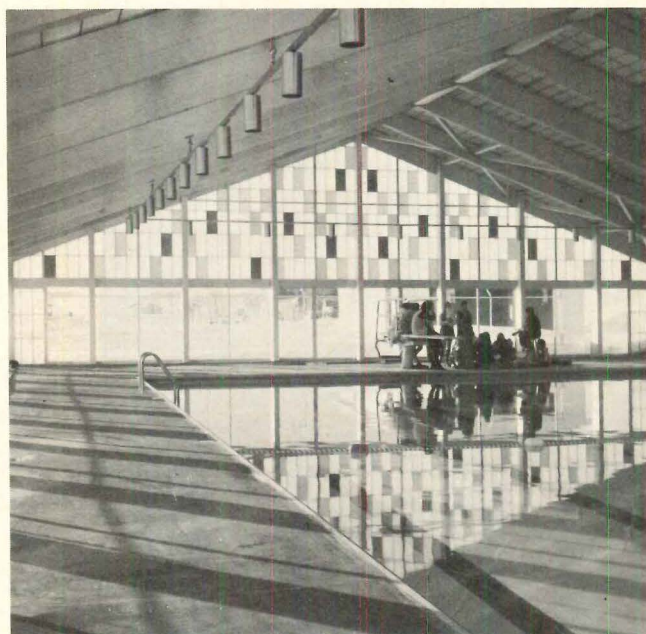
The Paddock Pipeless Pool in a Paddock Skywall Natatorium . . . the perfect combination for indoor/outdoor swimming . . . year round.



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It's filtered by Paddock's Pipeless Filters—a full line of filters which may be installed anywhere in the pool complex.



And, it is enclosed in Paddock's Skywall Natatorium, the indoor/outdoor enclosure, in which nearly 50% of the roof and two thirds of the side wall may be open or closed as weather dictates.

It also eliminates duplication of Municipal-Educational facilities by combining the school pool that is unused in summertime with the park pool that is unused in wintertime.

Detailed brochures of the Paddock Pool System are available by writing—Vice President, Marketing Paddock Pool Equipment Co., 118 Railroad Ave. Ext., Albany, N.Y. 12205.

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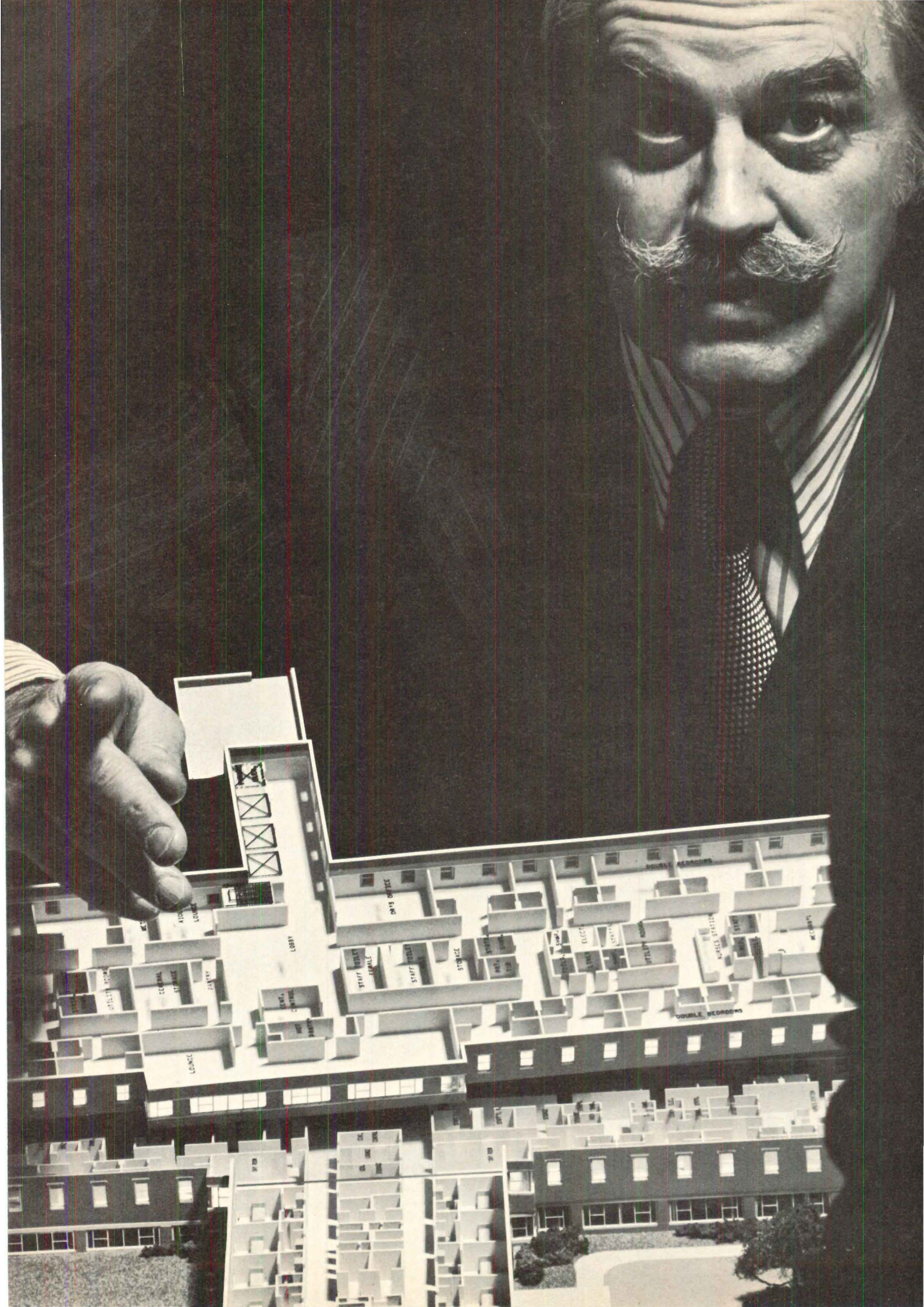
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The July issue of Progressive Architecture

'The voice of architecture in America'

To help you with your next hospital commission

In 1972, there will be \$15.7 billion in architecturally designed hospital construction. That's 15% of the entire building market. Most of the hospital commissions will be awarded to large and medium sized firms with staffs and expertise covering the full range of problems: patient care, space utilization, waste handling, work and laboratory stations.

To bring you up to date on—ahead of—current developments in the field, the editors of Progressive Architecture will devote the entire July issue to the subject of systems, sub-systems and other "packages" for hospital interiors. The time is right for an update on the subject.

Example: there will be a report on "minimal shell" designs that provide almost complete flexibility in space allocations by means of lightweight partitions; plastic furniture that can be decontaminated by "dishwasher" techniques; remote control laundry systems. What's now available, what's ahead.

If your firm is interested in federal, state or private hospital commissions, the July issue is must reading. It will put you three giant steps ahead of your client's program.

Advertisers note: if your products are used in hospitals—and what products aren't—the July issue of Progressive Architecture is well worth your consideration.

Lime Crest Marble Chips add color contrast to architectural concrete

20th Precinct Station House, Manhattan. Architects: Ifill, Johnson, Hanchard;
N. Y. C. Pre-cast concrete by: Vernon Art Stone Corp., Bronx, N. Y.



With their unusual crystalline structure, Lime Crest Marble Chips offer a predominant, long lasting whiteness: you can use pastel shades or other light colors in a mix . . . almost any desired effect can be achieved so much more economically than with cut stone. No wonder Lime Crest is so often specified when the aggregate is exposed, when split blocks are used, or wherever appearance makes a difference.

Lime Crest Marble Chips have been thoroughly tested for **Compressive Strength**, **Flexural Strength**, and **Durability** by an independent testing company. But words don't do them justice . . . let us send you some samples that will.

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Kricket Smith has been appointed a principal in the Cambridge office of Moriece Gary, Inc.

Mergers and expansions

The planning and architectural firm of William L. Pereira Associates, Los Angeles, has merged with the firm of William P. Fickel AIA, of Newport Beach, Calif.

The A. Epstein Companies, Inc. has organized a sixth subsidiary company, Epstein Civil Engineering, Inc., Chicago, with Ernest Pepe as president.

John Graham and Company, Seattle, has formed an institutional programming and planning division with William R. Pickens as its director.

New firms

Walter Burde, AIA, and Eugene W. Bayou AIA, have formed Architects Burde, Bayou Associates, Monte Verde St. and Seventh Ave., Carmel-by-the-Sea, Calif. 93921.

R.M. Kliment Architect, 1013 Carnegie Hall, 881 Seventh Ave., New York City 10019.

Herald R. Holding and Robert H. Kula have formed the firm of Holding Kula Associates, Colorado Springs, Colo.

Emil M. Madsen, Architect, Battle Lake, Minn. 56515.

ADD Inc., architecture design development has been formed in Cambridge, Mass. to solve environmental design problems. Philip M. Briggs and Wilson F. Pollock, Jr. are participating principals.

Charlotte Sabathie Design Associates, Inc., 29 E. 10 St., New York City 10003. Charlotte Sabathie is president and Joseph H. Fevola, vice president of the firm.

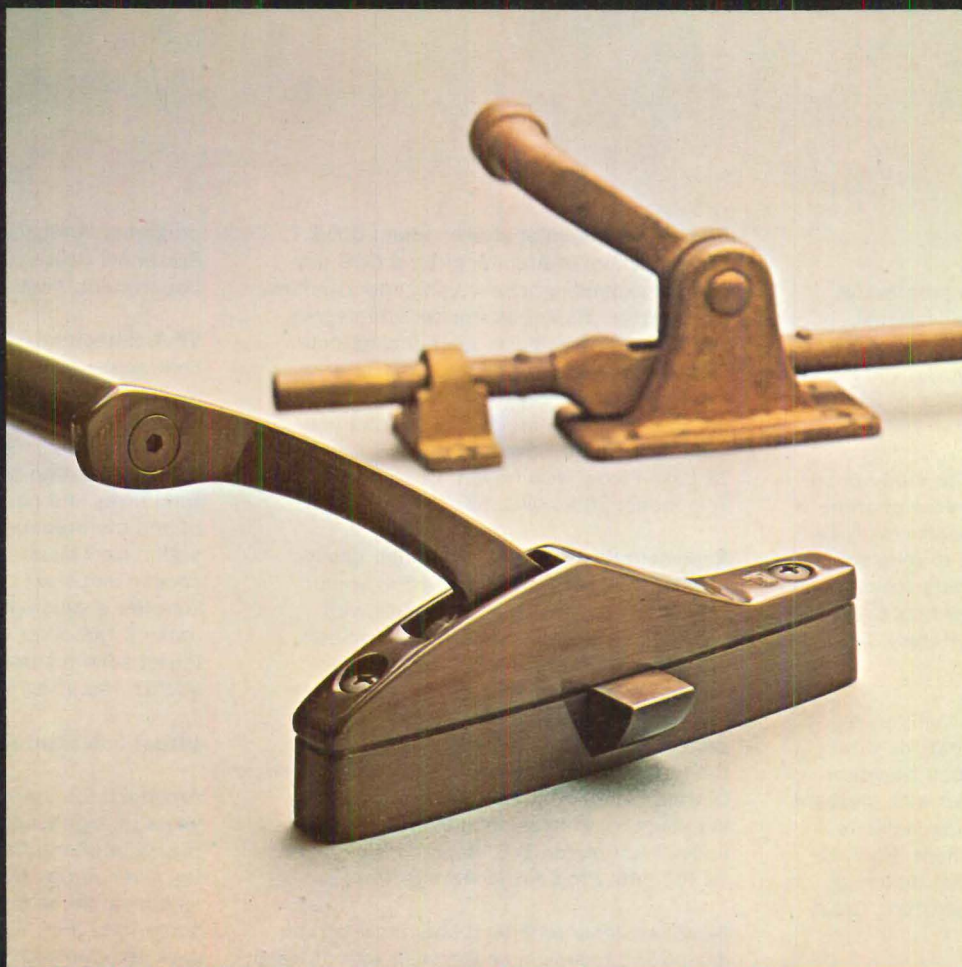
Reorganizations

Dubin-Mindell-Bloome Associates, consulting engineers of West Hartford, Conn. and New York City, now operate as a professional corporation in all states where corporate practice is permitted. The partnership of the three principals, Fred S. Dubin, Harold Mindell and Selwyn Bloome will continue to practice in all other states.

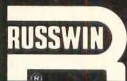
David H. Wilson and Associates, Architects, Towson, Md., has been changed in name and structure to Wilson-Magruder Webb-Ratych, Inc., Architects, Planners and Designers.

Interiors for Business of Atlanta, Ga., has been reorganized under the direction of W. Upright, production manager, and John R. Langford, design manager.

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Architect: Project manager with minimum of 10 years experience, in all phases of architecture. Permanent position with rapidly expanding firm. Must be willing to relocate in Baton Rouge, La. Send complete resume and salary requirements to C. Frederick Brave, Architect, 2133 Matador St., Harvey, La. 70058.

Architects: Required for work on housing and recreational centers by practice with contracts throughout the United Kingdom office situated in coastal resort with pleasant surroundings and good housing facilities. Salaries by personal arrangement. Reply to Williamson Partnership, Central Buildings, Mary St., Porthcawl, Glamorganshire, Great Britain.

Architect or architectural draftsman: Growing office with general practice including contemporary and traditional architecture, civil, sanitary and structural engineering and urban and regional planning. Located in the center of the "Land of Pleasant Living." Send resume and salary requirement to George, Miles & Buhr, Architects-Engineers-Planners, P.O. Box 669, Salisbury, Md. 21801 or phone 301-742-3115.

Architectural instructor: Eastern community college is seeking dynamic architectural instructor, dedicated to innovative teaching techniques with community college student uppermost in mind. Course offerings range from architectural graphics, construction methods and materials analysis, to basic design process and environmental planning concepts. Professional degree and practical experience required. Teaching experience preferred. Please respond in confidence with salary requirements to Box #1361-345, *Progressive Architecture*.

Black environmental studies team: B.E.S.T. (Yale's School of Architecture); a CDC program is expanding; challenging opportunities: (1) Director: Master of architecture degree and 3 years experience, (2) Educator-counselor: Architecture or related field with teaching experience, (3) Field work coordinator: Bachelor of architecture. Send resume to: Prof. Richard Dozier, c/o B.E.S.T., 78 Lake Place, New Haven, Conn. 06511. Telephone: 203-436-8168.

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Senior designer-architect: Must have strong design and technical background with at least 8 years experience. Opportunity with an expanding large architectural firm in southeast area of United States. Experience should be diversified and preferably weighted with hi-rise and institutional structures. Salary commensurate with experience and talent. Send resume to Box #1361-347, *Progressive Architecture*.

Senior structural draftsman: With minimum 3 years experience. Develop and check contract drawing with minimum supervision. Experience in steel and concrete frames for institutional and commercial projects desired. Submit resume in confidence to Mack Epperson, P.E., Architects Hansen Lind Meyer, 116 South Linn Street, Iowa City, Iowa 52240. An equal opportunity employer.

State agency: Opening as head of historic sites planning and restoration branch. Requires a BS in architecture with experience in architectural restoration and supervising archeological, architectural and historical

programs. Annual salary—\$14,628—cont. Personnel Office, Texas Parks and Wildlife Department, Austin, Texas 78701.

VP-Architectural/client relations: General contracting firm, located near Detroit, seeks an architect or engineer with architectural experience to head their client services department. This individual will be responsible for co-ordination between outside architectural firms and our clients, the negotiation of and the preparation of cost budgets and preliminary plans. At least 5 years of experience in industrial construction is desirable. We offer a substantial base salary, bonus, options and other excellent fringe benefits. Please send resume in confidence to Box #1361-348, *Progressive Architecture*.

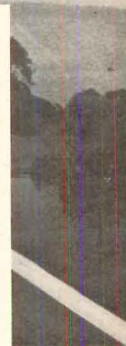
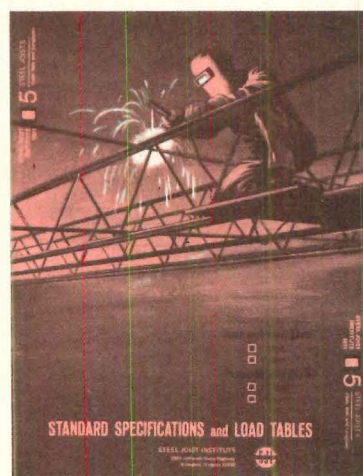
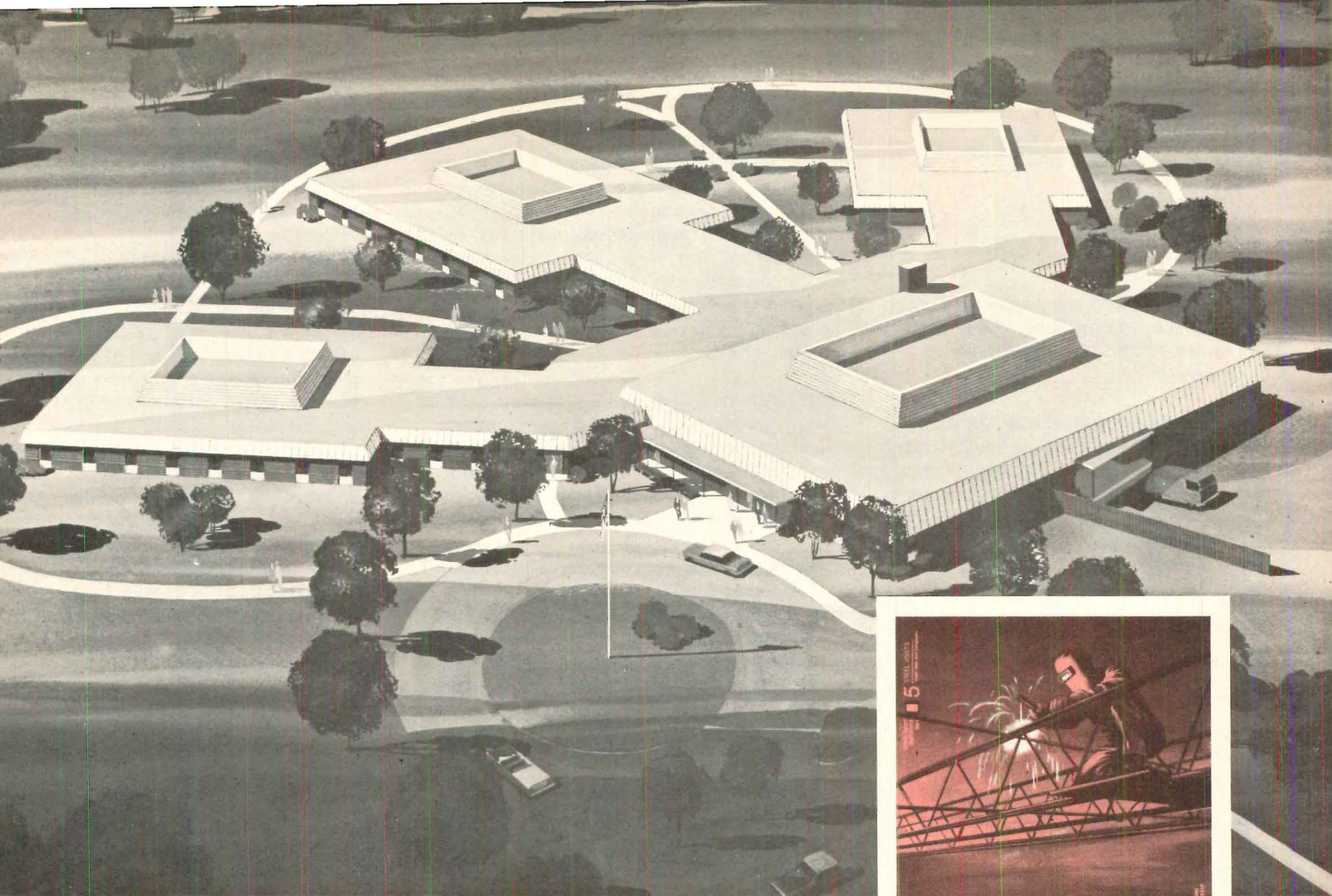
Situations wanted

Architect: 32, married, B. Architecture, 10 years of experience in design, working drawings & interiors. Creative, very good at sketching & rendering. Currently employed in a leading architectural firm in west coast as senior designer. Wishes to relocate in a design oriented architectural firm. Reply to Box #1361-349, *Progressive Architecture*.

Architect: Missouri registration, 28, married, 5 years experience in diversified projects, 2½ years hospital design. Seeks responsible position with advancement potential in small to medium, progressive firm. Prefer southern or coastal region, will consider others. Willing to travel. Reply to Box #1361-350, *Progressive Architecture*.

Architect: Registered, Master of Architecture, 10 years varied experience with international firms. Experience in all phases of the profession with primary work in design. Presently chief designer. Desire position with partnership. Resume upon request. Reply to Box #1361-351, *Progressive Architecture*.

Architect: 10 years varied experience, licensed New York, NCARB pending. Work ranges from high-rise housing design and campus planning to children's furniture/play-environment. [Continued on page 174]



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Architect-manager: NCARB, CSI, 25 years experience including specification work. Now with internationally known Los Angeles A. & E. firm. Desire relocate SE United States, prefer North Carolina. Seeking responsible position best utilizing abilities. Married, family grown. Resume upon request. J.L. Mills, Jr., 1741 Bel Aire, Glendale, Cal. 91201. (213) 242-8161.

Engineer/construction/real estate/manager: Degrees in engineering and business; presently affiliated with A/E firm for 10 years: principal and officer in construction firm; real estate license & associated with local real estate firm. Thoroughly experienced in modular housing & F.H.A. requirements. Age 33; married. Willing to relocate. Resume upon request. Reply to Box #1361-353, *Progressive Architecture*.

Hospital architects: 4 hospital architects totaling 30 years experience in design of health care facilities and who have worked together for 4 years desire collaboration with established firm. Would like to form nucleus of medical team to provide programming, planning design and working drawing services. Reply to Box #1361-354, *Progressive Architecture*.

Professional engineer: 38, proficient in heating, ventilating, air conditioning, plumbing and drainage systems. Will affiliate or represent contractor, engineer or architect. Geographical area no barrier. Reply to Box #1361-355, *Progressive Architecture*.

Professional exhibits designer: Specialized museum and permanent exhibition experience, all phases, 14 years experience, graduate industrial designer with administrative experience, seeks position with architectural firm engaged in museums, exhibit pavilions, halls of fame, etc. Capable and responsible with professional references. Possible business following. Reply to Box #1361-356, *Progressive Architecture*.

Senior draftsman: 36 years, experienced in producing quality working drawings with some design, for a wide range of projects. Seeking

position with progressive A/E or architect firm. Willing to relocate. Reply to Box #1361-357, *Progressive Architecture*.

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[Continued on page 177]

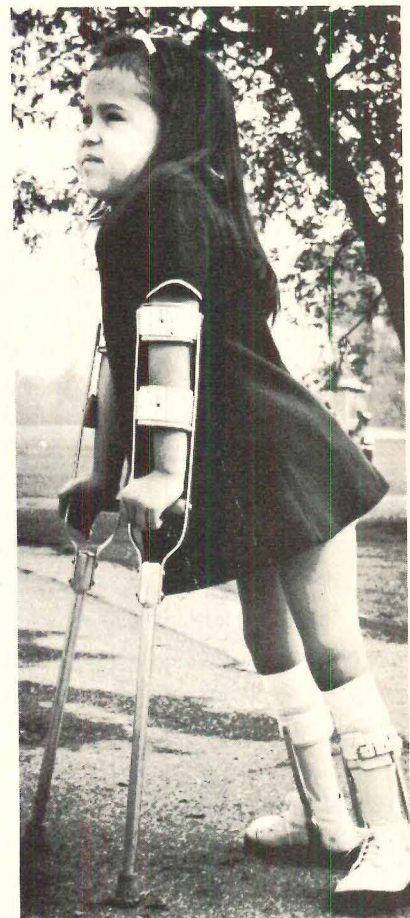
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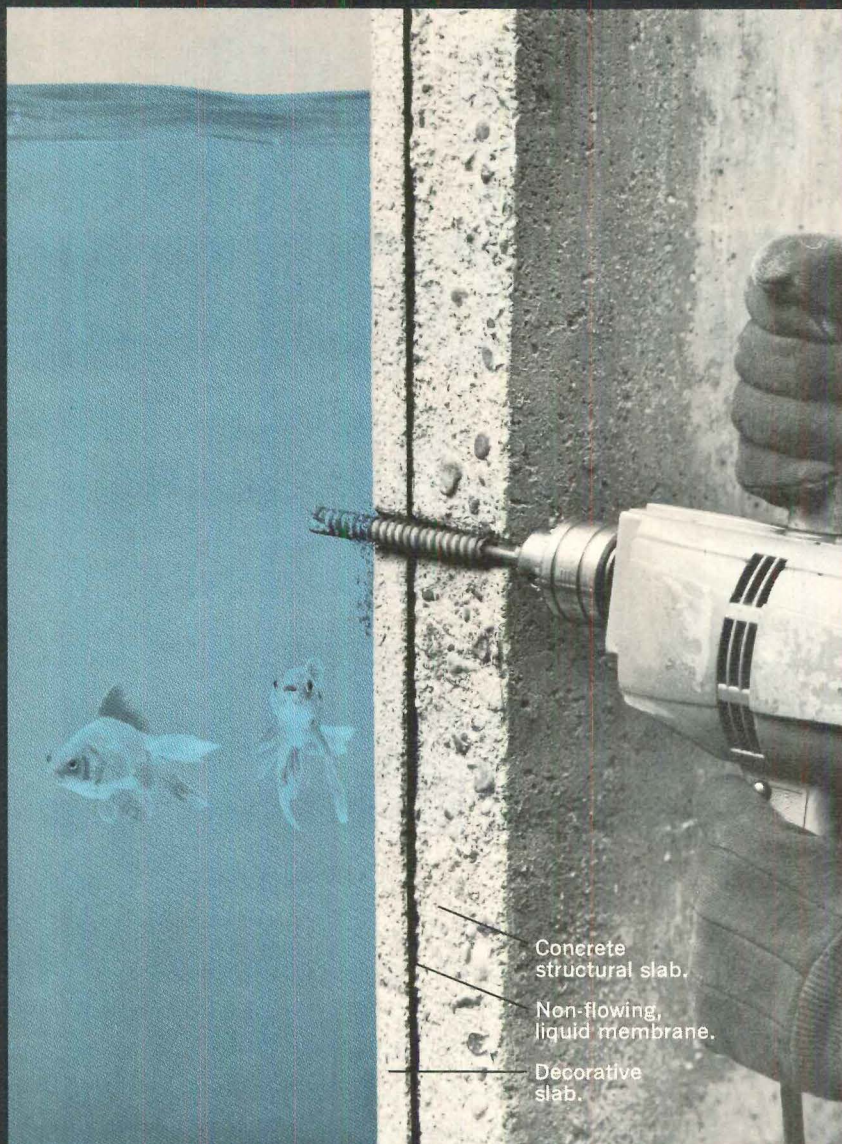
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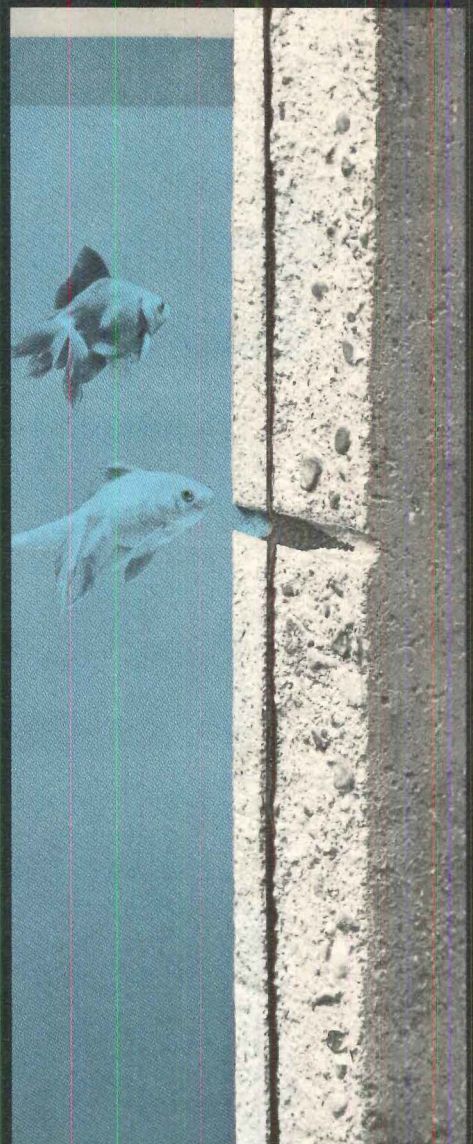
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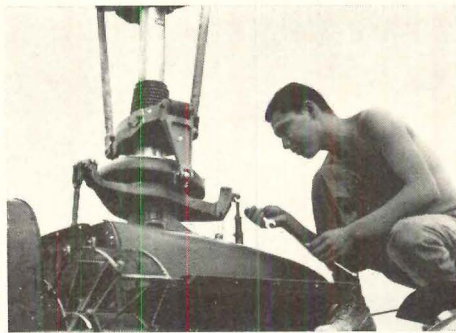
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by Robert Venturi, Denise Scott Brown, and Steven Izenour

This important book has already generated a good deal of healthy controversy through excerpts that have appeared in *The Architectural Forum* and through numerous articles dealing with some of its themes, but the full statement that only the book can make will lead to much new thinking—and passionate debate—about the proper goal of architecture and the true role of architects.

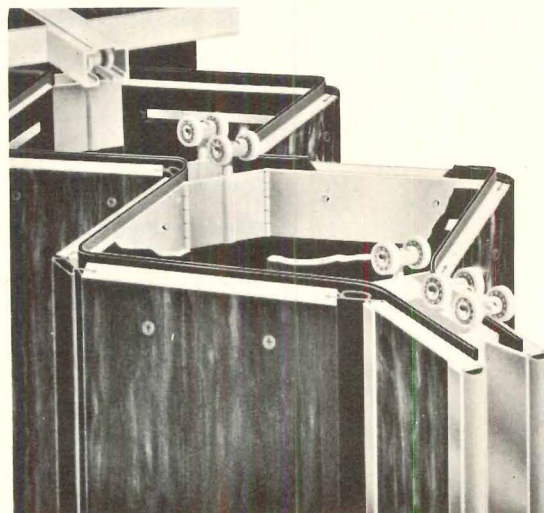
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art continued from page 174

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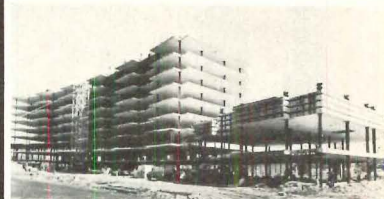
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A. stoning rough concrete



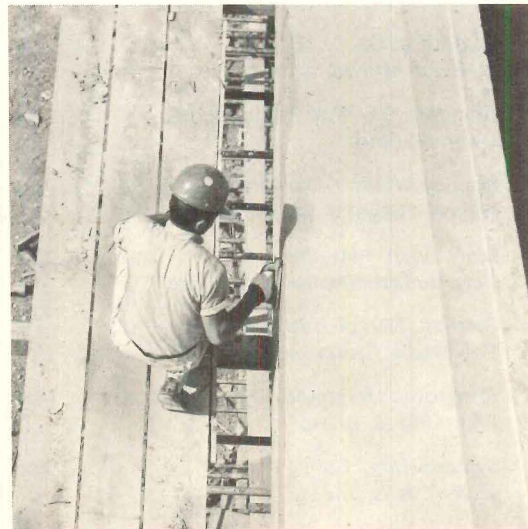
B. knocking off burrs



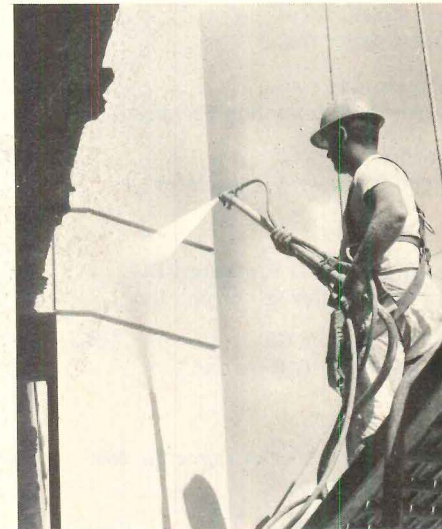
C. grout coat application



D. trowel coat to level



E. finishing for spraying

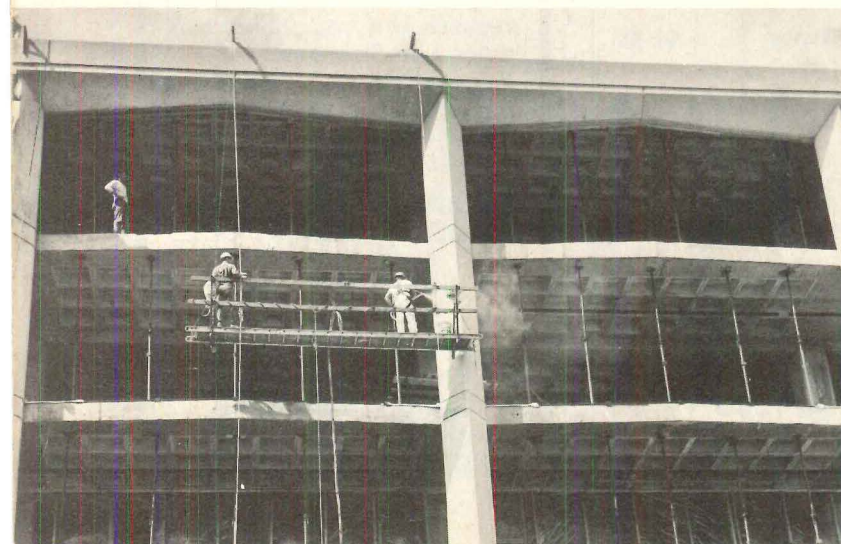


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