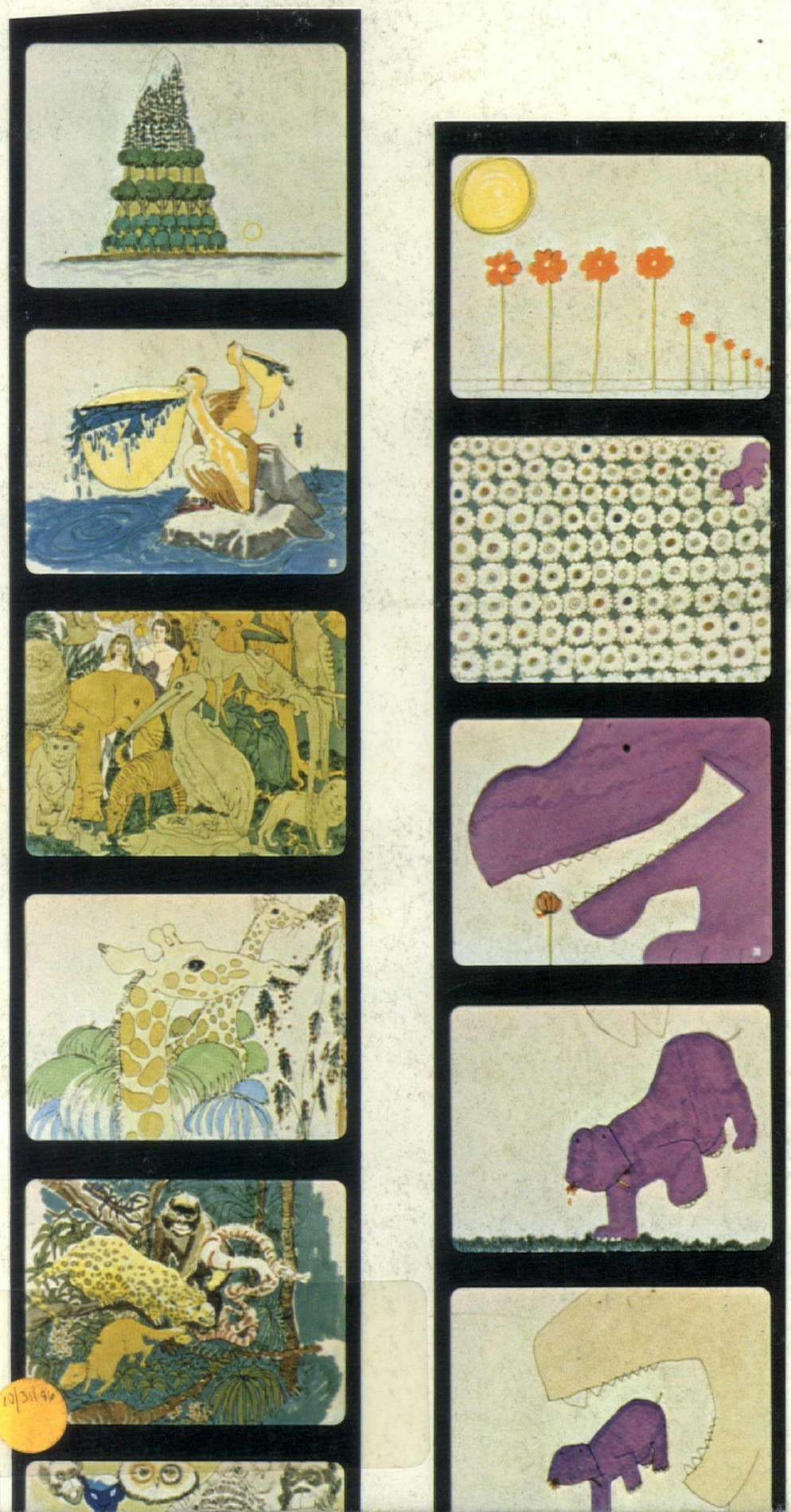
Schools

Progressive Architecture

February 1972, A Reinhold publication



What makes this ceiling right for this job?

The way it allows imaginative design.

Armstrong Luminaire lets you design your own ceiling. You can set off an area without putting up walls; have lights just where you need them; and change the whole thing around at a later date.

Flexibility like this is a necessity when your assignment is to design a bright-looking school for bright kids. And Armstrong Luminaire flexibility doesn't end with the ceiling. Demountable wall partitions can be removed easily and will attach to the Luminaire grid in new positions. Concealed Supply-Air Linear Diffusers can provide conditioned air where you want it, or more conventional air-handling methods can be used.

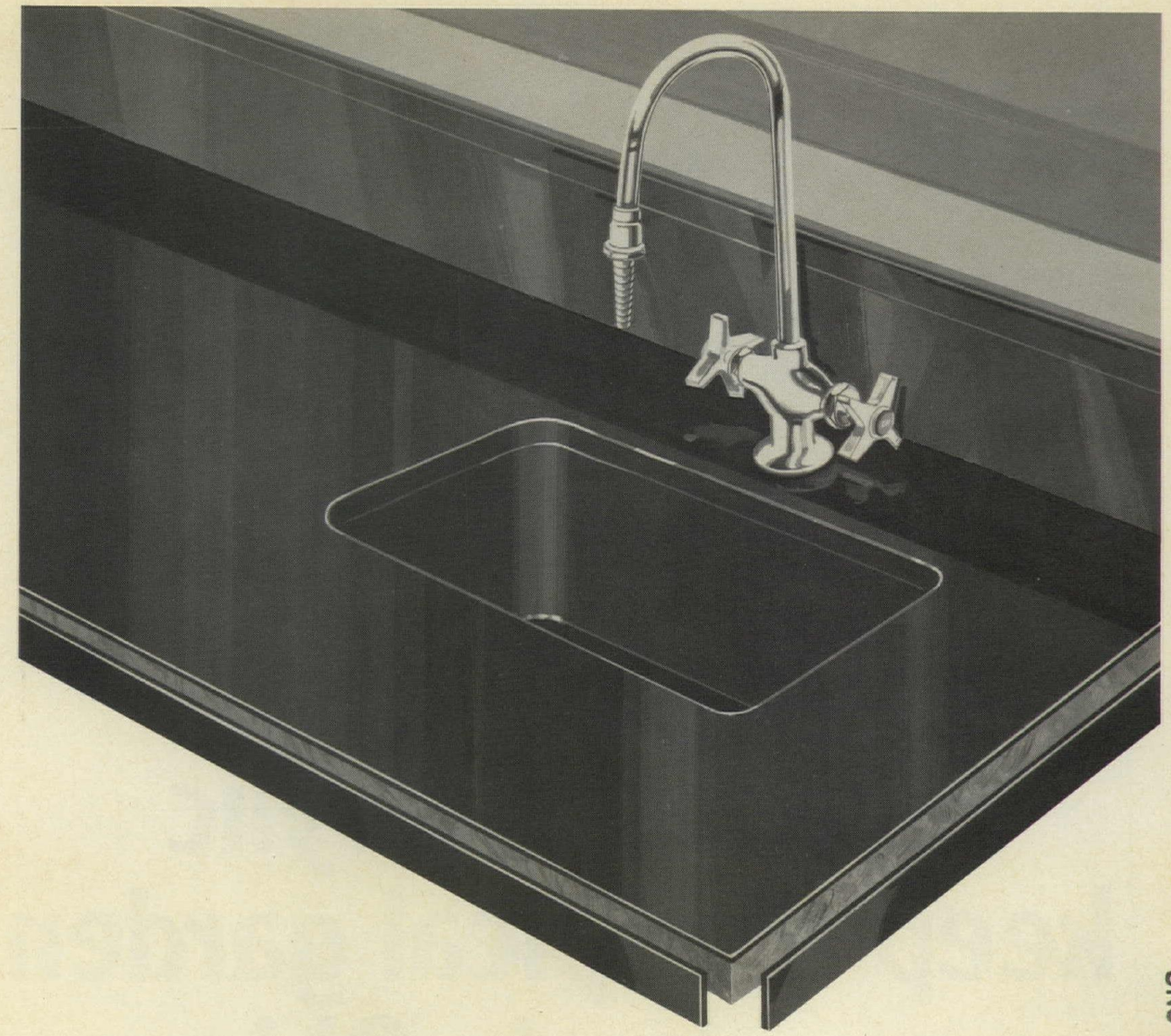
But that's only the beginning. Modular Luminaire Ceiling Systems come in over 1,100 different sizes, install easily, give beautiful, high-level lighting, great acoustics, and up to two-hour-rated fire protection. And you can see for yourself how good looking they are.

For more information, write Armstrong, 4202 Watson Street, Lancaster, PA 17604.

West Bloomfield High School, Orchard Lake Road, West Bloomfield Township, Michigan
ARCHITECT: Linn Smith, Demiene Adams, Inc., Birmingham, Michigan
GENERAL CONTRACTOR: J. A. Ferguson Construction Company, Farmington, Michigan
MECHANICAL/ELECTRICAL ENGINEERS: Hoyem Associates, Inc., Bloomfield Hills, Michigan
CEILING SYSTEMS CONTRACTOR: R. E. Leggette Company, Dearborn, Michigan

Armstrong CEILING SYSTEMS THAT WORK

On Reader Service Card, circle no. 342



Durcolam! New laminate for tough, attractive laboratory table tops

Durcolam is a permanent, economical tabletop material, designed for easy handling and fabricating. A lightweight epoxy-based sheet, it can be mounted on almost any supporting material. Durcolam resists corrosion, heat and stains. It is ideal for new laboratories and for renewing corroded and stained tabletops. Send for more information today.

THE DURIRON COMPANY, INC., DAYTON, OHIO DURCO

Architect: Barbitta-James & Associates, Inc., Akron, Ohio.
Skylight manufacturer: Naturalite, Inc., Garland, Texas.
Client: Mayflower Realty, Inc., Akron, Ohio.

16-foot spans of Swedcast acrylic keep a tropical garden growing in Ohio.

Mayflower Realty's office garden simulates the lush, tropical atmosphere of their Florida condominium community.

The skylight is made of bronze Swedcast, the world's first continuous cast acrylic. Swedcast was specified for several reasons.

Its unique formula and continuous casting give greater strength and more resistance to ultraviolet degradation. (That'll keep the plants looking great.)

Swedcast comes in almost unlimited lengths, so there are no welded seams to leak or collect dirt. (That'll keep the architects looking great.)

Just imagine what you can do with Swedcast, the continuous cast acrylic sheet. For more information, write to Swedlow, Inc., Acrylic Sheet Division, 7350 Empire Drive, Florence, Kentucky 41042.

SWEDLOW, INC.
New dimensions in acrylic technology.

Departments

Progressive Architecture, published monthly by Reinhold Publishing Corporation, a subsidiary of Litton Publications, Inc., Division of Litton Industries. Philip H. Hubbard, Jr., President; Harry I. Martin, Group Vice-President; Charles O. Bennewitz, Treasurer; Kathleen A. Starke, Secretary; Robert W. Roose, Vice-President. Executive and editorial offices, 600 Summer Street, Stamford, Conn. 06904.

For subscription or change of address write Progressive Architecture, 25 Sullivan St., Westwood, N.J. 07695, giving former as well as new address, zip codes, recent address label if possible. Allow two months for change.

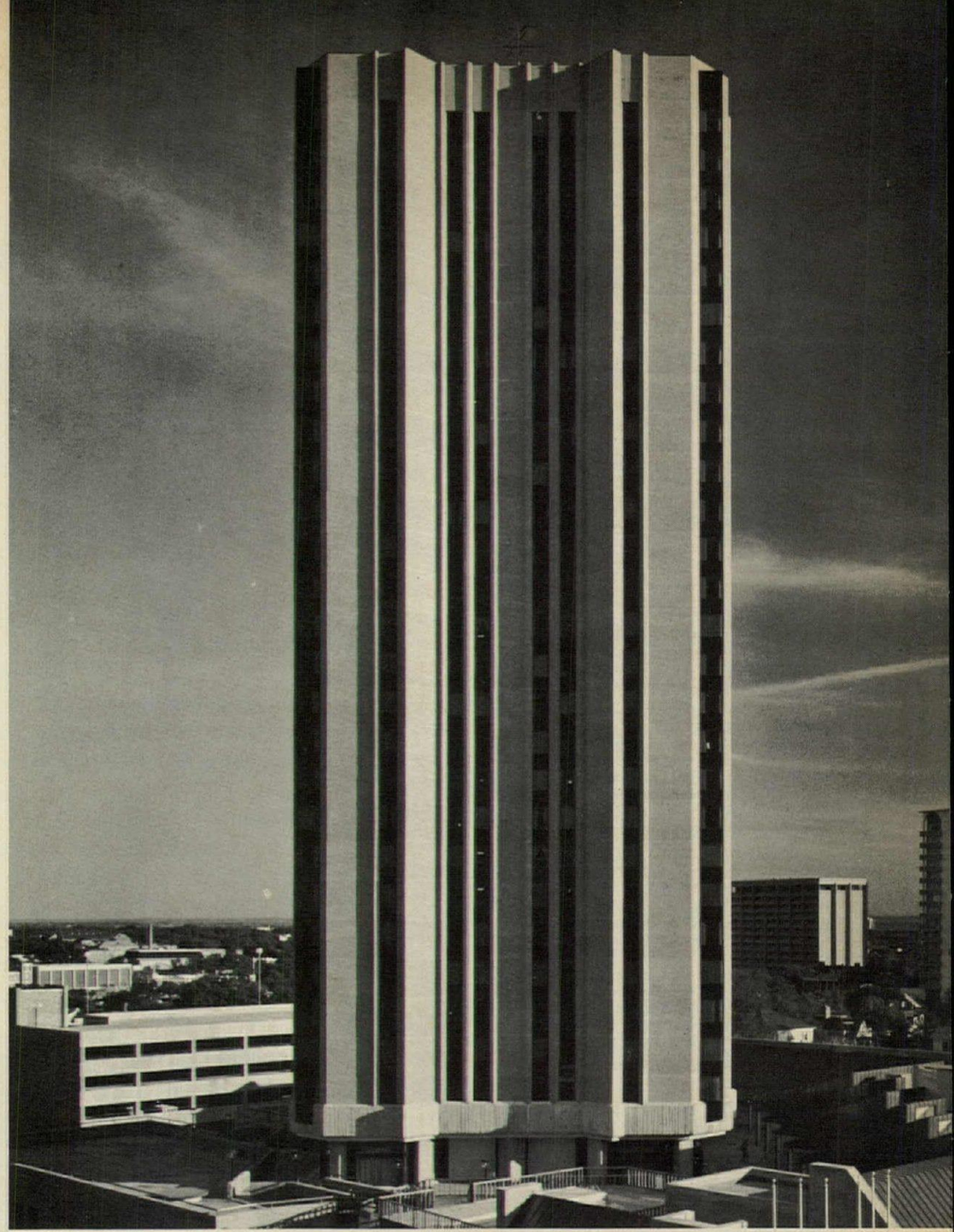
Subscriptions payable in advance. Publisher reserves right to refuse unqualified subscriptions. Subscription prices to those who, by title, are architects, engineers, specifications writers, estimators, designers, or draftsmen, and to government departments, trade associations, above title groups on temporary military service, architectural schools, architectural students, advertisers and their employees; $6 for one year; $9 for two years; $12 for three years. All others, and those professionals outside the U.S., U.S. Possessions and Canada; $12 for one year; $18 for two years; $24 for three years. Foreign nonprofessionals; $24 for one year. Single copy $3, payable in advance. Indexed in Art Index, Architectural Index, Engineering Index. Second-class postage paid at Stamford, Conn. and additional offices. Volume LIII, No. 2. Printed in U.S.A.

February, 1972

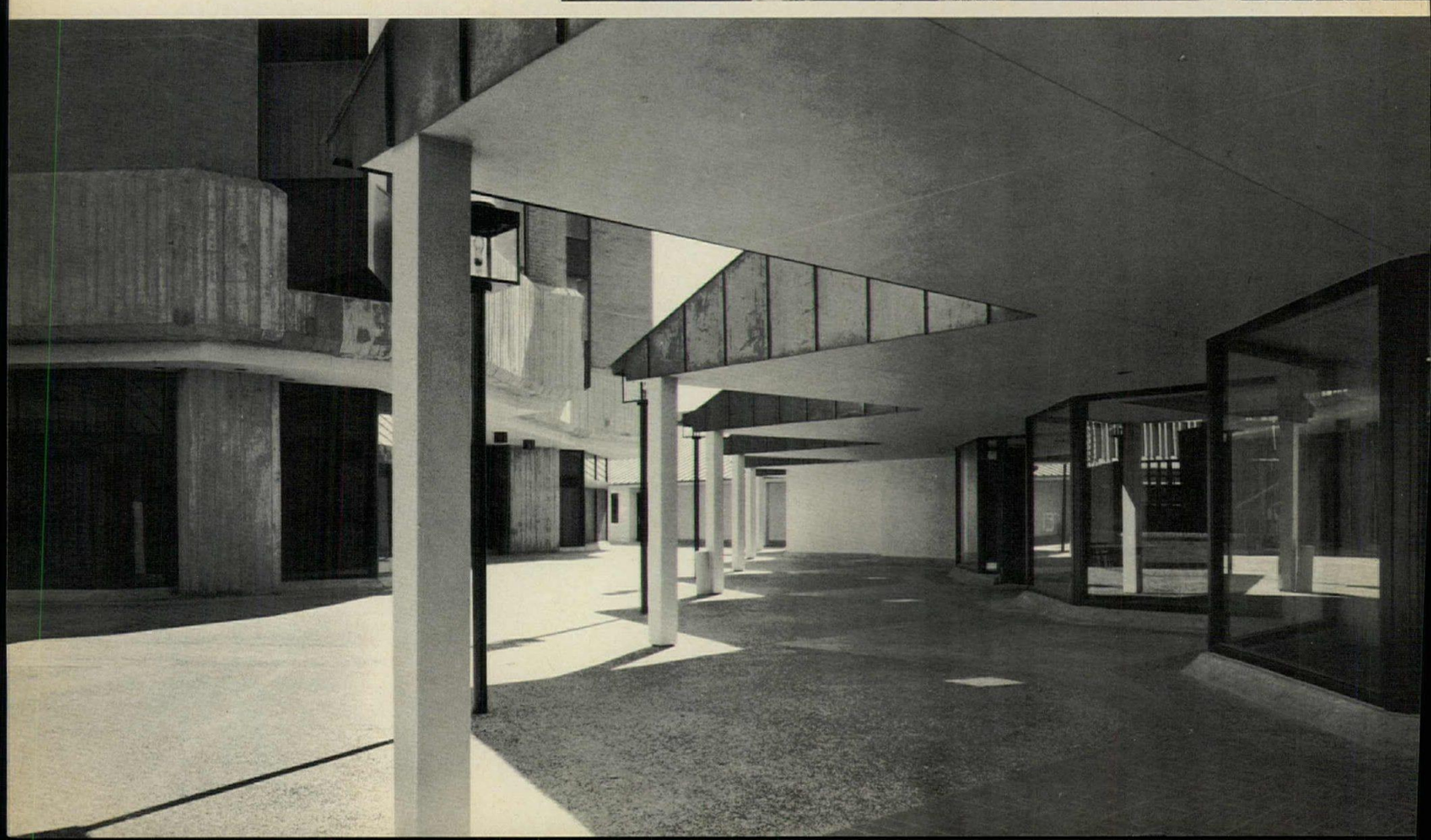
Progressive Architecture

Schools

Cover: Filmstrips from *Earth Island: An Introduction to Ecology in Action* by graphic artist Emmanuel Stallman for C. Richard Hatch Associates, Inc., authors of the book; copyright 1971 by Simon & Schuster, Inc.



DOBIE RESIDENCE HALL, UNIVERSITY OF TEXAS, Austin—Architects/Engineers: Daverman Associates, Grand Rapids, Mich. General Contractors: Guy F. Atkinson Company, South San Francisco, Calif. Three Dover gearless traction elevators, 500 FPM, Computamatic® control; two Dover Oildraulic® elevators, installed by Dover Elevator Co., Hunter-Hayes Division.



Dover Delivers
elevators for systems-built buildings

Both the buildings shown here involve new construction technology —and both are served by Dover Elevators.

Luther Towers is the first completed project using the Mah-LeMessurier System that offers significant savings in construction time and costs. A combination panel and box system in concrete, it makes maximum use of structural efficiencies while retaining wide latitude in esthetic options.

The 29-story Dobie Residence Hall at the University of Texas, is the tallest building to date using a new system of prefabricated brick curtainwall panels. The tower has 72,700 square feet of masonry, single-brick width, without metal reinforcing or backup. Panels were prefabricated in sheltered workshops at the job site, using a new high-bond mortar, and hoisted into position. No scaffolding was required, there was no overhead bricklaying to interfere with work at lower levels, no cleanup of dropped mortar and no delay for adverse weather. Time and labor savings were also effected.

Much of the emphasis in these and other new building techniques is on telescoping construction time to achieve earlier occupancy. The elevator manufacturer must be able to meet these tighter construction schedules as well as offering the range of equipment appropriate to the building type.

Dover delivers both, with pre-engineered Oildraulic® and traction elevators that feature accelerated production schedules and installation crews that understand the need to get the job done fast—and right —in today's building market. Let us work with you at the planning stage. For literature, write Dover Corporation, Elevator Division, Dept. B-1, P.O. Box 2177, Memphis, Tenn. 38102. In Canada, Dover/Turnbull, Toronto, Ont.

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.

DOVER

the elevator innovators

On Reader Service Card, circle no. 357

Views

Congratulations and complaints

Dear Editor: Your editors are to be congratulated for your article "Available now: systems that save energy," in the October issue of P/A (p. 78). This is a fine, informative article showing that reduced energy requirements in mechanical and electrical building systems are possible by using efficient, modern designs. As a mechanical engineer I found it most useful.

Harry R. Patterson
Ohio State University

Dear Editor: Your October 1971 issue is outstanding!

Richard R. Jones
Salt River Project
Phoenix, Ariz.

Dear Editor: We have only recently seen the article in your October 1971 issue entitled "Energy: Crisis Amidst Plenty" (p. 71) in which a TVA official is quoted in a context which makes it appear that he—and TVA—are fearful of catastrophic nuclear accidents.

We want to make clear that the author has distorted to his own purposes a remark which was made in a completely facetious context which was plain from the text. Your article, after asserting that nuclear plants are "not immune to accidents which . . . could be catastrophic," adds:

"In fact, a TVA authority has recently said that the ideal plant would be one where there has been no seismic activity for a millennium, where nature is perfectly calm, located in an unpopulated endless desert that has a large supply of cold water supporting no aquatic life, near an important load center."

The TVA official's actual remarks were: "An ideal site for a nuclear plant is one for which there is no evidence of any seismic activity over the past millennia; is not subject to hurricane, tornadoes or floods. It should be in the midst of an endless expanse of unpopulated desert with an abundant supply of very cold water flowing nowhere and containing no aquatic life. Most important, it should be adjacent to a major load center."

Your writer's omissions change the statement from a jocular reference to a serious one. But in addition, he omits the sentence which follows the remark, namely: "If such there be go mark it well, as it will have been designated as a national refuge for those unwilling to cope with the problem of living in this everyday world. All kidding aside, though. . ."

Paul L. Evans
Tennessee Valley Authority
Knoxville, Tenn.

Liturgical arts

Dear editor: I very much enjoyed your article in the December issue (p. 46) pertaining to the post-Vatican perspective. It is my opinion that in this era the liturgical arts will breathe freely again only if the creators are free of the judgment of the archaeologists, craftsmen and clergy. They are the culprits who revert constantly to the past and to past techniques, and in their way frequently make the whole subject seem uninspired.

A great liturgical art will exist if there is first an inspiring spiritual environment, second a great artist to express it, and third, a recognition and acceptance of new communication media and methodology. Picasso once said that great art always suggests nobility of spirit, and a great artist is answerable only to God.

Leon Gordon Miller
Cleveland, Ohio

Whither the AIA?

Dear Editor: As the wife of an architect, I would like to comment on the editorial by Max O. Urbahn, 1971 AIA president, in the September issue of P/A (p. 111).

Mr. Urbahn chose to explore the purpose of AIA conventions. He states that a convention is far more than a means of electing officers and collecting dues—it is a means, he says, of "discussing and acting upon major issues in architecture" *and* "on major public issues that are related" and, he says, a convention is a place "where policy is formed and positions are taken on these issues." He stresses, throughout, the need for communication.

To start with, Mr. Urbahn, you have told us in a major architectural magazine that there will be a major architectural conference at Houston in May, '72. However, you have not communicated what the issues will be. All you said was, Houston is an exciting place for a convention. Perhaps everyone in the field knows what will take place in Houston. If so, I apologize.

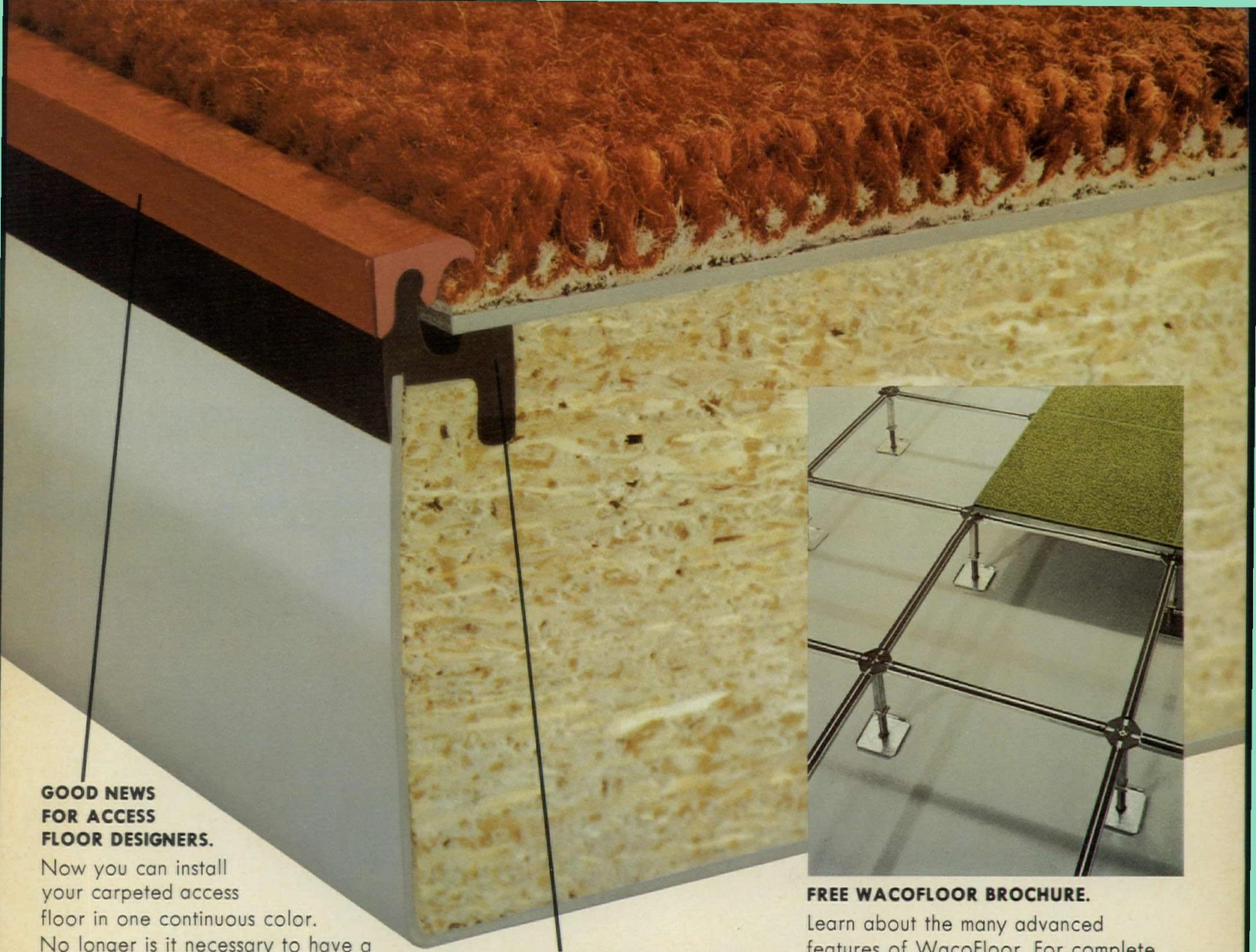
However, I can think of lots of themes for a convention this year—anywhere. I am afraid the professionals of whom you speak have not the peace of mind to enjoy "illuminating corners of the mind" concerning "high aspirations for architecture." Very little architecture, of any kind, small or grand, is being done in the country today, and the grandiose projects have been exorbitant political footballs. More important, architects are out of work, starting with those most experienced, best trained, and with tenure on the job, because these men command higher salaries. As for public issues, the country is at the same time in desperate need of low-cost housing, extended school building, continued storebuilding for the type of economy that could be possible if government money, that is, people's taxes, were not tied up in Vietnam.

There *are* issues for a convention in '72, an election year. So, a full page is devoted to discussing how, at conventions, we need room for listeners as well as speakers, and non-scheduled as well as scheduled activities. What good the mechanics if the meat of the convention is irrelevant, unreal and inhumane? Again, I apologize if relevant issues are being proposed at Houston, but first things should be first. Architects need work. Be certain, we are all listening to what the AIA is interested in, is proposing, is representing, in short, what kind of organization it will be in '72.

Architects may not, by nature, be joiners and social organizers, but some of us are beginning to realize that we now need an organization that could act with the intelligence you claim, and with the authority (the power to strike, and to influence government) of a true labor union. What would this mean to a profession like ours if we were at last, even in desperation, to form a union of our workers (who have the potential to influence the building trades and thus, the welfare of the country)?

The AIA may have the power to alter those important things which affect architects and the country itself. If it does not act with knowledge of this power, perhaps architects will join to form a more effective organization in touch with the times.

Name withheld upon request



GOOD NEWS FOR ACCESS FLOOR DESIGNERS.
Now you can install your carpeted access floor in one continuous color. No longer is it necessary to have a "square pattern" look with carpeted access floors caused by carpet trim edges. With WacoFloor's exclusive new 900 series variable module access floor, carpeted panels are edged with trims that perfectly match the carpet. Now carpet and trim edges blend, creating a solid color effect to complement the room.

CARPET STAYS BEAUTIFUL— LONGER.
WacoFloor carpet panels also feature an exclusive Vise-Grip that locks the matching carpet edges permanently in place. The carpet cannot come loose, ravel or develop irregular seams. Fraying is a thing of the past. But, when you want to replace the carpet, the Vise-Grip can be removed.

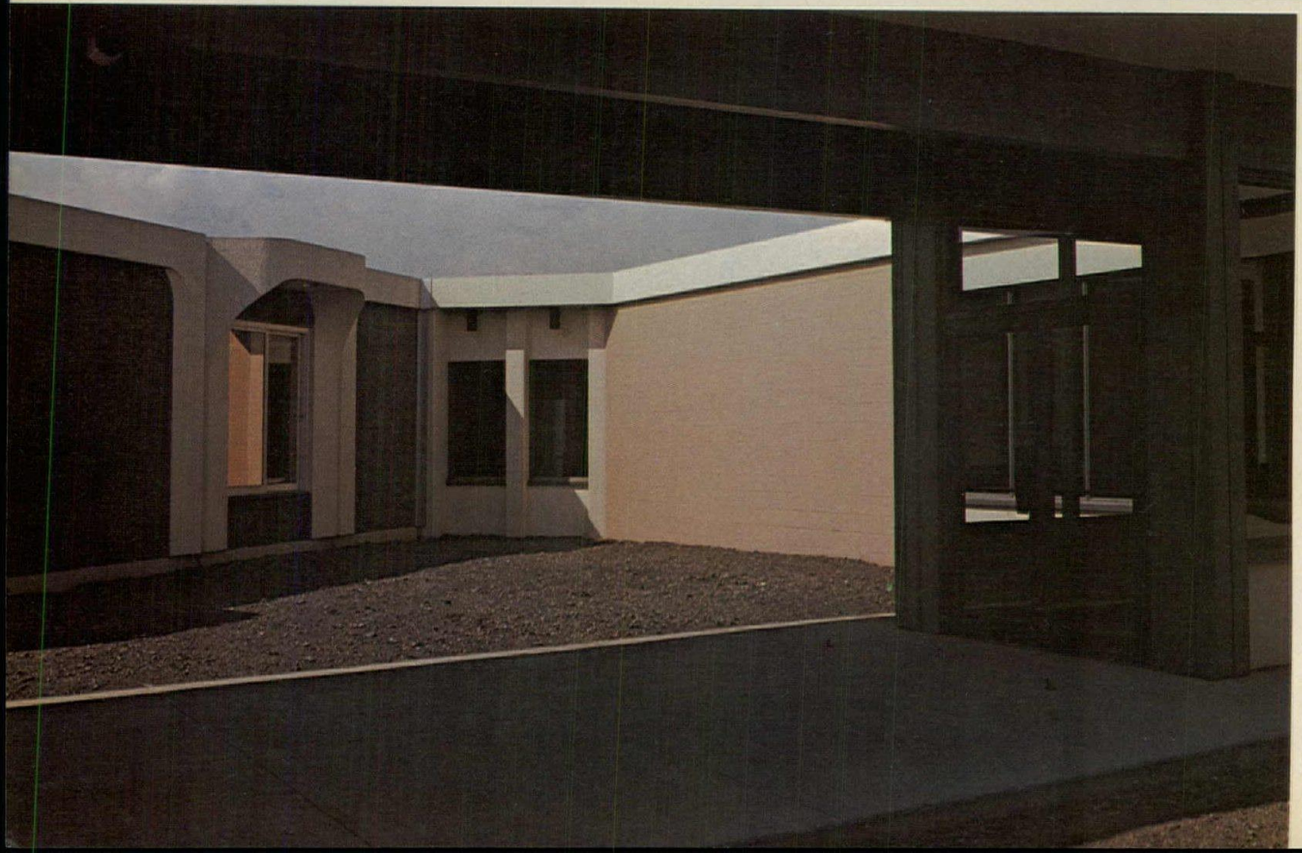
FREE WACOFLOOR BROCHURE.
Learn about the many advanced features of WacoFloor. For complete details and architectural specifications, request brochure No. 13.9/WA.

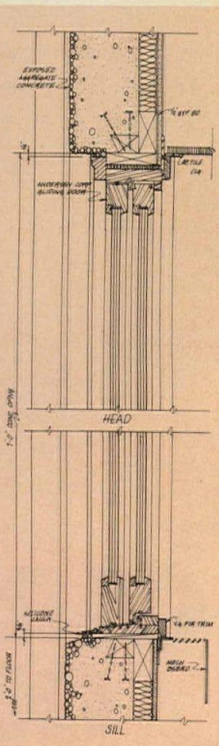
WacoFloor

Washington Aluminum Company, Inc.
Knecht Avenue,
Baltimore, Maryland 21229 an ABeCo Company

CARPET MATCHED TRIM EDGE. ONLY WACOFLOOR HAS IT.

On Reader Service Card, circle no. 335




EXPOSED AGGREGATE CONCRETE
HEAD
SILL

When is a window not only a window?

When it's an emergency door.

The windows in Wonder Park School, Alaska, are in fact Andersen Gliding Doors.

This was the architect's creative solution to the problem of providing adequate emergency exits without limiting his freedom of design.

Placed 24″ above the floor, these gliding doors become "window-exits." They are easily opened at any time and in emergencies the students can be evacuated through them in a matter of seconds.

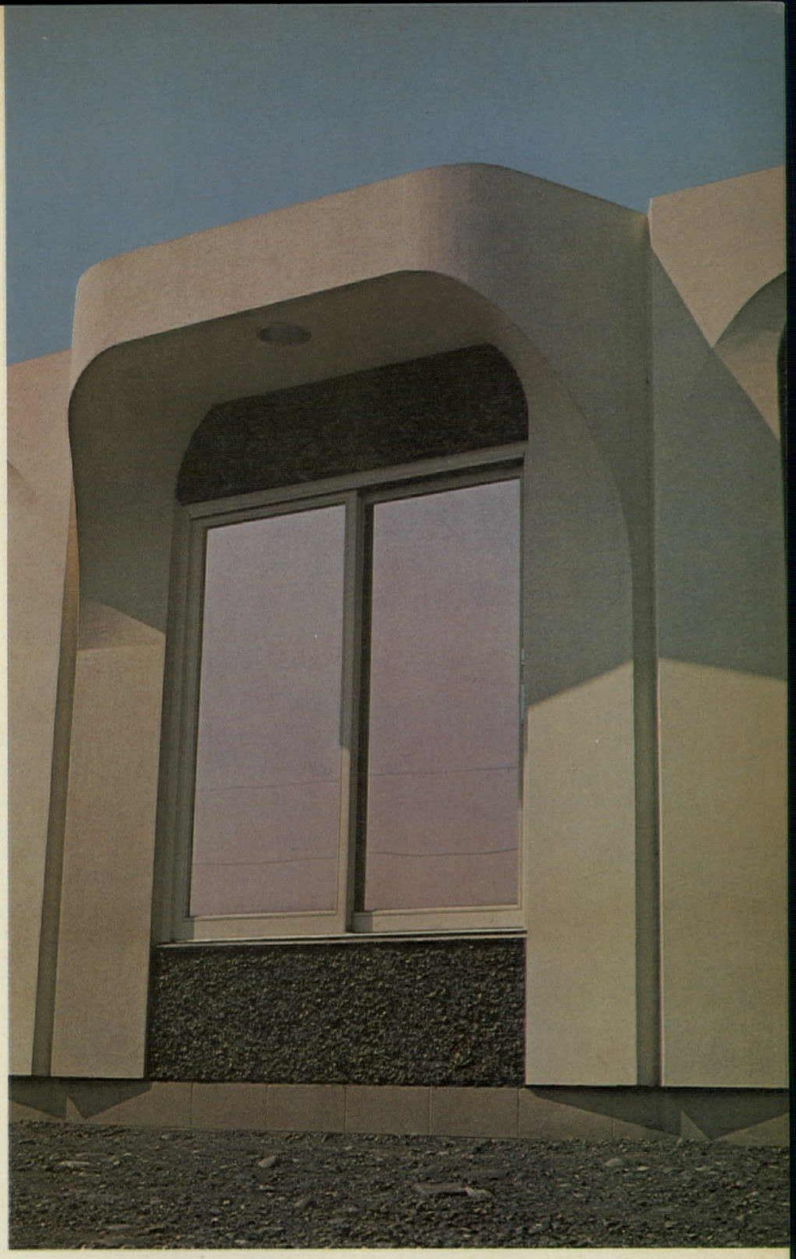
These Andersen Gliding Doors solved more than one problem. Their welded insulating glass eliminates the need for storm windows—even in Alaska. And the glass is tinted to reduce glare from the low winter sun.

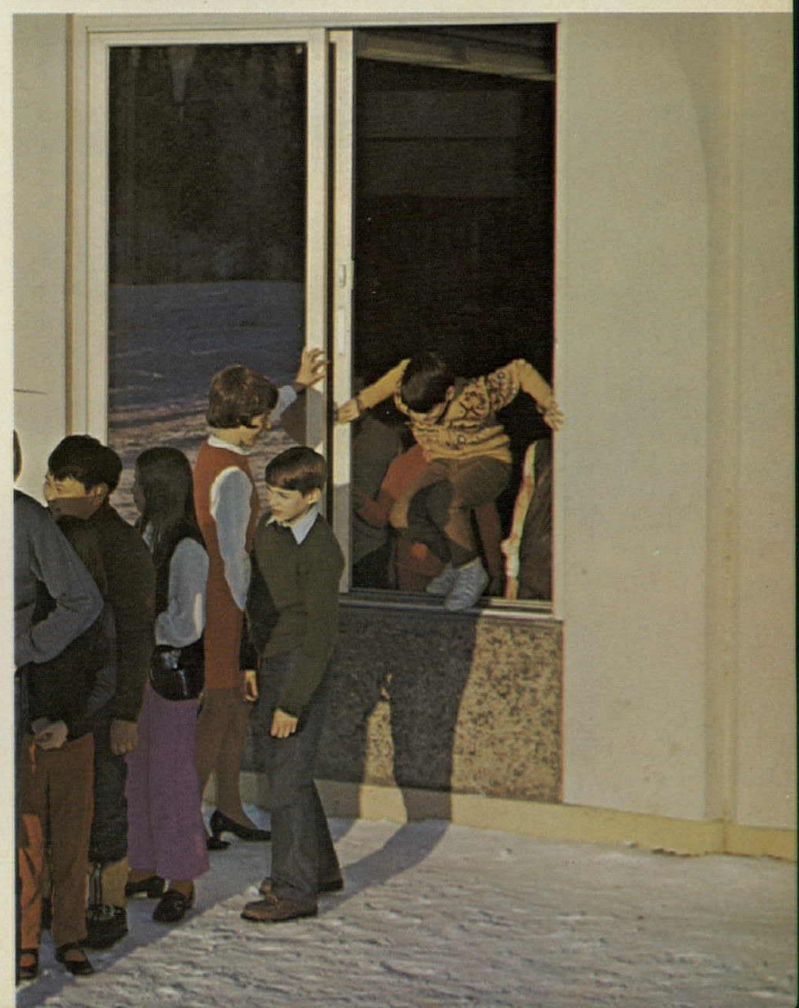
The superior insulation properties of wood, and Andersen's weather-tight construction, make these doors even more winter-worthy.

Wonder Park School is an example of how Andersen Windows and Doors—and a little imagination—can solve several problems at once—beautifully!

For details on all Andersen Windows and Doors (or even Window-Doors) see Sweet's File (Sections 8.16/An and 8.6/An) or your nearest Andersen distributor.

Wonder Park Elementary School, Anchorage, Alaska. Architect: D. J. Coolidge, AIA, Anchorage, Alaska. Consulting Architect: Ralph M. Alley, AIA.





AW®

Andersen Windowalls®

ANDERSEN CORPORATION BAYPORT, MINNESOTA 55003

On Reader Service Card, circle no. 341

With Powerbond you don't have to decide between carpet and tile.

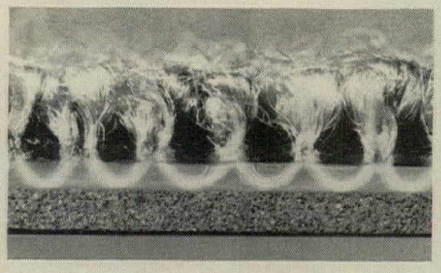
Powerbond pile vinyl is carpet and vinyl together! And only Collins & Aikman makes it.

A floor covering whose luxurious soft surface provides the esthetic beauty of carpet. A tough, dense pile surface made from a second generation, anti-soil nylon. Which allows for maintenance as low or lower than other floor coverings. It's fused to a closed-cell sponge vinyl that resists indentation and is virtually waterproof. And provides dimensional stability so Powerbond pile vinyl can't crawl, bag or sag. In short, with Powerbond pile vinyl you get the best of carpet fused to the best of vinyl.

And we'll also tell you about Powerbond Tex-Tiles. The 18″x18″ miracle squares of vinyl-backed carpet that need little or no adhesives for installation. You can put them down and pick them up at will. Making a truly "portable" floor covering.

Don't decide on a floor covering until you get the full Powerbond pile vinyl and Tex-Tile story. From Bill Wiegand or Harry Vorperian at (212) 371-4455. Or send in the coupon. And we'll have a man out to you in a jiffy to show you the unique floor coverings that make practical, beautiful sense. Powerbond pile vinyl and Tex-Tiles.

Collins & Aikman, 919 Third Avenue, New York, New York 10022.



P-2

Please call me for an appointment.

Name_____

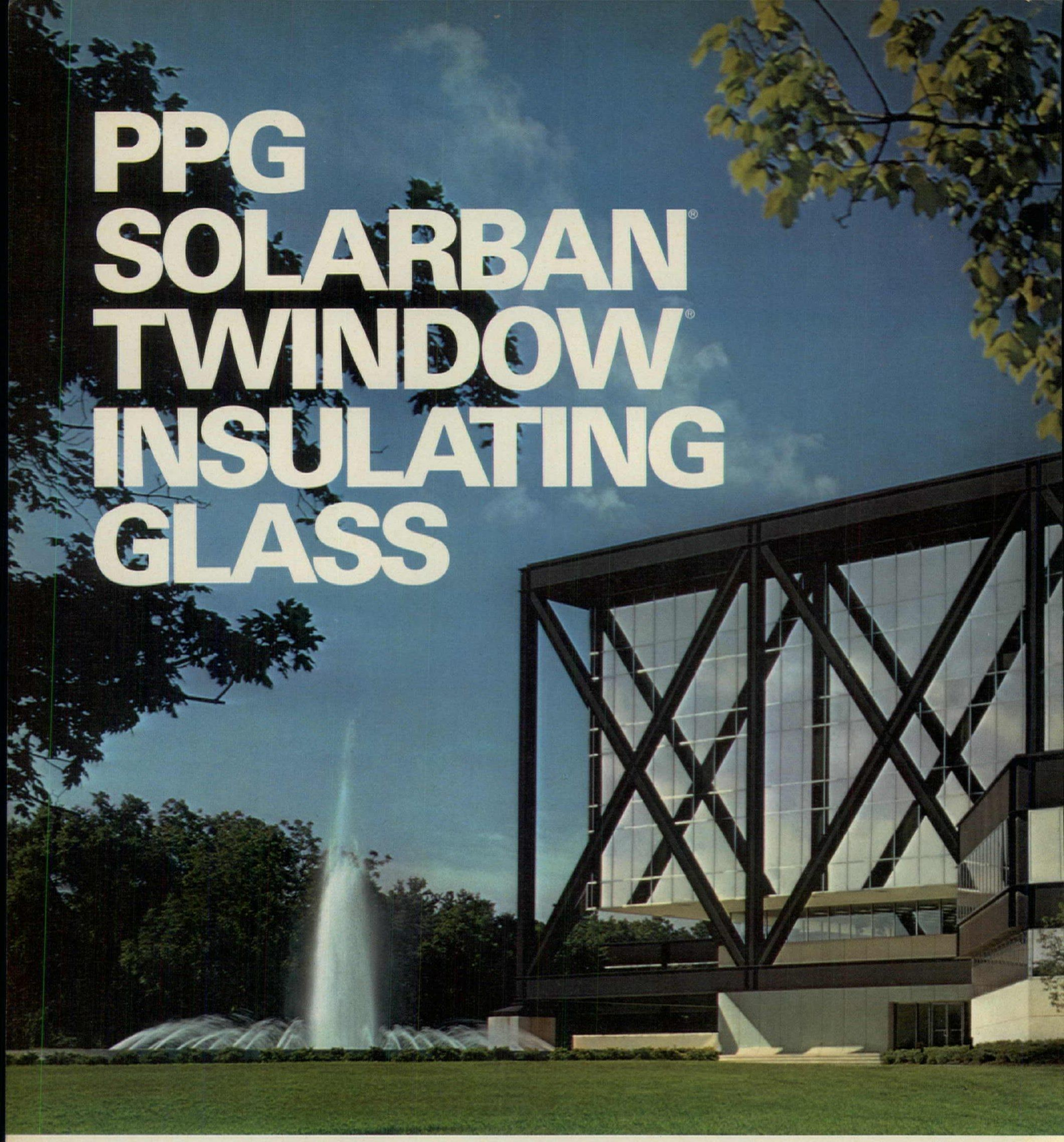
Firm_____

City_____ State_____ Zip_____

Telephone number_____

Collins & Aikman makes the Pile Vinyl that makes things happen.

PRICE PFISTER Manufacturers of Plumbing Brass • Pacoima, Calif. 91331 • Subsidiary of Norris Industries



PPG SOLARBAN® TWINDOW® INSULATING GLASS

PPG Performance Glass creates a beautiful, comfortable corporate home for Burlington Industries.

This new headquarters building nestles in a parklike setting—"a glass cube suspended in a steel cradle."

The architect selected PPG's *Solarban* 575 (2) *Twindow* Insulating Glass to complement and reflect the massive structural steel shapes. And in doing so, he was also able to ensure optimum performance values for the owners. From indoors, the glass reduces brightness of sun, sky and clouds. So visual comfort is increased. In addition, the exceptional ability of *Solarban Twindow* Units to reduce solar heat gain and conducted heat loss results in substantial reductions in heating and air conditioning equipment costs.

See PPG about *Solarban Twindow* Glass—or the others in our family of Performance Glasses for your next building. Early in the design stages.

There's a PPG Glass that you can use as an active design medium to meet esthetic considerations, increase occupant comfort and contribute to a return on investment.

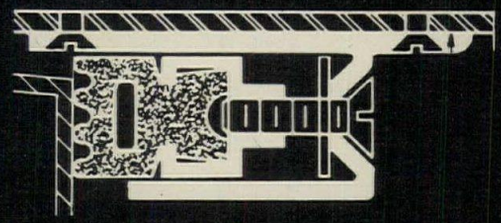
Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pennsylvania 15222.

PPG: a Concern for the Future

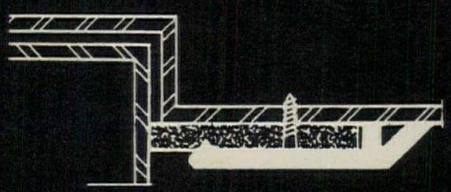
Owner: Burlington Industries, Inc., Greensboro, N.C.
Architect: Odell Associates Inc., Charlotte, N.C.

PPG INDUSTRIES

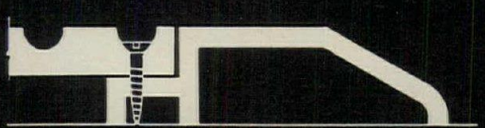
Our Old Design



Head and Jamb Sound Seal No. 170. Basically excellent weatherstrip seal but sound penetrates where insert moves.

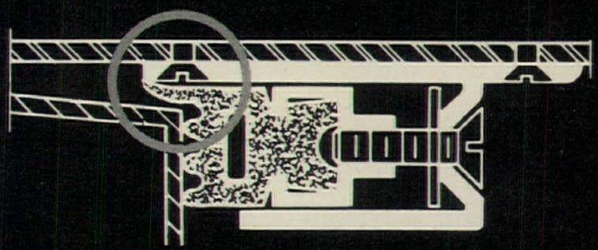


Head and Jamb Weather Stripping No. 139. Screw penetrates Neoprene, makes adjustment difficult. Retainer will tilt if screwed too tightly. 1¼" dimension will not fit on 1" stop.

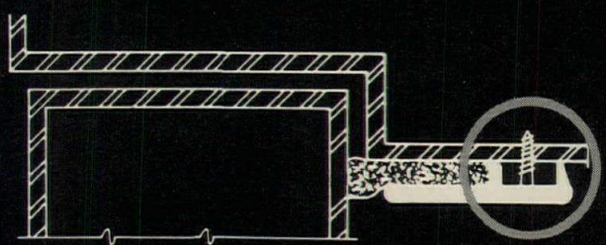


Saddle Assembly. Assembly must be fastened by drilling and tapping through plate into support section. Difficult to set level. Expensive to install.

Our New Design



Head and Jamb Sound Seal No. 170. Neoprene projection, compresses against housing, eliminates sound penetration when insert is adjusted. Excellent weatherstrip seal modified to compensate for sound in 45 decibel range.



Head and Jamb Weather Stripping No. 314. Support leg keeps housing straight. Screw does not contact Neoprene; adjustment is easy. ⅞" dimension allows fit on 1"stop. Housing is 34% heavier.

Saddle Assembly. Interlock between plate and support section eliminates drilling and tapping. Secure fit guaranteed. Easy installation.

Zero's weatherstripping isn't just an improvement over everyone else's. It's even an improvement over our own.

If you want the benefit of these and other improvements in weatherstripping, soundproofing and lightproofing materials, don't specify "Zero or equivalent." There is no equivalent! The only way you can be sure you get exactly what you — and your job — call for is to specify "Zero." By the style number in our new, 1972 catalog. Send for your copy today.

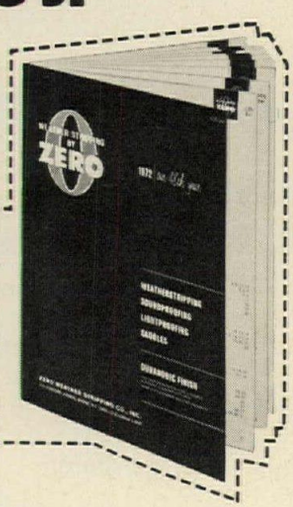
Zero Weatherstripping Co., Inc.
415 Concord Ave., Bronx, N.Y. 10455
GENTLEMEN: Please send me your 1972 catalog

Name _____ Position _____

Company _____

Address _____

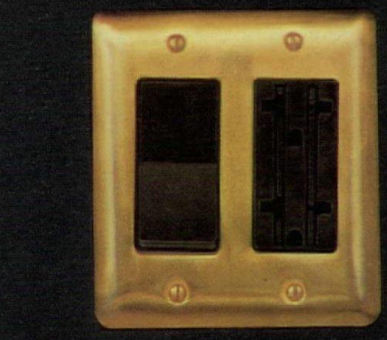
City _____ State _____ Zip _____

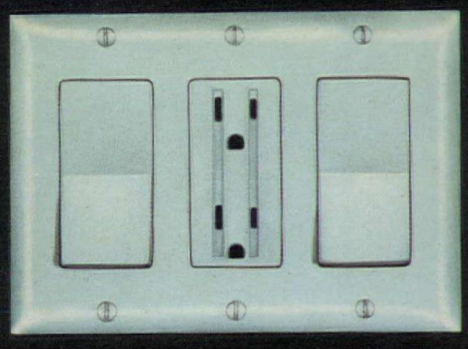


Zero Weather Stripping Co., Inc.
415 Concord Avenue, Bronx, N.Y. 10455 / (212) LUdlow 5-3230

On Reader Service Card, circle no. 337

On Reader Service Card, circle no. 329 →





"They just don't make 'em like they used to."

That's right. At Slater, we make them better.

Our expanded Decorative Line of specification-grade touch-switches and receptacles, for example.

We've come up with a rather unique idea. Personalized embossing on the touch switch. Let's say you're bidding on the electrical contract for a new motel. There isn't a motel around who wouldn't love to see its name on every switch in the building. We can emboss other things, too, like switch functions (fan, disposal, etc.). The possibilities are limitless.

A small detail? Let's face it. In your business, an advantage is an advantage.

Speaking of advantages, here are some more.

We've added a new single receptacle to our Decorative series. Also a wide variety of combination devices. Slater's soon-to-be-a-classic 770 touch switch now comes in a 20-Amp version called the 2770.

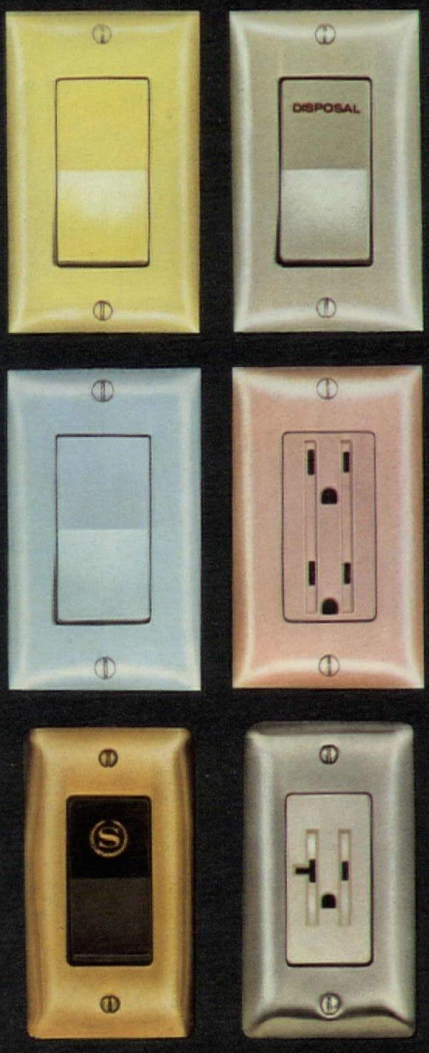
And the modular design of our Decorative series enables you to really reduce your inventory. One plate fits both the switch and the receptacle.

We also ask you to remember that selling up to Slater means greater profit per item. As if we had to tell you.

And last, but not least, are the colors. The newest decorator pastels belong in the newest buildings. The only part of an installation that your customer sees is the devices installed on the wall. If he likes what he sees, so much the better.

We have a whole bunch of new ideas. But they all boil down to one thing:

Slater. The Decorative Line that makes you look good.



Slater

GLEN COVE, L.I., N.Y. 11542
HEAVY DUTY AND RESIDENTIAL GRADE WIRING DEVICES

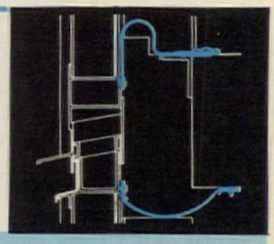
BEAUTIFUL OUTSIDE

and beautifully QUIET inside–

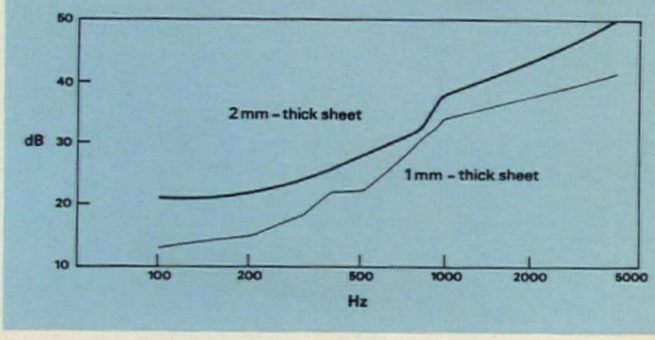
with the help of LEAD

Lead-filled natural rubber sheet prevents noise leaks from one floor to another in the new Pirelli Centre in Milan. It forms a flexible sound barrier sealing the gap left between the floors and the curtain wall to allow for thermal movement. ☐ Known as Gade (Gomma Alta DEnsita = high density rubber) the material contains a high proportion of a lead compound. It was developed by Societa Applicazioni Gomma Antivibranti and, as shown in the graph, a sheet only 1mm thick can provide 30 decibels reduction at 1000 Hz. ☐ In addition to its sound attenuating capability, lead-filled rubber will not transmit vibration and can be easily cut to shape and installed in any type of gap. Similar materials such as leaded vinyl are used for like purposes in the U.S.A. ☐ This is another example of how architects and designers are using lead to improve the quality of life by keeping things quiet. ☐ St. Joe supplies quality lead—industry puts it to work.

At right—Section through curtain wall showing position of lead-filled rubber sheet seals.



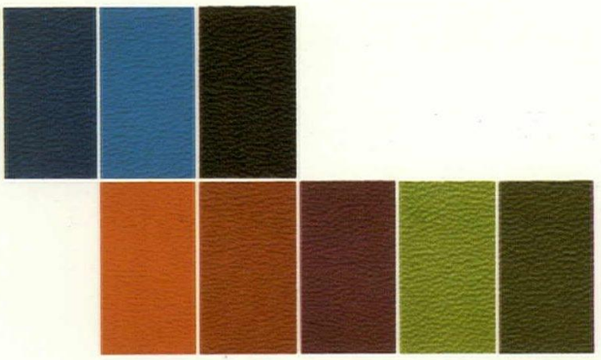
Below—Effect of different thicknesses of lead-filled rubber sheet on sound attenuation.



ST. JOE MINERALS CORPORATION

250 Park Avenue
New York, New York 10017
Tel. (212) 986-7474

On Reader Service Card, circle no. 324 →



Environment 5... Drexel's synergistic system for schools

The perfect learning situation is a functional blend of five environments; spacial, visual, thermal, acoustical and furnishings.

For the fifth environment there is now Environment 5, an exciting furnishings system for existing schools, new schools, tomorrow's schools.

A system that started with cataloging and measuring hundreds of thousands of objects, surveying the needs of schools nationwide. A system so unique that Drexel, the most trusted name in furnishings in wood, has for the first time developed special new materials. Unique materials for strength, beauty, easy maintenance.

Environment 5 is scientifically sized to insure utmost utilization of space.

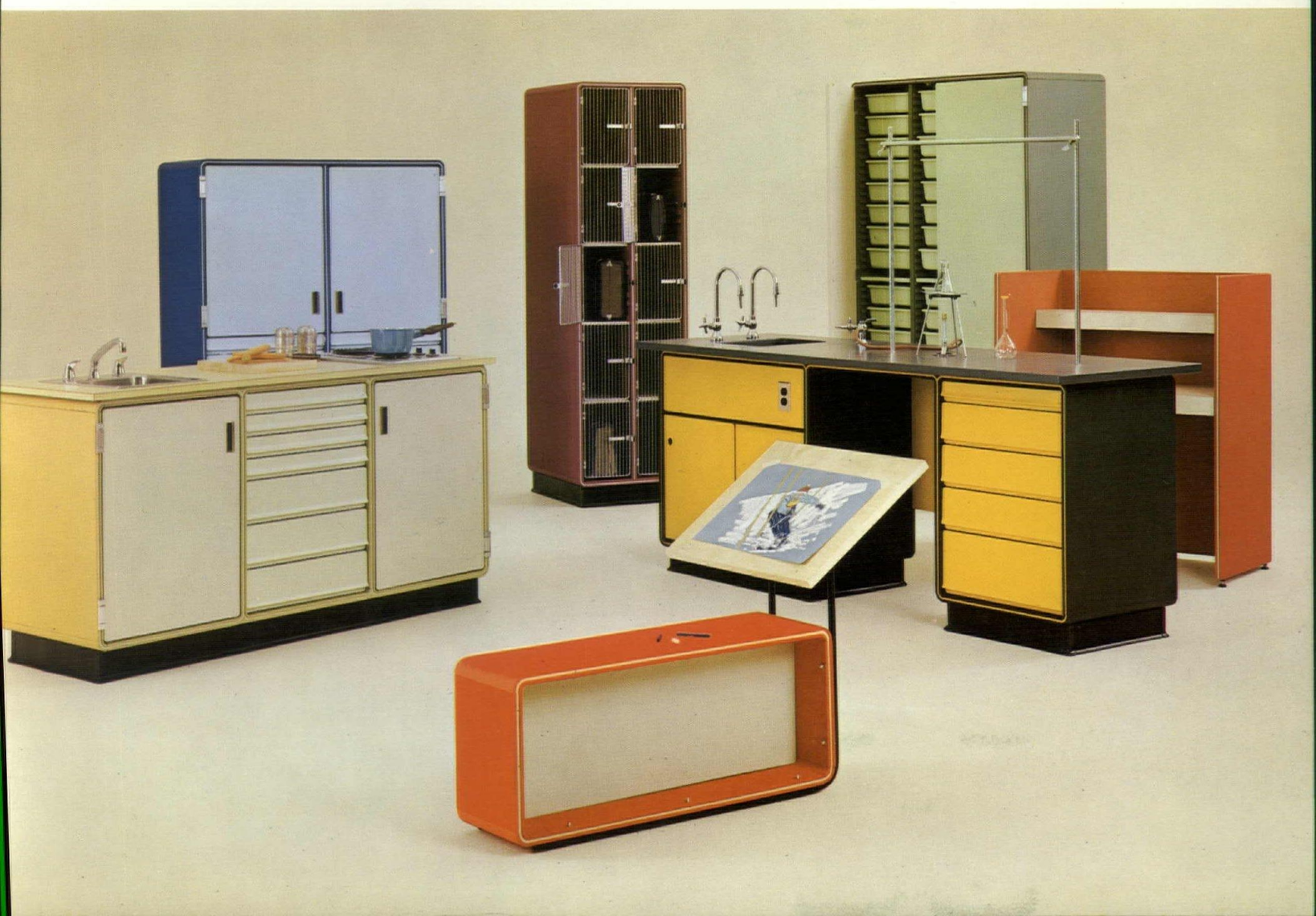
In storage modules, for example, drawers and other insert options are of one-piece molded construction. And they are completely interchangeable within an individual module or any other Environment 5 module of comparable width—without the use of tools.

No matter the discipline—science, band and music, arts and crafts, homemaking or library—Environment 5 units can be used individually or in an assembly. They can be fixed or mobile.

Environment 5 is color. It's continuity of design. It's flexibility. It's what you want it to be. The possible combinations, the possible ways to use the components are endless.

Environment 5—the exciting new environment of order. For information, write Drexel Institutional Furniture, (formerly Southern Desk Co.), P.O. Drawer 2187, Hickory, N.C. 28601.

by Drexel®
MOST TRUSTED NAME IN FURNITURE



CHICAGO...

where the world's most advanced buildings depend on Fly Ash Concrete.

World's largest . . . world's tallest . . . these and other superlatives have been used to describe the numerous new structures on Chicago's skyline. Among them, more than thirty-eight major buildings—ranging from the 1100-foot-high John Hancock Center to the new McCormick Place—utilize fly ash in the concrete mixes.

In 1969, in fact, 1¼ million cubic yards of Fly Ash Concrete were delivered in Chicago.

Because concrete containing proper amounts of Fly Ash is superior to ordinary concrete in many ways. It goes in place easier, is more workable. Its fine fines result in more completely filled forms, easier finishing. The required degree of plasticity is attained with less water. Sharper edges and corners are possible. Fly Ash increases the density of the concrete and its resistance to leaching. It also increases resistance to water penetration. In place, Fly Ash Concrete actually gets stronger as it ages, due to pozzolanic action.

Fly Ash builds better.

If you want more information on Chicago—and other—applications and product sources, or would like help in determining the potential of Fly Ash in your own applications, call us at (202) 659-2303. We're the clearing house for Fly Ash data.

NAA

NATIONAL ASH ASSOCIATION, INC.
1819 H Street, N. W.
Washington, D. C. 20006

NA-3001

On Reader Service Card, circle no. 374

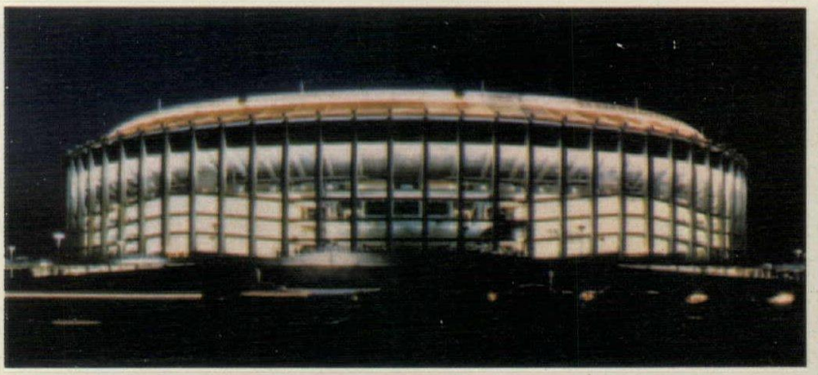
Spaulding luminaires are seen in the very best places

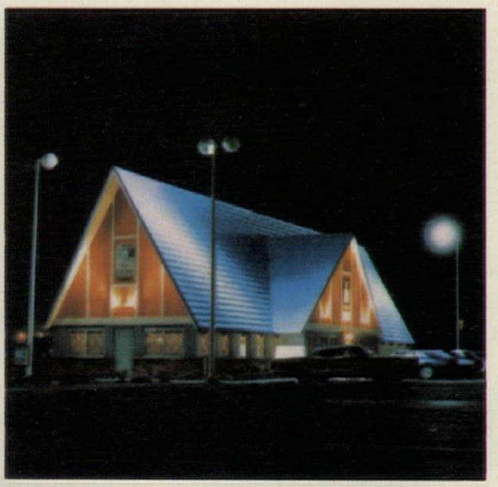
Places like Veterans Stadium in Philadelphia, Pennsylvania . . . the Hayward City Center Building in Hayward City, California . . . at the entrance/exit of the Queen's Tower apartment/restaurant complex in Cincinnati, Ohio . . . and around the country at the distinctive blue roofed International House of Pancakes. ■ Spaulding luminaires, for seeing . . . and to be seen. Packages of light for planned communities, shopping centers, campuses, free standing buildings. Anyplace. ■ Lighting by Spaulding. Everything from sports to low level landscape lighting. Decoratively functional. Functionally decorative. A variety of luminaires to suit all of your lighting needs. ■ Spaulding is your one source of luminaires, posts/poles, brackets and lighting design innovation. All backed with dependable guarantees. All as near as your Spaulding representative.

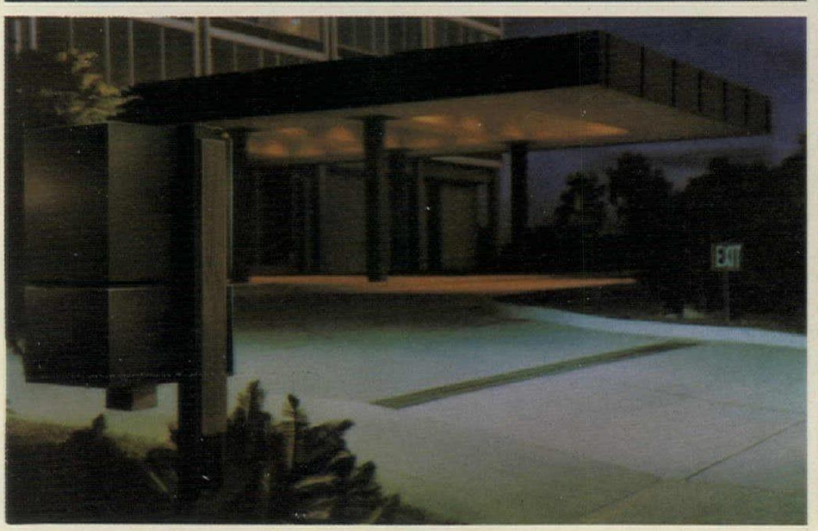
Spaulding

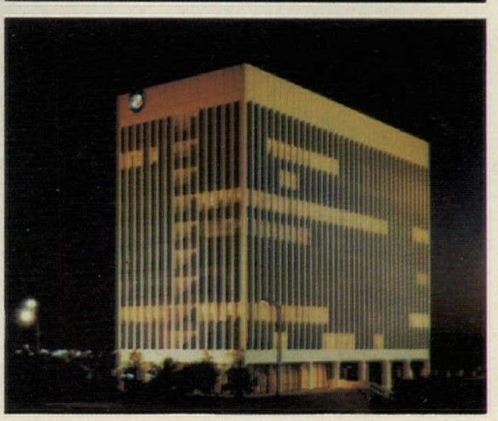
3731 Dirr St., Cincinnati, Ohio 45223

LOOK TO SPAULDING FOR THE WIDEST SELECTION OF OUTDOOR LIGHTING PRODUCTS . . . ANYWHERE.

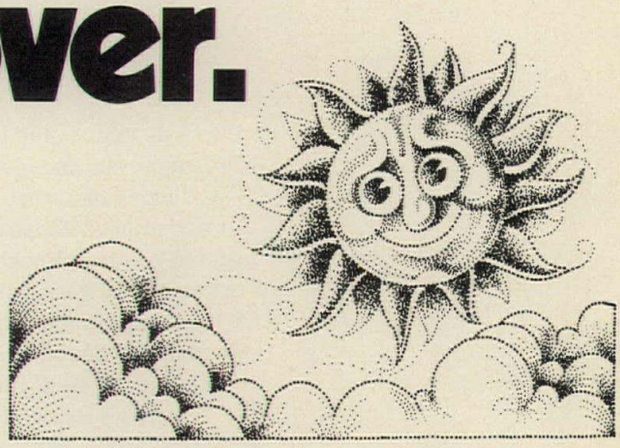


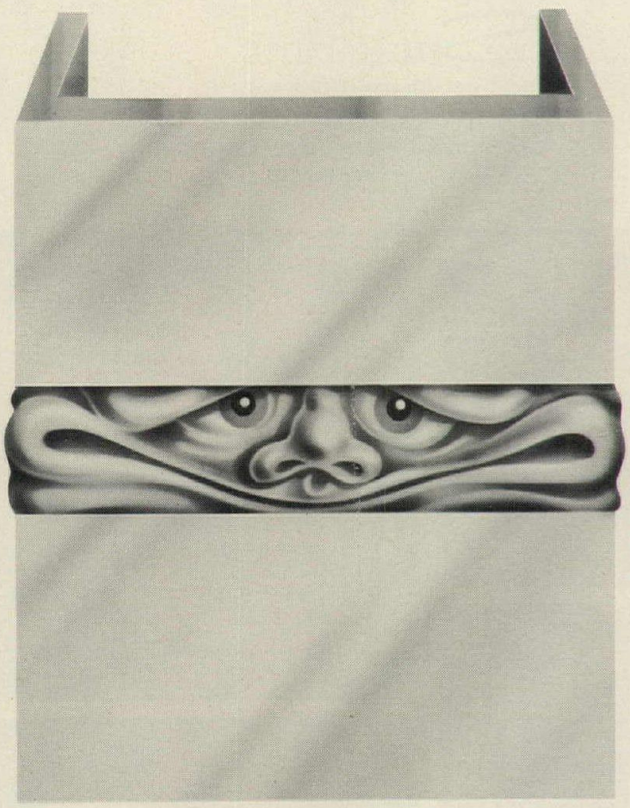


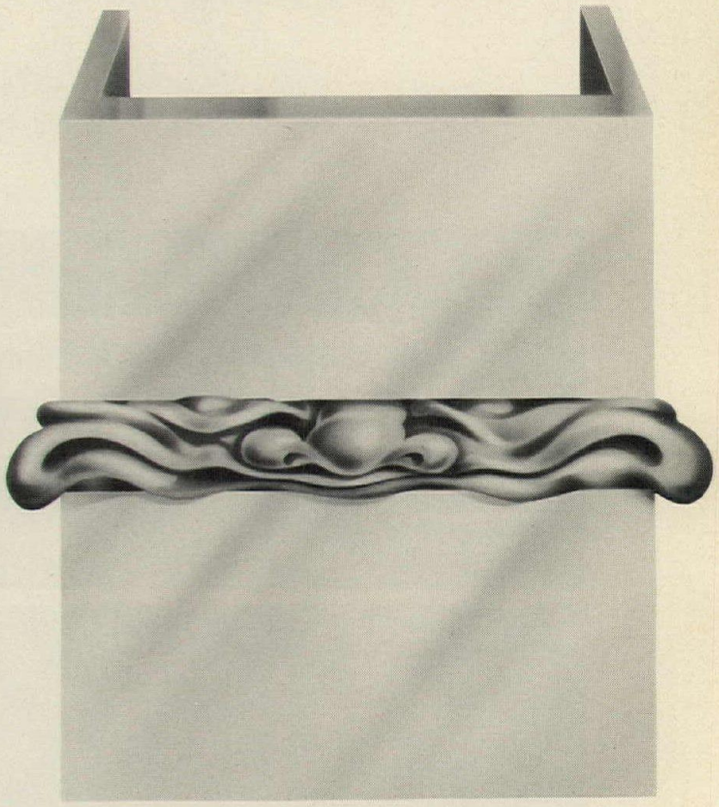




Mating habits of the all-aluminum column cover.





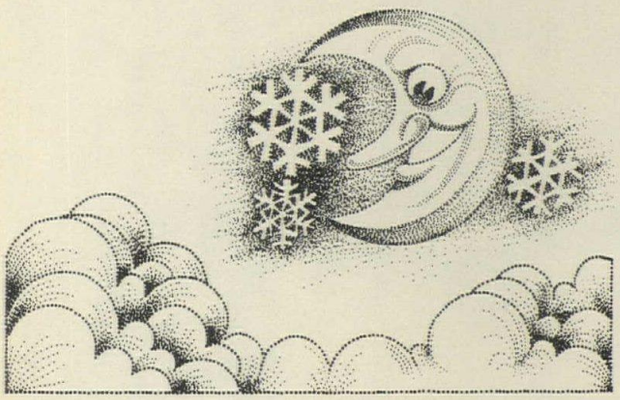


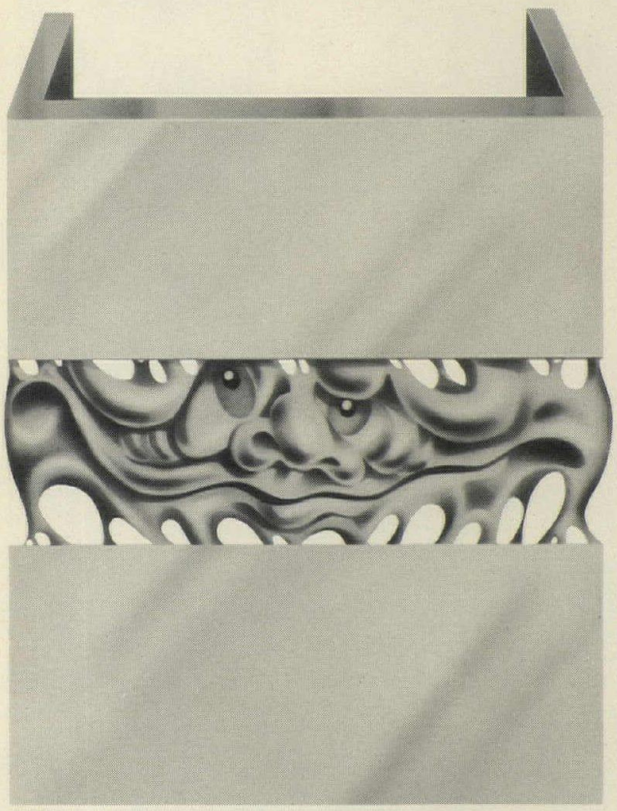
By itself an aluminum column cover is a thing of joy and beauty forever. The trouble starts when you try to make a waterproof joint between a pair of them.

Let's say the job calls for a ⅜″ joint between 12-foot panels. The panels are set in place at 8:30 a.m. The temperature is 50°F when the sealant is applied. (Above, left).

But now the temperature starts to rise. By 4:00 p.m. it's 85°. And those dark-colored, dull-finished, insulated panels are up to 175°. The joint has compressed to ¼″. This is normal building movement. But look what's happened to the sealant. (Above, center).

Heat speeded the cure. And by 4:00 p.m. the sealant has cured to a firm bead ¼″ wide.





Now the temperature drops. By 9:00 p.m. it is 20°; the joint opens up to $\frac{7}{16}$". And while the job called for a $\frac{3}{8}$" cured bead that could move 25% either way, it actually winds up with a $\frac{1}{4}$" cured bead that must elongate more than 50% to $\frac{7}{16}$". It probably won't stick it out. (Above, right).

Here's how you can avoid this problem.

Design the joints at least $\frac{1}{2}$" wide. This way, you will wind up with a $\frac{3}{8}$" cured bead that has to move just 25% of its cured width.

If it is aesthetically feasible, use 6-foot instead of 12-foot panels. You'll cut panel expansion in half and stay well within the sealant's movement capability.

Better still, you might talk to us while you are still in the design stage. We're Tremco. And we cope with aluminum column cover sealant problems every day of the year. We also have some 15 basic sealant formulations to work with – including such familiar names as MONO (our job-proven acrylic terpolymer), DYmeric (our Tremco-developed polymer), and Lasto-Meric (our polysulfide).

With all this going for you, you can stop worrying about the mating habits of the all-aluminum column cover. Because Tremco will come up with a sealant system that will stick with you for years on end. The Tremco Manufacturing Company, Cleveland, Ohio 44104, or Toronto 17, Ontario.

TREMCO
The water stoppers

Collector's Item

Ronde. A boldly beautiful mood for today. A treasure for tomorrow. Enduring design in the Russwin tradition. Russwin, Division of Emhart Corporation, Berlin, Connecticut 06037. In Canada – Russwin, Division of International Hardware.

RUSSWIN

The Collector's Series by Russwin

Contents

News report

High-rise condominiums take over amusement park

Palisades Amusement Park, for years a destination for Sunday outings in the New York–New Jersey area, is no more. The world's largest salt water pool has been drained, the roller coaster has been taken down and construction has started on a high-rise condominium community overlooking the New York City skyline.

When completed, the $250 million project will boast close to 3700 apartments in six 30-story towers. Each building will have its own outdoor pool and sundeck, party and billiard rooms, plus a glass walled rooftop lounge complete with fireplace. Also on the site will be a two-story recreation center providing indoor and outdoor dining, banquet facilities, tennis courts and other recreational facilities.

The land, all 38 acres of it, cost developers Centex-Winston Corp. a cool $12.5 million; in developing it they plan to build on only 18 percent of the site, leaving the rest for landscaped walks and outdoor lounge areas. Cars will be parked underground in a garage with 6000 parking spaces.

Architects for Winston Towers on the Palisades are Gerber & Pancani, with Barancik, Conte & Associates as consultants on exterior design. Sidney Barbanel Associates are mechanical engineers; Robert Rosenwasser is structural engineer.

Palisades: no more roller coaster

Belluschi to receive AIA Gold Medal

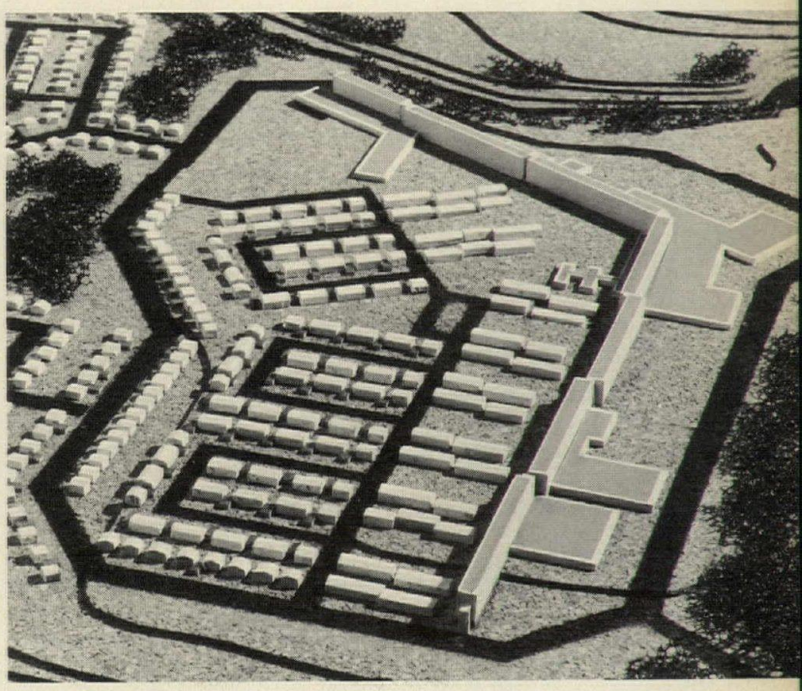
This year's AIA Gold Medal will go to Pietro Belluschi, former dean of the school of architecture and planning at MIT, and designer of more than 1000 buildings. The award will be presented during the AIA's national convention in Houston.

Other awards to be presented include the Allied Professions Medal, given this year to the outspoken landscape architect and regional planner, Ian L. McHarg, who served on this year's P/A Design Awards jury; the Fine Arts Medal, which goes to sculptor George Rickey; and the Industrial Arts Medal, which goes this year to Charles Eames. The first of this year's awards to be announced, the Architectural Firm Award, will be presented to Caudill Rowlett Scott.

Canadian mining town to have windscreen

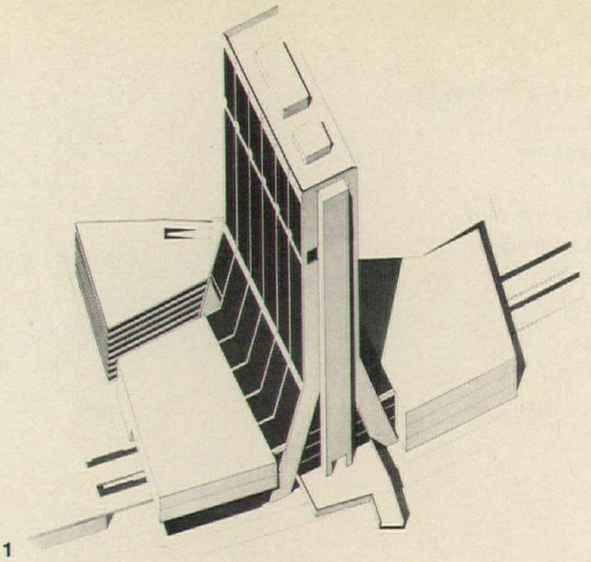
Anyone who grew up listening to "Sgt. Preston of the Yukon" knows that Canada can get windy and cold, in the east as well as in the old northwest. So when Quebec Cartier Min-

[continued on page 26]

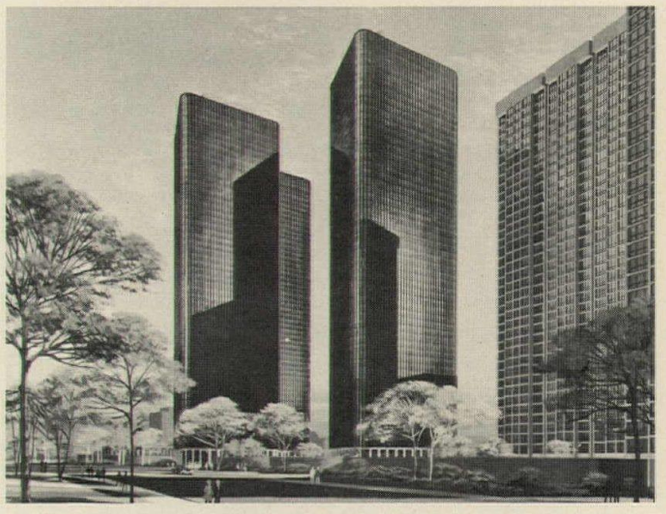


Windscreen for Canadian town

Buildings on the way up



1



2

1 Office and commercial complex for Hartford, Conn. will combine offices, shops, restaurants, parking and movie theaters with railroad station and hotel in a 38-story tower flanked by lower structures. Total area of complex will be 500,000 sq ft, and parking for 1000 cars will be available. Architects are Kenneth Walker Design Group.

2 On the site of Chicago's well-known Edgewater Beach Hotel, construction has started on the first of three triangular apartment towers. Sheathed with gray glass and black aluminum curtain walls, the 440-ft tower will include 728 apartments, two levels of underground parking, a landscaped plaza and a swimming pool and sun deck. The plaza will be linked with a plaza serving two existing buildings; when the second and third towers are built, they will be linked to the first buildings to provide an enclosed mall. Solomon, Cordwell, Buenz and Associates, Inc. are architects.

3 Temporary care, counseling and instruction will be provided for juveniles awaiting court action at juvenile detention home in Pittsburgh's East Liberty section. Home will be built around two corridors meeting at 90 degree angle; five units of 12 rooms each will project from each corridor, providing beds for 120 boys and girls. Recreation facilities will be provided indoors and out, along with gymnasium, classrooms and rooms for interviews and counseling. Architects for $5.9 million project are Foley, Kerr Scarlett and George M. Ewing.

4 Community facilities, including spaces for public health aides and community workers, are part of health center for north side of Chicago neighborhood. Center includes multiphase screening facility, radiology suite, dental clinic and mental health area; based on series of clinical modules, it can be converted for private group practice at a later date. Designed by Chicago's Bureau of Architecture and Building Maintenance with Metz Train Olson & Youngren, Inc. as associate architects, project will have reinforced concrete foundations and frame. Cost is put at $2.6 million with completion set for July. Engineers: C.A. Metz Engineers, Inc. (s); Environmental Systems Design, Inc. (m).

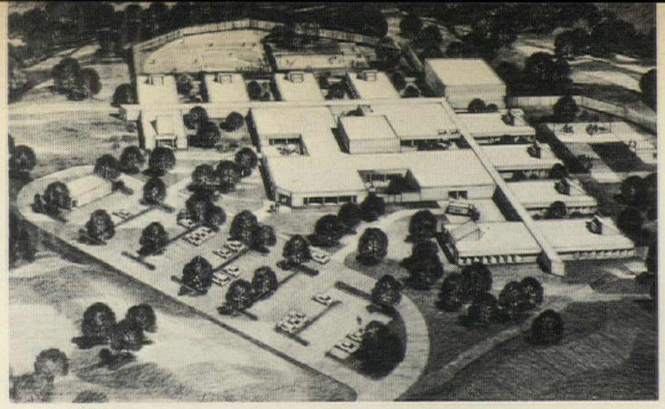
5 Recreation and therapy for some 637 severely handicapped and mentally retarded people will be available at the Recreation Center for the Handicapped, designed for a wooded site next to the San Francisco Zoo. Two single story buildings are planned: the first, 17,000 sq ft in size, will provide day care programs for children and recreation space for teenagers and adults; the second, 10,000 sq ft, will include a gymnasium and swimming pool designed for therapeutic swimming. Architects for the $800,000 project are Hertzka & Knowles.

6 Final step in the development of the University of Washington's Central Quadrangle, Meany Hall Performing Arts Building will provide 1200-seat main theater, 125-seat thesis theater, studios, lounges and storage and office space. The building, a reinforced concrete structure with a brick veneer exterior, will be completed in the fall of 1973; cost is put at $7 million. Architects are Kirk, Wallace, McKinley, AIA & Associates; engineers are Skilling, Helle, Christiansen, Robertson (s); Bouillon, Christofferson & Schairer (m,e) and Sparling & Associates (e). Paul S. Veneklasen & Associates are acoustical consultants and Landry, Hunt & Bogan are theater consultants.

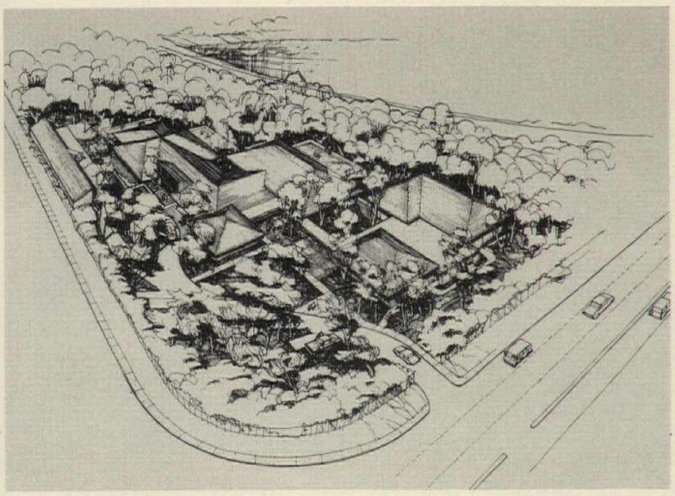
7 Regional headquarters for Federal Aviation Administration will be a six-story building enclosed with reflective glass and stainless steel expressed as a membrane. Structure is reinforced concrete frame and columns with waffle slab ceilings. Located in Lawndale, Calif. (near Los Angeles), the building was designed by Daniel, Mann, Johnson & Mendenhall. It provides office space for 1000 people, parking for 500 cars.

8 Comprehensive services for cerebral palsy victims will be provided by United Cerebral Palsy of New York at a rehabilitation campus planned for Brooklyn. To be built in three phases, the center will include an education building and a transportation center (first phase, to start in June, 1972); residence facility and vocation center (second phase, to start in 1974) and an enclosed mall (scheduled for a 1978 start) connecting the various buildings. The education building will be a renovated warehouse. Davis & Sands are the architects.

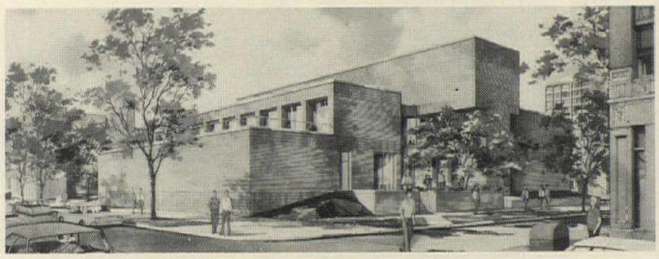
9 Perhaps only New York City would need a high-rise Ford dealership. A 20-story building designed by The Eggers Partnership will include 460,000 sq ft of space on nine levels for sales and service of Ford cars and trucks, Lincoln and Mercury automobiles, plus almost 500,000 sq ft of rentable office space. Bronze glass and light gray stone will be exterior materials; the building is set back to provide pedestrian plaza and an arcade beneath the building. Interior spaces are based on 38-ft bays to allow room for movement and storage of cars and trucks. Engineers are: DiStasio & Van Buren (s); Kelly & Morris (m,e).



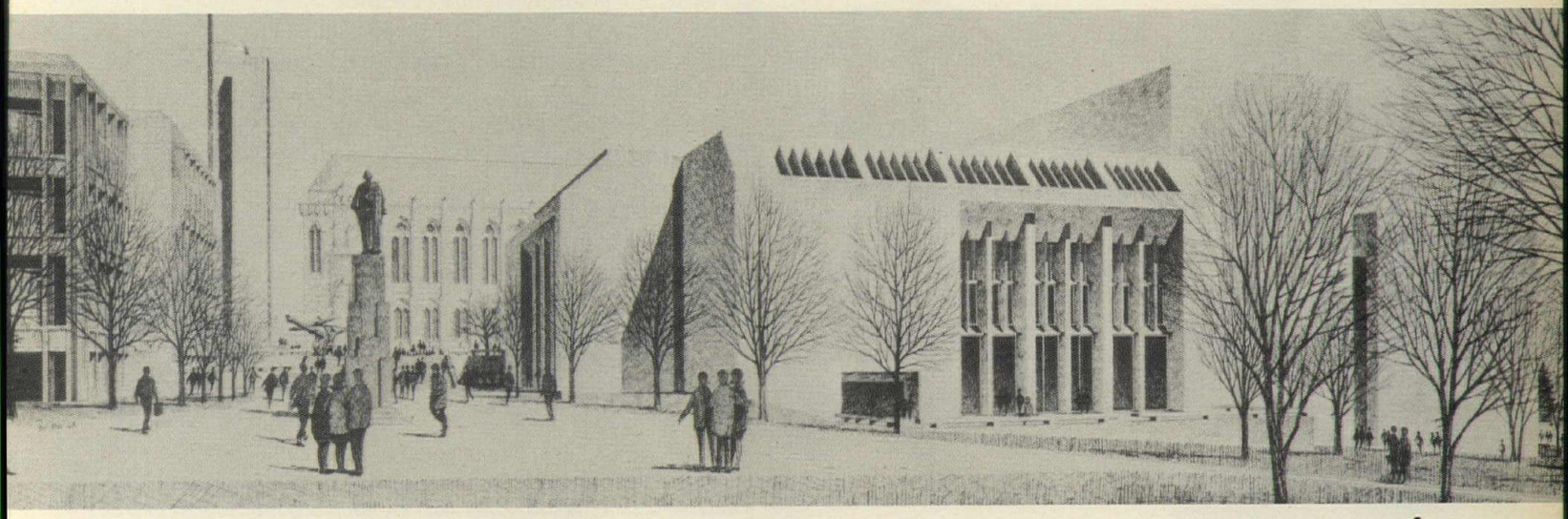
3



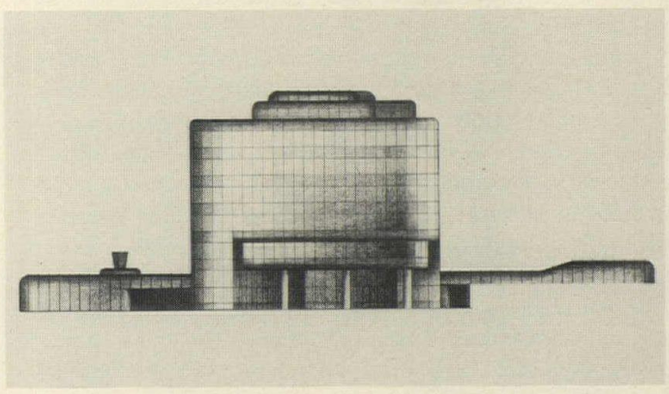
5



4

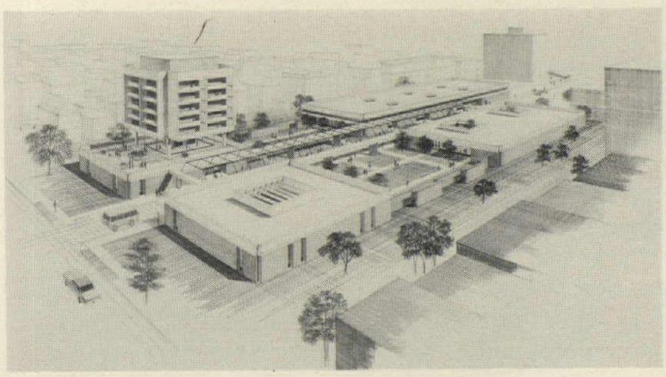


6



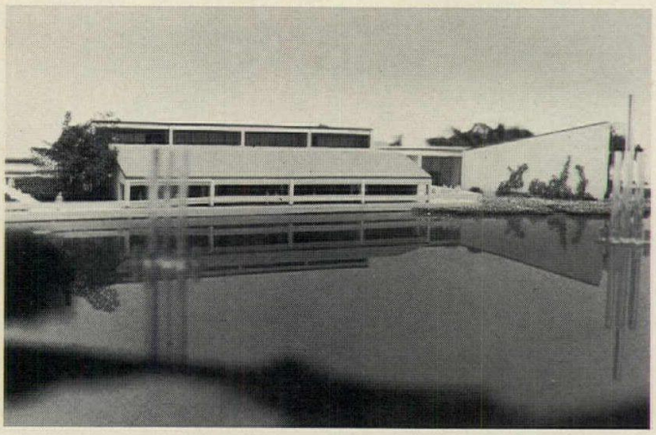
7

9

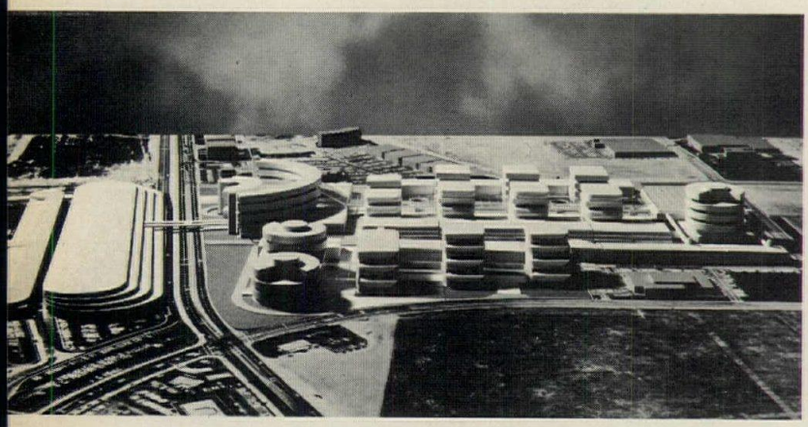


8

News report continued from page 23



Poinciana: building and preserving nature



McDonnell Douglas commercial complex

ing Co. decided to build a new town in a mining area in the northeast corner of Quebec, their architects designed one with a windscreen.

Fermont, the new town, is planned for a site 500 miles northeast of Montreal, and to block the prevailing winds, the architects, Desnoyers and Schoenauer, have included a windscreen of specially insulated apartment blocks. The three- and five-story structures will house 350 families. The windward walls will have no windows; those on the lee side, to the south, will.

Connected to the apartment complex by a climate controlled walkway will be a shopping center, restaurant, swimming pool, arena, library and town hall. A school building and a curling club will also be linked to the apartments by a similar walkway. The rest of the town will consist of semi-detached two-story houses and bungalows. Most construction will be pre-fabbed and brought to the site by road, water or rail.

Construction starts on Florida new town

Prompted in part, no doubt, by the Central Florida real estate boom, a Florida developer has broken ground for an ambitious new town project. The new town, called Poinciana, will eventually have a population of 250,000 people; construction started late last year, and property improvements are expected to take 14 to 16 years.

The plan for Poinciana calls for eight villages, bounded by major traffic arteries, lakes and open space; each village will have a junior high school site and a 10- to 25-acre shopping and commercial center. The villages are made up of three to eight neighborhoods each. An elementary school site is provided in each neighborhood, along with church and recreational tracts and a convenience shopping area. Greenways link the school site to most residential lots, thereby reducing traffic crossings.

At the center of the town is a 550-acre town center site, and a smaller business district is planned for the south end of the property. Towards the north end of town is a site for an industrial and office park.

Poinciana will be just south of Walt Disney World and about 29 miles from Orlando. Inhabited originally by Indians (burial mounds some 11,000 years old have been found) and then by cattle ranchers, the site is generally flat, laced by creeks and dotted with lakes and oak and cypress hammocks. Some 25 sq mi of the site will be preserved: a boardwalk will thread through the Reedy Creek area, and one of the Indian mounds will be opened for display.

Construction has started on a sales and administration building, surrounded by a lake; Skidmore, Owings & Merrill of Chicago are architects and engineers for the first buildings. Other initial projects include an access road, community center, golf, swimming and tennis facilities and 15 apartments.

Aerospace firm starts down to earth project

McDonnell Douglas, known for some time as an aircraft manufacturer and more recently as an aerospace contractor, has started a more down to earth project—a $100 million, 50-acre commercial complex hard by the Orange County (Calif.) Airport. The project represents its "healthy diversity."

The project, essentially a megastructure, would include a 500-room hotel as its first phase, according to the master plan drawn up by Welton Becket and Associates. Subsequent phases would provide office buildings and a convention

[continued on page 28]

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.

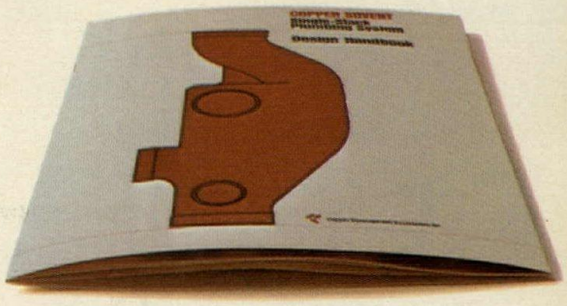
There's more room in your budget too because the Copper Sovent system is easier and cheaper to install.

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.

COUNT ON COPPER



News report continued from page 26

center; a people mover would link all parts of the project.

The hotel, which would have the usual assortment of guest facilities, would be expandable to twice its original size. The second phase would connect the hotel with a large commercial and office complex lining both sides of a glassed-in pedestrian mall. From this spine, escalators would lead to parking levels above and below ground. A third phase would add the convention center and a people mover running the length of the mall and linking the complex with a future terminal complex for the airport. And finally the complex would be connected to a parcel of ground for prestige office buildings.

As the project grows away from the airport, heights would increase according to Federal Aviation Administration standards, giving the whole complex a terraced appearance. The master plan calls for precast concrete structures with an 80-ft square modular bay, aluminum curtain walls and dark glass.

New towns: brave new world or grand illusion?

Robert H. Mutrux AIA, who attended the first AIA conference on new communities, recaps the meeting in this report

In May 1969 the National Committee on Urban Growth recommended that the United States build 110 new cities to help accommodate the growing population during the remainder of the 20th Century. On Nov. 3 of last year the first national Conference on New Communities opened in Washington, and the program that may change the face of the nation is now officially under way. The conference was attended by a capacity audience of 350, 80 percent of whom, understandably, were architects; it was addressed by 21 well-qualified speakers, each with predistributed texts, and climaxed by an address by Secretary George Romney.

No aspect of the problem of new communities, from the gleam in the eye to the ultimate achievement, was left undiscussed. Land acquisition, ecology, historic preservation, long-range planning, transportation and utilities, plus the nagging realities of labor costs, interest rates, taxes and insurance were treated in elaborate detail, along with the intangible factors of income and racial integration and the elusive element of aesthetics.

From these, three major points emerged. First, it was made clear that there is no pattern, no formula for the creation of new communities, and that Title VII, which provides federal financial support, is not the modern philosopher's stone. Second, there is a desperate need for federal control through a national land policy. Without this, the constitutionally supported rivalries among national, state, municipal and private sovereignties will continue to halt progress. Third is the inescapable fact that the developer, whose very name is anathema in other branches of construction, appears today as the principal driving force in the fields of housing and new communities.

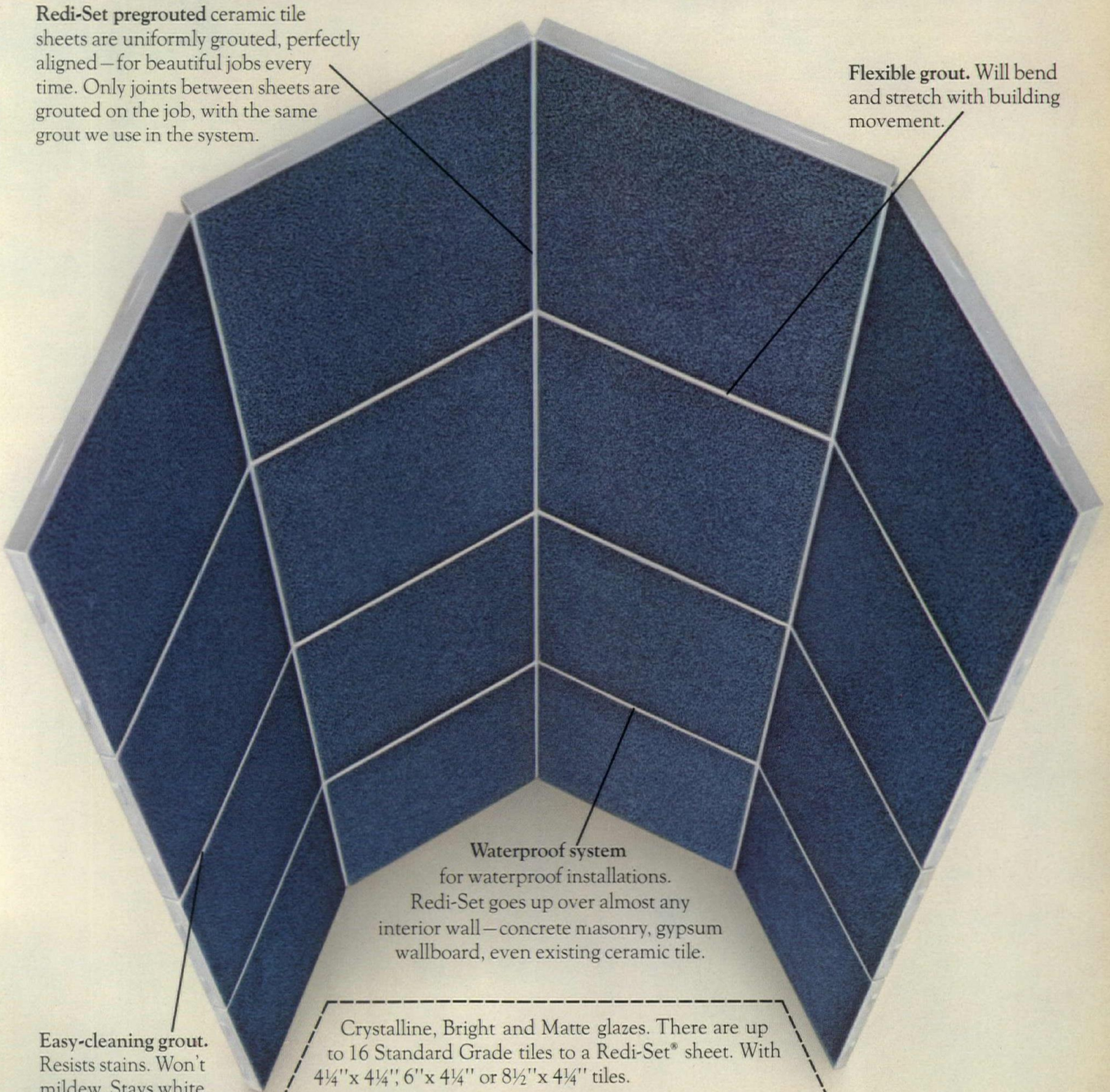
Secretary Romney brought that out emphatically when he said "I want more men like Jim Rouse" (the entrepreneur who created Columbia, and who is equally well known for his total lack of dependence on the architect for its success). The entire conference, in fact, was haunted by the prospect of a world in which not merely 80 percent, but all buildings are realized without the blessing of the arts' aging mother.

[continued on page 31]

New! The American Olean ceramic tile system.

Redi-Set pregrouted ceramic tile sheets are uniformly grouted, perfectly aligned—for beautiful jobs every time. Only joints between sheets are grouted on the job, with the same grout we use in the system.

Flexible grout. Will bend and stretch with building movement.



Waterproof system for waterproof installations. Redi-Set goes up over almost any interior wall—concrete masonry, gypsum wallboard, even existing ceramic tile.

Easy-cleaning grout. Resists stains. Won't mildew. Stays white. Cleans with a damp cloth.

Crystalline, Bright and Matte glazes. There are up to 16 Standard Grade tiles to a Redi-Set® sheet. With 4¼"x 4¼", 6"x 4¼" or 8½"x 4¼" tiles.

American Olean Tile Company, 1631 Cannon Ave., Lansdale, Pa. 19446.
Send me literature.

Name _____
Firm _____
Street _____
City _____ State _____ Zip _____

American Olean
A Division of National Gypsum Company

Redi-Set pregrouted tile. It's the natural thing to use.™

On Reader Service Card, circle no. 340

Never in carpet history, has so little been guaranteed to do so much.

We guarantee that a carpet made with as little as 2% Zefstat® anti-static yarn will reduce static below the level of human sensitivity for the useful life of the carpet or five years.

Or else we replace the entire carpet, free of all charges, including the cost of installation.

No other anti-static carpet yarn is backed by a guarantee of any kind, let alone a five year guarantee. Which means either we know something no other fiber producer knows or else we're crazy.

We're not crazy.

We originated and developed the concept of turning metal into soft textile yarns more than 20 years ago.

We knew how to blend acrylic-modacrylic or nylon with Zefstat anti-static metallic yarn during yarn production so that you wouldn't see it or feel it.

In fact, the best way to see if Zefstat is there is to look at the back of the carpet and see our guarantee.

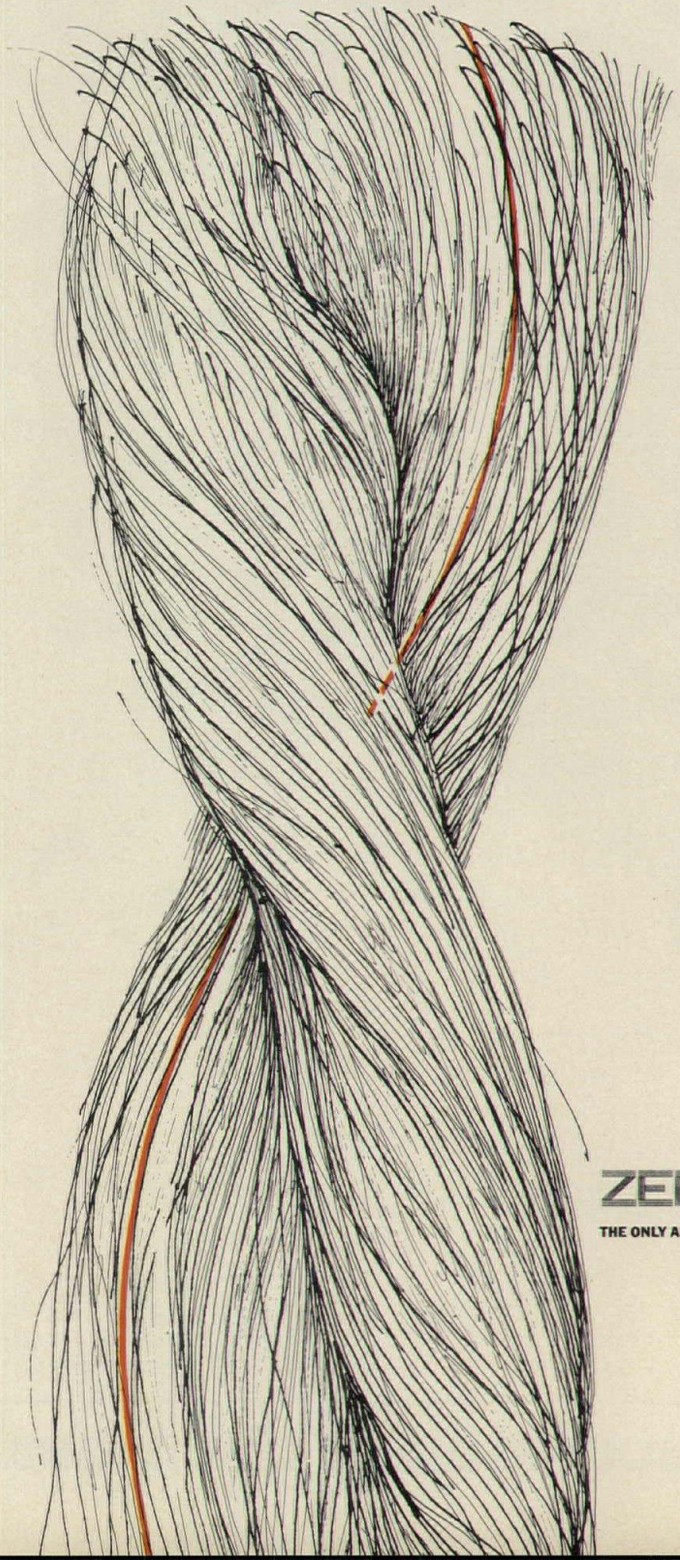
Dow Badische Company, 350 Fifth Avenue, N.Y., N.Y. 10001.

Zefstat is a registered trademark of Dow Badische Company.

Dow Badische Company guarantees to the original purchaser that a carpet made with Zefstat will not generate static in excess of 2,500 volts down to a relative humidity of 20% at 70°F. (The threshold of average human sensitivity is considered to be 3,000 volts.) This anti-shock feature is guaranteed for the useful life of the carpet or five years, whichever is sooner.

If the anti-shock performance fails to meet the above standard and if human comfort is adversely affected by static generation, the purchaser must notify the manufacturer and make the carpet available for testing by Dow Badische Company. If failure is verified by our tests, the carpet will be replaced, free of all charges, including the cost of installation.

If 2% of the carpet doesn't work we'll replace 100%



ZEFSTAT DOW BADISCHE

THE ONLY ANTI-STATIC YARN GUARANTEED FOR 5 YEARS

On Reader Service Card, circle no. 355

News report continued from page 28

To offset this, the architect, through a welter of metaphors, was encouraged to justify his existence. His contribution to history was continually referred to as a "role," but he was more frequently referred to as "a member of the team," a metaphor which most architects are more than willing to accept. Paradoxically, Ben Cunningham, architect for the consortium that is erecting Jonathan, Minn., recommended strongly that the architect "play it by ear."

Three days of well-disciplined but highly concentrated dialogue brought forth a wealth of information on projects from the east to the west coast, but some important questions were left unanswered. Within 365 pages of documentation, the term "community" was not once defined or outlined, although the necessary acreage was measured in thousands, and the families to be served were in groups of five figures. The ultimate sociological goal, likewise, was not clearly stated. Carl Feiss suggested that our aim is to achieve "a better quality of life," but he admitted that there is great need for basic research in this field.

Archibald Rogers exhorted architects not to lose sight of their responsibility as artists, and yet no mention whatever was made of the work of America's two creative giants, Buckminster Fuller and Paolo Soleri. Gloria Segal, co-developer of Cedar-Riverview in Minneapolis did, indeed, receive a well-deserved round of approbation, evidence not so much of masculine courtesy as of sincere professional respect.

Most unfortunate, and mystifying, was the total absence of representation by the client, the future city's residents, although for a brief moment during Floyd McKissick's brilliant freehand delivery, they seemed to fill the hall to overflowing.

All-in-all, the conference, despite a few minor shortcomings, provided an enlightening overview of an exciting architectural challenge. It cannot fail to inspire the architects who now are back at the drawing board, pondering how to ensure that at least one of tomorrow's cities will bear their signature, somewhere in its fine print.

GSA launches survey of federally-sponsored art

From 1933 to 1943 some 160,000 works of art were produced through federally supported programs and placed in public buildings. That period will be a key period in the National Fine Arts Inventory recently launched by the General Services Administration.

The inventory will be done in two phases. The first will locate and catalog works of art in GSA maintained buildings; a pilot program has been completed in the Rocky Mountain States. The second part of the inventory will cover nonfederal public buildings and institutions.

On-site surveys will be made by college and university faculty members. The information they gather will be augmented by data from the National Archives and stored for use by GSA, scholars and laymen.

CIF report calls for limit on retentions

Major reforms in payment practices, including a 5 percent limit on retentions, have been called for by the Construction Industry Foundation. CIF's recommendations were made in the final report on a study of the flow of funds in the construc-

[continued on page 32]

News report continued from page 31

tion industry; the report noted widespread abuse and lack of consistency among construction owners about retentions and final payments.

In its survey of approximately 10,000 contractors, material suppliers and manufacturers, CIF found that subcontractors get the short end of the stick when payment time comes around. Over half of the general contractors, suppliers and manufacturers reported that they are paid according to invoice terms more than half the time; only 38 percent of the subcontractors reported the same experience. However, 73 percent of the general contractors and 81 percent of the subcontractors don't include interest expense as an item in job estimates.

CIF president Robert G. Cerny says the study confirms an earlier survey of bank lending officers, particularly in regard to the big reason for delays in progress payments—"working the funds" by owners or prime contractors. The foundation recommends a maximum limit of 5 percent of total contract price on retentions; the limit should be reduced to 2 percent on jobs costing more than $250,000, when the designer certifies that the job is substantially complete.

Another recommendation calls for payment in full to subcontractors whose work is completed, including testing, following inspection and authorizations by the owner's representative. What's more, CIF recommended that all retained funds be invested, with the income accruing to the prime contractors and subcontractors whose money is being withheld.

A correction

Design credits for the Harry S Truman Sports Complex ("All American Monument" P/A, November, 1971) should have read as follows, according to Ralph E. Myers of Kivett and Myers: Kivett and Myers, Project Architects with Charles Deaton, Architect, Design Associate. Under the contract between Deaton and Kivett and Myers, according to Deaton and his lawyer, Deaton was to be "primarily responsible for . . . the design of the project." Subject to Deaton's design responsibility, Kivett and Myers was to have complete responsibility for architectural services; they would prepare working drawings, which Deaton would review.

St. Louis meeting provides latest on federal construction

The Navy's building housing, the Air Force does a two-step, GSA won't award inflationary contracts, and the VA, which is still building hospitals, has changed its contracts. That, in a nutshell, is what the second national Federal Agency Construction Program Conference, held in St. Louis, was all about. Sponsored by AIA, CEC and NSPE, the conference drew over 500 architects and engineers.

Along with the details on policy and program changes came talks by Samuel Jackson, general assistant secretary of HUD, who urged the professions to help bridge the gap between professionals and people in poor communities: "We must be sure that we build what people need and prefer and not merely build more of what we have inherited from the values, the technologies and the prejudices of the past," and Eugene Gulledge, commissioner of the Federal Housing Authority, who noted that the architects' and engineers' role and

[continued on page 34]

In restaurants and drive-ins Bally Prefab Coolers and Freezers are accepted as the standard for walk-in refrigerated storage

Bally Prefabs can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of urethane foamed-in-place. Easy to add sections to enlarge . . . easy to relocate. Factory refrigeration systems for every temperature from 35° cooling to minus 40° freezing. Stainless steel, patterned aluminum or galvanized finishes. Subject to fast depreciation. (Ask your accountant.) Write for 28-page booklet and urethane wall sample. Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.

There's an evolution in the kitchen

Bally®
Dept. PA-2

News report continued from page 32

responsibility in shaping the future is "indisputable."

Policy changes were outlined by spokesmen for various government agencies. Arthur Sampson, commissioner of GSA's Public Building Service reported on the progress of value engineers, construction management and systems building and added a word on inflation—a firm "no." GSA had warned that it wouldn't award inflationary contracts, Sampson said, and they haven't. He cited a project in Philadelphia in which the fourth phase of a courthouse and federal office building came in $12 million over estimates, resulting in a postponement of the contract.

VA deputy assistant administrator for construction, L.G. Schweickart, outlined the administration's yearly $100 million hospital program, urging architects and engineers to get their names in the file if they wish to be considered for VA projects. New contract features include 6 percent fees for working drawings and specifications, a deferral limit of one year (not two, as before) until start of construction, and use of critical path scheduling.

The Navy, according to Rear Adm. D.G. Iselin, deputy commander for Planning, Naval Facilities Engineering Command, will put about $800 million into new family housing during the 1970s. For this year, he said, $102 million has been approved for new housing.

The Air Force's two-step is its way to get cost effective construction for certain types of work, Maj. Gen. M.R. Reilly, USAF's deputy director of civil engineering, told the audience. The first step calls for proposals without prices; these are evaluated for technical adequacy, and in the second step, technically acceptable proposers follow up with bids, and the work goes to the lowest qualified bidder.

TARGET's fuel cell test program to run through year

For three months a Midas Muffler shop in Chicago will be the test site for a prototype fuel cell power plant. During the next year and a half, Peoples Gas Light and Coke Co., which is running the test, will install and test three other fuel cells in an apartment building.

These tests, like the one at Farmington, Conn. (P/A, Oct. 1971, p. 37), are part of a program of field tests sponsored by TARGET, short for Team to Advance Research for Gas Energy Transmission. The power plants being tested were developed by Pratt and Whitney; they run on natural gas, producing electricity through an electrochemical reaction.

The test program, to continue through this year, will see up to 50 fuel cells installed in homes, apartments, stores, restaurants, office buildings and industrial buildings. Some will be run in parallel with conventional electric utility systems. After three months of operation, during which power output will be compared with conventionally produced electricity, the fuel cells will be taken out of service and returned to the manufacturer for further evaluation.

Fourth NEOCON show set for June

This year's National Exposition of Contract Interior Furnishings, otherwise known as NEOCON, will be held during the latter part of the summer home furnishings market at the Chicago Merchandise Mart. Official NEOCON dates are June 21-

[continued on page 37]

News report continued from page 34

23, 1972. NEOCON, the Merchandise Mart says, will be open without charge to architects, interior designers, space planners, dealers, purchasing and business officers for educational institutions, housing officers, administrators and other officials in hospital and nursing home fields, office comptrollers, purchasing agents and managers, hotel, motel and food service owners and management, and others involved in non-residential services. As usual, there will be product displays and a wide-ranging program.

Plastic bottles used as concrete aggregate

Some 25,000 plastic bottles which would have been part of the growing solid waste problem will be ground into chips and used as aggregate in a concrete bridge designed for Elgin, Ill. The plastic chips will replace 30 percent (by volume) of the sand aggregate to be used.

The bridge will carry pedestrians and maintenance vehicles between the Elgin Civic Center and an island in the Fox River. Robert Layer of Schmidtke & Layer, an Elgin architectural firm, designed the bridge and helped get a plastic bottle drive started. Tests with cylinders of the new plastic aggregate concrete show the mixture to weigh 10 percent less than the same volume of conventional concrete, with no significant loss of strength. The concrete arch bridge, 100 ft long and 7 ft wide, is expected to weight 9 percent less than if conventional concrete had been used. Other tests show that the mixture has no slump when wet. Tests were sponsored by the Society of the Plastics Industry and the Portland Cement Association.

Memphis Breakthrough housing goes up fast

The first housing units on the Memphis, Tenn. Operation Breakthrough site were put up, all 16 of them, in three normal 8-hour days. The 16 apartments were constructed with 48 modular units manufactured by General Electric; they were GE's first Breakthrough units.

Using one crane and a crew, Lucchessi Construction Co. erected 15 modules the first day, 16 the second and 17 the third. The modules are 12 ft wide, up to 10 ft high and 19 to 30 ft long. They are the first run of GE's prototype plant in King of Prussia, Pa. and were grouped by architects Hugh and Donald Gibbs into two-story courts of eight apartments.

The process, not the product

Process, not product, was the general topic at the International Systems Building Round Table conference in Boston November 17–19, but all major facets of the wide world of systems were explored. Held at the Boston Architectural Center, the conference featured discussions with systems experts from all parts of the world—United Kingdom, France, Italy, Canada, Holland, Japan, Peru and the United States.

Prof. Colin Davidson (of the University of Montreal and Washington University at St. Louis) opened the sessions with the observation, later refuted by Hugh Morris of England, that European systems experience had its roots firmly in hardware approaches, not software. Americans, he said, were much more preoccupied with software and process.

The conference, partially funded by the National Science Foundation, and attended by about 160 persons, was the brain child of BAC's Duncan (Ken) Wilson. Sensing the need for an interchange of systems information, he had started a series of round table discussions leading up to ISBRT.

Sessions were broken down into three general categories: housing, education and health care. Each classification was presented to the entire audience through case histories, then three concurrent panel discussions. Following the panels, nine seminars, also concurrent, crossed building type lines and sparked discussions about the broader implications of systems. Since the entire conference focused on process rather than product, "nuts and bolts" weren't stressed.

Those attending such a conference are already interested in systems, of course. But as Dean John Eberhard of the State University of New York, Buffalo, pointed out, given a choice of seminars and workshops, people tend to pick according to peer groups in which they feel comfortable. Given the broad range in viewpoint within "systems," and some comments heard after the conference, reaction was diverse. As Eberhard also noted, the conference is a process, benefiting the receptive participant more than the impervious one. Those who came prepared to hear their own voice probably heard little else; others, at the very least, probably learned something they didn't know.

New York City plans housing over tracks

The largest city housing project in 10 years is being designed for an air rights project over railroad tracks in the Bronx, according to the New York City Housing Authority. The $35 million project, which will provide 1034 apartments, will be seven blocks long and use a new steel construction technique developed at MIT.

Instead of using steel columns to support the project, the architects, The Eggers Partnership, is planning to use staggered steel trusses. That way construction will not interfere with railroad operations.

The project, which will consist of two buildings of nine independent components, will range from 11 to 29 stories high. The railroad tracks, 20 ft below street level, would be completely covered but provided with ventilation, lighting and fire exits. The embankment flanking the tracks would be used for boiler plants, elevator pits and utility lines. Parking for 130 cars would be provided on grade.

New York City looking at energy saving program

Blackouts, brownouts, high utility rates, pollution—New York City is often considered the nation's capital for all of them. But now the city may be moving towards a program aimed at conserving energy by making more efficient use of it. Milton Musicus, chairman of the Mayor's Interdepartmental Committee on Public Utilities, has met with architects, engineers and industry and utility leaders to start work on just such a program.

The city plans to sponsor the development of standards for the efficiency and fuel consumption of heating, cooling and lighting systems, as well as standards for judging the efficiency of electric appliances. Musicus proposed that the electric industry and the design professions come up with ways for realtors to judge the relative efficiency and fuel consumption of buildings.

At the meeting, a number of ways to conserve or make better use of energy were suggested. S.W. Brown of S.W. Brown and Associates suggested reclaiming and using heat pro-

[continued on page 38]

News report continued from page 37

duced by refrigeration or power generation; central total energy plants for clusters of buildings were another of Brown's suggestions. Richard Koral, president of the New York Chapter of ASHRAE, urged programs to train building supers in the efficient operation and maintenance of heating and cooling systems. Richard Stein, representing the New York Chapter AIA noted that lighting levels in buildings could be substantially reduced and still provide needed illumination.

Awards

A baker's dozen of projects were honored in the 1971 New York State Association of Architects awards program. Certificates of merit were given to **Warner, Burns, Toan and Lunde** (University Student Center of Adelphi University, Garden City, L. I.); **Corgan & Balestiere** (Town Hall, Parma); **Richard G. Stein & Associates** (Park and playground, Rochdale Village, Queens); **The Perkins & Will Partnership** (Buffalo College Library, State University College, Buffalo); and **Stephan Marc Klein** (Klein beach house, Westhampton Beach). Honorable mentions went to **Horace Ginsbern and Associates** (Gracie Plaza and Columbus House, both New York City); **Dobiecki & Beattie** (Quadrangle buildings, Suffolk County Community College, Selden and St. Lawrence the Martyr Church, Sayville); **Gibbons, Heidtmann & Salvador** (Great Neck Library); **Gruzen & Partners** (Southbridge Towers, New York City); **Carl Petrilli** (Graduate Center, City University of New York); and **Bentel & Bentel**, (Neitlich residence, Oyster Bay Cove).

Calendar

Feb. 24–Apr. 15. Series of five seminars on design and planning sponsored by The Graduate School of Design Association and the Graduate School of Design, Harvard University, Cambridge.
March 6–10. American Concrete Institute's 68th annual convention, Statler-Hilton Hotel, Dallas, Tex.
March 14–15. GATE-Southwest Research Institute Energy Conservation Forum, Hilton Palacio del Rio Hotel, San Antonio, Tex.
March 15–17. Michigan Society of Architects, AIA, annual convention, Detroit Hilton Hotel, Detroit, Mich.
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. 27–28. Thirty-third annual conference of the Guild for Religious Architecture, Regency Hyatt House, Atlanta, Ga.
May 2–5. Symposium on the Performance Concept in Buildings, American Society for Testing and Materials, Philadelphia.
May 7–10. 1972 AIA National Convention and Exposition, Albert Thomas Convention Center, Houston, Tex.

Personalities

Murray A. Milne has been named Associate Dean of the UCLA School of Architecture and Urban Planning.
Mrs. Anita Moeller Laird of Washington, D.C. and **Robert J. Castle** of West Orange, N.J., have been named honorary fellows of the American Institute of Interior Designers.
James M. Alexander, head of the Industrial Design Department of the College of Design, Architecture and Art of the University of Cincinnati, Ohio, has been made a fellow of the Industrial Designers Society of America.
Charles J. Allen, PE, of Albert Kahn Associates, Inc., Detroit, has been elected president of Automated Procedures for Engineering Consultants, Inc.
Richard Q. Praeger, chairman of URS Systems Corporation and president of its subsidiary, Madigan-Praeger, Inc., New York City, has been elected president of the American Institute of Consulting Engineers.

Washington report

The environmental movement shifts gears

There's a slow change coming in the tactics and direction of the "environmental" movement that will become evident as Congress gets back to work in this election year. The change will affect architects and their work, and has in part been affected by architects and other professionals who have agreed with the general objectives of cleaning up the environment, making cities better places to live and work—but who have also warned of dangers that could result from excessive insistence on single-purpose objectives. It is also dictated by what the "environmentalists" (some of them, anyway) have sensed as a stiffening mood in Congress, and growing public awareness that remedies cost a lot of money, most of which must come from public pocketbooks in some way or another.

The anti-highway movement is already shifting away from demands that virtually all highway construction be stopped, an idea that simply will not gain any real popular support, in view of America's regard for motor transport and real need for it, to diversion of money from the huge Highway Trust Fund for other purposes. That's expected to be the crux of the Congressional battle to be fought out this year, as the lawmakers consider legislation that will shape the highway program for years to come (after the Interstate System is completed, hopefully by 1977 or so).

Environmentalists and their allies will try to channel some of the Trust Fund money to rail rapid transit in urban areas, to parking lots and beautification programs, and to many social purposes outside of (but claimed to be related to) highway work. Some of this has already been done: some Trust Fund money is already going to clear billboards and junkyards from near major highways, other money to "collector" parking facilities near transit terminals.

In such areas as the very broad one of pollution control, there will be further emphasis on social problems created by pollution of air and water and efforts to impose some sort of cooperative regulation that will make allowances for the realities of economics as well as pollution. The scattered plant closings that have resulted in the past year from tight pollution control enforcement; the spending ($1.5 million a day by the oil industry, for example, many millions by steelmakers) for controls that are beginning to be reflected in prices and available jobs—these are striking home to many citizens. So far, it has been a mild fall-winter season in the northern parts of the U.S., but a bitter cold snap could bring energy shortages, largely blamed on environmental considerations and delays, very close to home indeed.

Congress is getting worried: it already has a resolution before it to instruct delegates to a world conference on the environment (at Stockholm, in June) to insist that other nations establish control standards, so that U.S. industry won't be pe-
[continued on page 44]

LIABILITY?

ADVANTAGES OVER 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 Contractors 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)

(SEE PRECEDING PAGES)

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	OFFICE BUILDING 10 floors 200 MSF
Sq. Ft. Cost of Building	$24.	$45.	$14.	$18.
Total Cost of Building	$2.4 million	$8.1 million	$1.4 million	$3.6 million
ADDED COST FOR 10-YEAR BARRETT PROGRAM*				
Total at $3 per 100 Sq. Ft.	$1,500	$900	$3,000	$600
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

THE CELOTEX 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 described 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 ⅔ 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 A Franklin
Attorney-in-fact

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

News report continued from page 38

nalized by having to spend for control, while foreign industrialists do not. It was also threatening to hold down appropriations to the Environmental Protection Agency, the Labor Department's Occupational Safety and Health arm and others, on the grounds that these agencies now have more money than they can spend, and that their proposed and actual regulations, so far, have often been far too harsh.

All of which is coming around—at long last—to what the architects and their fellow professionals have been saying for years: no new facility—highway, pipeline, canal, building, housing development or whatever—can or should be considered entirely on its own merits and objectives. It must also be considered for its overall effect on the environment, both physical and social, in which it is to be placed.

Thus, if a highway is built with only transportation needs in mind, the best that the architect, engineer or landscape architect can do is "pretty it up" a bit with good structures, architectural concrete and other treatment, trees and shrubbery. There's little or nothing that these design professionals can do, at this stage, about the social impact of dividing a homogenous neighborhood, separating children from nearby schools, the impact of noise and air pollution on the surroundings, the displacement of families and business establishments, and much else.

By the same token, the siting and character of a new office, commercial or residential structure goes far beyond its physical appearance, however pleasing, or its efficiency as a space enclosure. It must also be considered for its impact on its neighborhood in terms of traffic and work patterns, contributions to noise and air pollution and the rest. The same goes for such major environment-changers as housing developments and recreational areas.

The whole development fits very well, in fact, with AIA's new "public policy," as adopted by its board of directors in mid-December, calling for "a strong voice in public policy and an expanded role for the architectural profession in shaping the physical environment." In 1972, said the Board, the Institute will work to provide "mechanisms which will make possible the building of an environment that recognizes the need for more than adequate shelter." A major portion of the $4.4 million operating budget will be devoted to implementing the report of AIA's National Policy Task Force dealing with Institute sponsorship of legislation and other changes looking toward rebuilding cities, developing "new towns," cooperating in growth outside metropolitan areas, regional planning, and "the proper use of natural and human resources."

In addition to furthering its already started programs, AIA will seek to fill another important gap—the need for vastly greater technical background on which to base municipal and planning decisions. To this end, it will establish a full-scale "Technical Services Center" for production and marketing of documents and automated services like the "Masterspec" system; will continue its efforts to involve architects in writing and the revision of building codes and standards; continue its $200,000 book-publishing program; produce more educational aids on such matters as regional planning and design, land-use planning, economic and administrative management, design and behavioral sciences. [E.E. Halmos]

Unretouched Photograph/Summitville

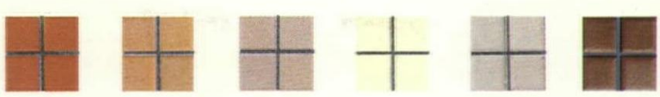
QUARRYETTES . . .

IF YOUR BUILDING HAS A FLOOR . . .
OR A WALL . . . OR A BUDGET

. . . you'll find extruded Quarryettes provide all the qualities provided only by genuine ceramics along with super economy . . . in many cases under $1.20 a sq. ft. *installed* . . . that's far less than many products that wear out. Available in modular 1″ x 1″ x ¼″ or 2″ x 2″ x ¼″ and a wide range of natural earth colors and blends of colors. Quarryettes *(Miniature Quarry Tile)* may be your best answer to problems of beauty and budget in *every* kind of building. Check Sweet's or ask your ceramic tile contractor for the full story.

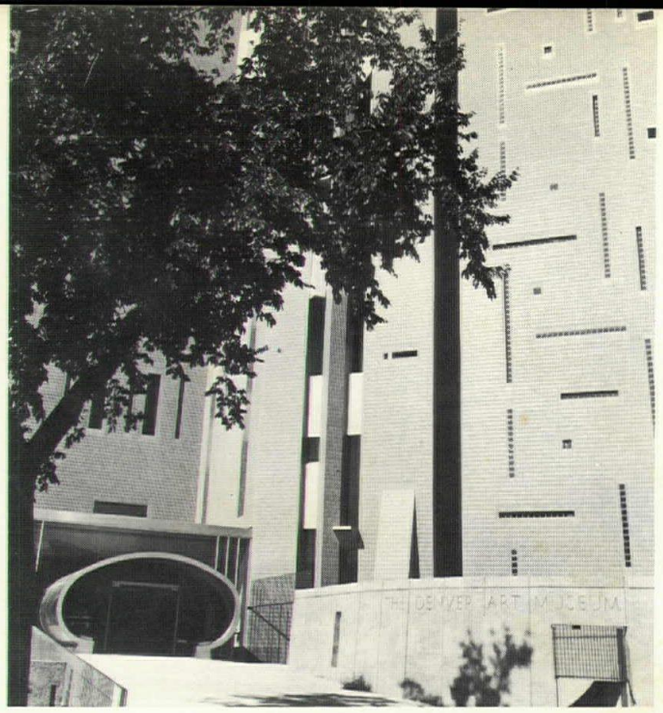
Summitville® TILES INC.
Summitville, Ohio 43962

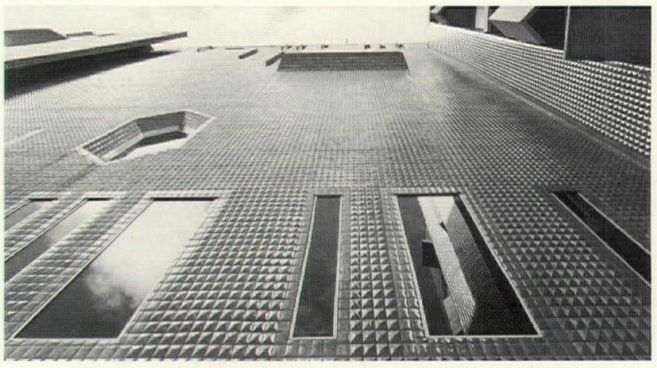
MEMBER: TILE COUNCIL OF AMERICA, INC. / PRODUCERS COUNCIL

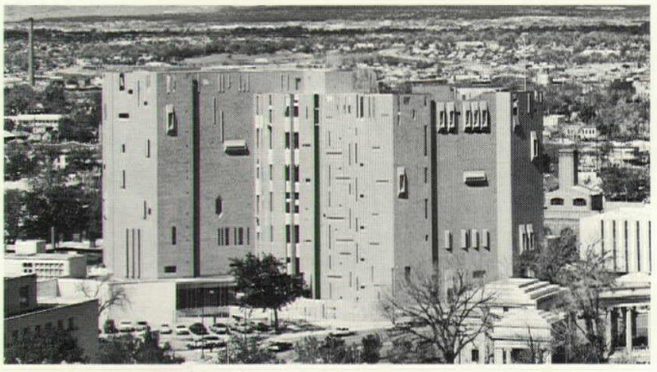


News report

Architecture west







Denver's new museum

It was a warm golden day in Denver, with transparent yellow elms in the block-wide Civic Center Park and the gold leaf gleaming on the Capitol dome. The park, designed in 1910 with the Capitol at one end and the U.S. Mint at the other, includes peristyles and an amphitheater. Along the sides are civic buildings and the new six-story Denver Art Museum.

I stood with the 80-year-old Gio Ponti who had come from Milan for the opening of the building on which he had collaborated with James Sudler Associates of Denver. Our backs were to a peristyle and we faced the stainless steel tubular entrance to the museum. He said of the many-faceted (28-sided) building with its random pattern of windows: "It had to have a big unity, not be a collection of parts. I wanted a thin expressive wall, and we emphasized the thinness by many changes of plane."

His Pirelii Building in Milan is faced with ceramic tile, but in the museum he uses a 2" x 6" pyramidal section gray glass tile. "I asked the sun and the light and the sky to help me." He watched sides of the building relax in shadow and others spring to life under the movement of the sun. Flat tiles around all openings and occasional streamers of glass brick can appear as strips of neon. The light makes it pop art—city drama as immobilizing as the Changing of the Guard.

"A building without unreality is only technique or engineering. Here it is the light that creates the enigma. Cities are ready for enigmas. The same size window repeated over and over starves the eye. Sameness is a renunciation. The museum is nocturnal architecture too. At night the shell is a pattern of light. Some slits of light extending to the top of the building break the walls apart."

The building is essentially two 90′ x 90′ offset towers seven stories high containing 11 stacked galleries. Around them is a space cushion of varying depth and configuration. The existing tower was wrapped in with the new ones. Dr. Otto Bach, the museum director, wanted artificial light in all galleries, and it is the 28-sided cushion around the galleries which receives the light—niches, stairs, offices, lounges. In galleries where light is not incompatible with the art there are what Ponti calls "little escapes into framed landscapes."

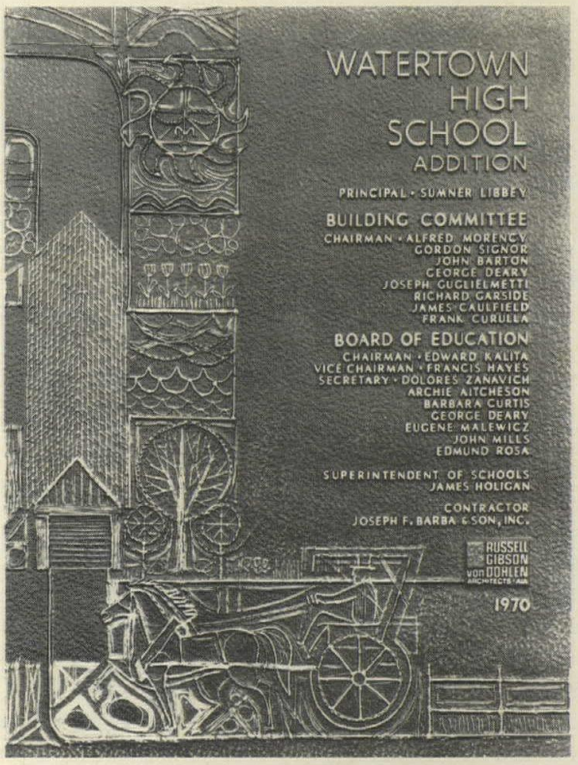
There are also little escapes on the roof garden, where the donors' penthouse will be built later. Visitors go from opening to opening in the high parapet wall to view segments of city or mountains, or queue up to climb one of the two stairs to a platform in front of a window. "They are climbing to the top of the mountain," Ponti said. He added, "Panorama is no art. Architecture must create spectacles."

The museum, Sudler told me, serves eight states and is basically a teaching instrument. Its collection of American Indian tribal art is unique, and it is strong in the art of the Spanish Colonial Americas and the Orient. The idea of an association with a foreign architect came from the trustees. "I agreed, if I could have Ponti, whom I knew. My associate Joal Cronenwett or I went over several times to exchange ideas and Gio came to see the site and our work." Near the museum are three Sudler banks and the Federal Building (with Fisher and Davis).

"It was 4 a.m. Milan time when Gio and Mrs. Ponti arrived for the opening, but he went straight to the museum. His first *bravo* was a real pleasure to hear." [Esther McCoy]

On Reader Service Card, circle no. 381 →

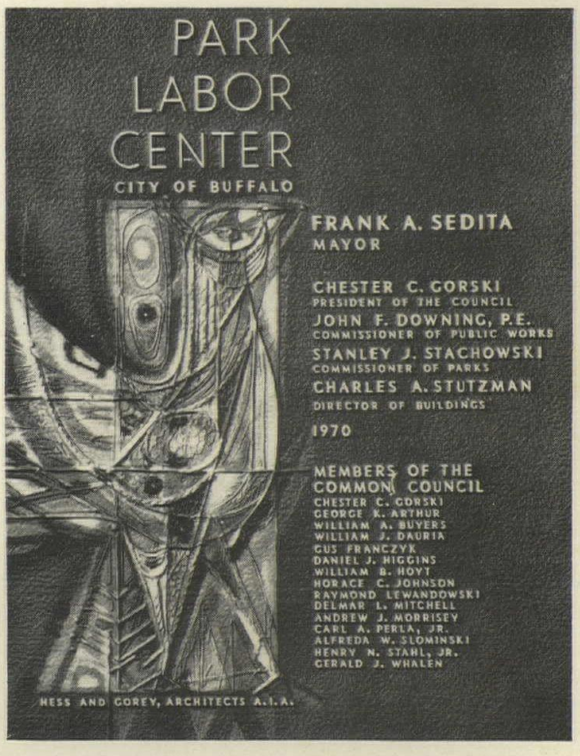
Identify with metal . . . and Matthews

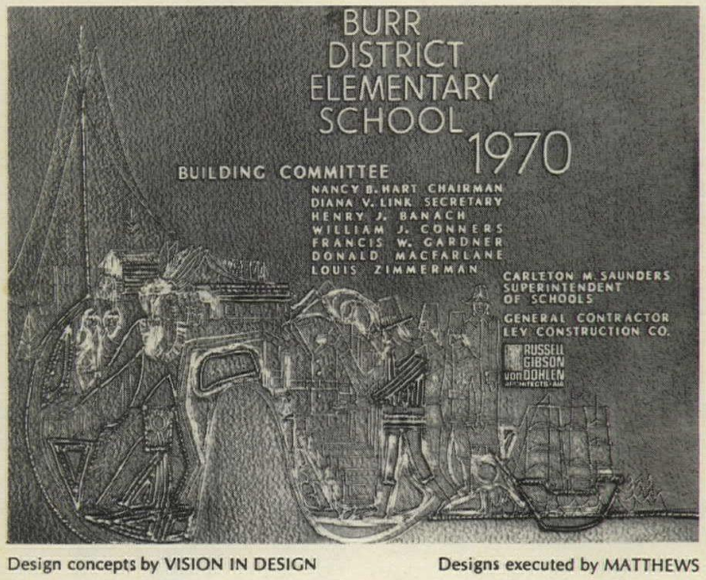


Be contemporary and creative all the way . . . with cast metal lettering or tablets for exterior or interior identification. It speaks with distinction . . . for your clients, for you.

Matthews has what it takes. 25 different, handsome lettering styles to choose from. Cast in solid bronze and aluminum. In a wide range of finishes and modern baked enamel colors. And you can give striking new depth and dimension to school crests and symbols, through custom casting in bronze or aluminum.

For an integrated identification program, include interior metal lettering, cast tablets, etched plaques, name plates . . . even limited editions of superb bronze sculpture . . . for foyers, corridors, reception areas, courtyards. And look to Matthews for expert design assistance. For FREE CATALOG on Matthews' Identification-In-Metal capabilities, write:





Design concepts by VISION IN DESIGN

Designs executed by MATTHEWS

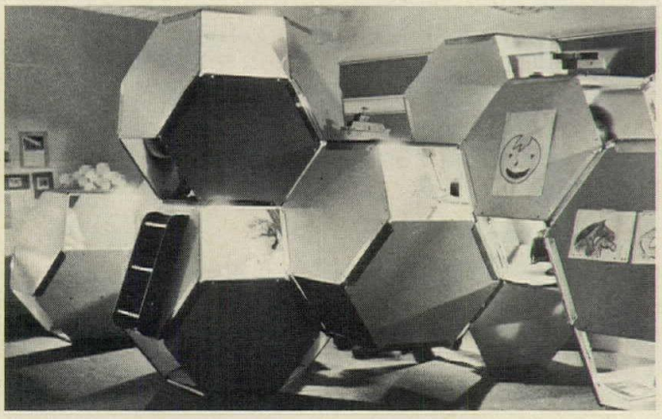
JHM

JAS. H. MATTHEWS & CO.
Identification In Metal

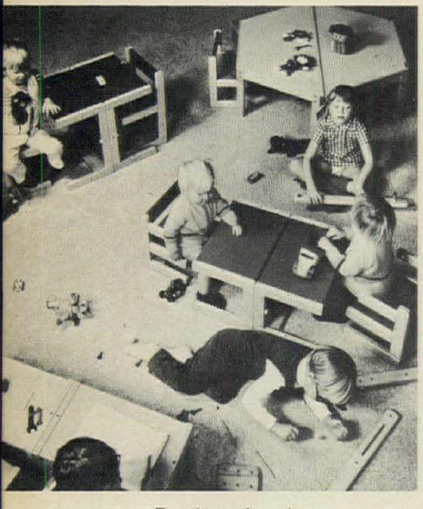
1315 W. Liberty Ave., Pittsburgh, Pennsylvania 15226

PLANTS IN PITTSBURGH, PENNSYLVANIA; SEARCY, ARKANSAS; MILTON, ONTARIO; SUN CITY, CALIFORNIA; SENECA FALLS, NEW YORK; EL MONTE, CALIFORNIA.

Products and literature

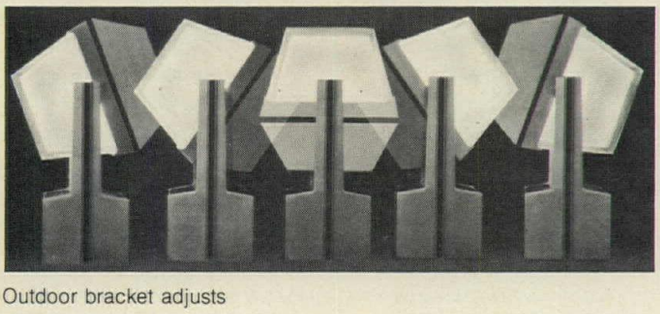


Learning in a cubbyhole



Furniture for play

Fire control folding partitions



Outdoor bracket adjusts

Learning in a cubbyhole. Called caves, cages, and by its makers, "self-spaces—a planned educational environment," these cubbyholes essentially are truncated octahedrons designed to house children from second to sixth grade. They include a carpeted floor and seat, reading light, storage space, fold-away desk and bookshelves. Several open surfaces make it easy to climb in or out—ladders help too. The result of extensive research, they are said to offer needed classroom privacy which the young student requires, as well as an efficient use of cubic space—each learning space is attached in a variety of configurations to form a three dimensional stack of individual spaces. Units are suggested for conventional or open-space schools, schools for the handicapped, for libraries and other situations. St. Charles Manufacturing Co.
Circle 101 on reader service card

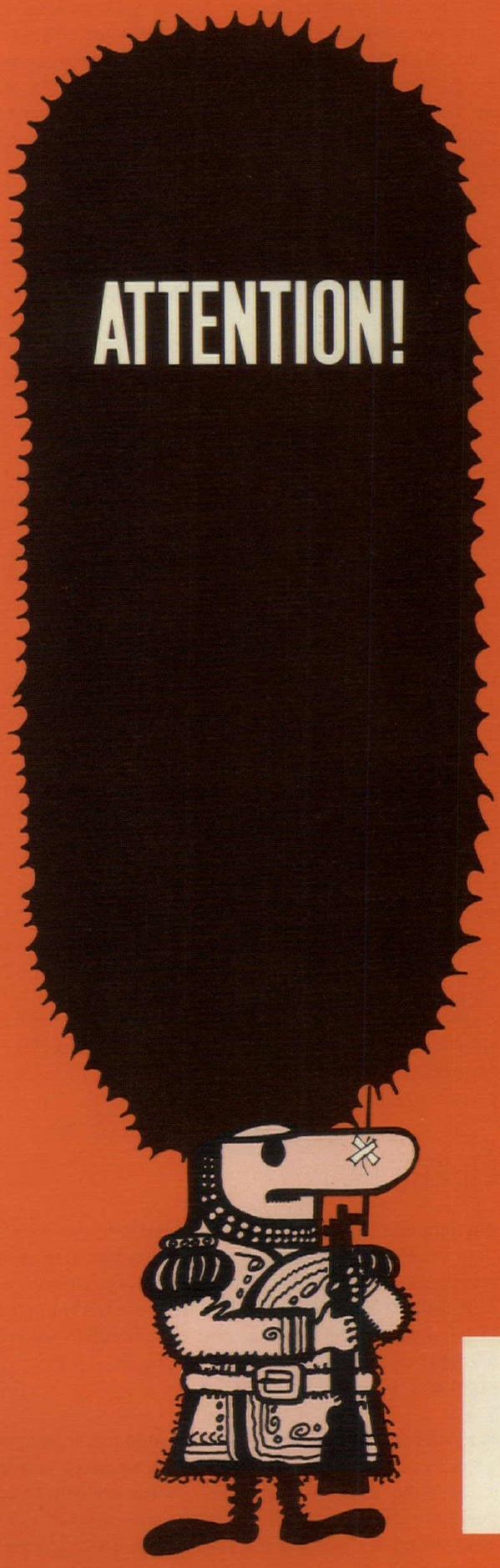
Furniture for play. In creating this furniture for day care centers, the Scandinavian designers wished to entertain and stimulate the children as well as to offer furniture that was robust but easy to handle. Essentially designed for 3–6 year olds, each age has its own bright colors in chairs, stools and tables. A group of chairs and trapeze tables are suitable for meal-time use as well as for teamwork, drawing and sewing. Accessories such as platforms, canopies and easel boards are available. Made of matured beech wood, parts are assembled without nails and screws through the use of wooden spirals dipped into a special glue which is said to bond securely. Skandi-Form, Inc.
Circle 102 on reader service card

Carpeting the school. A level loop nylon carpet with a secondary backing of Loktuft Duon for direct glue-down use is suggested for educational institutions, based on testing for flooring that would not generate noise. The man-made fibers respond less to atmospheric conditions than natural fibers; the special backing eliminates creeping and moving with temperature and humidity changes. Other reported advantages include ease of installation and subsequent cost savings. Carpet by Barwick Mills; backing by Phillips Fibers Corp.
Circle 103 on reader service card

Fire-control folding partitions. Automatic fire control system combines a fire-proof folding partition with an automatic panic-proof self-closing element and a self-actuated fire extinguisher. All partitions in the system close for a three-second interval as a warning to those in the immediate area. Suggested applications include civic, industrial and residential buildings. Tests indicate that stock partitions withstand regulation laboratory fire test for more than eight hours with temperatures over 2300°. Won Door Corp.
Circle 104 on reader service card

Outdoor bracket adjusts. Suitable for commercial, industrial and institutional structures, this weather-tight outdoor lighting bracket can be mounted on a wall, ceiling or pad. The reflector is engineered for maximum light output delivered at the correct angle to the refractor. There is a choice of 11 adjustment positions to 124° on either side of the axis. In painted aluminum or brushed bronze finish. Art Metal Lighting, ITT Lighting Fixtures.
Circle 105 on reader service card
[continued on page 52]

ATTENTION!



TAKE A SECOND LOOK

What you see below is a unique product called **SMOK-CHEK**™, the latest of the Rixson family's Century 2000 concepts in door control. You have never seen anything like it.

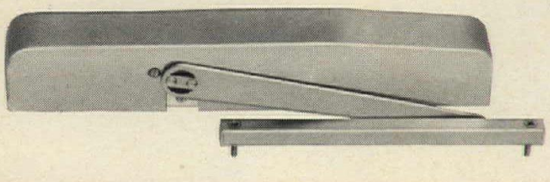
This is a high-quality, low-cost, fail-safe door release with its own integral closing power. It mounts on a standard frame above any interior door. It holds the door conveniently open under normal conditions, releases and closes the door instantly when smoke or fire is detected.

The Smok-Chek eliminates all need for separate door closers and releases, eliminates confusion and coordination problems, and is less expensive to buy, install and maintain. The low profile unit may be finished to blend in with its background.

- In new or existing buildings
- On virtually any standard door frame
- Surface or concealed wiring
- Independently adjustable closing speed and force
- Hold-open at 90°, 100° or 150°
- Listed by nationally recognized testing agencies

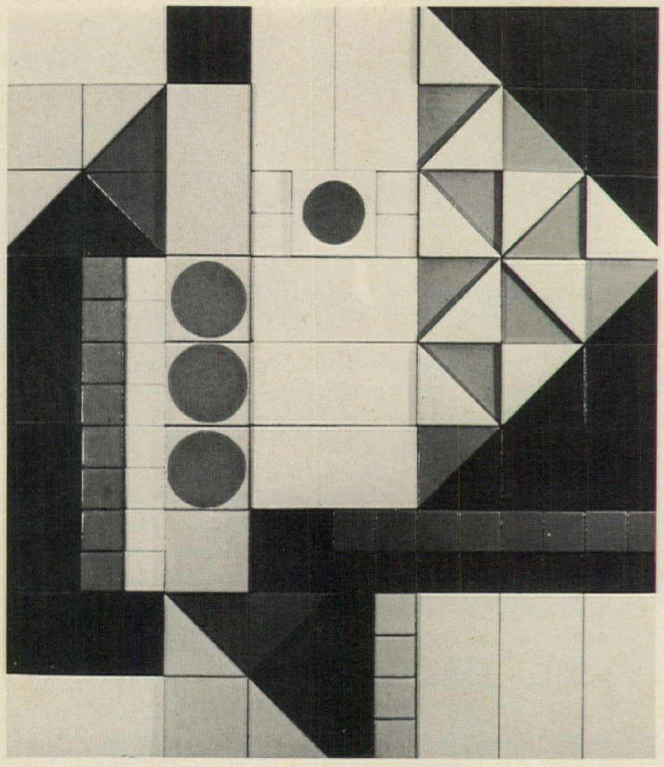
FIREMARK®
A Division of RIXSON Inc.
9100 W. Belmont Ave., Franklin Park, Ill. 60131
In Canada: Rixson of Canada, Ltd.

Smok-Chek T.M.

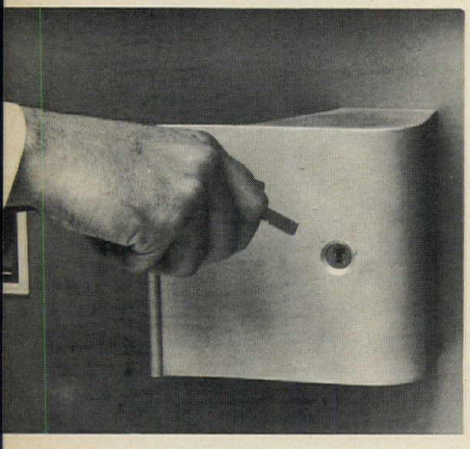


On Reader Service Card, circle no. 359

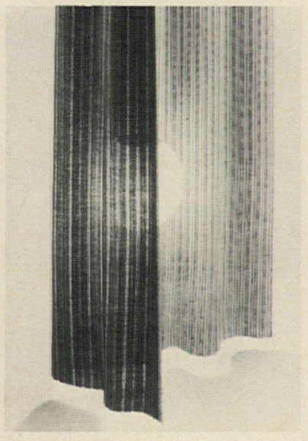
Products continued from page 50



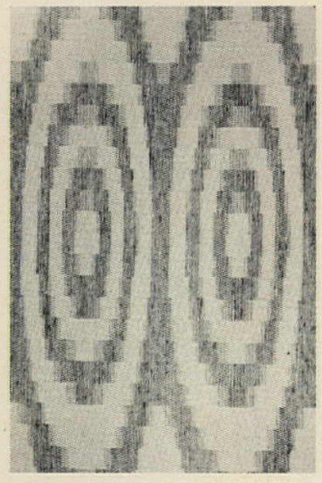
Ceramic graphics



Hotel security



Double face fabrics



Colors from China

Ceramic graphics. Designed by Lee Rosen, this collection of architectural graphics consists of nine works in which ceramic elements of varying sizes and geometric shapes create colorful panels in abstract patterns. The rectangular panels range in size from 18″ x 31″ to 3½′ x 5′ and are also intended as studies for major architectural applications in which the graphic theme can be developed for large installations. Design-Technics Ceramics Inc.
Circle 106 on reader service card

Hotel security. The problem of stolen and lost room keys is eliminated with this hotel security and service system. Said to cost as little as 25¢ per day per room, Omni-Key invalidates a room's door lock combination upon guest checkout and electronically creates a new combination and key for arriving guests. Only the newly created key matches the new combination. Instrument Systems Corp.
Circle 107 on reader service card

Double-face fabrics. Designed for buildings using solar tinted glass, these fabrics offer a solution to a problem in glass buildings: the face complements the interior color plan while the reverse side relates to the dark glass of the exterior. Woven with Verel and rayon yarns, the fabrics are flame retardant, sun resistant, come 50 in. wide. Ben Rose, Inc.
Circle 108 on reader service card

Drafting pencil. Mechanical pencil provides the thinnest lead ever produced commercially and reportedly requires no sharpening. The almost continuous flow of lead results in considerable time savings for draftsmen—time spent in pencil-sharpening is eliminated, the lead-breaking problem is reduced and the polymer bonding agent leaves no residue. Pentel of America, Ltd.
Circle 109 on reader service card

Colors from China. A collection of upholstery-drapery fabrics emphasizes colors inspired, according to its designer, by ancient frescos in the Caves of a Thousand Buddhas in Chinese Turkestan. Rose and terra cotta shades are featured; other deeper colors are used in combination or for contrast. In silks, wools, velvet, plush, worsteds and Haitian cotton. Jack Lenor Larsen, Inc.
Circle 110 on reader service card

Literature

Shelfmates. Lighting fixture is designed to fit into the standard of adjustable shelves. A built-in attachment tongue fits into the standard slot and locks into position. Unit angles 90°, rotates 360° and pinpoints the light where it is wanted. Multiple use on standard creates pole-light effect. In walnut, sterling gray, satin aluminum. Swivelier Co.
Circle 111 on reader service card

Mini-mation. This is the title given an automation system reportedly priced so that almost any building owner can afford it. Designed, as are all automation control systems, to communicate information from the building mechanical system to the building engineering staff, the system is said to answer
[continued on page 55]

When there's more than paint in your plans, Glidden has enough vinyl to fill a book.

Architects, builders, decorators and painting contractors have come to know and love our "Architectural Color Device" (the fat orange one). Now there are hundreds of vinyl wall covering colors and textures to coordinate — so we introduce our "Architectural Vinyl Selector" (the fat brown one).

They work together to coordinate Glidden paints and vinyls. Easily.

Our new Vinyl Selector book is very complete, very expensive, and *very few* — right now. Meanwhile, we'll be happy to *loan* you a copy. Just ask your Glidden representative.

GLIDDEN COATINGS & RESINS
ARCHITECTURAL & MAINTENANCE
CLEVELAND, OHIO 44115

Glidden

SCM SCM CORPORATION

On Reader Service Card, circle no. 361

Where quality is vital and cost relatively unimportant, why not specify the best—TCS

Items grouped under the general term "weathersealing"— fascia and counter flashing, for example — occupy a rather humble place among building components. But as every architect is aware, failure in such areas can often be very serious indeed, whereas the monetary saving involved in using an inferior material will normally amount to only a minute fraction of the total cost of an average building. It is in this context that we should like to suggest your considering the specification of TCS (Terne-Coated Stainless Steel), a product which provides built-in safeguards against failure that are unmatched in the field of architectural metals.

FOLLANSBEE

Follansbee Steel Corporation
Follansbee, West Virginia

Literature continued from page 52

the needs of such smaller buildings as school and office buildings. Competitive bidding for add-ons is assured, since competing equipment can be used. Barber-Colman Co.
Circle 112 on reader service card

Flooring. Sixteen-page catalog illustrates all colors and patterns in Azrock's vinyl asbestos floor, asphalt, feature strip and cover base tiles. Information on sizes, gauges, uses, installation, light reflectance values and brief specifications are given. Azrock Floor Products.
Circle 113 on reader service card

Roofing tiles. According to the maker, these clay roofing tiles are fade-proof and generally outlast the building they decorate. The interlocking shingle design with a side and head lock permits fewer pieces per square. All tiles are incombustible. Booklet illustrates varied standard and custom designs in tiles for indoors or out. Ludowici-Celadon Co.
Circle 114 on reader service card

Templates. The result of engineers' conferences with template users, this 24-page catalog illustrates and describes nearly 200 templates for general drafting, electrical, mechanical and other uses. Over 30 metric templates are described. Rapidesign.
Circle 115 on reader service card

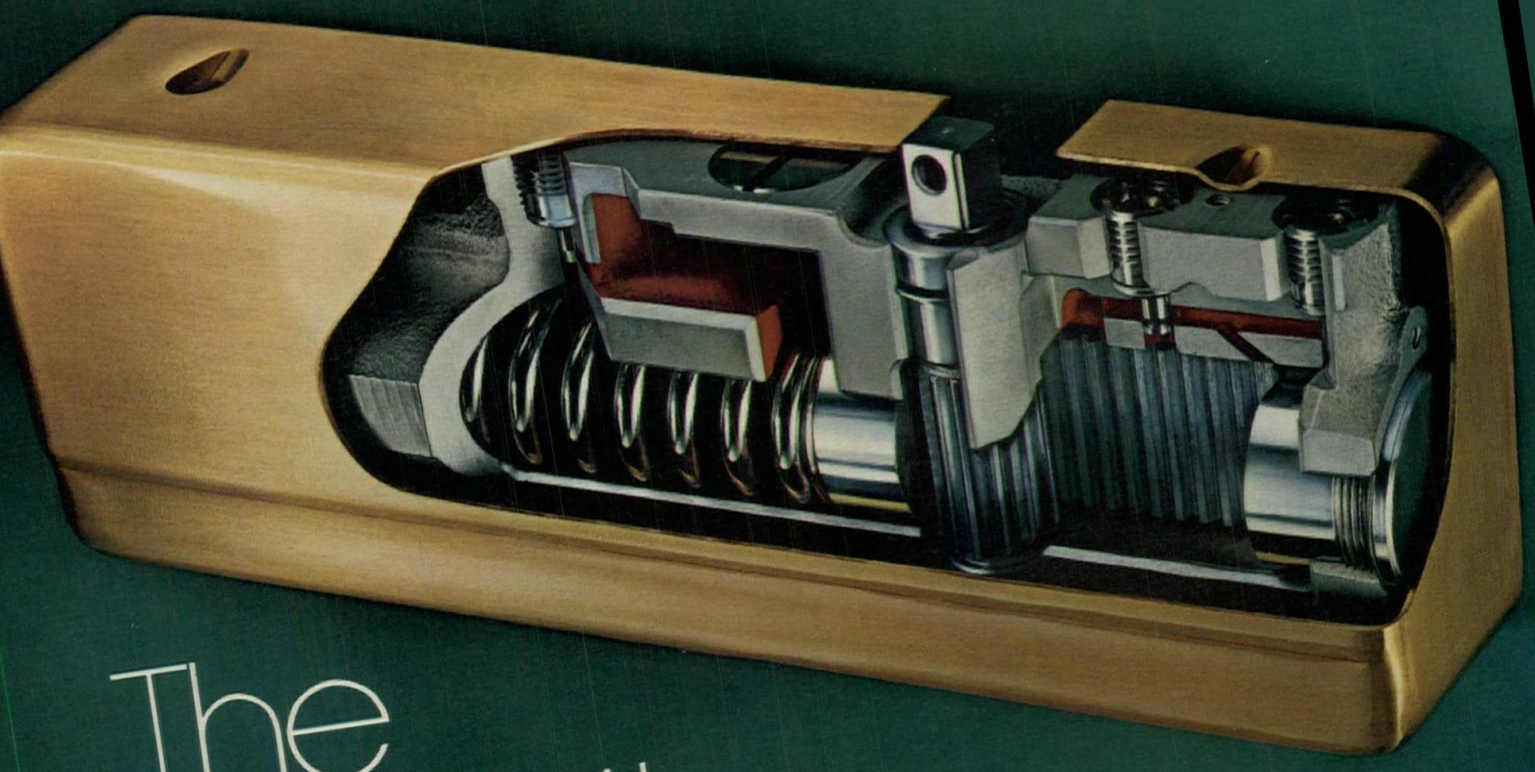
Tele-power poles. Designed to carry electrical and communication circuits to positions in away-from-the-wall locations, these poles are suggested for open-office application. They require no underfloor work, are available in a variety of models, finishes and colors. Booklet from The Wiremold Co.
Circle 116 on reader service card

Low-voltage lighting. From under-water illumination of swimming pools, to interiors, gardens and emergency lighting, this booklet points up the safety and effectiveness of low-voltage lighting. An illustrated guide to indoor and outdoor low-voltage fixtures is included. NECA.
Circle 117 on reader service card

Corkwood. Natural cork bark hand-crafted and assembled into a rectangular plywood panel makes it possible to cover walls without revealing panel joints. According to its designers, the ¼" thick corkwood layer also provides excellent acoustic qualities. Standard panels are 24" wide and 8', 9' or 10' long. Panels are described as sufficiently flexible to be applied to curved walls. Walton Corkwood.
Circle 118 on reader service card

Access floors. Originally designed for use in computer rooms, these access floors are described as being suitable for a variety of new building and remodeling applications. Bulletin suggests that initial costs are lower than with conventional construction, that future relocation of electrical utilities is facilitated. The system consists of a portable assembly of panels, stabilizing members, pedestals and accessories. Waco-Floor, Washington Aluminum Co., Inc.
Circle 119 on reader service card

On Reader Service Card, circle no. 320 →



The strength

The style

The range

Door closers.
Look at them as we do.
From the inside,
where strength and power
combine to easily close
the heaviest doors.

Now look at their eye appeal.
Clean, smooth lines.
Handsome finishes.
Style.

Take a look, too, at the choice:
The powerglide®,
the 1200 Series.
A door closer for every door,
in every value range,
with every feature.

Sargent door closers . . .
well worth another look.

SARGENT®

A complete line of advanced architectural hardware, including the Sargent Maximum Security Syste
New Haven, Connecticut ☐ Ontario, Canad

Progressive Architecture

February 1972

I am not going to start a revolution. The revolution in architecture has been underway for years, and P/A has been reporting on it with great insight.

While this has not been a sudden, violent upheaval, it is by no means just accelerated evolution. The process of shaping the environment is not undergoing refinement; it is changing radically and irreversibly. The neat little world summed up by the flawless model on the conference table has been shattered for good.

P/A has not yet reported the outcome of this revolution, because it is far from over. In fact, it has not yet reached its critical stage. The casualty count among resisters is going to rise sharply in the next few years as new methods compete for the field. Then—probably in the late 1970s—procedures will again become stabilized, as they were in the 1950s.

The winners in this struggle will be those who simply do the job best, regardless of their credentials—those on whom society comes to rely for environmental decisions. I am convinced that most of these leaders will be architects by training and title, but they will not be architects who see the world in one-point perspective, with sunlight from the upper left.

P/A has not recoiled from this revolution. It has never fallen back on the Divine Right of Architects—either as intuitive form-givers or as born "leaders of the team." It has followed the dispersal of design and planning decisions out of their presumed fountainhead in the drafting room, out into community meetings, into the computer center, and into the developer's war room. It has recognized the process as architecture, wherever it occurs.

For the last seven years I have been separated from P/A, observing the revolution from the vantage point of another journal. I have been admiring P/A's initiative in covering new developments and, as editor, I plan to maintain that thrust.

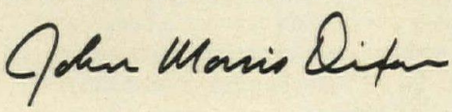
P/A is going to continue its stress on changes in the process of architecture—on all the shifts in roles, strategies, and techniques involved. We are going to continue reporting on the reorganization of design firms, on community involvement in planning, on the implications of technological methods, on new activities of government agencies as clients and instigators as well as regulators, on how students are preparing themselves.

We will be giving increased attention to the individuals and factions behind environmental decisions. We will be publishing more of the *thoughts* of architects and planners on everything from theories of form to meeting the payroll. We are going to give more attention to what the nonprofessional public is thinking about architecture and planning and to what influences shape its opinions.

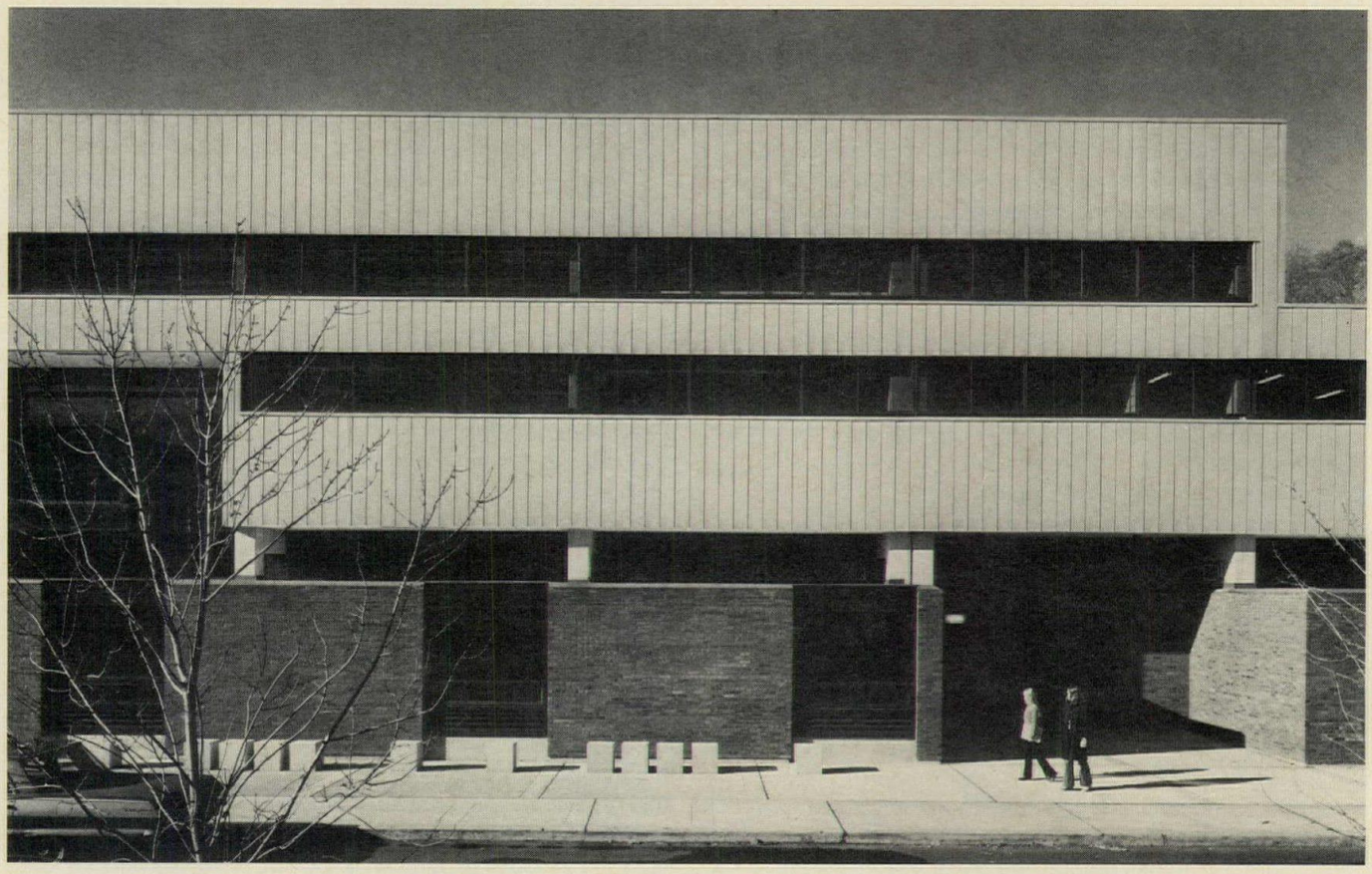
We plan to say more about how buildings affect people's activities and attitudes. (Behavioral scientists take notice.) We hope to go back to some of our favorite buildings and complexes to analyze their performance after a few years of use. And we are going to keep returning to the critical questions of how our society allocates its public funds, its land and its energy resources, of how we can keep from spoiling the planet for everyone.

All of us, of course, occasionally like to look up from the problems at hand to expand our thoughts with subjects related only indirectly to our pressing concerns. P/A will continue to inspire you, or at least divert you, with aesthetic explorations such as those of Luís Barragán (August 1971 issue), with social experiments such as prisoners' murals (December 1971) or with discoveries from a mellowing past, such as the concrete landmarks of St. Augustine (September 1971).

Our primary interest, however, will be in the transformation of the design process and the physical consequences of it. Many of you may know a lot more about aspects of this revolution than we do. We will wecome news from any front.

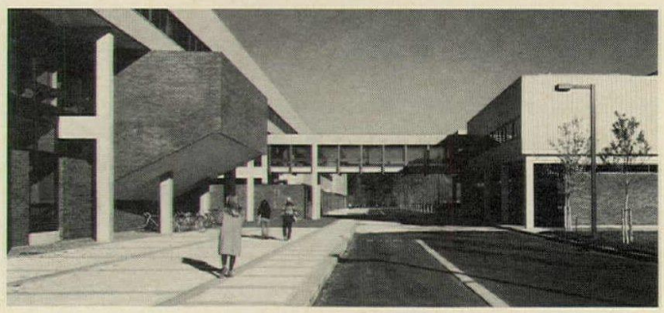


Along the way

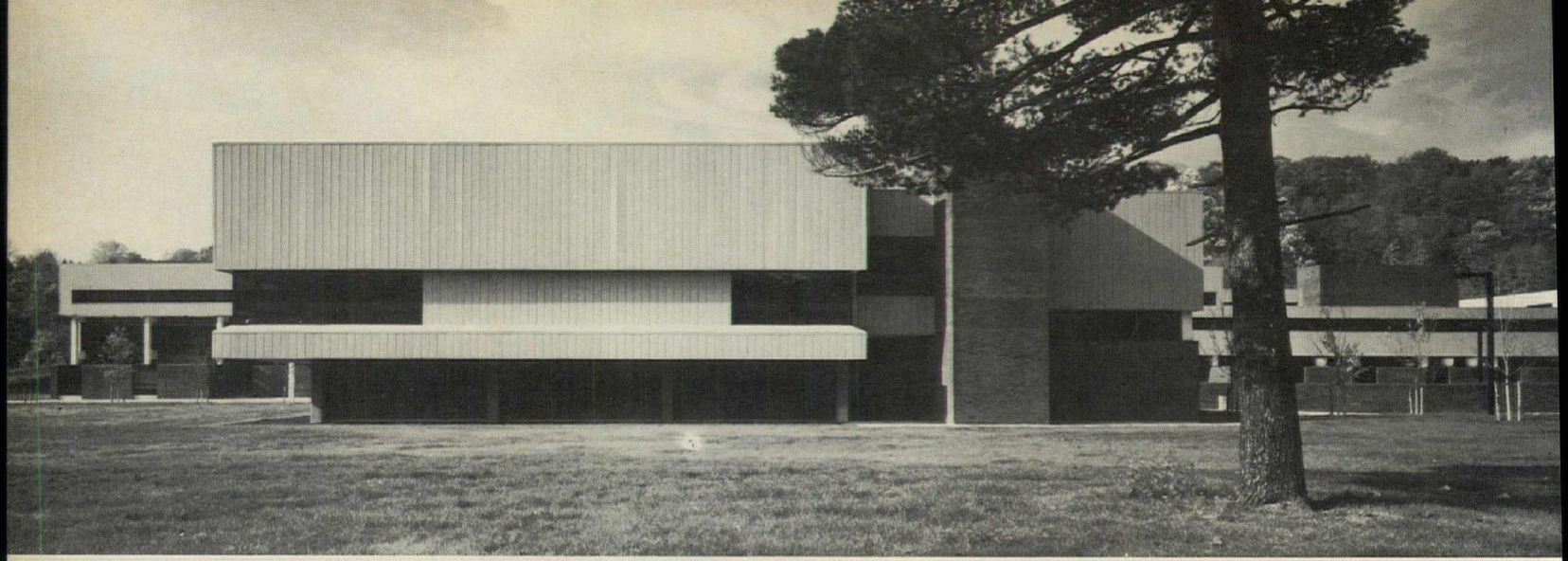


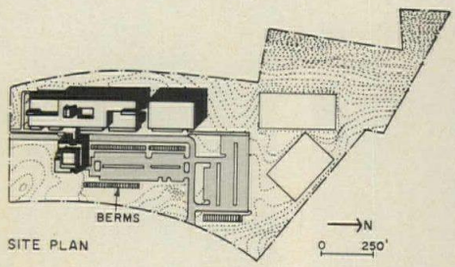
A linear school derives its form from site parameters, its dual scale from vehicular and pedestrian viewpoints and its materials from industrial (above) conventional applications

Given a long narrow site sandwiched between a busy state highway and a steep embankment, associated architects Schofield and Colgan/Earl R. Flansburgh and Associates were asked to design a 2000-pupil high school, with expansion to 2300. Growing enrollment figures in the Wilton, Conn. schools had cancelled plans to build an addition to the existing high school, a design for which the architects won a P/A Design Awards Citation in 1968. Instead, the high school became a junior high, and the new high school was scheduled



Combination of industrial with conventional building materials returns large blocks to pedestrian scale near main entrance, bracketed (opposite) by the bridge and protruding lecture hall.





SITE PLAN

Library wing (above and right) can be used independently from school. Main entrance to the school (below) brings light into adjacent corridors, contains free standing brick elevator enclosure.

for a nearby site along Route 7, at the other end of a large playing field area (to the south but not shown in site plan).

In southern Connecticut, Route 7 is a busy artery for north-south traffic, and whenever its much delayed rerouting and rebuilding is realized, the traffic load it now carries should be reduced considerably. Until then, however, the new high school will have to live with it. The desire to get the building onto the narrow site as far from the highway as possible, yet give the building scale, both to vehicular traffic at 40 mph and to pedestrians, prompted a number of design decisions. A very linear scheme was an inevitable solution to the site-highway constraints, and the massing of the building, while composed of very large blocks, is broken down to human scale in areas most related to pedestrian traffic. Earth berms and landscaping also screen the pedestrian areas and the lower floor of the building from both the highway and parking areas.

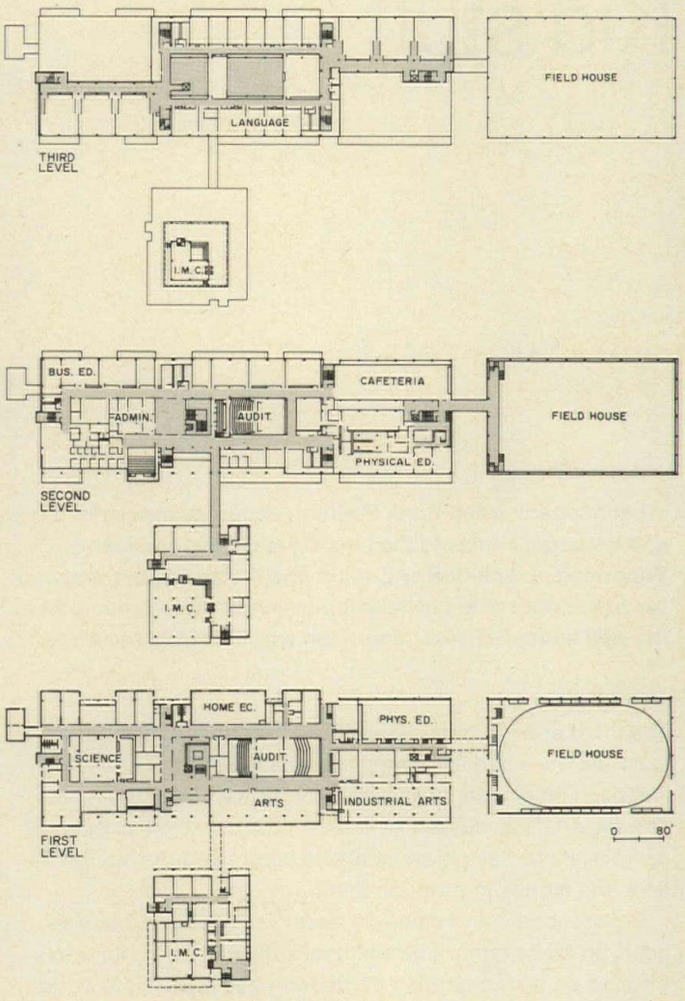
Entrance to the school is through a three-story skylighted space housing the main stair and an elevator. Since the building is three stories, the second floor was conceived to be the heart, being most accessible to all facilities. A series of skylights brings light from third floor courtyards into second floor corridors. On this floor are the main offices and teachers' offices, cafeteria, business education, physical education, locker rooms and, across an enclosed bridge, an air conditioned library designed for independent use after school hours or in the summer. The cafeteria is served entirely by vending machines which are filled from a rear service area.

There is also second floor access to the upper level of the auditorium, which is really a 300-seat theater of considerable sophistication. Since the nearby existing school has a large auditorium, none was included in this building. Both the theater and the 80-student lecture room may be entered from either the first or the second floor. Because of its primary use by the science department, the lecture room is located near that function.

The ground floor houses science, home economics, art, industrial arts, physical education spaces and a 33,000 sq ft field house. The fully equipped field house is separated from the school by a bridge, and can also be used after school hours. Language areas and flexible classrooms may be rearranged to seat 7, 15, 25, 30, 50 or 80 students.

In the separate combination classroom-library building, an upper reading mezzanine overlooks the second floor main reading area, itself a bi-level space placing no student more than 80 ft from the bookstacks. The Instructional Materials Center, in addition to its books and tapes, employs a comprehensive dial retrieval system that connects with every classroom. Air conditioning and classroom-seminar spaces will allow the after school and summer community use.

Precast prestressed concrete beams and columns form the structural system, with precast plank roof deck and floors except at grade. Long span steel joists and corrugated steel roof deck were used in the field house. Exterior walls are either brick/block cavity walls and infill, or 18-gauge steel siding with fluoropolymer paint finish. Interior walls are unpainted concrete block or gypsum board on sound deadening board and steel studs. Floors are carpeted in most areas, except for circulation spaces having brick pavers, toilets with ceramic tile and some vinyl asbestos tile. [JM]



Data

Project: Wilton Senior High School.
Architects: Schofield and Colgan/Earl R. Flansburgh and Associates, Inc., associated architects.
Site: long, narrow piece of land in Wilton, Conn., fronted by a state highway in a characteristically commercial area. A steep slope rises from the back of the site to high residential area beyond.
Program: high school for 2000 pupils, with expansion to 2300, library and field house to be capable of independent use.
Structural system: precast, prestressed concrete beams and columns, precast plank and poured in place decks, steel deck and long span joists in the field house.
Mechanical system: forced hot water in fin tube radiation and unit ventilators. Office, auditorium and library have roof top air conditioning units.
Major materials: concrete structure, brick and concrete block ground floor exterior walls, prefinished metal panel on steel grid system at exterior upper level walls. Aluminum windows and doors with bronze glazing. Interior walls are unpainted lighweight pumice block or painted gypsum board, and ceilings are painted concrete plank or acoustical tile in fully accessible spline ceiling. The majority of the floors are carpeted, with some vinyl asbestos tile and brick pavers.
Costs: $10,165,200 ($39.60 per sq ft).
Consultants: structural, Zorab Vosganian & Associates; mechanical and electrical, Kallen & Lemelson; landscape architects, A.E. Bye and Associates; acoustical consultant, Bolt Beranek and Newman, Inc.; food consultant, Flambert and Flambert, Inc.
Interiors: Earl R. Flansburgh and Associates; Linda S. Horowitz, associate; Schofield and Colgan: Luke Corsano.
Photography: Wayne Soverns, Louis Reens.

Kid stuff

What happens when Punk Polluter, accursed master of dirt and garbage, comes to the small town of Never-Clean? Superman is replaced by Ecokid and the good guys and bad guys now fight over environmental issues. Watch out folks, the well educated next generation won't tolerate the mess

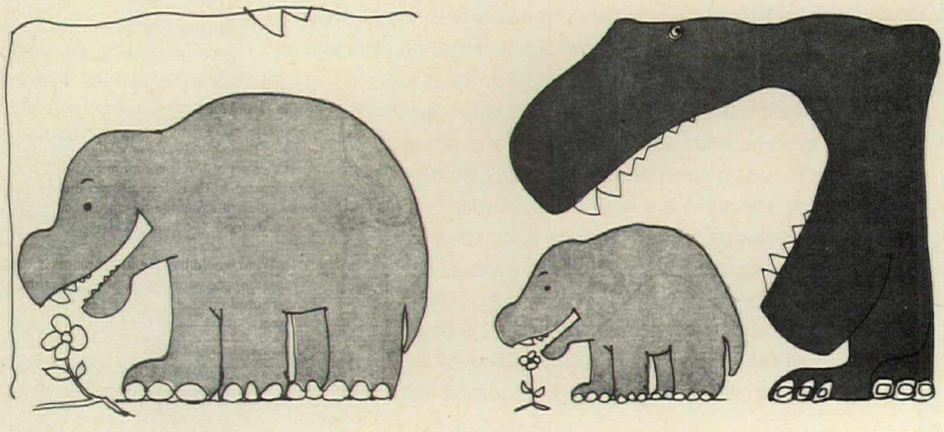
Teaching environmental issues in schools is relatively new, as teachers have had little training in these subjects and there has been little material available for formal classroom use. The materials discussed here exist because a few people felt it important to have these subjects taught and they found the time and money to produce them.

Both teachers and students have responded enthusiastically to these rather untraditional subjects. The goal is to introduce an understanding of the form of our physical world; why it is the way it is and what can be done to change it. Teaching concepts of architecture/planning and environmental issues to school age children promises to produce a generation of adults who can demand good design and planning and who can support professionals in their work.

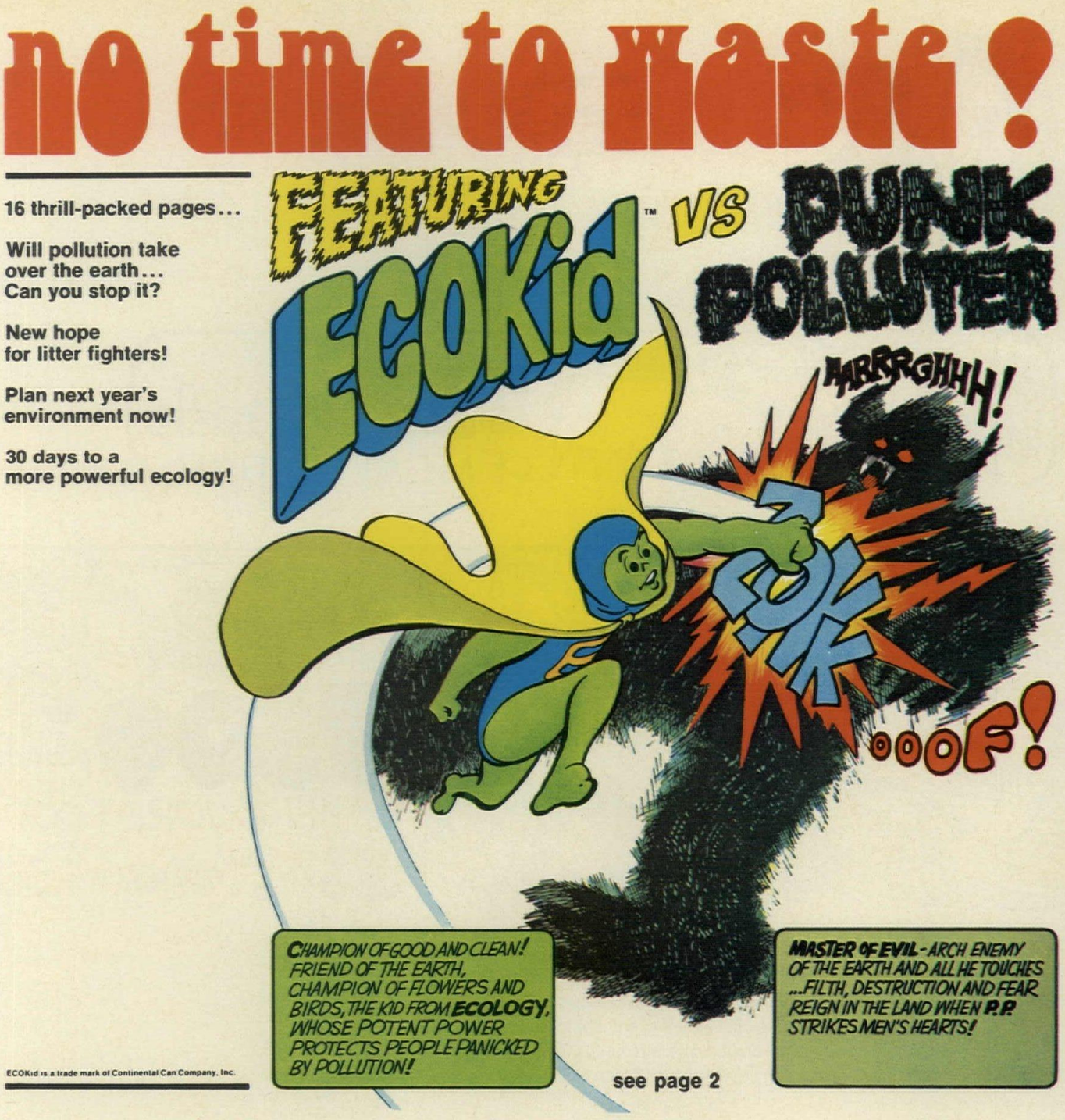
The educational material now available comes from two sources, both architectural—Group for Environmental Education (GEE) and C. Richard Hatch Associates. When asked why he became involved in producing this material, Hatch, an architect, replied that there were more important things to be done than buildings. Hatch started producing informational material as an advocacy planner with ARCH in Harlem with the idea that the meetings with the community should produce more than decisions about what to do. Once the planners had left, the community should have a body of information so that it could carry on its own work.

GEE began in 1966 as an offspring of the architectural firm of Murphy, Levy, Wurman in Philadelphia. Partner Alan Levy organized and wrote much of the material with funding from the AIA, the Brunner Fund and the Heinz Foundation. Besides the educational material for schools, Richard Wurman, also a member of GEE, has done much work to increase the public awareness of the environment. A book entitled *Making the City Observable* (MIT Press, 1971) is a collection of city plans, transportation maps, guide books, aerial photographs and written material, all of which explain or give information in graphic form about a city or the environment. Not only does the book show the diversity of information for learning about a place, it also includes the address for obtaining the specific documents.

The book is based on a traveling show put together by the Walker Art Center in Minneapolis which will travel throughout the U.S. A museum's commitment to show the collection of documents also means a commitment to assemble—as part of the show—a series of documents about its own city. The City/2 exhibit organized for the Museum of Art in Philadelphia discusses the concept that the public land—the streets, playgrounds, and public buildings such as City Hall—belong to the people, not to the anonymous organization called the city government. In making people aware that they own over half



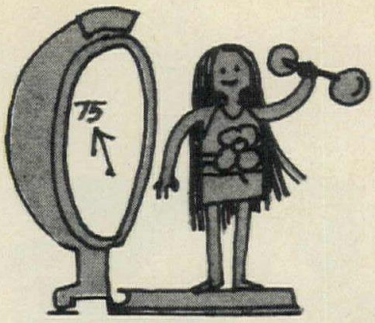
Herbie the Herbivore who is eaten by the carnivore is part of the filmstrip showing the interdependence of man, animals and plants from *Earth Island: An Introduction to Ecology in Action* Copyright 1971 Simon & Schuster, Inc.



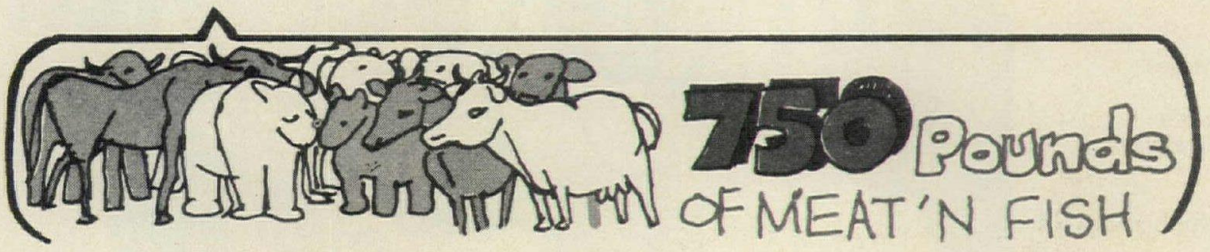
of the city, Wurman hopes to change the public attitude and increase the sense of responsibility toward the quality of their own environment.

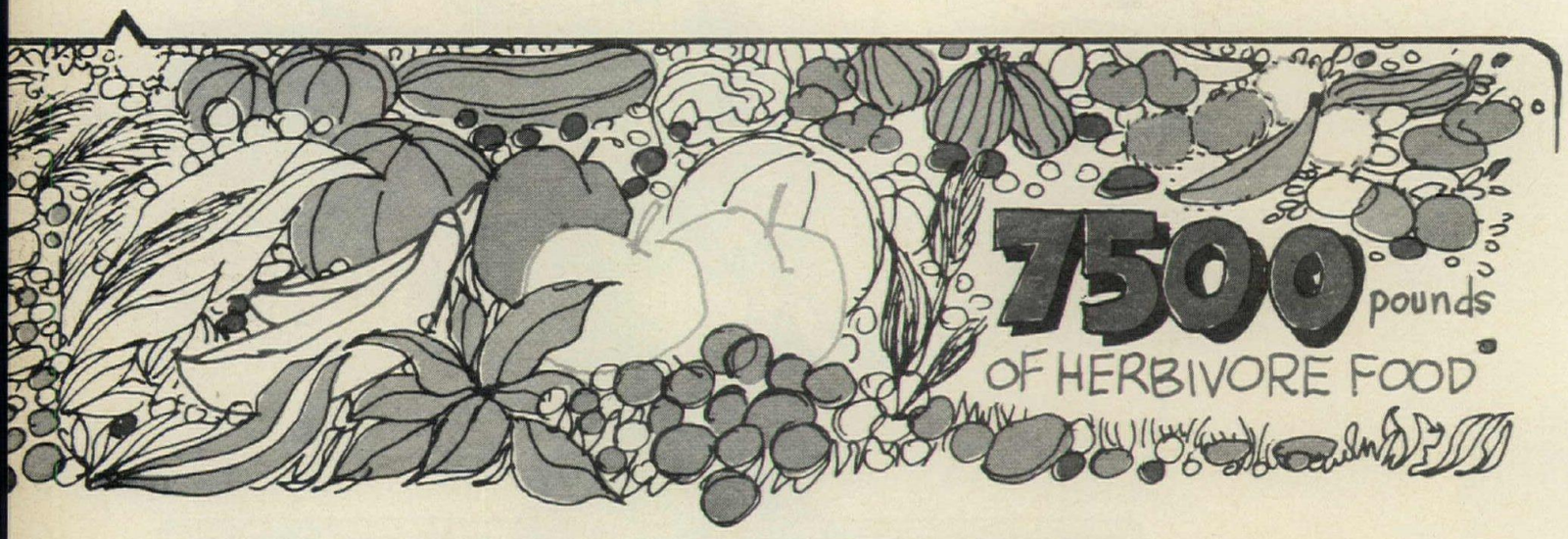
The *Yellow Pages of Learning Resources,* a document currently being assembled, is a collection of people, places and processes. It tells you what you can learn from a particular professional, what you can learn at a particular place and what you can learn about a process. It outlines what questions to ask in an attempt to overcome initial hesitation in asking questions on a subject about which one knows little. The idea of the Yellow Pages is similar to Wurman's belief in schools without walls where the ground floor of the city becomes a classroom and people tell what they are doing and why they are doing it. The school without walls, conceived by Cliff Brenner, is being tested in the Philadelphia School System as the Parkway Program. Wurman's role in this program is to take students on walking tours of the city where he and the students discuss various aspects of the environment in terms of how it performs.

The educational material for formal classroom use concerns two major areas—architecture/planning and ecology. The three ecology programs—*Earth Island, No Time to Waste* and *Recycling Resources*—were all developed by C. Richard Hatch Associates, the first for Simon and Schuster, the second and third as a public service of the Office of Environmental Affairs of Continental Can Co. They are all similar in their objectives and organization. Each seeks to make the student aware of the natural balance which exists in nature and the cause-effect relationships that occur when the natural cycle is tampered with as man increases his control over the environment. While much of the factual information is contained in cartooned stories, data-cards, filmstrips and in the stu-



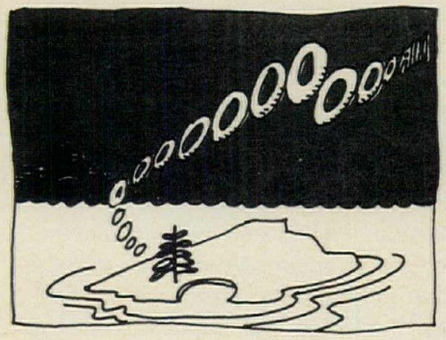
How much do you weigh?



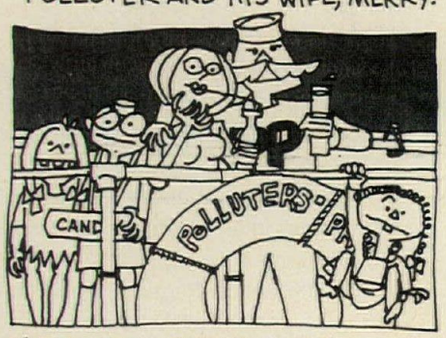


Drawings above show the proportion of plants needed to feed animals who in turn feed man. The cartoon below is the beginning of a story which depicts the growing pollution problem. Mr. and Mrs. Noble Polluter are eventually forced to leave the island through their own destruction of natural resources. From *Earth Island: An Introduction to Ecology in Action* copyright 1971 by Simon & Schuster, Inc.

THE LOUDEST NOISE ON THE ISLAND IS THE OCCASIONAL HOWLING OF A WOLF. NO HUMAN BEING HAS EVER SET FOOT ON THE ISLAND.



THE BOAT, CALLED **POLLUTERS' PRIDE** BELONGS TO MR. NOBLE POLLUTER AND HIS WIFE, MERRY.



ON IT ARE THE OWNERS AND THEIR THREE CHILDREN, *NOBLE JR.*, AGE 11, *IMA*, AGE 9, AND *BABY HAPPY*, WHO IS 1.

dents' handbooks, the students are also asked to observe their own environment, take field trips, collect data and samples, interview people, assemble and collate information.

Learning at first hand

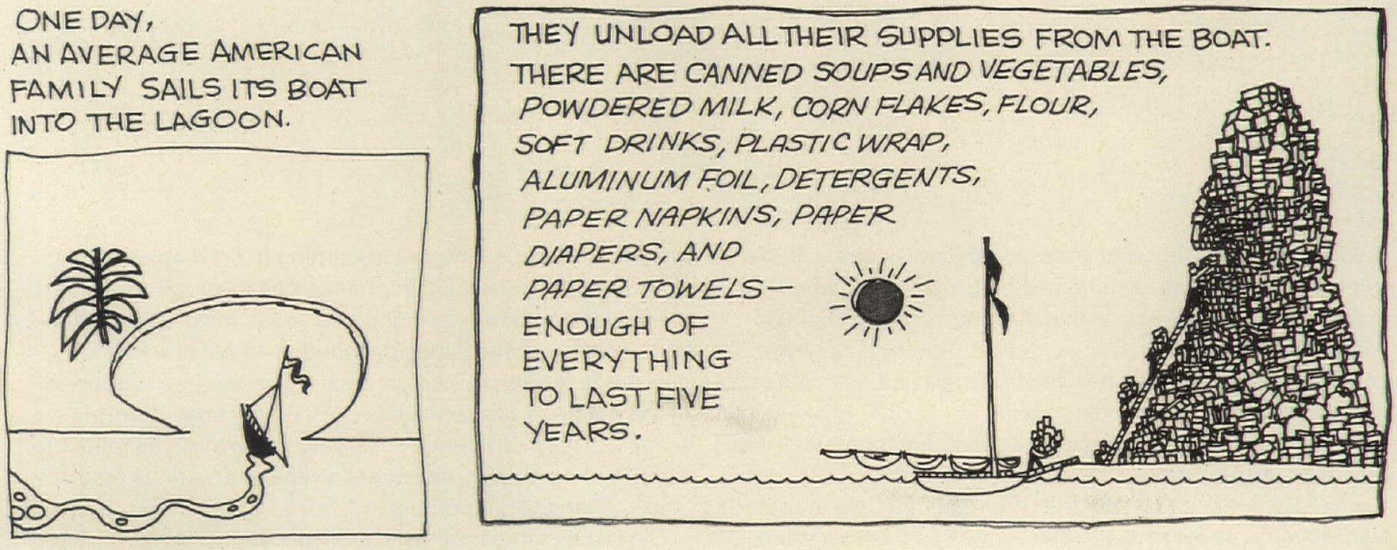
As with the rest of Hatch's material, the application of theory to the student's own experience and environment is an integral part of the learning experience. Ultimately, after exploring air, water and solid waste pollution, the students decide what is necessary in order to lessen each type of pollution and ask themselves how much they are willing to give up in order to effect a cleaner environment. Learning to make tradeoffs and the cost of depolluting is one of the strongest points of the process. The methods by which learning takes place vary with the age group for which the program was designed. *No Time to Waste* is for grade 3, *Earth Island* for grades 4–6, and *Recycling Resources* for grades 7–9.

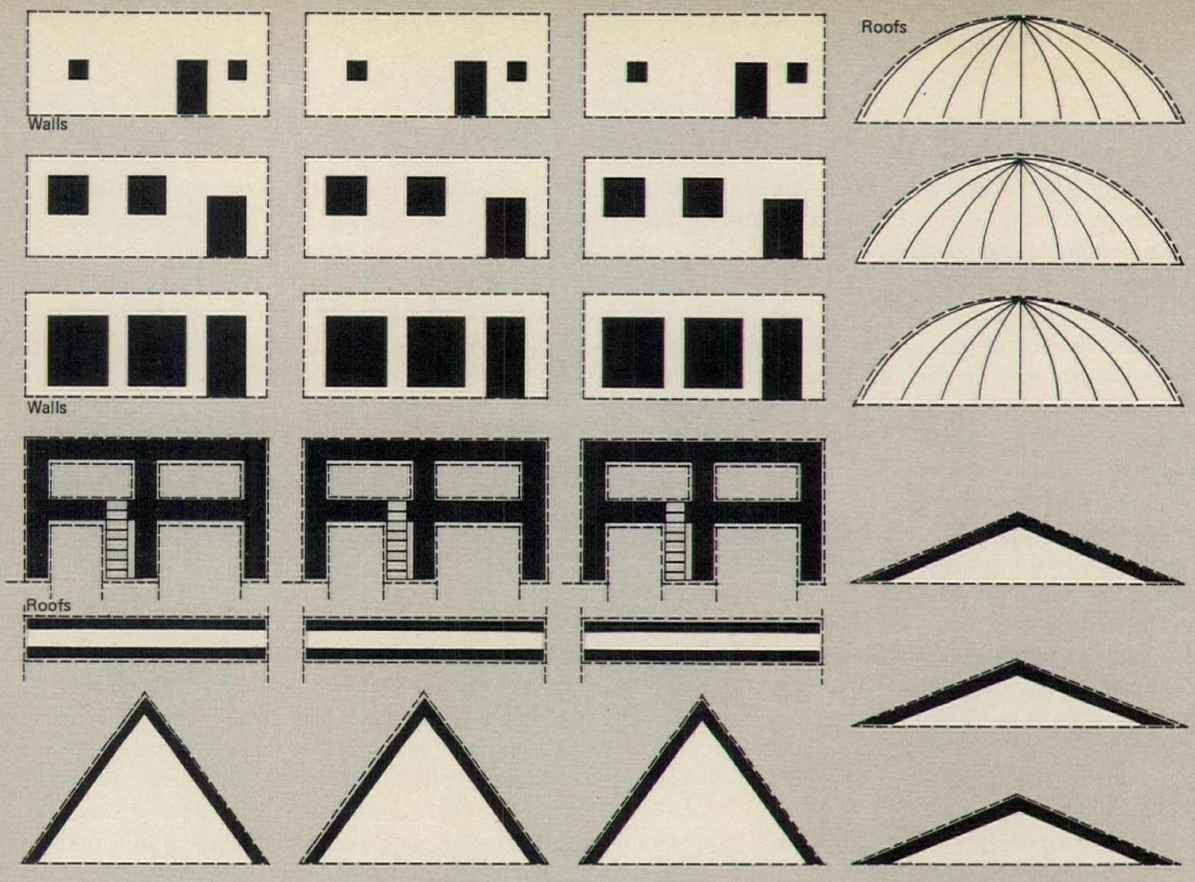
No Time to Waste is a rather moralistic struggle between Ecokid and Punk Polluter—a concept equivalent to Superman or Batman depending on which generation you are from. *Recycling Resources* contains a very sophisticated card game where the students assume roles in government and industry; they choose to pollute or not, and they learn the penalties for their choices. Laws can be changed, the polluter can be harassed by other players and penalties can be invoked against him. The only group so far excluded from the learning material are K–3. But the eventual plan at Continental Can Co. is to have a complete program for grades K–12. *No Time to Waste* is now available at cost from Continental Can. *Recycling Resources* is in production and will be available around the first of the year.

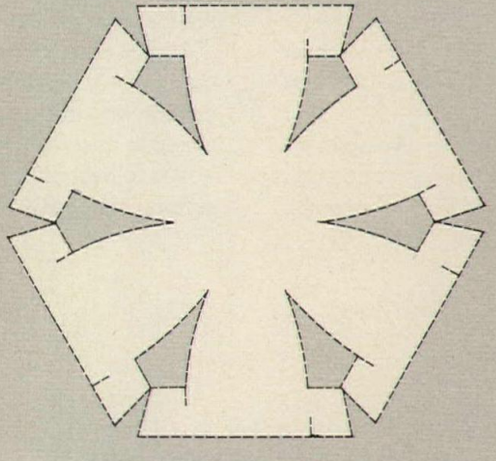
The architecture/planning material is more diverse in its scope. *Man-Made Environment Book 7* and soon to be issued *Book 8* were developed by GEE. *Book 7* is a series of questions and begins by defining the man-made environment as every place built by man. A problem given to the student asks him to take a series of shapes and make a design within a rectilinear format. Then he is asked to take the same shapes, think of them as specific pieces of furniture with the rectilinear format becoming a floor plan, and to arrange the furniture in a functional manner. The student is then asked to distinguish between design and function. The second question posed by the book is why the environment is built and the answers it provides are simple and basic; to provide shelter, to give privacy and to provide spaces for different activities.

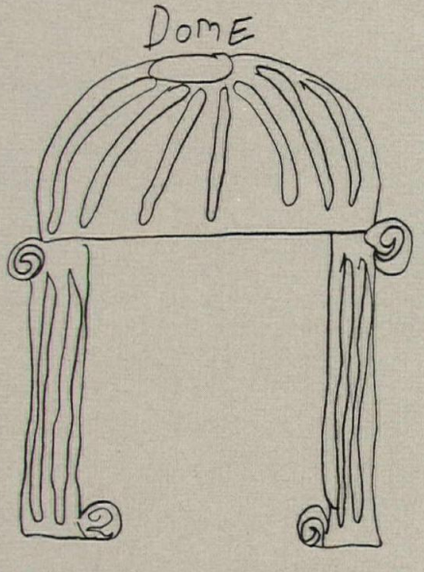
The third question is what determines its form and the answers touch only on the functional level of determinants: the size of man, what we need for life support and comfort (heating and plumbing) the activities that take place, the form of the land, the materials and methods used to build, transportation and relative importance of one place over another (emphasis vs. unity). Each one of the form determinants is illustrated with an exercise for the student. The final question asked is the obvious one of just how does one change the environment? But the real question is never answered. Time and technology change, moving from place to place, and changing, adding to, or demolishing are given as reasons for change, but the "how do *we* change the environment?" is left for the student to speculate about. The final two pages show the typical means by which an architect describes a building. There are plans, sections, elevations and perspectives—long the tools for deception of many a client.

Book 8 is not sequential to *Book 7*. It simply poses different questions and it begins by asking "what do you want?" In considering the question of what one wants, the students are asked to describe a place in terms of its performance as opposed to describing it by its formalized name, i.e., library, school, etc. Part B of the same book describes the concept of









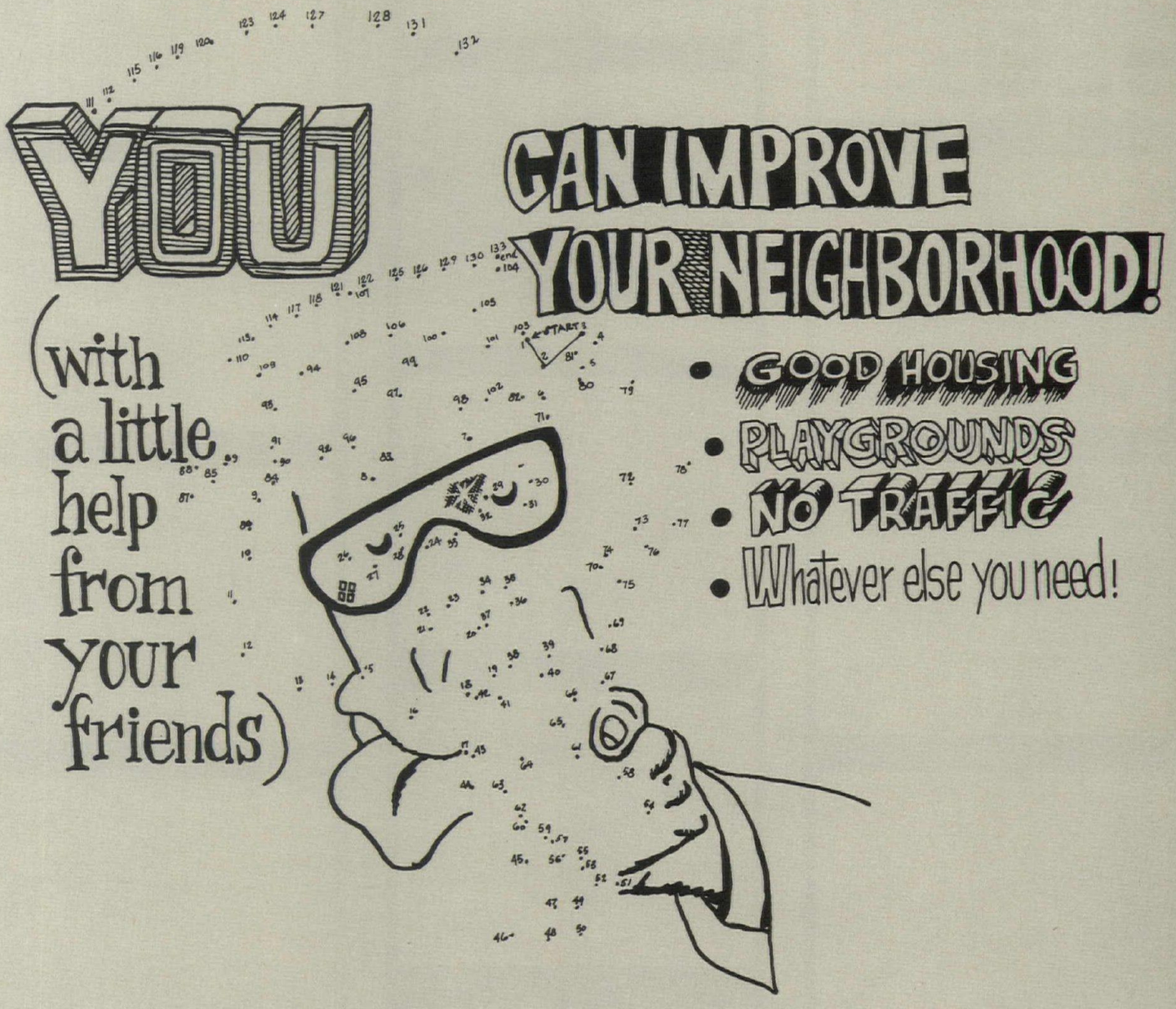
Series of walls and roofs show how climate affects design. Cutout forms a dome (right) when tabs are slotted together. Drawing of dome is by a child using *Man-Made Environment Book 7* from which the above material is taken. Copyright 1970 by GEE! Group for Environmental Design, Inc. The drawing (far right) is from *Urban Action; Planning for Change.* Copyright 1970 by Ginn and Company.

kid stuff

resources—manpower and knowledge; Part C deals with the rules and regulations—zoning and building codes—who makes them, how to work within them, and how to change them. Again it does not tell one "how to" change, only that zoning does change with new technologies and attitudes or with variances from the zoning board.

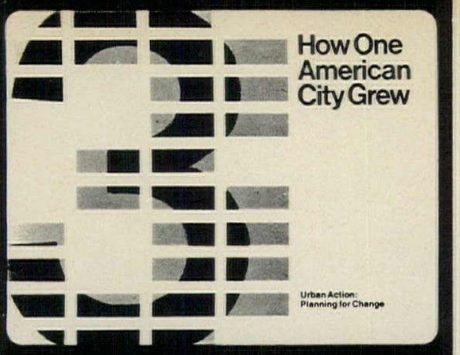
Learning to Get Around, another document for educational purposes, was developed by a group of Philadelphia school teachers in conjunction with the GEE material. Only the very last section is about what the title suggests—transportation systems and maps. The rest is learning to draw objects in scale and reading a lot of information off the maps provided in the back of the book—postal zones, locations of all the Philadelphia schools and ethnic distribution—most of which is irrelevant to the student's experience. The rewards suggested by the teachers who wrote this book do not come from a sense of accomplishment in learning a new skill, but rather in a series of candy bars which are given out at various crucial points in the learning process.

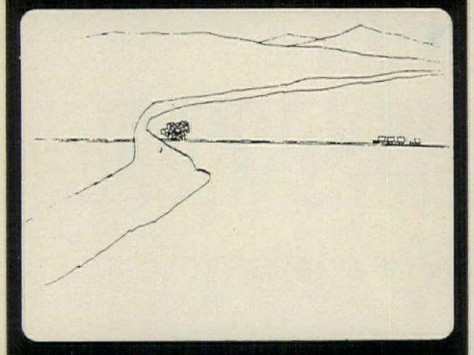
The last and most sophisticated educational tool is for the

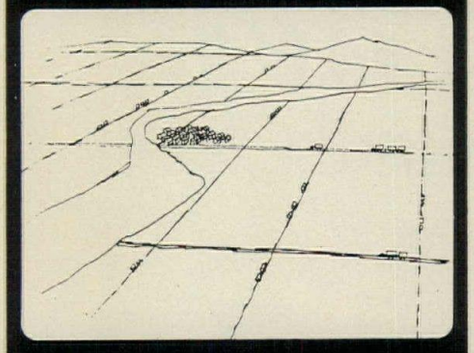


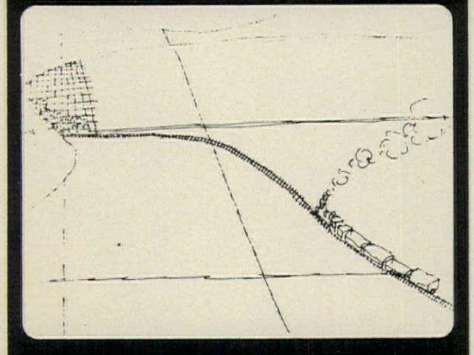
high school level—*Urban Action: Planning for Change* developed by C. Richard Hatch Associates for Ginn and Company. *Urban Action* is a year's course of study throughout which the student is involved with his own community—that which he knows best and cares about most. Beginning with a series of filmstrips, Unit 1 traces the way man has lived at different periods in history, what the cities were like, who made the decisions and what the problems were. At the same time the student is asked to answer the same questions about his own neighborhood. The second issue in Unit 2, which explores immigration, is who lives in cities and why and the next filmstrip on the imaginary town of River City talks of the growth that takes place with new methods of transportation, new methods of production, and the new wave of immigrants which make up the labor force.

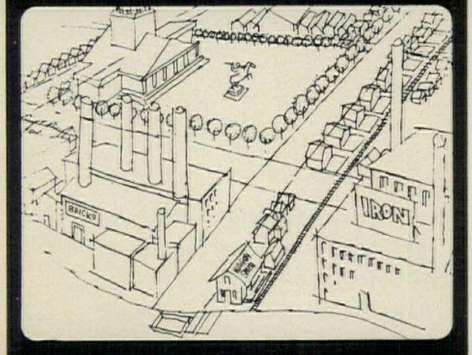
Cause and effect relationships are made between growth of slums, labor unions, decline of the city, the automobile and the move to the suburbs. Unit 3 deals with the cultural uniqueness of the various ethnic groups, while Unit 4 defines the various elements that make up a neighborhood: housing of

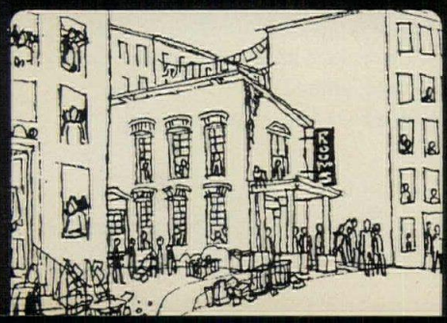

How One
American
City Grew
Urban Action:
Planning for Change

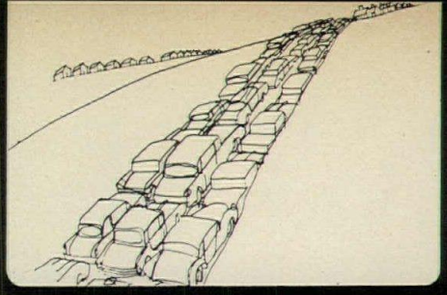


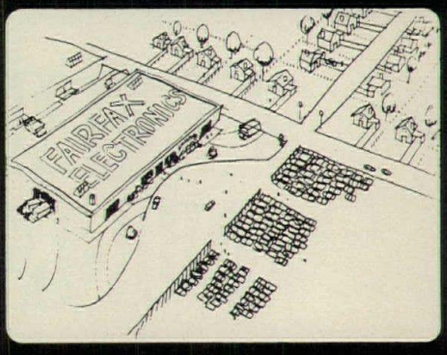


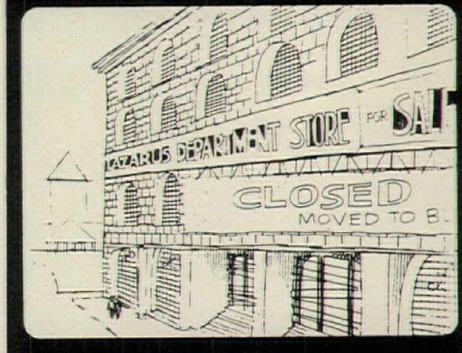


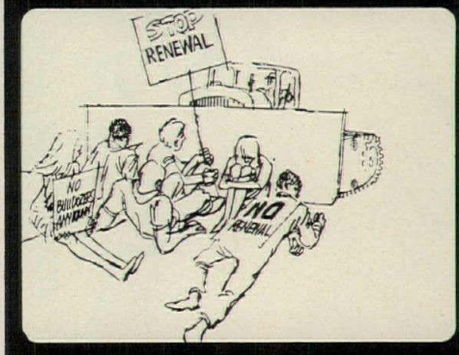


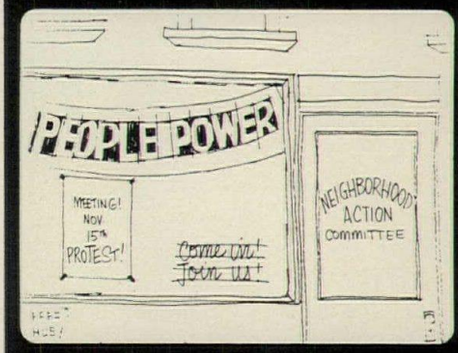


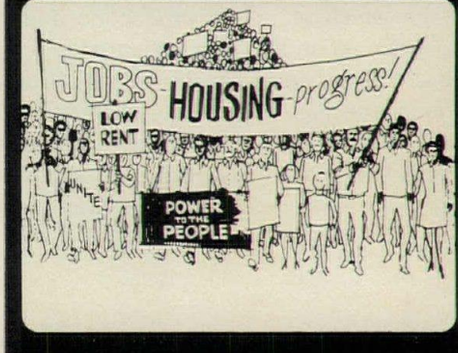


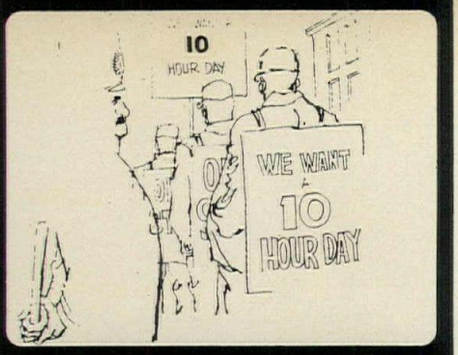

FAIRFAX
ELECTRONICS

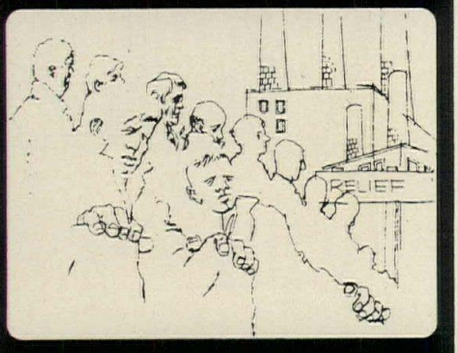

LAZARUS DEPARTMENT STORE
CLOSED
MOVED TO B

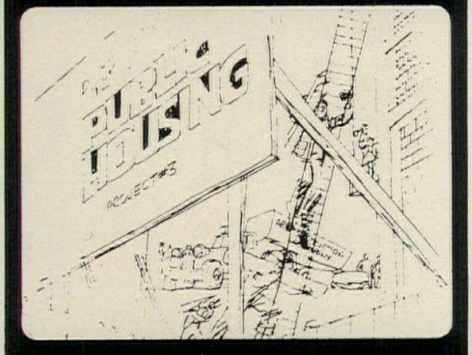

STOP
RENEWAL
NO
RENEWAL

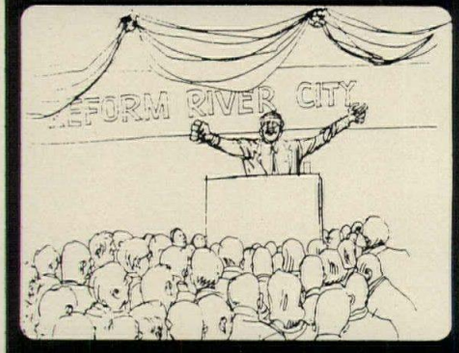

PEOPLE POWER
MEETING!
NOV
15th
PROTEST!
NEIGHBORHOOD
ACTION
COMMITTEE


JOBS
HOUSING progress!
LOW
RENT
POWER
TO THE
PEOPLE

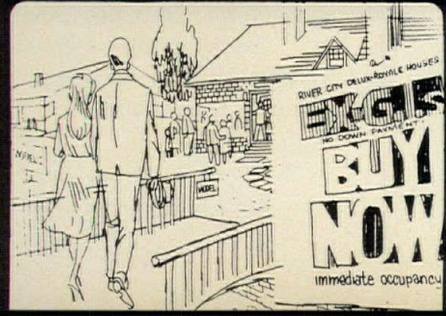

10
HOUR DAY
WE WANT
A
10
HOUR DAY


RELIEF




REFORM RIVER CITY


WANT
YOU
JOIN
ENLIST
NOW!
SERVE


RIVER CITY DELUXE-RIVALE HOUSES
BUY
NOW
immediate occupancy

Photos above show the students of Lamont, Ill. with their proposal for the renewal of downtown. Photos: Richard Hatch. Filmstrip (left) is "How One American City Grew" from *Urban Action: Planning for Change* copyright 1970 by Ginn and Company.

various types, stores, industry, open space and transportation. Maps are made of the student's own neighborhood showing land use, density, open space, transportation, building condition and future land use. Students interview residents of the neighborhood asking what people want and assess these needs by asking who benefits and who is harmed. Unit 5 deals with utopian communities and alternative ways of life. Plans reflect values and students are asked to think about what the various values are in each of the three utopian communities. He is then asked to decide for himself what things are most important to him and to compare his ideas with others in the class.

The first five units lay the preparatory work and give the student the experience of thinking about his own neighborhood, asking questions, gathering information, thinking of alternatives, mapping uses and understanding values. The last half of the course, outlined in Unit 6, is making a plan for change. The class as a whole is asked to set its goals, and then specific areas of study are divided among small groups. The governmental structure which plays a part in redevelopment is discussed and the students are made aware of the various methods that can effect change. After information is gathered and plans are worked out, the class builds a model of its proposal for the neighborhood and is asked to present it to local residents as well as to governmental officials.

While the objective of both GEE and Hatch Associates is to create an awareness of the physical environment, they use different means to achieve their goal. Urban Action is a rich source of material for classroom use—filmstrips, records, data-cards, and workbooks—as well as a structured program of working within the neighborhood. It educates the students and teacher simultaneously not only in planning issues, but in the value of working outside the school. The GEE material is seen by the authors as a point of departure for a teacher's own explorations and interests, and so the formal material does not contain a structured program for involvement beyond the classroom. The authors hope to provide a stimulus only and to encourage the teachers and students to take their own directions. One teacher in an experimental middle school in Philadelphia asked each child to take a lemon and to describe his lemon to the rest of the class. The rule was that no two lemons could be described the same way. After everyone had done this task, the lemons were all returned to the pile and each child was then asked to find his lemon. Surprisingly, they were all able to do so.

Urban Action is in use in the Chicago Catholic School System—the fourth largest school system in the country—as well as in some New York City schools. Students in Lamont, Ill. proposed a revitalization of the downtown, did a model of their ideas and presented it to the three aldermen of the city. With the usual finesse, the response from the aldermen was, "Well that's very nice but . . ." The kids weren't in the least intimidated, kept asking questions and eventually ended by understanding some of the complexities in the economic structure of their community. The proposal went no farther than the model, but the students still believed in what they had done and were enthusiastic about what they had learned.

One teacher, commenting on her students' work, said that many who had been apathetic and poor learners were able to get very involved in the work that the course demanded. "The students could not have done the adequate job they did in presenting the project to the village board if they had not been trained in the basic techniques of data gathering, interpretation, tabulation. It has matured them and widened their horizons. It has made them more confident, community-minded individuals. I hope they will implement and carry through their lives what they have learned this year and that teachers will realize the importance of leaving the classroom and going to the community or of bringing the community into the classroom and making this an ongoing project. If teachers feel that education is just in the classroom they have missed a very important part." [SLR]

Sources

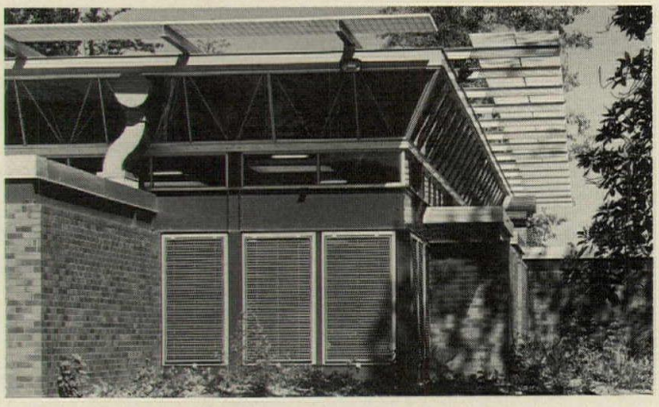
No Time to Waste, $7.50; workbooks, 35¢ ea. **Recycling Resources,** $12.50; workbooks, 35¢ ea. Continental Can Company, 633 Third Ave., New York, N.Y. 10017.
Man-made Environment Book 7. $4.75 (1-4 copies); **Man-made Environment Book 8,** (not available); **Teacher's Manual for Book 7,** $2; **Learning to Get Around,** $2. Group for Environmental Education, 1214 Arch, Philadelphia, Pa. 19107.
Earth Island, $100 including 30 workbooks. Simon and Schuster, Educational Div., 1 West 39th St., New York, N. Y. 10018.
Urban Action: Planning for Change, $200 including 30 workbooks. Ginn and Company, Spring St., Lexington, Mass.

Space framing at Sanislo

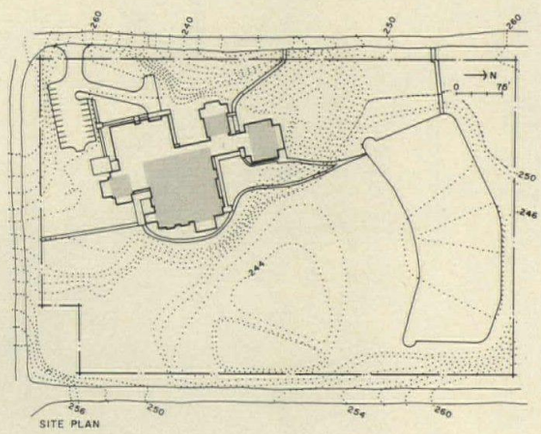
Given a progressive program, Seattle architects and their engineers use a space truss framing system to answer many typical problems of budget, expandability and fabrication

As school districts adopt the open plan, individualized learning and team teaching, a dual challenge is born. One, the administration is forced to re-evaluate its educational specifications, and two, the architect must learn to cope with them. While that two-headed re-think is happening across the country, the success or failure of the process in each instance depends on both heads. The Captain Stephen E. Sanislo Elementary School (K–4) in Seattle, by architects Sullam, Smith & Associates, is the result of a 90-page educational specification stressing innovation and individual learning, and the architect's desire to keep the building from impeding that goal.

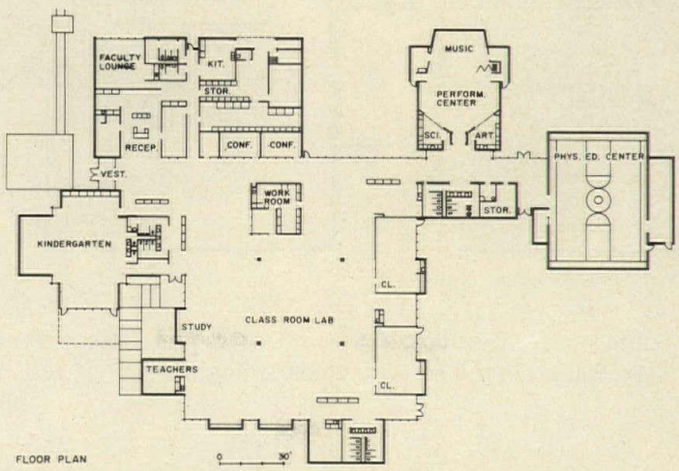
In its specification, Seattle School District No. 1 spelled out many objectives, most of which are directed at those illusive



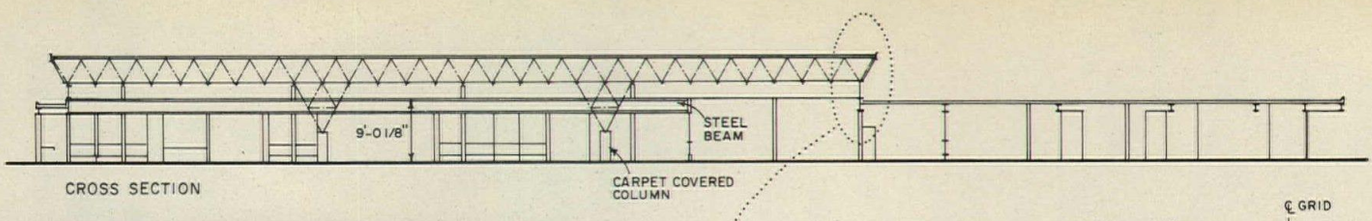
Edges of the space frame are glazed and sun shaded to admit light with minimum glare. Tree-like supports and the open nature of the structure (opposite) allow access to overhead power and mechanical services, and permit daily changes in area uses.



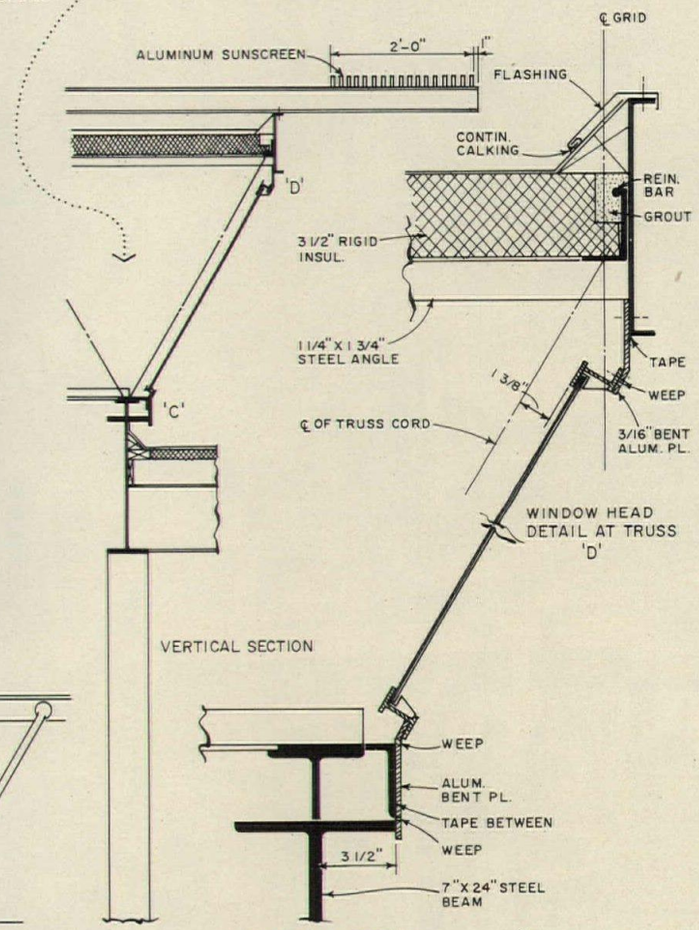
SITE PLAN



FLOOR PLAN



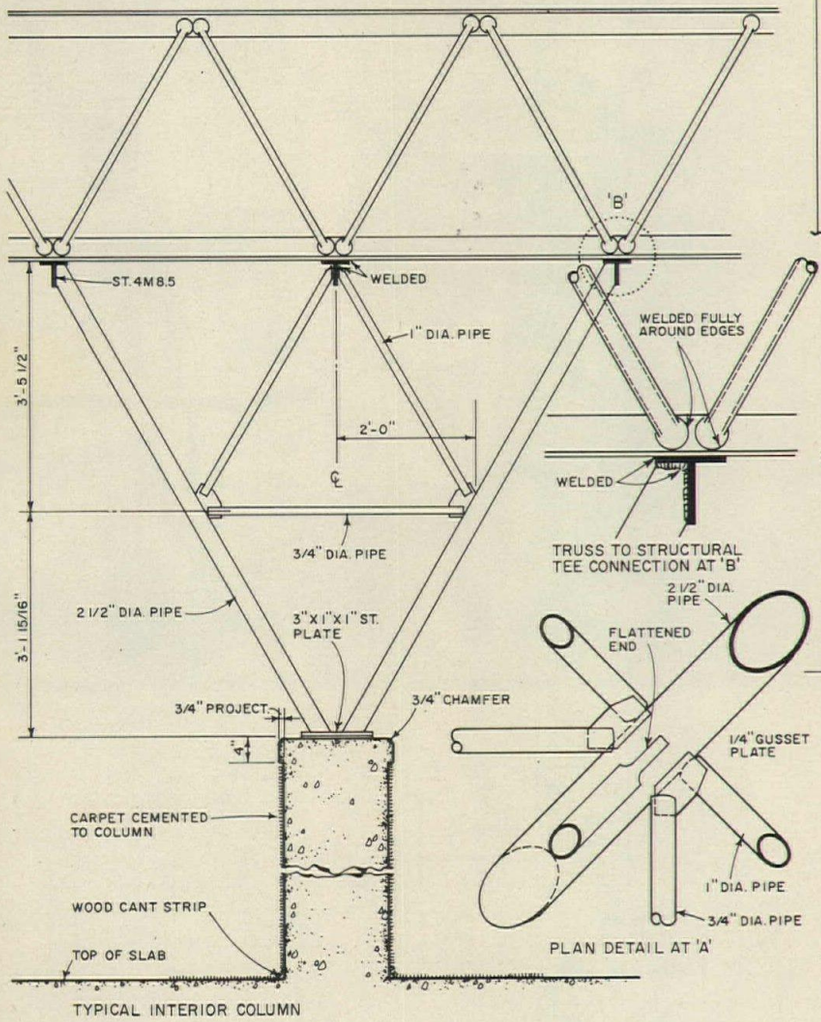
CROSS SECTION



VERTICAL SECTION

WINDOW HEAD DETAIL AT TRUSS 'D'

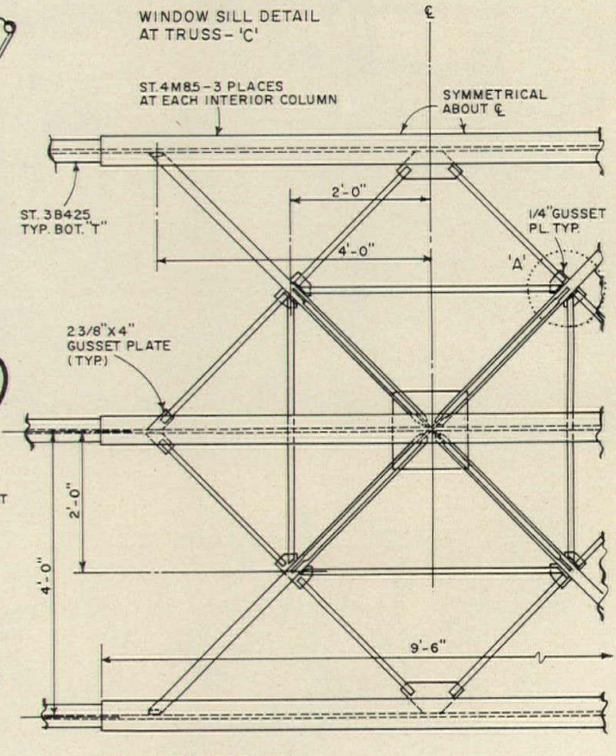
WINDOW SILL DETAIL AT TRUSS - 'C'



TYPICAL INTERIOR COLUMN

TRUSS TO STRUCTURAL TEE CONNECTION AT 'B'

PLAN DETAIL AT 'A'



PLAN VIEW OF COLUMN

Space frame, Sanislo school. Sullam, Smith & Associates, architects; Kelly, Pittelko, Fritz & Forssen, structural engineers.

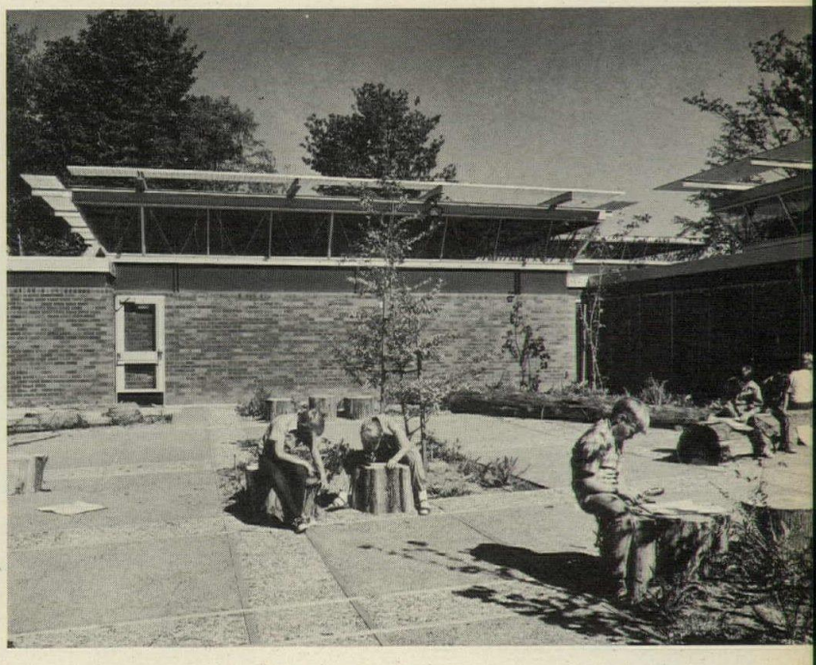
Space framing at Sanislo

qualities of flexibility and adaptability needed to allow the school to form its own educational direction: "The architect should constantly bear in mind that his design of the project, its spaces and facilities, must permit and support an experimental educational function." In choosing a space frame solution to cover large open areas, the architects picked a nondirectional structural approach that they felt allowed for the required diversity while providing the most uninterrupted space. Further, the nature of a space frame is very forgiving, and can accommodate an almost infinite array of ducts, piping, light fixtures and electrical runs. Left exposed, it is a convenient device for supporting fixed objects such as clocks and speakers, as well as any other special equipment, even if temporarily.

The plan of the Sanislo School is dominated by the large "classroom laboratory" that contains enough area for 10 teaching spaces. There are distinct teaching facilities for kindergarten and physical education, and a performing arts center, all with their own space frame roof structures. All supportive areas such as administration, circulation and utilities are identified by lower, flat roofs.

The space truss system was designed for competitive bidding after a thorough review of truss systems and pre-engineered components revealed a total lack of compatibility between products of various manufacturers. Engineers Kelly, Pittelko, Fritz & Forssen joined the architects in setting their own criteria, then designed a system to meet them. With the aid of extensive computer study, a space truss was developed using three simple fabricated elements which were shop assembled into large sections, delivered and erected in minimum time and at a cost reported to be below that of prefabricated proprietary systems.

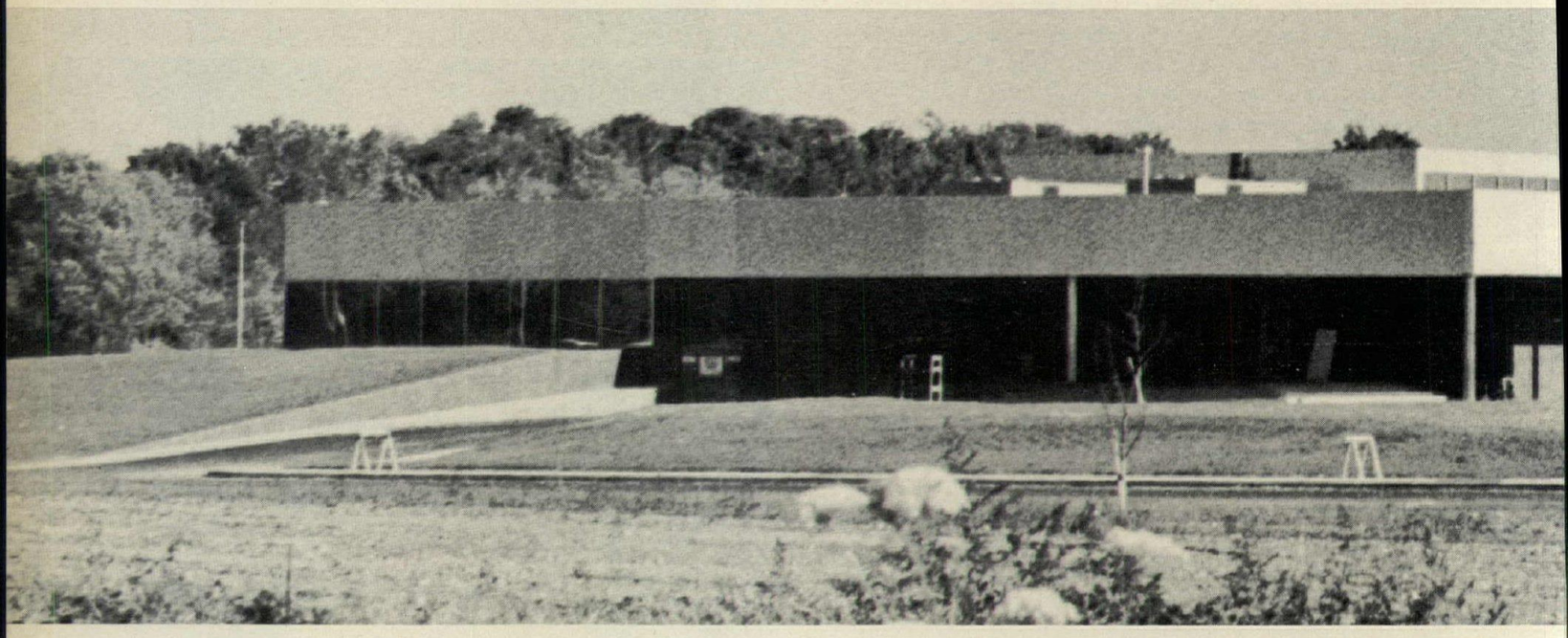
The space truss system developed for Sanislo School is made up of three basic components: the longitudinal elements, the transverse top chords and the transverse bottom chords. Each of these components is made up of readily available materials which may be assembled by any competent steel fabricating facility. The longitudinal elements consist of two rolled steel angle chord members connected to small diameter steel tube web members and arranged to form a Warren truss. The longitudinal elements are assembled in truss panels up to 60 ft long consisting of one angle top chord, one angle bottom chord and the tube diagonals. Connection between the angle chords and the tube diagonals is accomplished by flattening the ends of the tubes and welding into the re-entrant intersection of the angle legs. The completed longitudinal elements take the form of a planar truss which may be easily handled and shipped to the job site without special equipment. At the job site the longitudinal elements are positioned with their vertical axes at a 45 degree angle to form a symmetrical pattern of tubular diagonal web members in each direction. The top and bottom transverse chord members which consist of rolled structural tees are then positioned at a right angle to the long axis of the longitudinal elements. To create the bidirectional structural action, the longitudinal and transverse members are connected by field welding. The concept may be readily expanded to encompass a wide range of module sizes, span lengths and load capacities. [JM]

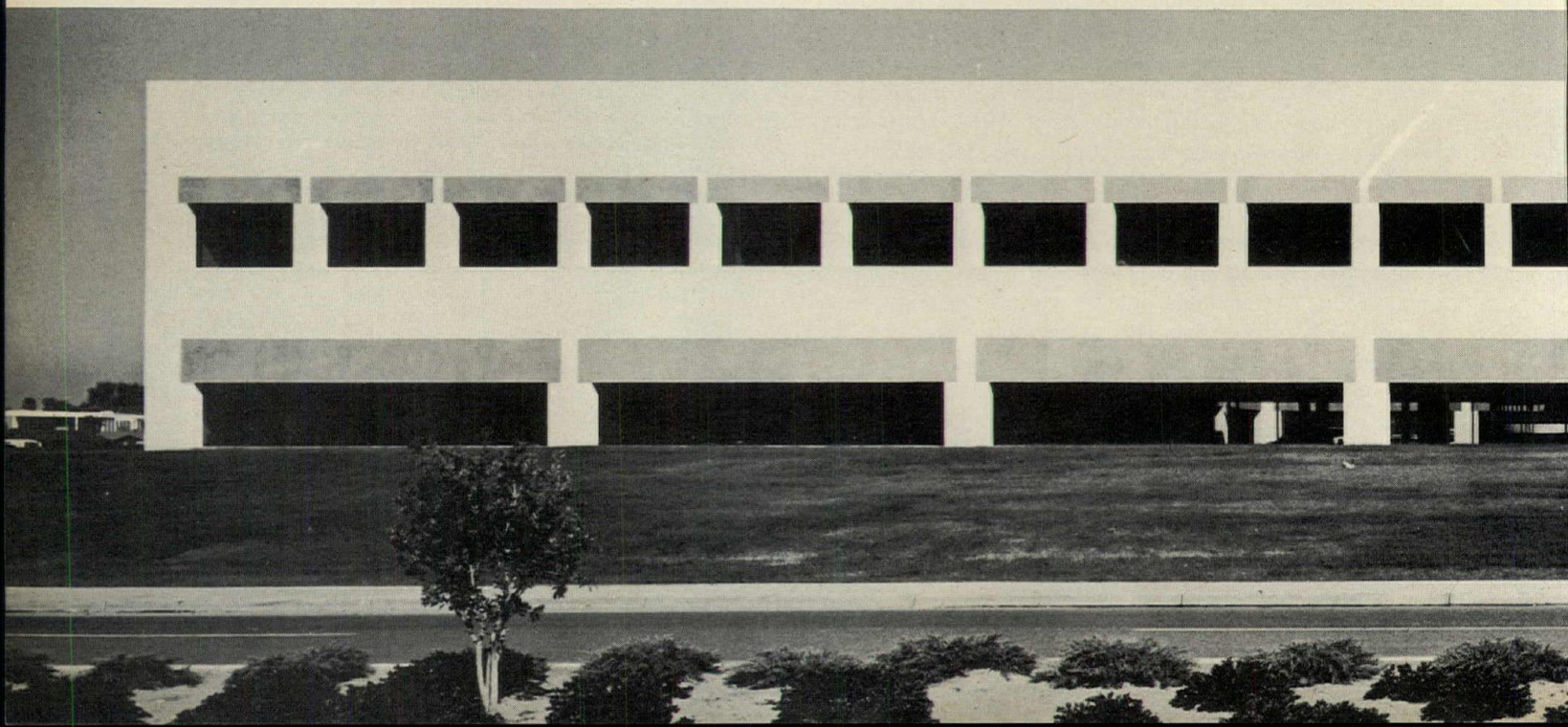


Data

Project: Captain Stephen E. Sanislo Elementary School.
Architects: Sullam, Smith & Associates.
Site: 7.8 acres, Seattle, Wash., sloping to the north and east.
Program: school for 375 kindergarten-through-fourth grade students, with expansion possibilities to 500 pupils. Maximum emphasis on flexibility and individual learning.
Structural system: steel space trusses for major educational spaces; steel framing for supporting facilities; concrete foundations.
Mechanical system: heating by oil-fired hot water boiler serving multizone reheat coils. Roof mounted fresh air units provide fresh air supply, with mixed air tempered by the reheat coils. Cooling units may be added in the future.
Major materials: steel framing and space trusses exposed, brick and wood stud walls, all floors except gymnasium, toilets and service areas are carpeted.
Costs: $868,817 ($25.50 per sq ft exclusive of land, landscaping, equipment and fees).
Consultants: structural, Kelly, Pittelko, Fritz & Forssen; mechanical and electrical, Valentine, Fisher and Tomlinson; landscape architect, Edward M. Watanabe.
Photography: Hugh N. Stratford.

Vocational schools are fraternal twins





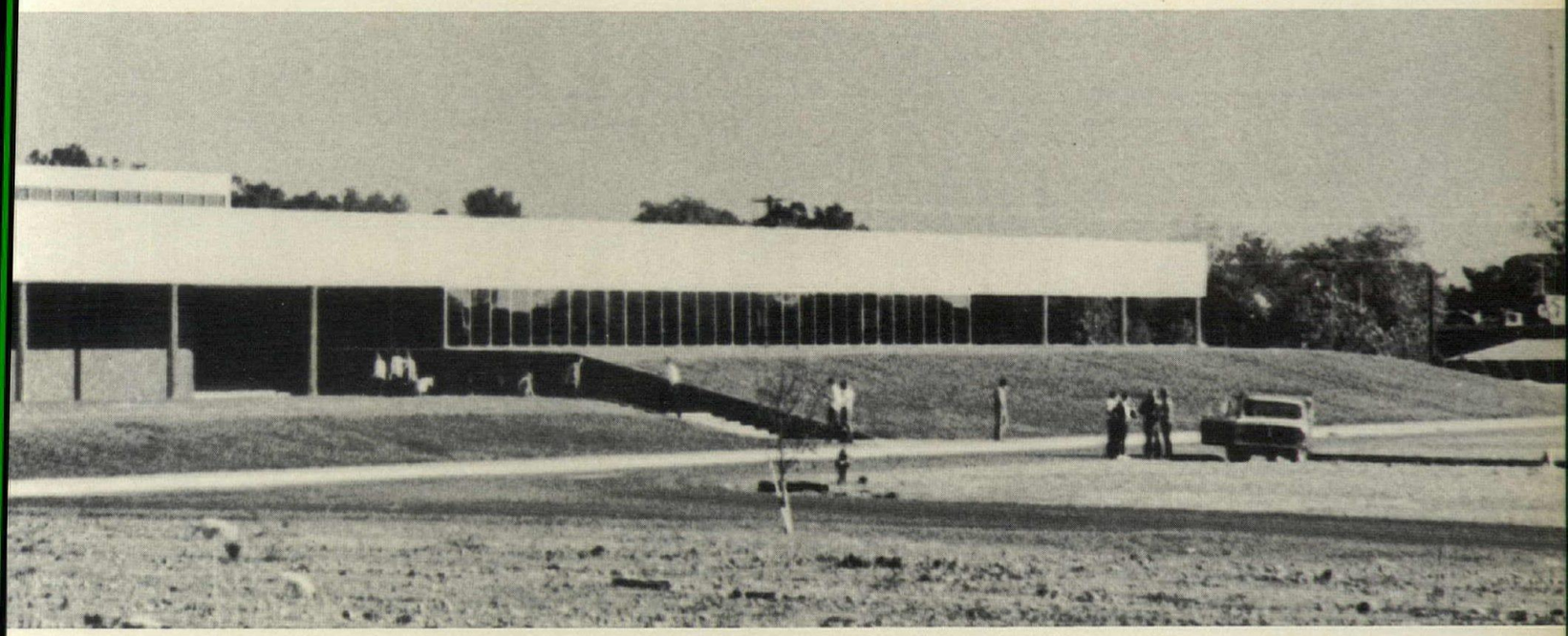
By joining forces with a construction manager and using fast track construction with their systems approach, Caudill Rowlett Scott met a corporate client's nine-month deadline to build two handsome, well-detailed vocational schools

Several things have become perfectly clear to Caudill Rowlett Scott about building systems-type schools: it's not as important to find a system that will do as many tasks as possible as it is to find one that will do its own thing best. The façade should be cladding, kept out-of-system. The biggest economies come from how convenient the architect makes it for the trades. A good construction manager is a valuable aid to design; he knows what looks expensive but isn't; he knows what construction techniques can clutter up a site and cost more in the long run.

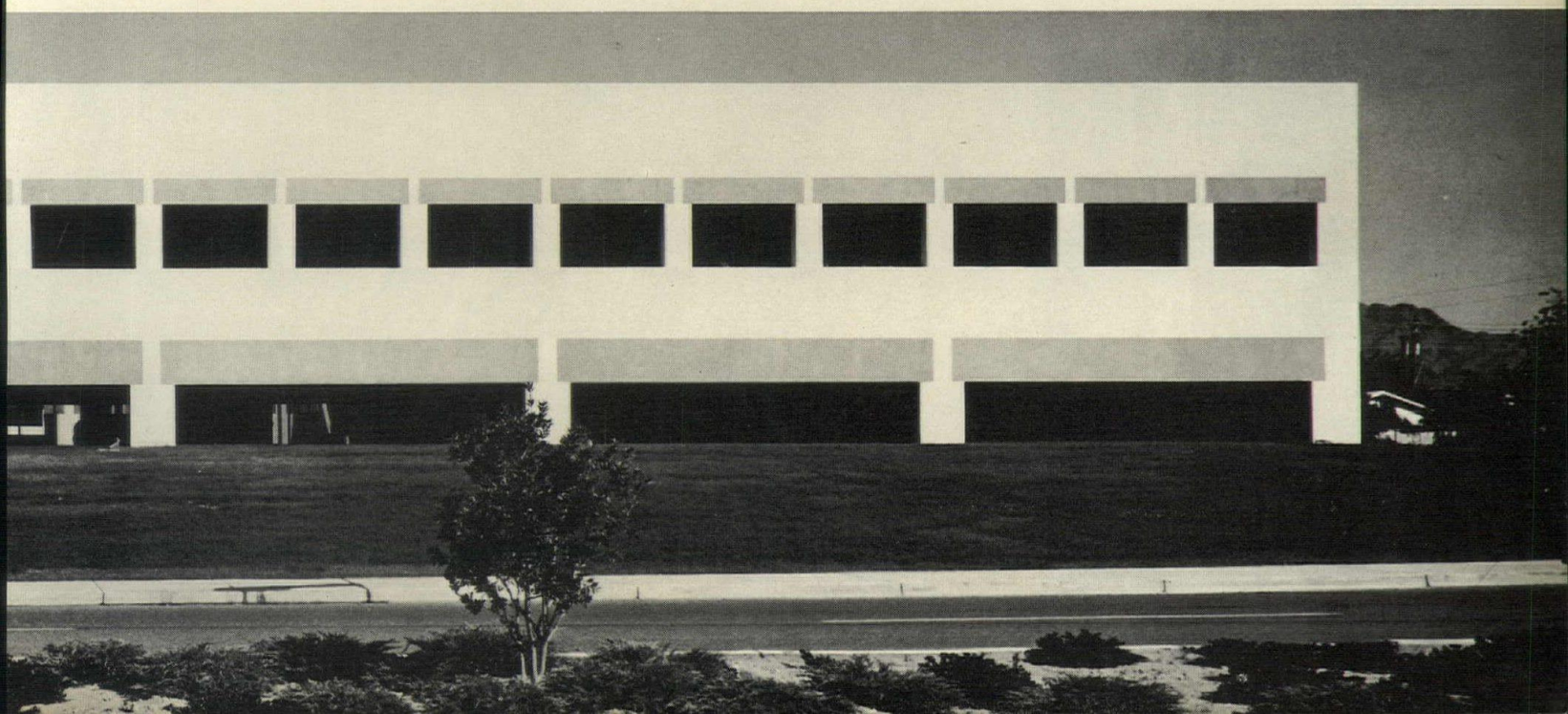
And, in building quickly, adds CRS' Norman Hoover, "You have to be able to live with a few things that might not be exactly right. But, compared to conventional construction, you get to evaluate every project quicker, and hopefully learn something."

In January, 1971, CRS was commissioned to design two schools, one in Phoenix, Ariz. and the other in Columbus, Ohio, for Bell and Howell Schools, a nationwide chain of vocational/technical schools. Evaluation began in September when both schools opened on schedule.

Bell and Howell schools specialize in electronics and engineering, offering commuter students two-, three- and four-year degree programs on a two-shift basis. Because they are operated for profit rather than for training future employees of the parent corporation, the schools would have to be low cost yet well designed to attract prospective students. They needed to be flexible enough for changes in class size and programs as new classes are admitted each quarter. It was



Ohio Institute of Technology, Columbus, Ohio (above).
DeVry Institute of Technology, Phoenix, Ariz. (below).



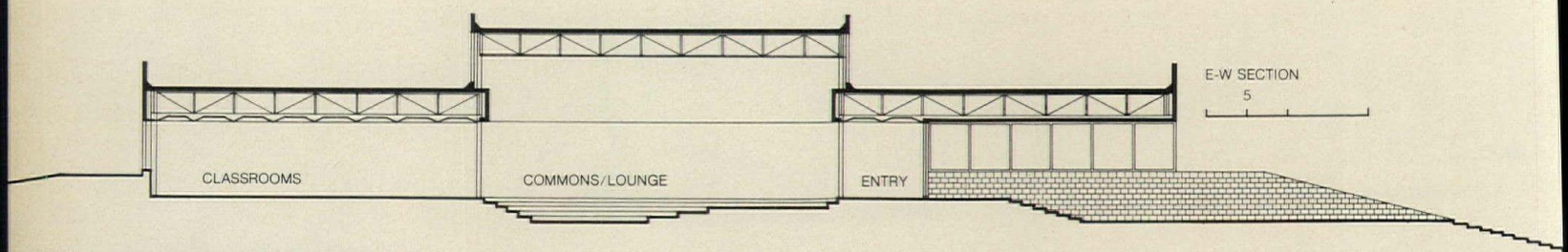
also important that the buildings be adaptable to other purposes in case Bell and Howell should decide to give up their operation and sell the properties.

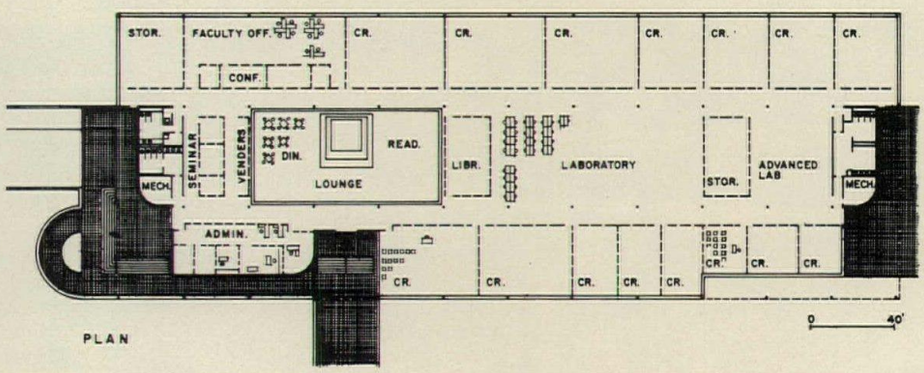
Each school required classrooms, open laboratory space, a dining/library/common area, faculty and administrative offices. Although the systems approach seemed to be inherent in CRS being given the commission in the first place, and despite the similar programs, the schools were individually designed for their separate sites. The first step was to retain Kitchell Contractors of Phoenix as construction manager. The second was an intensive programming and schematic design session (CRS calls these sessions "squatters") which produced basic floor plans with open space around fixed cores of toilets and stairwells. The Phoenix site and climate dictated a two-story building around an open court; for Columbus, a linear one-story building would be most visible from the adjacent highway.

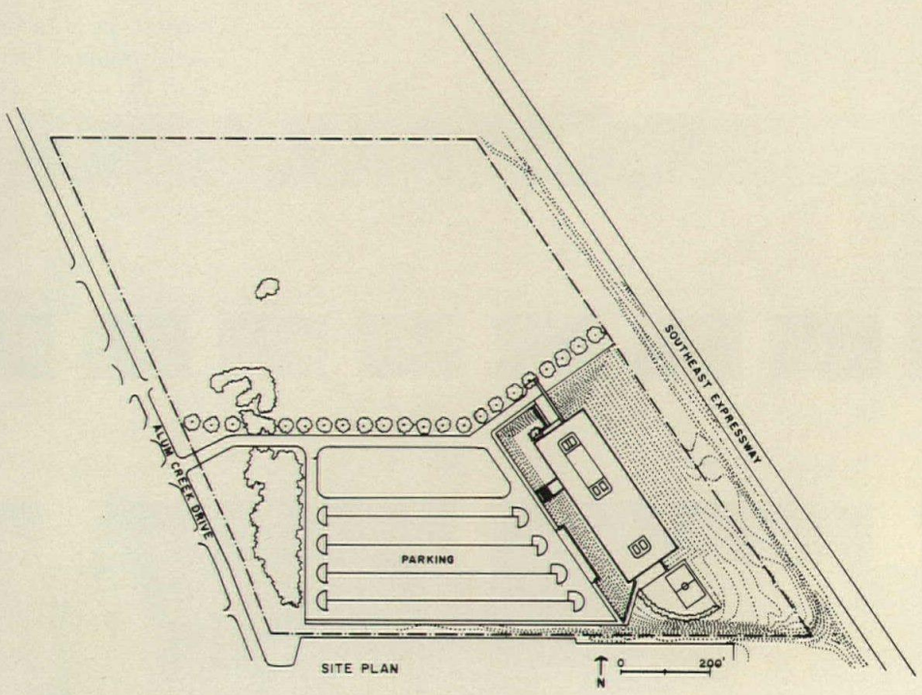
Pre-bid, bid, build

The four key subsystems—structure, heating ventilating and air conditioning, ceiling/lighting, and partitions—were pre-bid for both schools on the basis of performance-type specifications. Because little detailed programming had been done at this stage, the partitions were pre-bid on a quantity/unit cost basis; the final layout was done some three months after construction started and bid prices adjusted once the final linear footage was known.

A second "squatters," this one for all systems bidders, was







Brick walls of recessed entry at Columbus contrast with reflective glass and shiny aluminum skin chosen for visibility from highway. Dashed lines in plan represent movable partitions, one of four major subsystems in project.

held so that all manufacturers could confer with the architect, the construction manager and each other. Sealed bids were received at the end of one week and the winning contractors chosen by the middle of the following week.

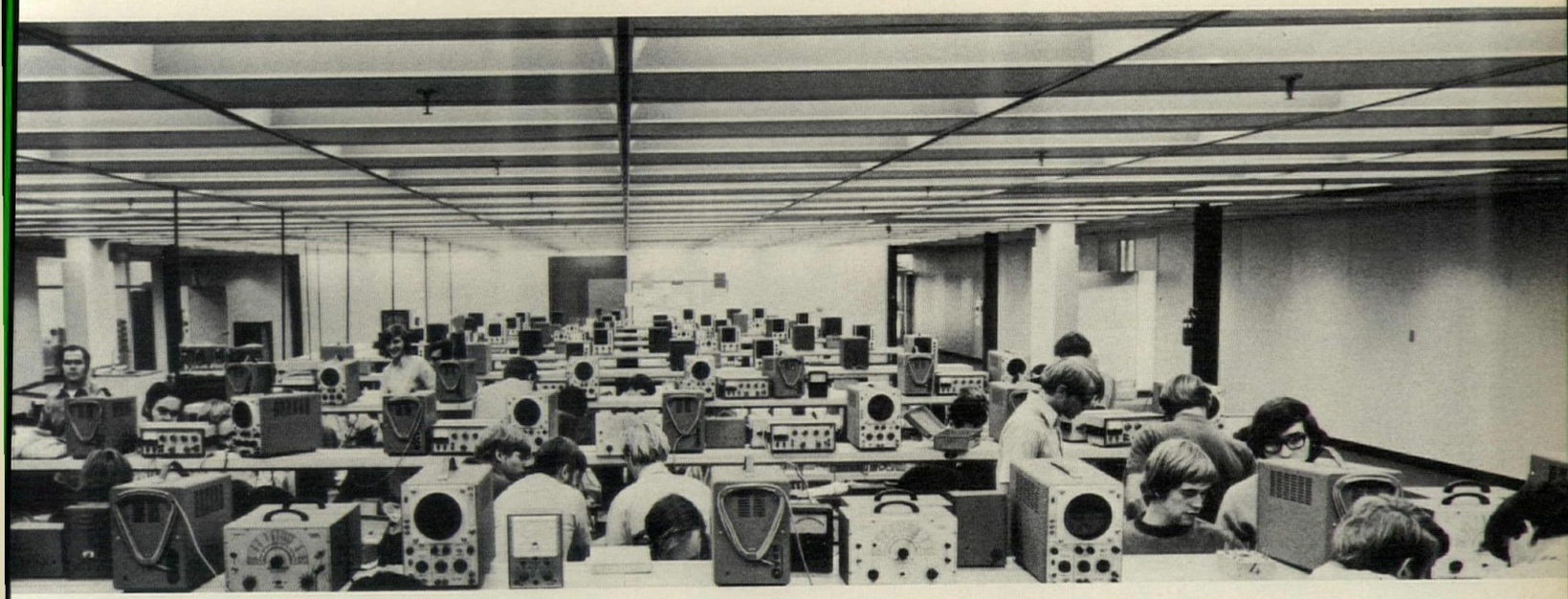
The Columbus school

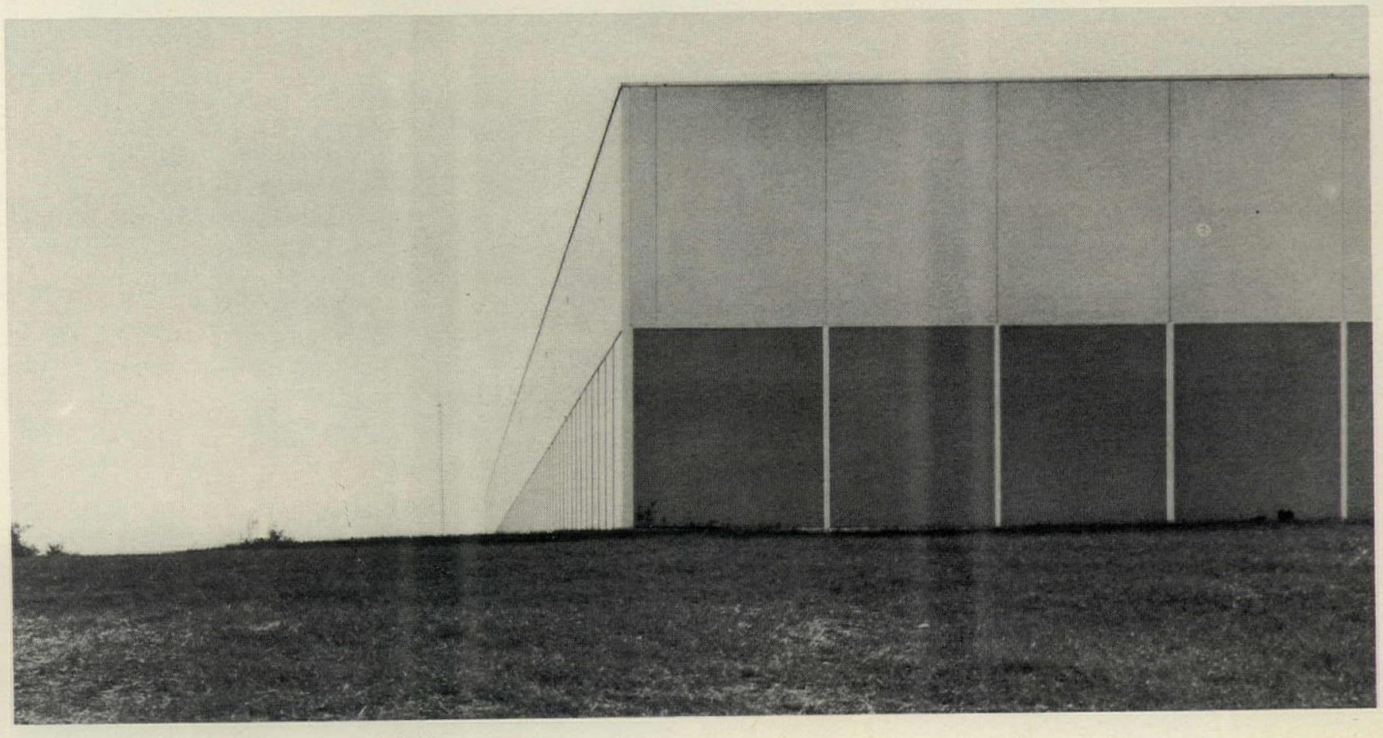
The basic design problem for the Columbus school was to make a small building (42,000 sq ft) highly visible. The solution was to make it an integral but contrasting part of the topography—a long, low reflective building parallel to the freeway with the earth bermed up to the sills to emphasize the small hill.

As reflective glass would be too costly for the entire façade, the architects combined it with aluminum faced, foam core

Data

Project: Ohio Institute of Technology, Columbus, Ohio.
Architects: Caudill Rowlett Scott.
Site: a high knoll adjacent to a freeway; area zoned for light industry.
Program: vocational/technical school operated as a commercial venture; building to be low-cost, completely flexible and finished in nine months from date of commission. Capacity to be 1100 students in two shifts with parking for 440 cars.
Major subsystems: light steel frame, Romac Structural Systems, Inc.; lighting/ceiling, Armstrong; HVAC, ITT Nesbitt; partitions, E.F. Hauserman.
Enclosure: shiny aluminum foam-core panels, mirror glass.
Costs: $914,185 for basic building; $21.72 sq ft (gross area 42,075 sq ft).
Consultants: Kitchell Contractors, Inc., construction manager.
Client: Bell and Howell Schools.
Photography: Balthazar Korab.





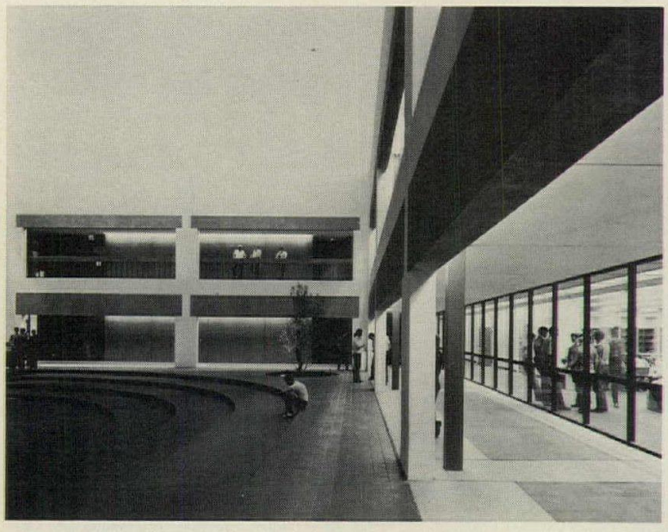
panels with the shiniest standard mill finish available. Hoover reports they are more than satisfactory—at 3 in. they are rigid enough to form the parapet; they don't dent or "oil can" and two men easily handled each 5′ x 9′ panel. Similar panels are now being installed to screen the rooftop HVAC equipment, a detail omitted from the plans at first because of cost.

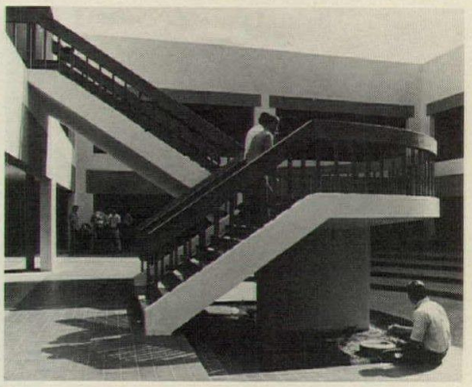
The purity of the basic box shape was sacrificed at the corners to allow large entry spaces, with curved masonry walls and brown brick pavers that contrast with the glass and metal. Inside, total flexibility was also sacrificed by putting the student lounge, dining (from vending machines) and library/reading areas into one central space. Hoover is pleased, however, with the spatial variety gained. "We raised the roof up 10 ft over the space, put in clerestory windows on two sides and left the light steel frame structure exposed. We lowered the floor a couple of risers, changed the carpet color, made a conversation pit, put in a bunch of bean bag chairs and some other decent furniture. We got a lively student center in the middle of an acre of flexible modular office space."

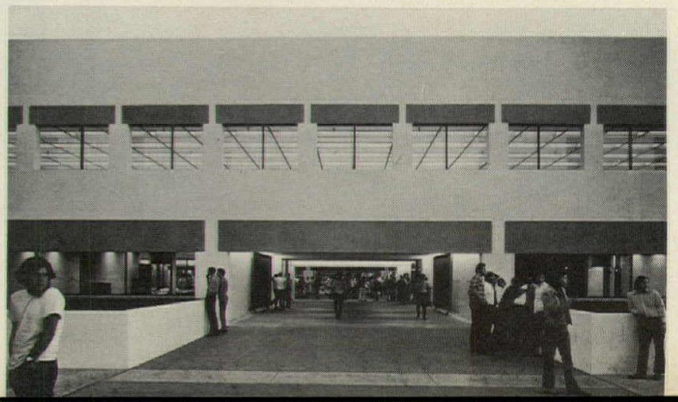
He is unhappy, though, with one exterior detail. All the glass set back from the outside wall is dark bronze, and nobody remembered to change the spec on the aluminum color in those areas.

Phoenix

The "thing you have to live with" at Phoenix is the way the freestanding masonry façade completely overshadows the scale of the light steel frame, reports Hoover. "The idea of de-







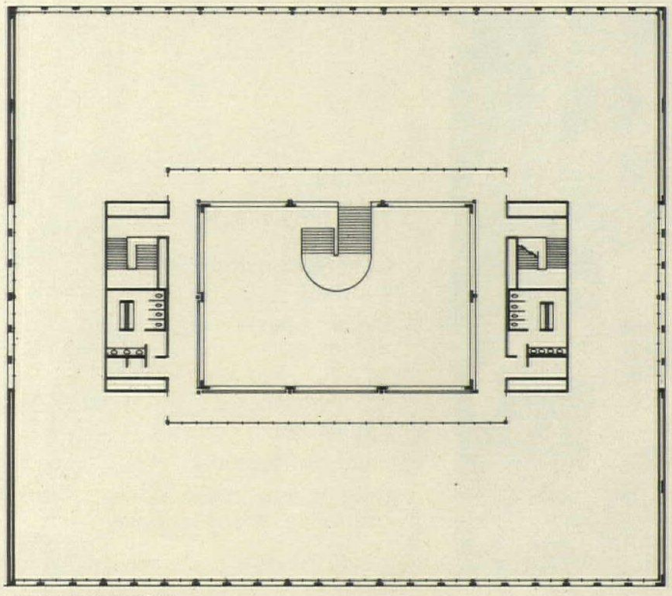
Courtyard of two-story school in Phoenix is central gathering place for students. Plans, across page, show the basic building at left, initial layout of movable partitions right.

veloping a contrast between the façade and the system did not quite come off." The façade was not a "decorative idea" but merely the cheapest way to clad the building in that area and that climate. Precast concrete lintels at the window openings were sandblasted to emphasize them as a separate system within the masonry. On the court side, recessed balconies that serve as prime circulation space provide sun protection for floor to ceiling glass walls.

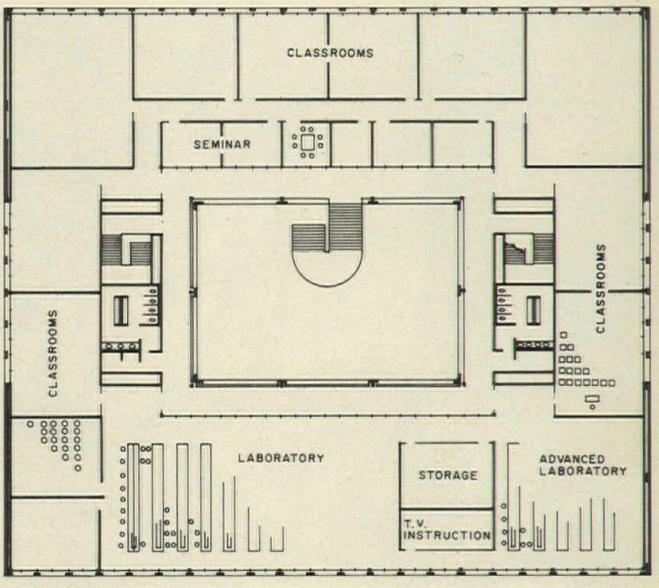
Entry from the 800-car parking lot is through one open structural bay to the courtyard, which functions as a central lobby and student assembly place. The landing of the monumental stair was designed to serve as a lecture podium but has also been successfully used as a stage for a rock band during the opening party for the students. [RR]

Data

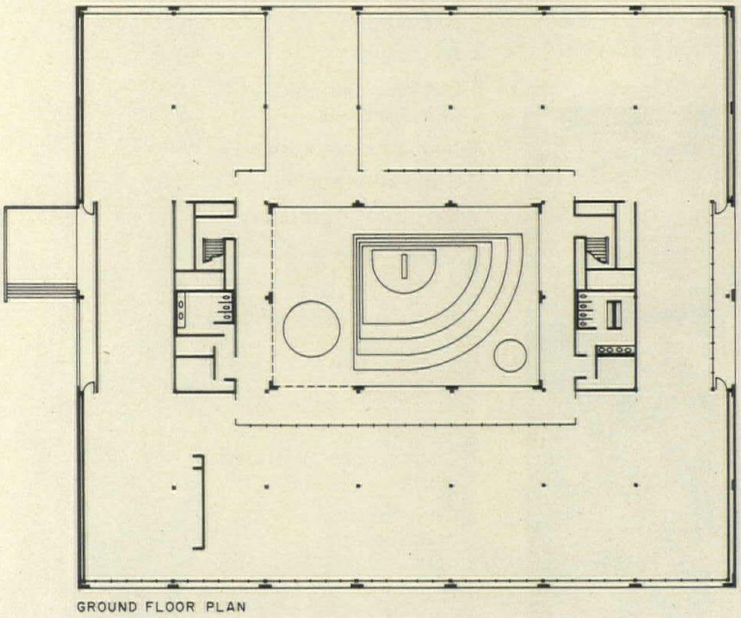
Project: DeVry Institute of Technology, Phoenix, Ariz.
Architects: Caudill Rowlett Scott.
Site: flat parcel on developing commercial strip.
Program: vocational/technical school operated as a commercial venture; building to be low cost, completely flexible and finished nine months from date of commission. Capacity to be 1650 students in two shifts with parking for 750 cars.
Major subsystems: light steel frame, Romac Structural Systems, Inc.; lighting/ceiling, Ceiling Dynamics, Inc.; HVAC, ITT Nesbitt; partitions, E.F. Hauserman Co.
Enclosure: freestanding stuccoed masonry walls, tinted windows.
Costs: $1,153,447 for basic building; $19 sq ft (gross area 60,650 sq ft).
Consultant: Kitchell Contractors, Inc., construction manager.
Client: Bell and Howell Schools.
Photography: Rondal Partridge.



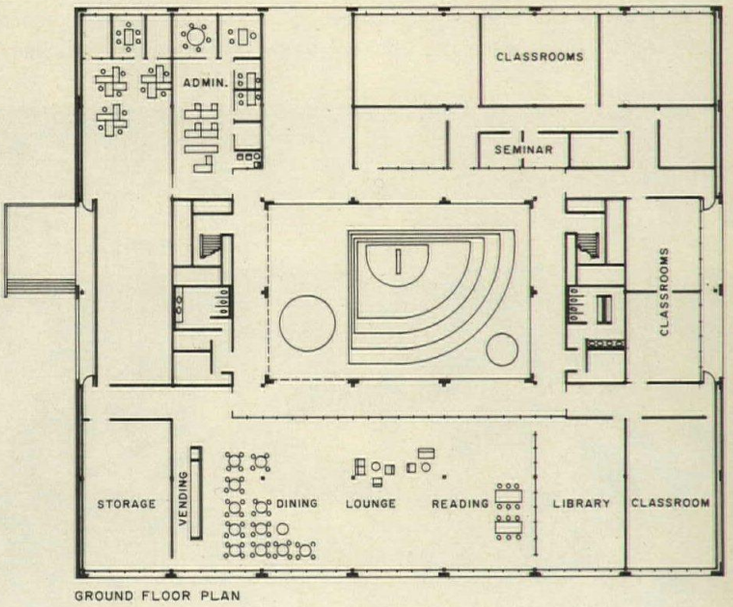
SECOND FLOOR PLAN



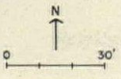
SECOND FLOOR PLAN



GROUND FLOOR PLAN

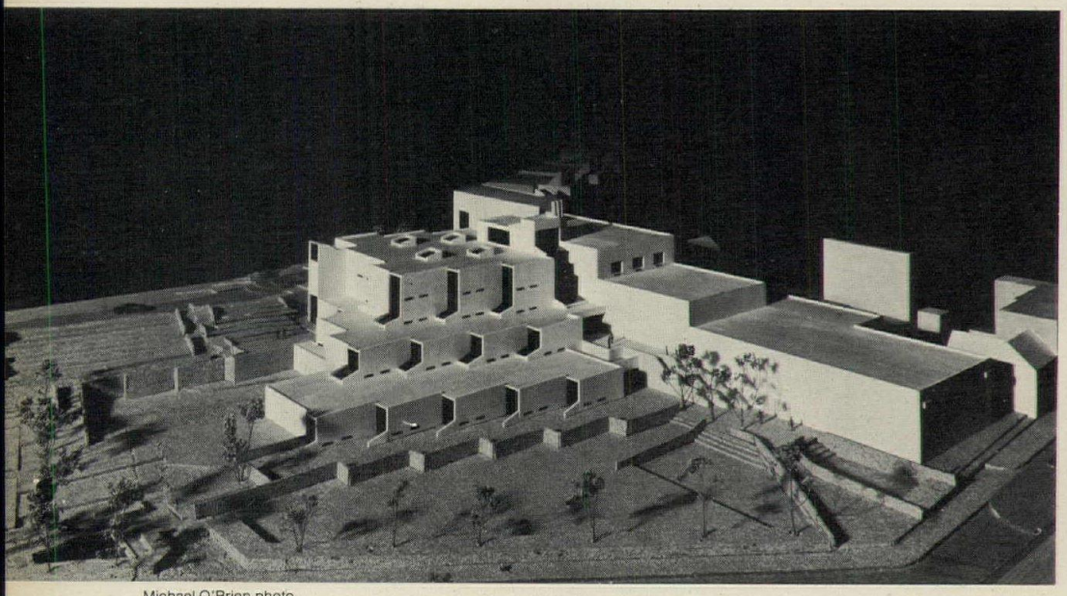


GROUND FLOOR PLAN



The price of the schoolhouse

Earl R. Flansburgh



Michael O'Brien photo

School sites are often marginal land; Kent School, Charlestown, Boston, above, is on a former dump. Repetition of steel columns and bar joists kept costs down at Acton, Mass. elementary school, below. LeMessurier Associates, structural engineers.

Louis Reens photo

Table 1

Total project cost

General construction contract		81%
Building costs	(91%)	
Site costs	(9%)	
	(100%)	
Furnishings		5
Equipment		4
Fees, professional		5
Contingency, clerk, legal, insurance, miscellaneous		5

Table 2

Total building cost

Excavation	3 to 8%
Structure	10 to 18
Exterior skin and interior walls	5 to 15
Miscellaneous metal	1 to 3
Carpentry and millwork	3 to 8
Moisture protection	3 to 5
Doors, windows, glass	2 to 5
Finishes	4 to 7
Heating and ventilating	12 to 18
Plumbing	5 to 9
Electrical	10 to 12
Contractors overhead, profit	15
Contractors contingency	5

There's only one public criterion for schools these days: high quality construction at lowest possible cost. The author explores ways to keep costs in line from initial programming and preliminary design through construction and financing

There are two common methods of cost control. The "scissor" method is to put it in, budget or bid too high, cut it out. This ex-post-facto control is most charitably described as a poor process, unsatisfactory to the client and expensive to the architect. It usually leaves "design" on the cutting room floor and earns the architect a reputation for having no knowledge or interest in cost control.

The "continuous cost effectiveness" process, however, is built on mutual understanding between the architect and the client and a willingness to face the truth on the part of both. Most clients are reasonable men and women who know school buildings cost money. All they ask is to know a dollar figure early enough in the design stage to react to it. A reasoned reaction in the design stage is preferable to a panic reaction when the bids are too high.

"Continuous cost effectiveness" is, as the name implies, evaluation of the cost and cost implications of various pieces of the project at various stages of the design. It also means evaluating the total impact of the cost of an item, not just its unit cost.

Cost effectiveness also means the architect is willing to accept the economic performance of a material or structure as a guide in determining the appropriate architecture for his client. This produces an architectural vocabulary based on the need for the material as well as its aesthetic qualities.

It is important to describe school costs accurately. In addition to the completed structure there are site work, equipment, furnishings, architect's fees, legal fees, blueprinting, site surveying and other miscellaneous items. Another substantial cost, frequently overlooked, is the cost of financing—the interest on the bonds. For this article, "total project cost" includes the building, site, equipment and furniture, fees and miscellaneous costs but not interest on bonds. The "building cost" is defined as the building alone without site work and other items in the total project cost.

Although the general construction contract will average about 81 percent of the total project cost (table 1), major efforts to control costs must center around the most substantial items. Effecting a 50 percent savings in an item that represents only 1 percent of the cost has little influence on the total building cost (table 2).

Major costs

Any review of the possible cost savings in each phase of the work is impossible in a short article. The paragraphs below touch only the high points.

Excavation: School sites, with their large playing fields, are frequently marginal land and we have found very few projects where a good soils engineer did not more than pay for his service. Every site should have borings on a regular grid in the building area and in line with the utility trenches. Although buildings can be designed around rock contours, plumbing and heating lines do not always have the same flexibility and the extra mechanical expense frequently wipes out the architectural foundation savings. Rock and peat are not the only problems. We have had a meadow with solid rock 3 ft below the surface; a swamp that turned out to be simply organic material in a hollow in the bed rock; an open gravelly river bank that was really an ancient lake bed filled with fine layers of sand of much less structural strength than the sand and gravel on the surface.

Structure: Simplicity and repetition have the most substantial effect on structural costs. In a steel structure, repetition of members means lower fabrication costs, lower erection costs, therefore lower structural costs. Concrete and exposed wood laminated beams or heavy timber joists are likely to cause problems at the interface between structure and the heating system. Cost evaluation, therefore, must include the expense of this interface in the equation just as evaluation of steel must include fireproofing and ceilings. The factors of simplicity and repetition also apply to concrete and wood.

Exterior skin: Despite constant searching there appears to be no exterior skin that offers a substantial cost saving over others in terms of material and installation. There are several, however, that save time, such as the complete sandwich of concrete-insulation and concrete or prefinished steel-insulation-primed steel. We are also currently using a similar panel in wood.

Time savings are valuable only if a specific phase of work shortens the total construction period. This will happen with the skin if the interface problems betweeen the exterior skin and the structure, heating and ventilating system and the interior partitions are solved first. Occupancy must be taken in context. Quick occupancy of a school is valuable in September and sometimes in February, less valuable in November or April. So, time savings in the exterior skin are valuable in direct relation to the amount of time saved *and* the actual finish date.

Miscellaneous metal; carpentry and millwork; doors, windows and glass: These three categories are lumped because the same basic principle applies to all three. It is important to know the standards of the industry involved. What the designer may think is simple and easy to build may require excessive standards of tolerance or expensive fabrication methods. While such costs may be entirely appropriate, a detail should be designed with the knowledge of both its aesthetic and economic effect on the project. Often, such items can be made of standard parts.

Four years ago a study of windows in schools led us to analyze comparative costs. We found a prefinished aluminum window in a color of our choice with tinted glass from one of the best U.S. manufacturers that would cost about two-thirds of the price for competing materials if we chose a standard dimension in one direction. The other dimension could be varied to suit the design.

Several years ago The Architects Collaborative discovered that a ¼ in. reveal around an interior door frame could be achieved by providing one extra bend in the hollow metal frame rather than expensive ¼ in. blocking. This cost almost nothing, since the door frame was being run through the hollow metal rollers anyway.

Author: As president of Earl R. Flansburgh and Associates, Inc., Cambridge, Mass., the author has been responsible for the price of many schoolhouses. He was a 1972 P/A Design Awards juror, and except where joint projects are noted, his firm is architect for all schools illustrated in this article.

Our study of chalkboards revealed that one manufacturer had a standard inexpensive detail at the back of his catalog which required no wood frame. A few changes in his standard detail produced an excellent writing surface at below the cost of boards of poorer quality that required wood or metal frames. The illustrations are legion, but the principle is simple. If "God is in the detail" as Mies said, than it is important to make sure the Chancellor of the Exchequer isn't in there too.

Heating and ventilating; plumbing; electrical: By planning the mechanical system as the building is planned, even from the first day, expensive problems can be avoided. We recently conducted an analysis of several structural systems for a new school. By combining a utility analysis with the structural analysis, we discovered that the most expensive structure was the cheapest mechanically and the cheapest combined cost because of a minimum of interference problems with the ductwork—the issue of interface again.

Early planning of utility space usually provides one item guaranteed to reduce utility costs—space. When the utility contractor sees that he has space for the easy passage of his ducts and pipes, walls thick enough not only for the pipes, but the hubs of the pipes as well, adequate space for electrical closets, filter boxes and fire dampers, it influences his price because it influences the cost of his work. A good rule to follow is to treat the area the engineers realistically need for the boiler room and other utility areas as part of the required program just like a classroom space.

Contractor's overhead; contractor's profit; contractor's contingency: Most contractors operate from a broad experience base and their analysis of construction time is usually quite accurate. If the school project is designed to minimize interface problems between the utilities, ceiling system, structure exterior and interior walls and other phases of the work a time saving will result. This saves money because it reduces overhead and to some degree contingency.

In terms of overhead the question of visual and written communication is important. The contractor is, after all, in business to make money. If he feels that the drawings and specifications accurately and completely describe the project he will usually have a slightly sharper pencil because of his confidence in the project documents. Clear definition of interface requirements between materials in the documents and the elimination of interface problems wherever possible in the planning will do more than any other single factor to reduce the overhead and contingency costs.

Environmental costs, exterior and interior

School costs frequently get out of hand because of the site if the architect does not take full advantage of his landscape architect during the design stage. A great deal of the work by landscape architects on the average school is basic engineering, and as such, can be extremely expensive if improperly handled. The large parking areas frequently create substantial drainage and grading problems which may require expensive solutions if not considered in initial planning.

Choice of the areas for playing fields, parking and the school building must be coordinated decisions between the architect and the landscape architect fairly early in the project. Although a soils engineer is normally considered to be appropriate for the building alone, his talents frequently can be useful in meeting the problems of the landscape architect.

School sites frequently have handsome if not sturdy wild trees that would take 30 to 40 years to replace. Proper attention to the water level and grading around these trees can provide an instant natural setting. Because of the complexity of this problem, it too must be considered at the outset.

As more of our schools are designed on the open plan, furniture and equipment have a substantial effect on the interior environment. A good interior designer knowledgeable in the field of school furniture in particular, but all furniture in general, can be a valuable asset to the design team. School furniture selected by the school authorities is frequently competitive in price, but rarely aesthetically cost effective.

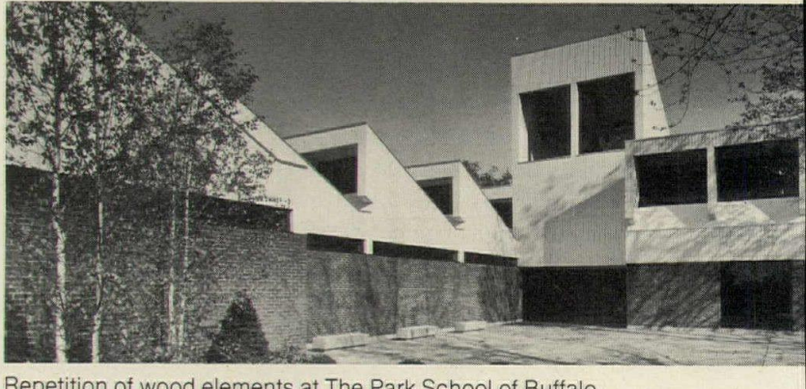
It is important that the 9 to 12 percent of the total project cost (depending on the size of the school) for furniture and equipment be treated as a realistic and necessary expenditure. It is difficult to reduce this cost without impairing the effectiveness of the school but, by careful selection, the furniture can be a handsome asset.

Economies by process

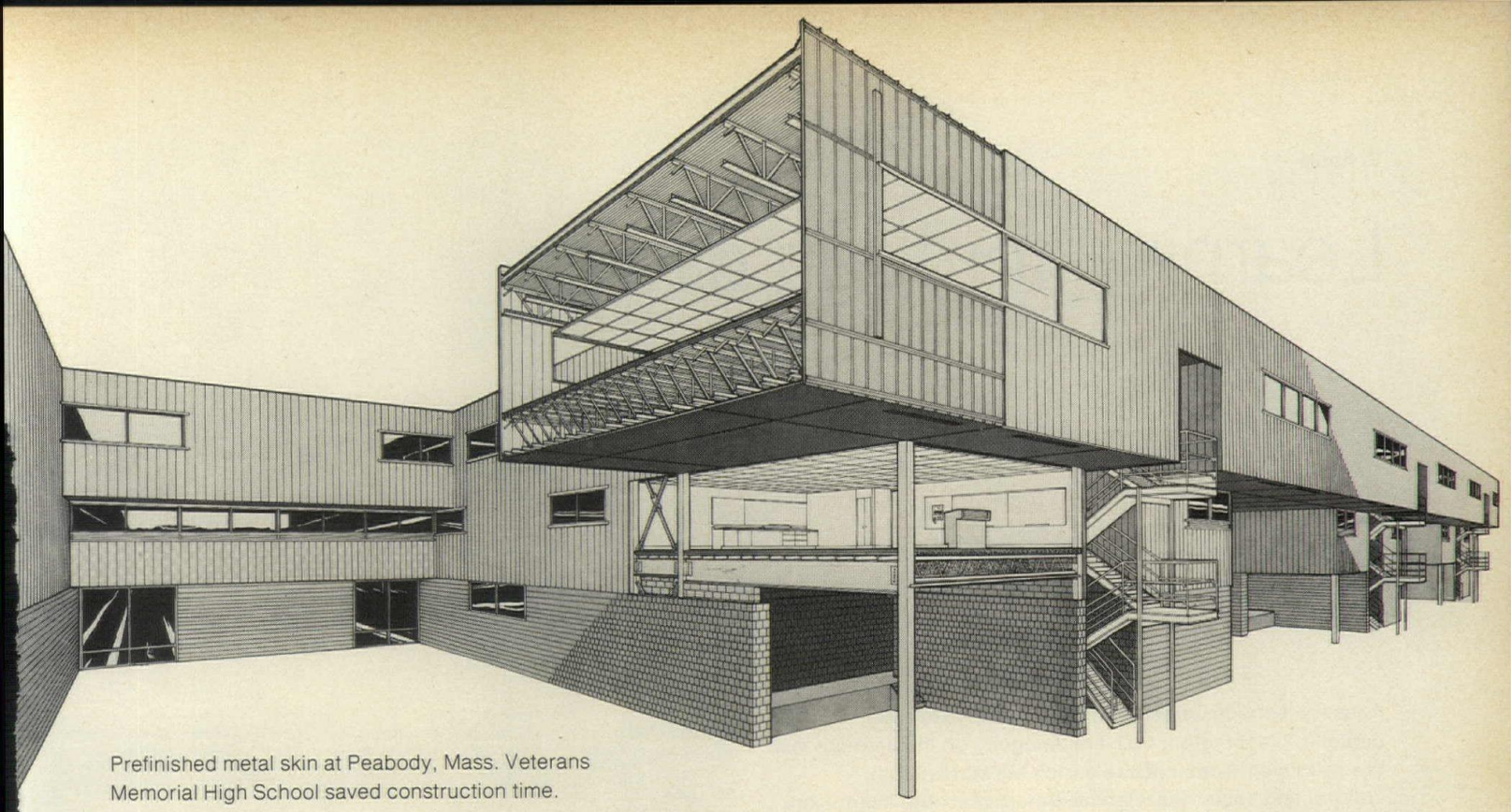
The process of creating a schoolhouse, in addition to its construction aspects, has an effect on cost. If we are willing to design our buildings based on an aesthetic vocabulary of need, evaluating the visual as well as the physical performance of materials in a continuous cost effectiveness approach, then the program should be prepared on a vocabulary of need basis as well.

In any program a definition of objectives and terms is necessary. "Total flexibility" is often requested, but educationally this may involve moving only 30 to 35 percent of the walls. It may be desirable to have 9 science labs, but only 8 of those labs may be critical. If, however, it is critical to have 60 interchangeable classrooms, the school cannot be properly scheduled with 59. This means a priority system should exist in the program, establishing those items that are essential, desirable and optional. Educators, of course, will say that any priority system will mean that the school will contain only the essential items and the desirable and optional will be omitted. This may be true. But evaluating the educational needs of the schoolhouse realistically by the professionals helps diffuse

Hare photo



Repetition of wood elements at The Park School of Buffalo, Snyder, N.Y. Lyman, Baldwin and Castle, Architects; Earl R. Flansburgh and Associates, Associated Architects.



Prefinished metal skin at Peabody, Mass. Veterans Memorial High School saved construction time.

the emotional and often irrational evaluation by the electorate when it comes to the bonds.

Elimination or reduction in size of a major element such as the auditorium can provide obvious economies. Larger school functions can often take place in a gymnasium. A highly developed theater for 300 to 400 may not be significantly less expensive than an 800 to 1000 seat auditorium, but educationally it may be immensely more useful.

As the design progresses from a well developed program, a constant dialogue with the school authorities will insure a realistic preliminary design—a design that responds to the real program, not just the architect's interpretation of it. This has a psychological advantage as well. It allows the educators to have a program interpretation input and does not confuse program interpretation with aesthetic considerations.

At the end of preliminaries a cost estimate should be prepared on a quantity take-off basis. It is more expensive than the square footage basis, but is much more useful in the long run and tends to reduce surprises. A method we have frequently used with success at this stage is for us to provide the quantities to our independent cost estimator and he provides the unit prices. It is critical to be honest with yourself at this stage. If schools are costing $30 per sq ft, wishful thinking at the preliminary design stage is not going to make that figure $26 per sq ft.

Working drawings are the place where the economic battle is often lost. As detail items are added during working drawings, the cost often escalates. The way to solve this is by continuous review of detail items against an aesthetic cost effectiveness scale.

A priority system on an aesthetic scale is important. As new items are put in some old items should be left out. A favorite aesthetic target of panic cost cutting is the finish schedule. For example, concrete block designed to be painted is left unpainted. Three-coat work is cut to two coats.

We have found the soundest way to insure the maximum finish life in terms of wear, and insure the proper aesthetic effect of color, is to have most color integral to the material. This frequently saves construction time and money as well.

In those places where paint is used on built-in items it should be field applied. Prefinished material, except carefully protected metal parts with baked enamel, invariably are scratched and require time consuming touch-up. Given the choices most contractors would field apply paint to built-in material.

One final cost factor concerns bidding. Competition among bidders helps, and one way we have found to stimulate competition is the personal notification of the sub and general contractors. This is in addition to vigorous local advertising in newspapers and Dodge Reports. The personal encouragement of the various contractors to bid has frequently resulted in 12 to 15 sub-bidders (we have a file-sub-bid law in Massachusetts) on a single $3 or $4 million project.

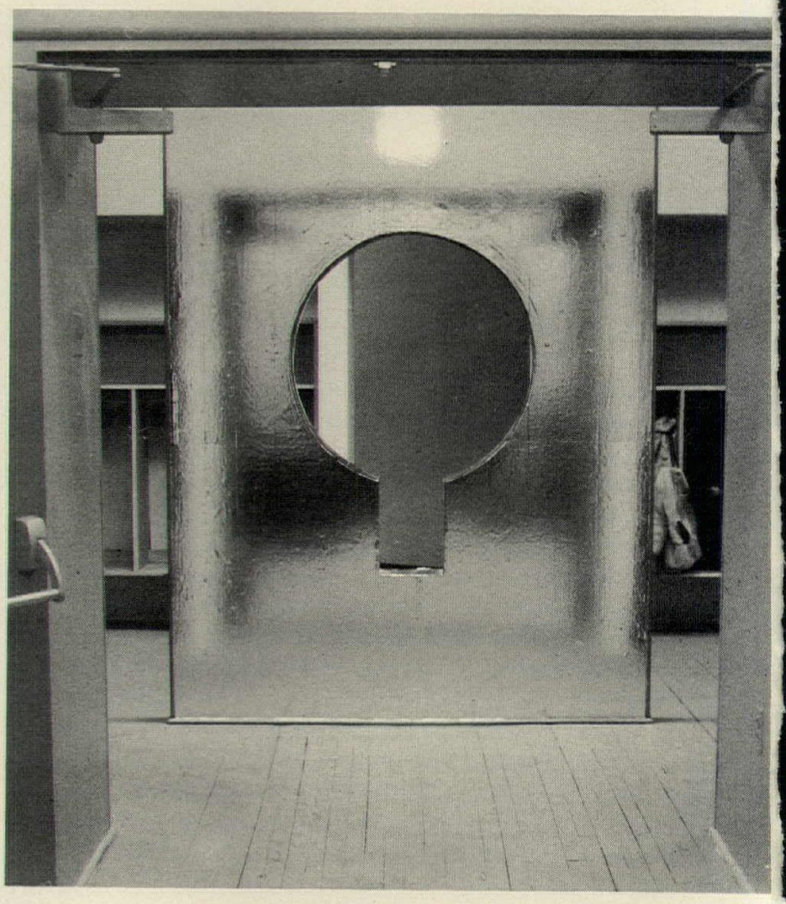
Saving on bonds

Having chipped away at pieces of the cost of the schoolhouse by simplicity, repetition, improved process and organized project development, the architect still needs a broad view of the entire cost saving picture. He may have saved 5 to 10 percent and presented a true cost picture at each phase. In the cost of financing the total project, however, the normal interest on 20-year bonds is an additional 40 percent above the total project cost. If interest costs can be lowered, a significant saving can be made in the total cost to the taxpayer over the life of the bonds. Borrowing for 10 years instead of 20 can save approximately 20 percent of the total project cost. In a $10 million project with $4 million added for interest, the saving is $2 million.

A shorter borrowing period represents a higher annual increase in taxes for a shorter period. This is because the taxpayer is amortizing the principal payments over a shorter period. A recent publication by the Educational Facilities Laboratories of the Ford Foundation, *Guide to Alternatives for Financing School Buildings,* discusses this problem in detail.

Learning through design

An early learning center in Brooklyn and a day care center in Washington, D.C. are designed on the premise that the child's environment can enrich his educational, cultural and social experiences before reaching school age



What does the executive dining room in the Federal Office of Education in Washington have to do with an old, vacant synagogue in Brooklyn? They both have been redesigned by a talented team of architects from the New York office of Hammel Green and Abrahamson as total environments dedicated to the child's natural ability to learn from his surroundings.

If one acknowledges that a child is affected by his surroundings, then it follows that certain things can be done to those surroundings to produce either beneficial, effective, or even detrimental influences on the child. According to Clark Neuringer, the project designer, poor surroundings come about through ordering the child's environment through the sensitivity of the adult. Unfortunately for children, adults are usually straightforward. Given their individual differences in taste, they usually prefer rooms that have flat floors and ceilings connected by straight walls, with pieces of furniture arranged throughout the space in some kind of order. They do not very often deposit their bodies on floors or hang them from anything handy. Nor do they seek out special, private places to hide in, or mysterious and exciting things to crawl into. They are fairly predictable.

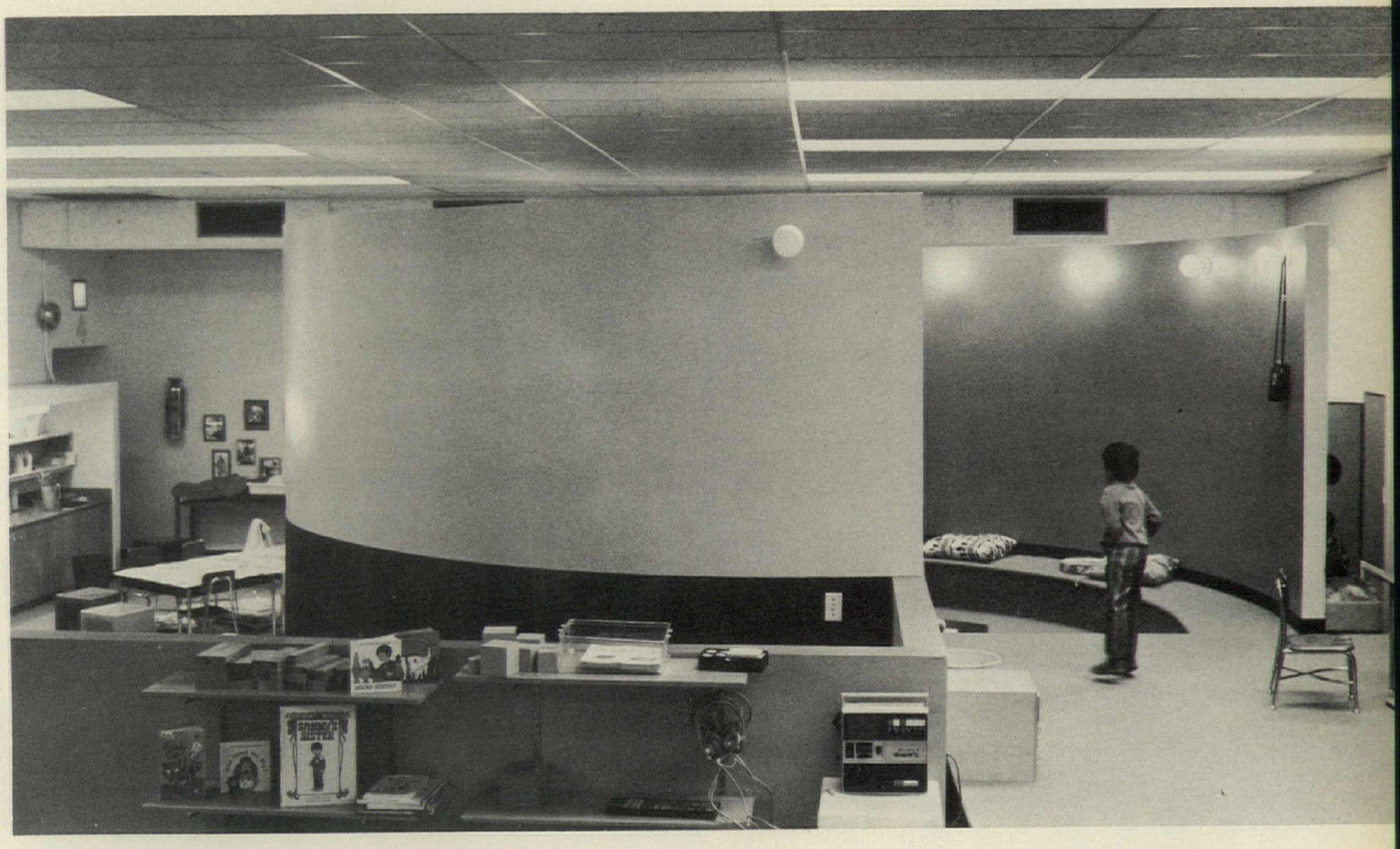
Children, on the other hand, are not. They like to hide, crawl, hang, run and jump. Their orientation is kinesthetic, not verbal. They communicate through their bodies and by tactile experiences, not by words. Their early learning centers on their own discovery of the world around them, not on being told what it is like. Ideally then, if the designer can envision space through the eyes of the child and structure it to respond to the child's needs, it can be designed not only to offer, but also to reinforce, a great range of opportunities to learn through discovery. Both the Block School in Brooklyn and the U.S. Office of Education Day Care Center in Washington attempt to do this.

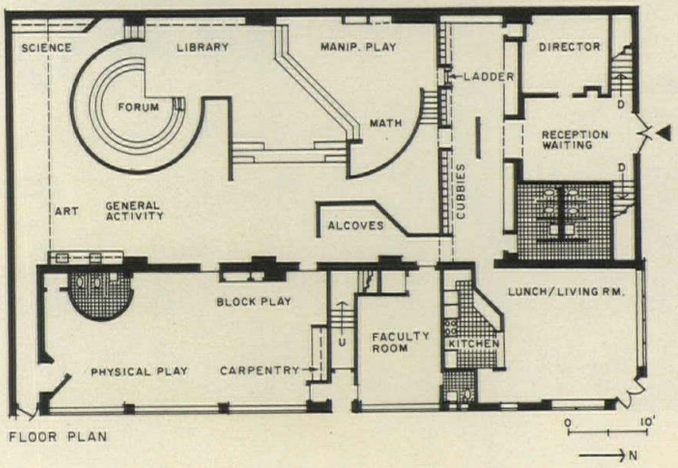
The Block School

The Block School, funded by the Federal Government, was designed for the New York City Board of Education as an experimental neighborhood center for enriching the disadvantaged child's educational, cultural and social experiences before he reaches school age. This is important, the director says, in order to eliminate the discontinuities that exist between home and school.

In renovating space in an old synagogue, the architects have stayed away from the flat-floor, flat-ceilinged sameness that pervades much educational design today. Instead, they have designed an environment that acknowledges the child's natural responsiveness to his surroundings and that reflects, in the child's own terms, a basic respect for the child. This was accomplished by designing a variety of "environmental attitudes," which range from group activity areas where the

The Block School is in an old synagogue in Brooklyn that was renovated, through acknowledging the child's natural response to his environment, to become an experimental neighborhood center devoted to enriching the disadvantaged child's experiences before he reaches school age.

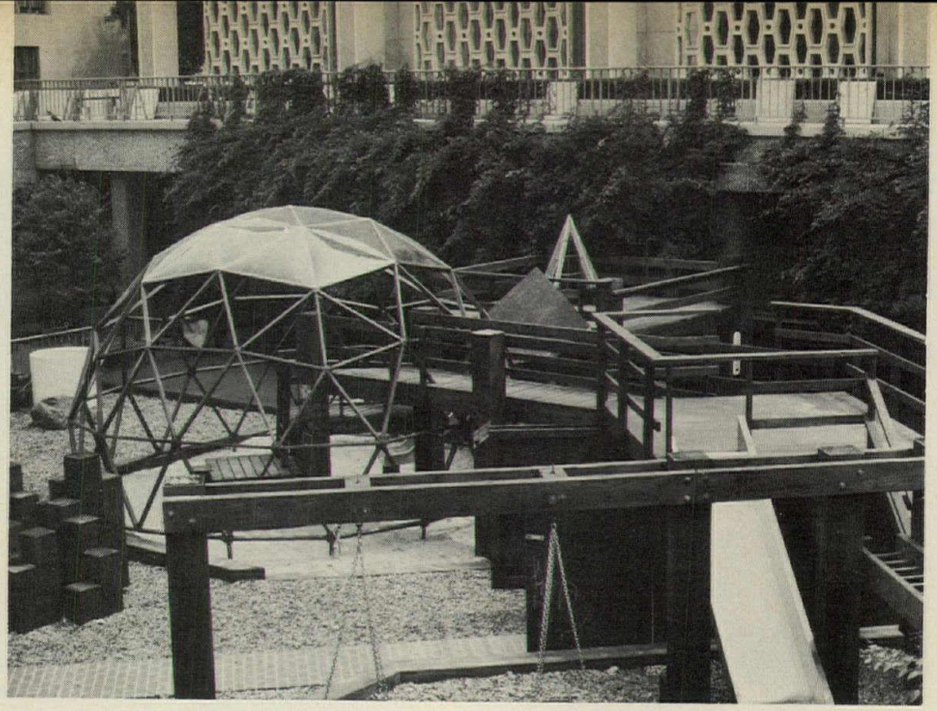


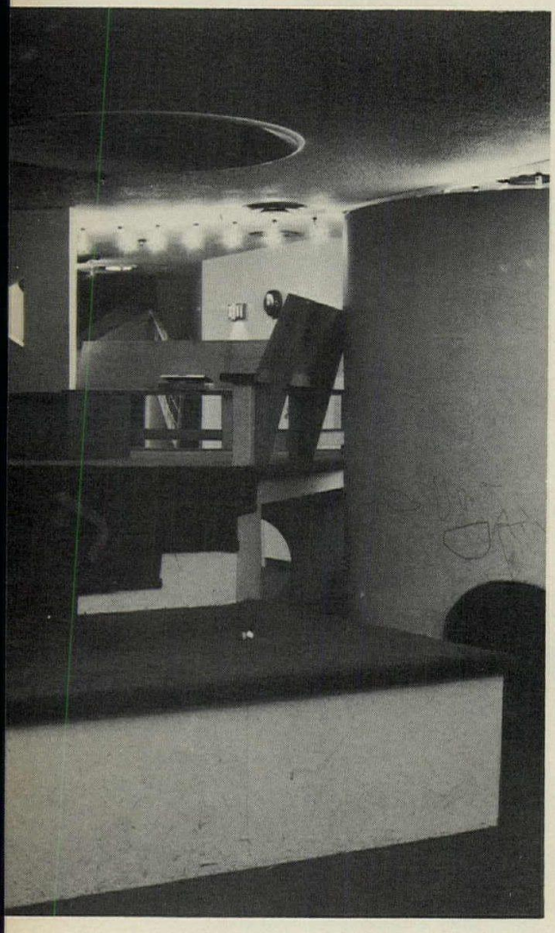


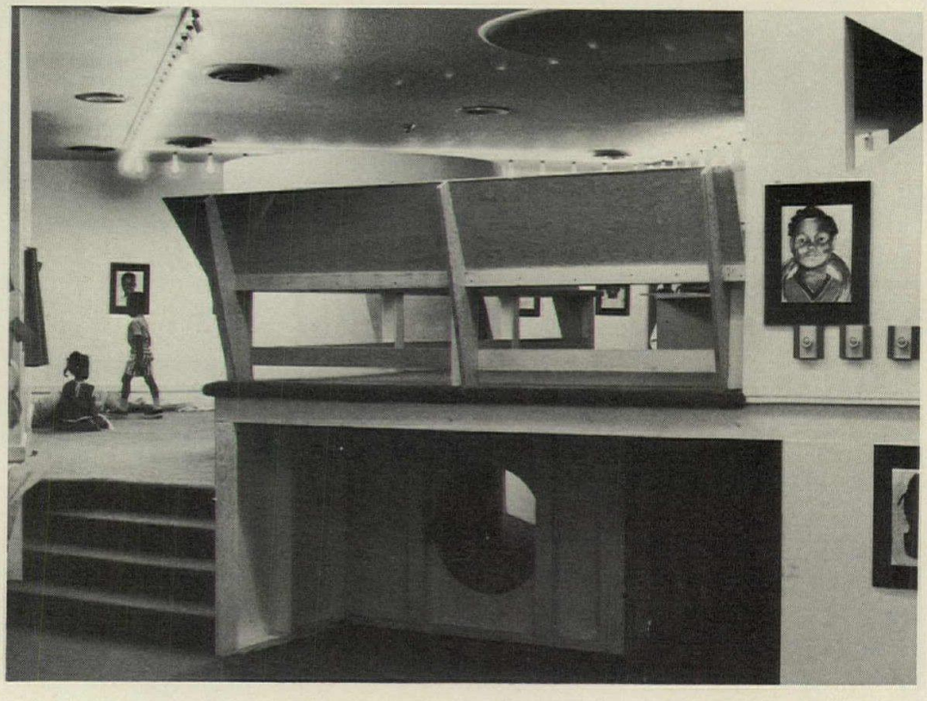
FLOOR PLAN

Data

Project: The Block School, Brooklyn, N.Y.
Architect: Hammel Green & Abrahamson; Ronald W. Haase, partner in charge; Clark H. Neuringer, project designer.
Program: a low cost, experimental neighborhood center designed to enrich the preschoolers' educational, cultural and social experiences.
Site: a vacant synagogue in an urban, rapidly changing residential neighborhood.
Structure and materials: carpeted wood platforms and low plasterboard partitions, simple furniture made of reinforced cardboard.
Costs: $75,000 complete, $12.50 per sq ft.
Consultants: Hannaham & Johnston, mechanical; Susan McLaughlin, color consultant.
Photography: Sharon Lee Ryder.







The Office of Education Day Care Center in Washington, D.C. was purposely designed on a tight budget so that it could realistically serve as a model for others to follow as the force of working mothers continues to climb.

ceiling stretches high above and the tiled floors echo the slap of running feet, to quiet, carpeted, tuck-away alcoves for the child to hide or to be alone, or where he can share a new discovery with a teacher or a friend. These areas are not separated by confining walls, but by variations in lighting, floor level and ceiling height; movement from one area to another becomes an enriching and exciting experience, or sometimes a daring adventure. Carpeted wood platforms and low plasterboard partitions are used to define different areas, and most of the simple furniture pieces are made of reinforced cardboard. Brightly painted found objects and bold graphics add to the rich environment.

In its design phase, which was partially funded through a grant from EFL, the Block School was developed cooperatively with the school staff. Basic construction was done by the building owner in a lease-back arrangement, but much of the alteration work was done by parents and volunteers.

U.S. Office of Education Day Care Center

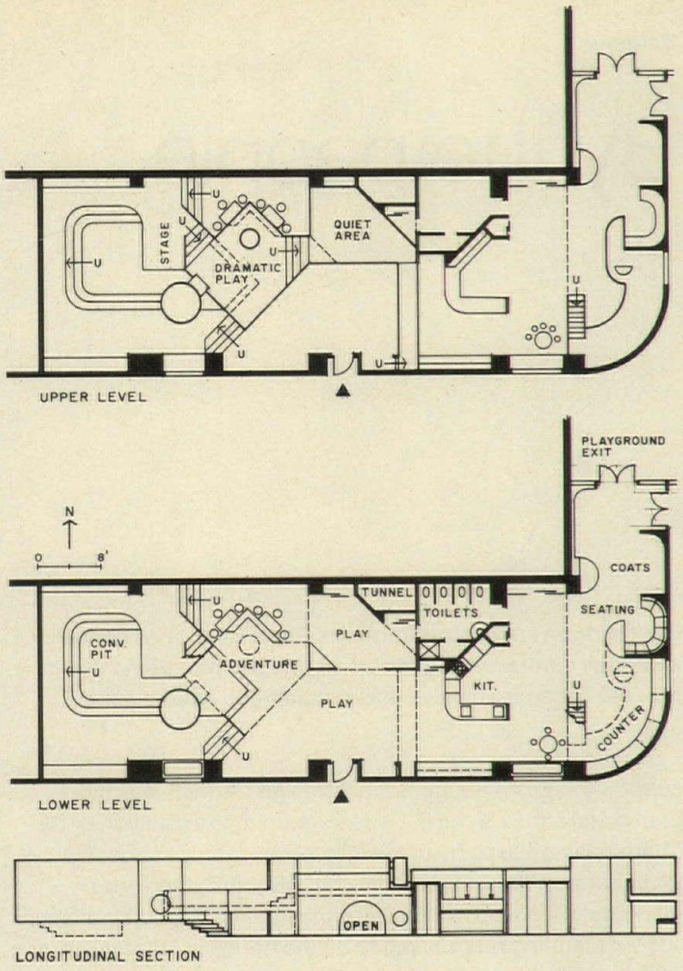
Most of the 36,000 day care centers now in operation throughout the country have sprung into existence during the past few years as stop-gap places to care for children of the growing number of working mothers who neither have nor can afford other places to keep their children during the working day. Usually, little attention has been paid to their design, or to the needs of the 640,000 children who spend 8 to 10 hours a day in them.

With the present work force of 4.2 million working mothers expected to climb to 6.6 million during the next 15 years, the federal government is now attempting to legislate for the funding of the new day care centers that will be needed. As another facet of the government's commitment to and involvement in the program, the Office of Education has now installed, in its headquarters in Washington, a model day care center that will serve as a national showcase example for local governments and private organizations to follow.

When the Office of Education contacted the architects to design a working model day care center for 50 of their employees' children, they had no budget set. The architects' first suggestion was to set a budget that would be realistic so that the center could really serve as an example for others to follow. With that established, and with the full cooperation of the federal government, the project moved from inception to completion in only six months.

Using the executive dining room, which is relatively small for the number of children who would be using it, but which was the only space available, the architects created a multilayered scheme that allowed them to increase the actual square footage. Here, they followed some of the same principles worked out earlier in the Block School. A series of platforms ascends from the existing floor level in 2-ft increments, providing a rich mixture of child-scaled spaces both above and below. A large, central, vertical tube that is carpeted on the inside allows circulation to and from the various platforms. The platforms are framed in wood joists, covered with plywood and then carpeted. Walls are constructed of wood studs and plasterboard, and occasionally plywood panels with playful forms cut out of them are used to define spaces.

Due to the small space and complex forms, the interior was conceived as a shell to enclose the newly generated forms: all wall and ceiling surfaces were painted white, while the undulating floor, carpeted in olive green and rich rust, generates the major color impact. The architects hope that the children who use the center will not resist the white walls for very long, and that they will make their own graphic contributions.



In order to gain direct access to an adjacent sunken plaza that was also turned over to the center, the architects had to convince the Office of Education to give them a little more space out of the employees' cafeteria. They got the space, and were able to create an outdoor playscape that incorporates many of the ideas of discovery-learning found on the inside. As in the Block School, design was partially financed through a grant from EFL. [DM]

Data

Project: U. S. Office of Education Day Care Center, Washington, D. C.
Architect: Hammel Green and Abrahamson; Ronald W. Haase, partner in charge; Clark H. Neuringer, project designer.
Program: a working, demonstration day care center to serve as an example for others to follow, as part of the federal government day care program.
Site: Federal Office Building No. 6, Office of Education, Washington, D.C.
Structure and materials: wood studs and plasterboard for walls, platforms framed in wood joists and covered with plywood, carpeted. Circulation tube framed in wood with skin of tempered hardboard, carpeted inside.
Costs: $125,000, interior and playground, $18 per sq ft.
Photography: Clark H. Neuringer.

By the people

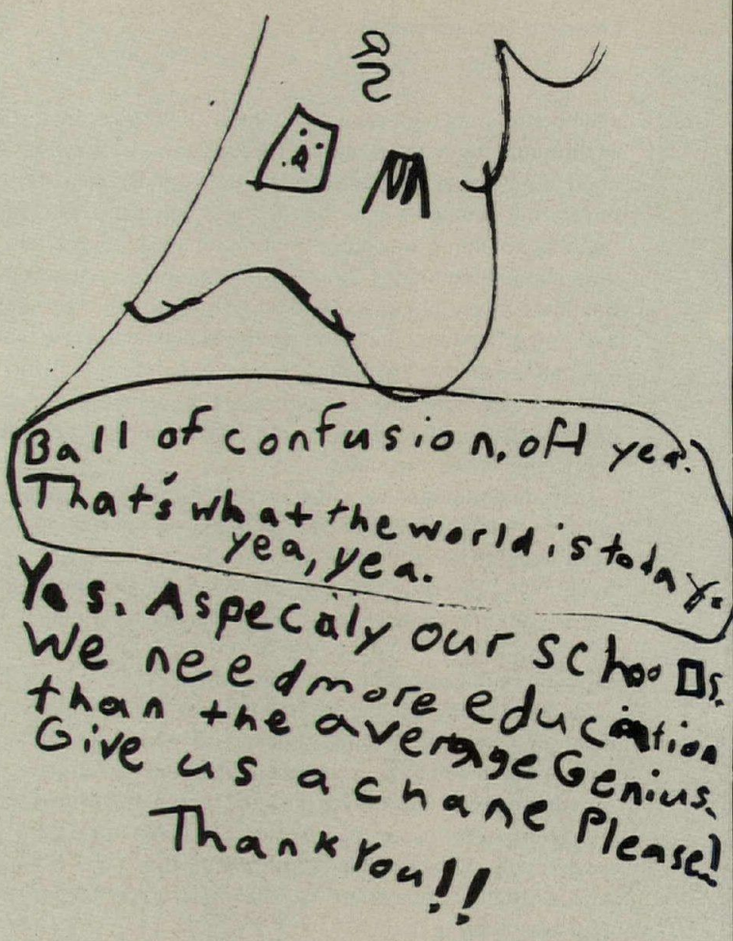
Operating a rented storefront with an open door, architects establish community action as an integral part of the design process for an innovative and sympathetic middle school

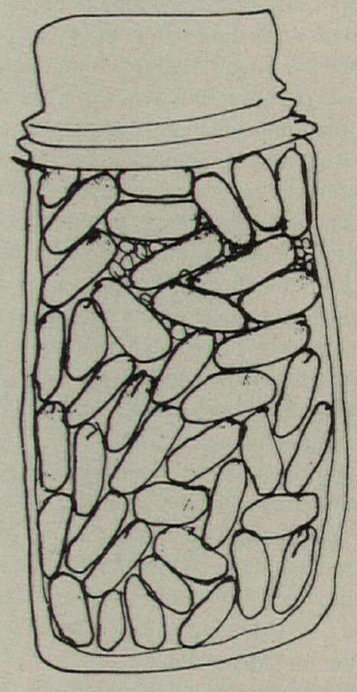
EOSDC—the East Orange School Design Center—was more than a storefront. Even if it was a return to the tradition of the "barn raising" aspects of town involvement, as suggested by an editorial in the East Orange (N.J.) Record, there was a marked difference. The concept of community participation in school planning has ceased to be the norm, or at least has been transformed into another, less constructive activity of the let-George-do-it-then-we'll-complain variety. Only after the fact do concerned citizens take part and wonder, usually with some justification, what is happening. That's the way the game rules have been evolved. The more recent insistence on citizen participation is still hardly more than the exception.

EOSDC, a rented mainstreet store with a "public welcome" policy, was established to develop EOMS (East Orange Middle School). "Alphabet soup" may be an expeditious way of identifying things. EOSDC was not an attempt to expedite the school planning process, unless, like Jules Gregory of Uniplan, the architect puts a premium on the participation of the community in its own projects. Uniplan, located in Princeton, set up the design center to confront directly the problems of school planning in another city, problems very familiar to most architects. Yet the goal was far more than an exercise in cold blooded problem solving. How do architects get a community involved, so that the resulting program and design respond to local inputs from the beginning of the process, not after the fact?

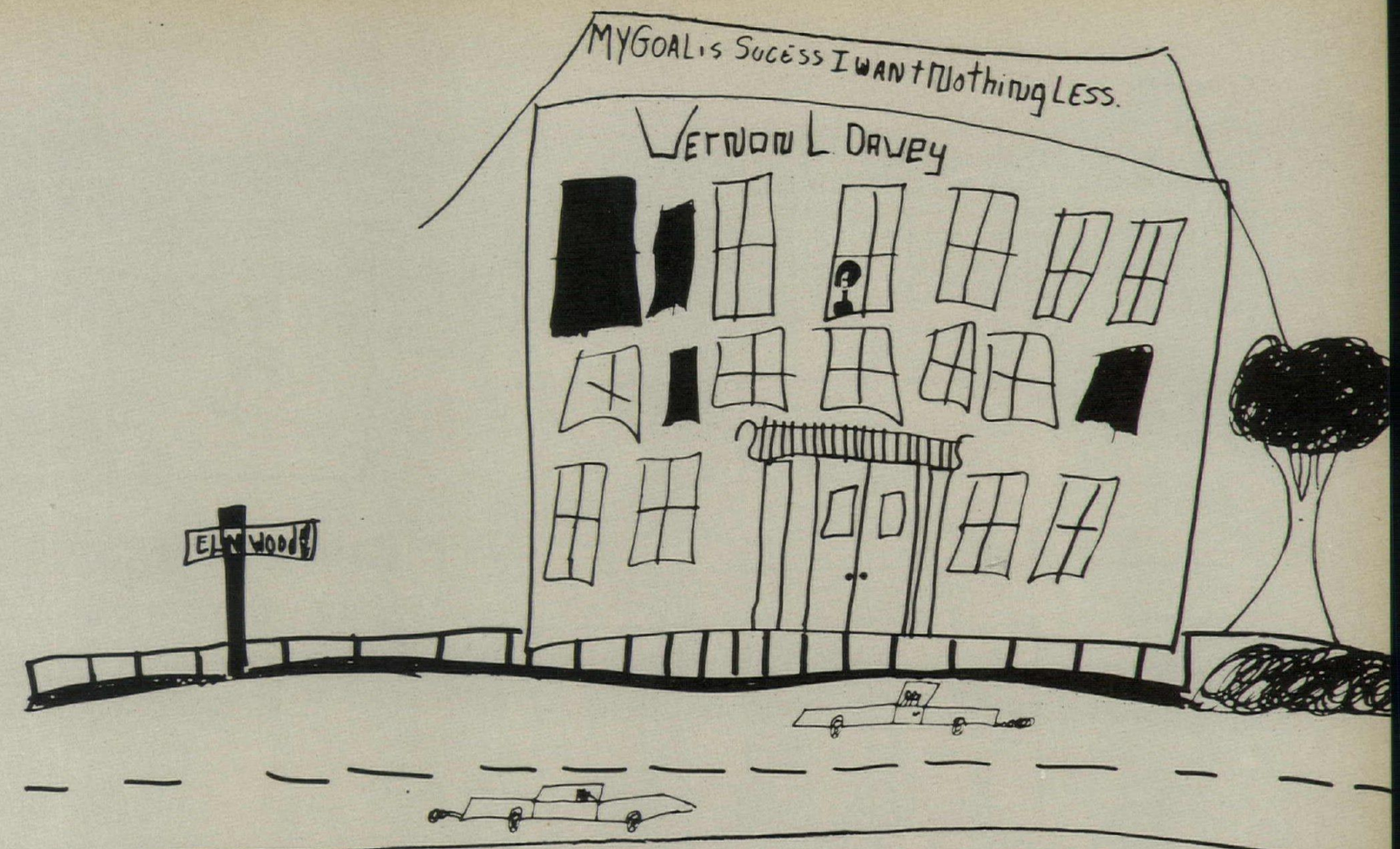
The process

In the summer of 1970, Uniplan decided that the accepted procedure from contract to written program to schematics (all passed somewhat impersonally from hand to hand) was inappropriate for East Orange, and maybe many other places. To provide the missing ingredient, involvement/communication, EOSDC was proposed, with EFL support. Beginning life in August with a public celebration, street closing and mayoral ribbon cutting, the center began its work. Knowing the importance of credibility in working with the community, Larry Goldblatt, the director of the center for Uniplan and an archi-





like a bottle of pink pills... they're all there, always touching, but never in the same way twice.



A SCHOOL IS A PLACE FOR EVERYONE to have A CHANCE to be Educated

by W CAUSEY

Have Karate, Judo and Guns for Lessons
Scott Vernon and Snanley

Put school under ground

a roller coaster on

rollercoaster

WELCOME

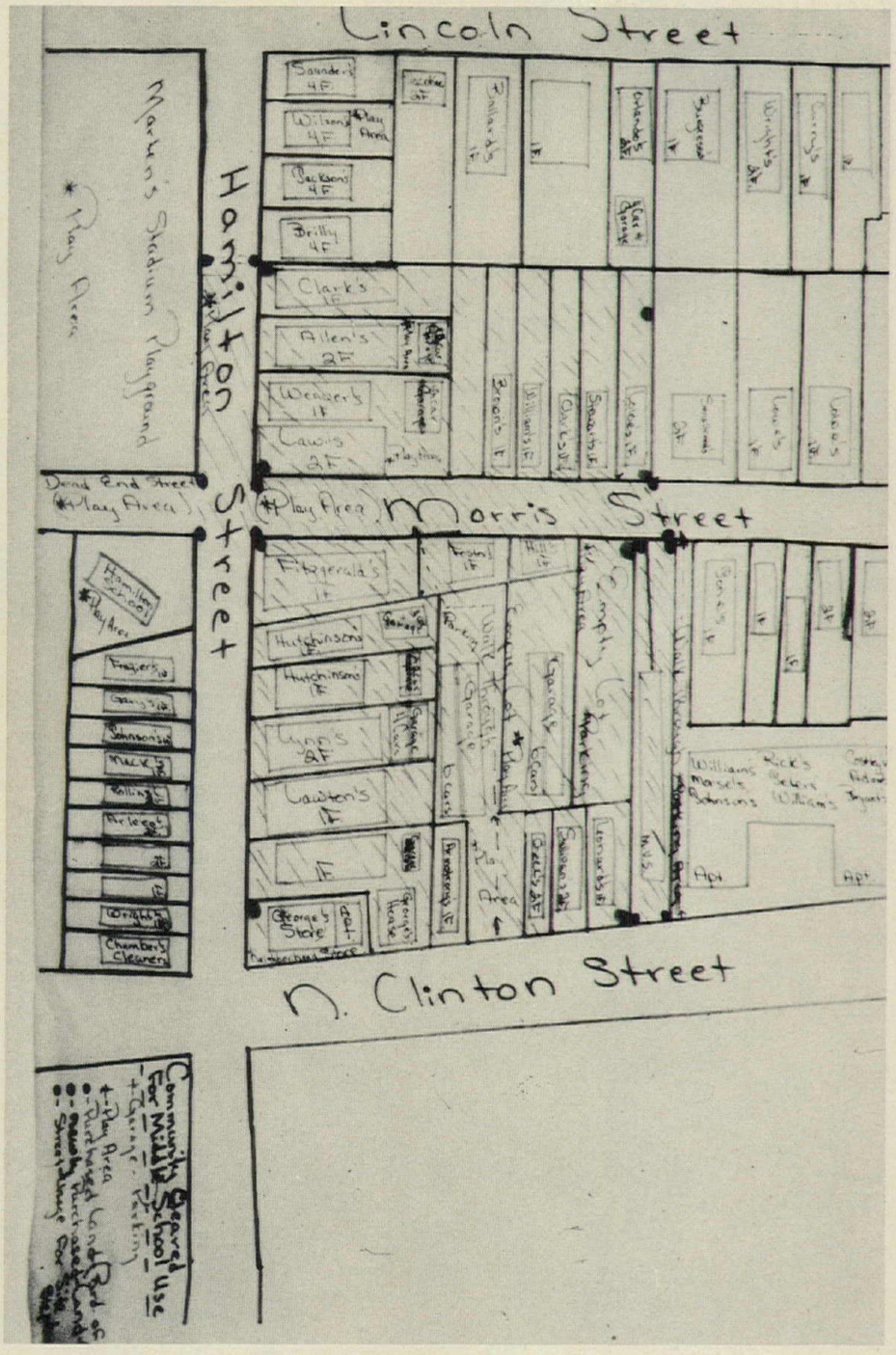
O'Neal

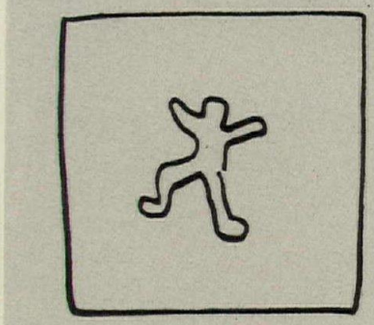
a Man teacher in all of my classes.

Could we have the Jackson five in School and class

can we have a hatha day every day

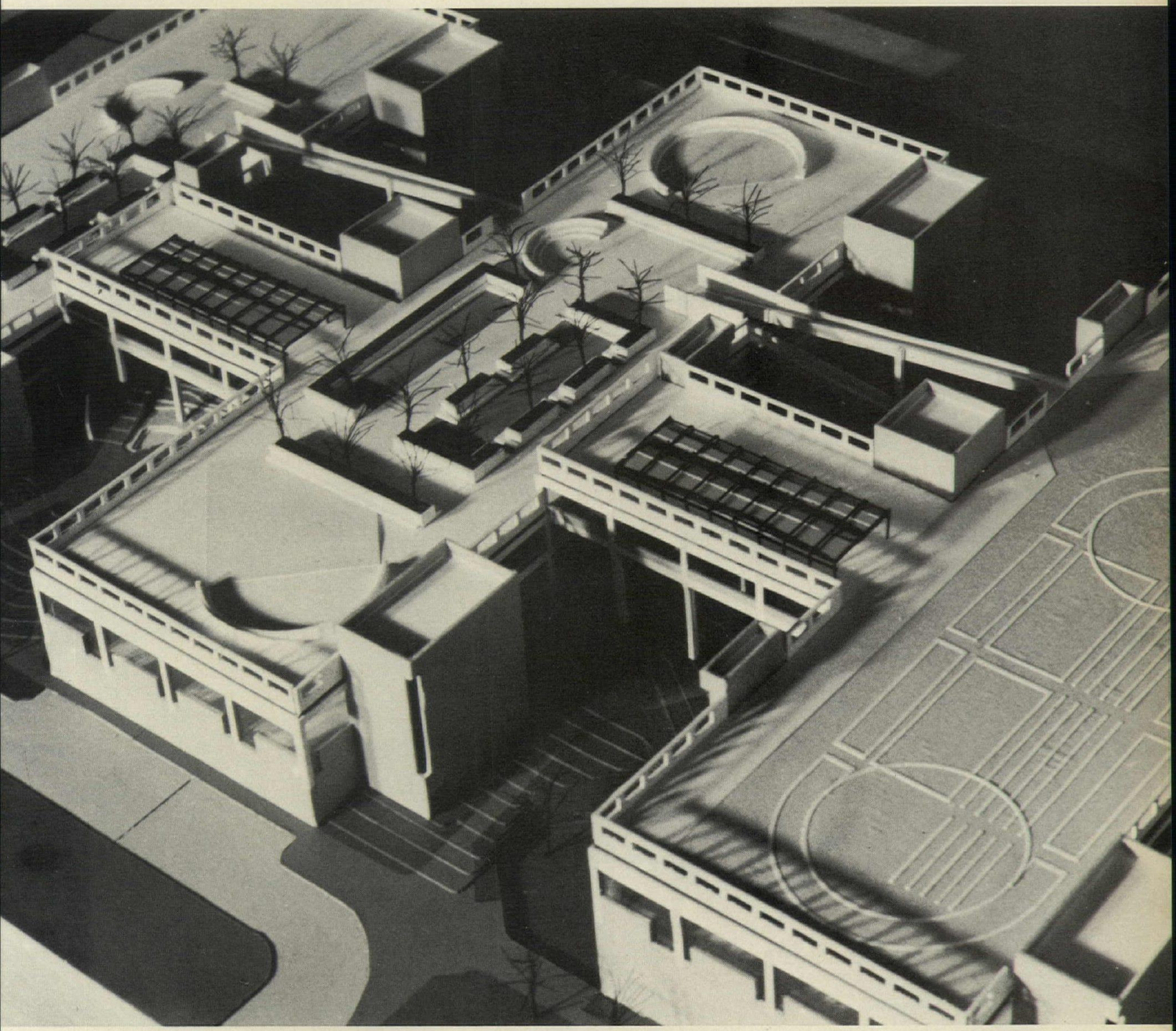
The scheme shown on the following pages, expressions from art classes and the school design center show the variety of interests. The "welcome" sign, done by a student at the EOSDC (above), was signed by its creator, at the urging of staff personnel at the design center.





CHALLENGE THE BODY IN SPACE

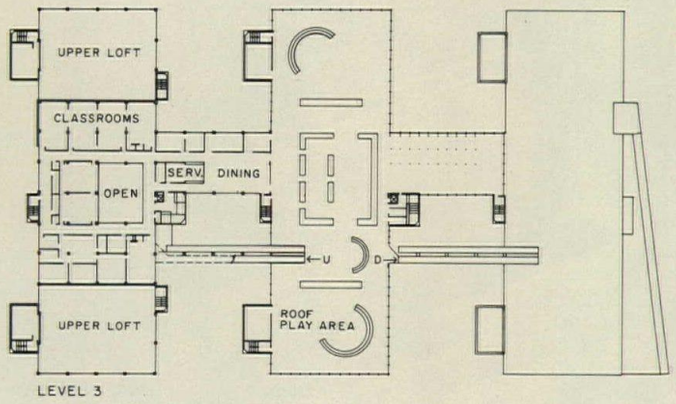
Existing site conditions (below) and neighborhood land uses were studied and mapped by EOSDC staff and community aides like Stephanie Wilson, who drew and identified the use map shown (left). Goals of the process were identified and sketched (above) as they evolved.



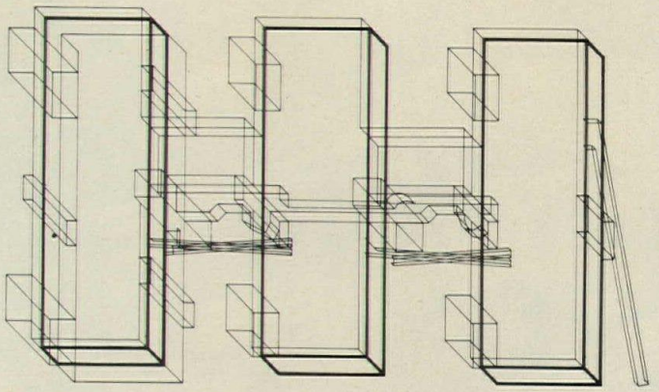
tectural student at North Carolina State, took an apartment near the center. (Goldblatt was later given academic credits for his work at the center.) Together with Stephanie Wilson and Larry Goldstone, professional aides from the community, Goldblatt put together information about the community.

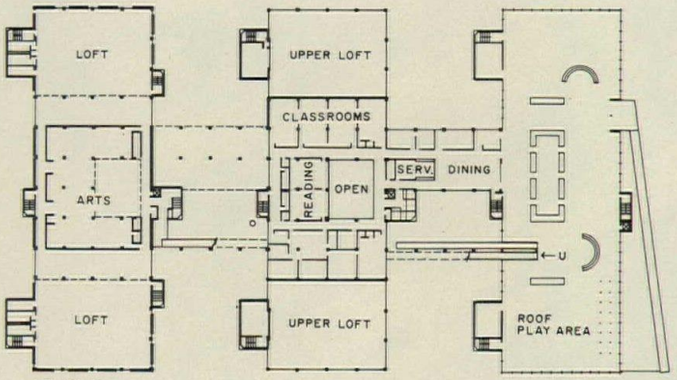
EOSDC began with facts that the population of East Orange is about 50 percent black, but that, due to age distribution figures, the school population is 90 percent black. It also found that the majority of the constituents in the area were in the lower middle economic range, did not live in areas which could be labeled "ghetto," and had a very intense interest in being involved in planning their school. The center was officially open between the hours of 9 and 5, but many nights, 5 p.m. stretched to 10 or 11 p.m. The Uniplan team identified a list of 30 community organizations, and often spent two or three nights a week giving slide presentations and talking to these groups. In the beginning, the architects gave their impressions of the East Orange region, inviting response to their visual and verbal reactions. As more graphic work was done at the center, the slide show was constantly updated and reshown.

Existing East Orange schools were invited to participate, and art teachers asked children to express what they thought a school should be. After school hours, students were wel-

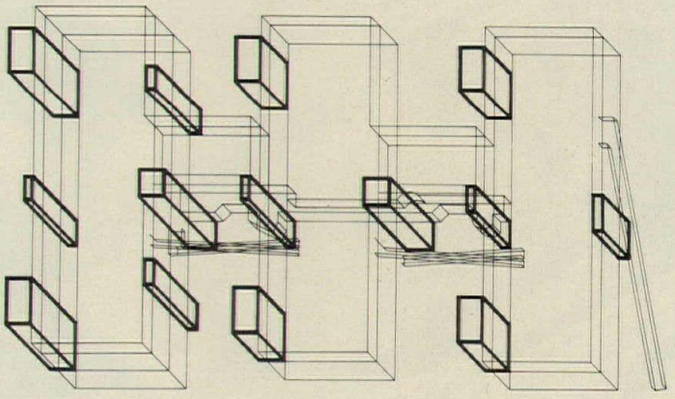


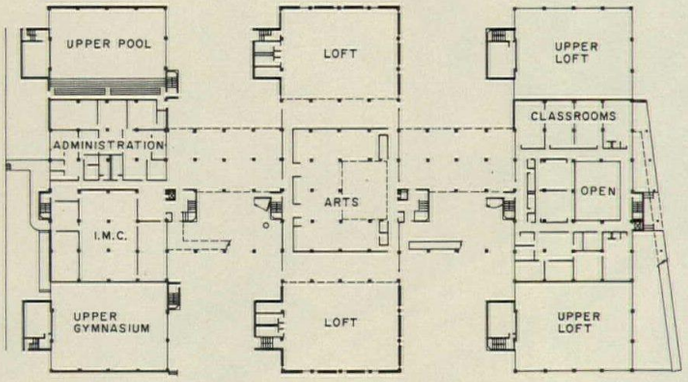
LEVEL 3


HOUSES

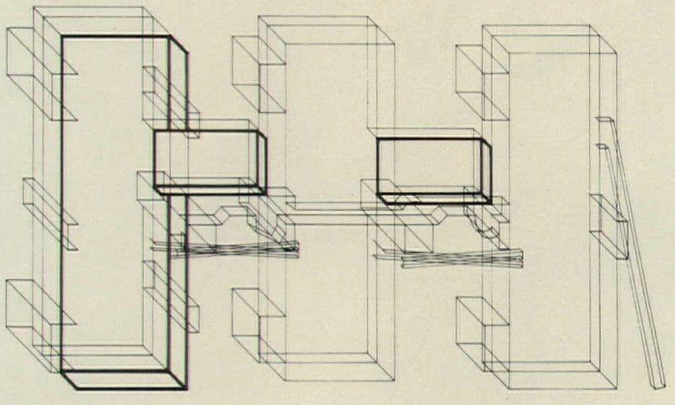


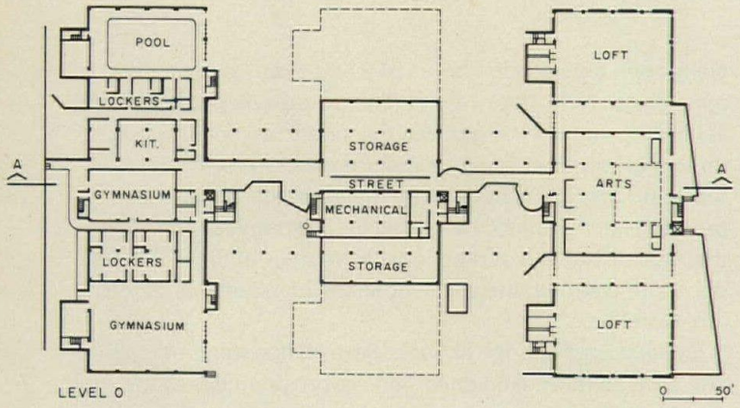
LEVEL 2


TOWERS

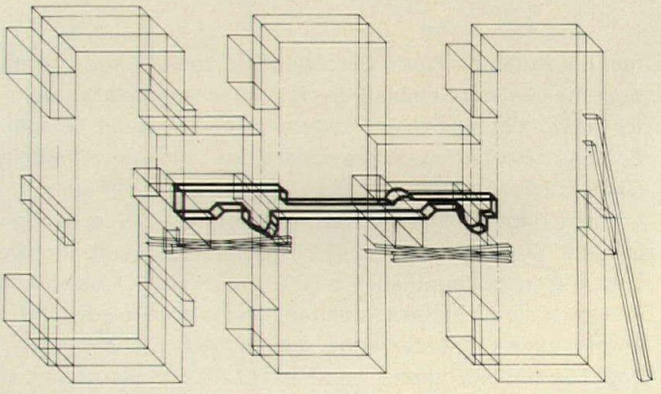


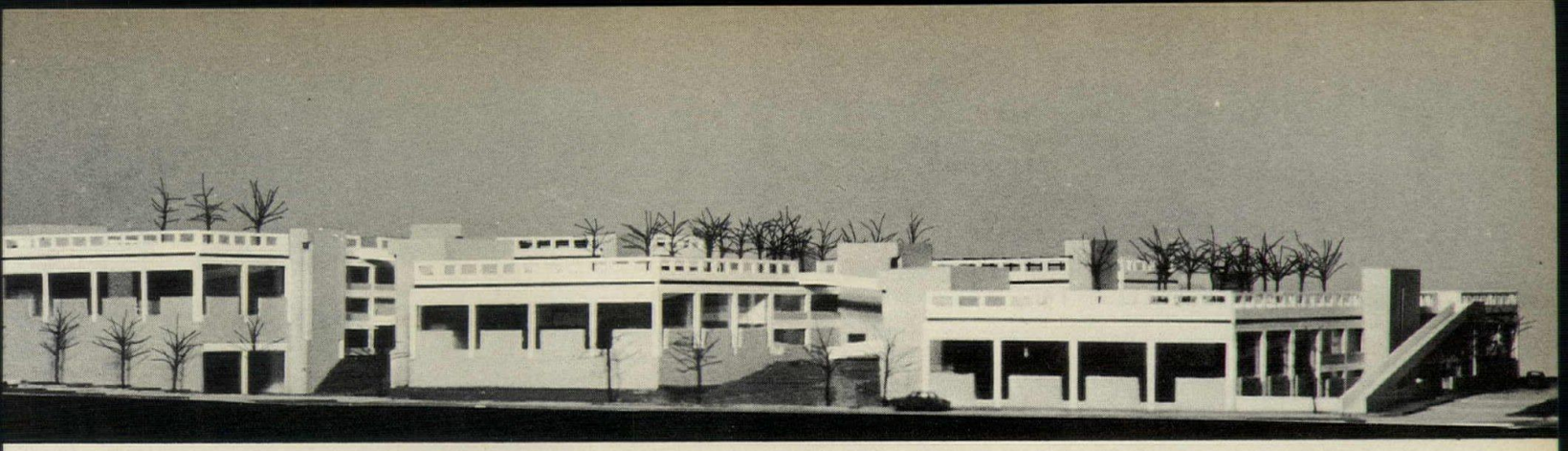
LEVEL 1

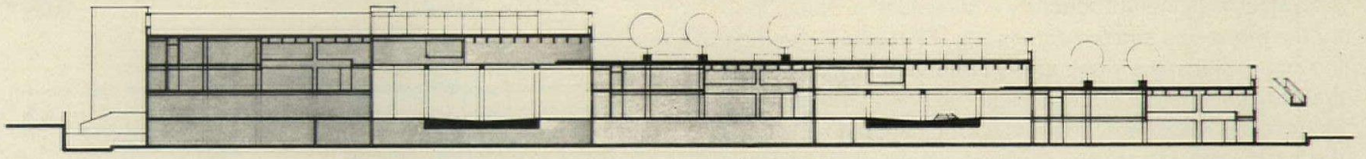

SHARED FACILITIES



LEVEL 0

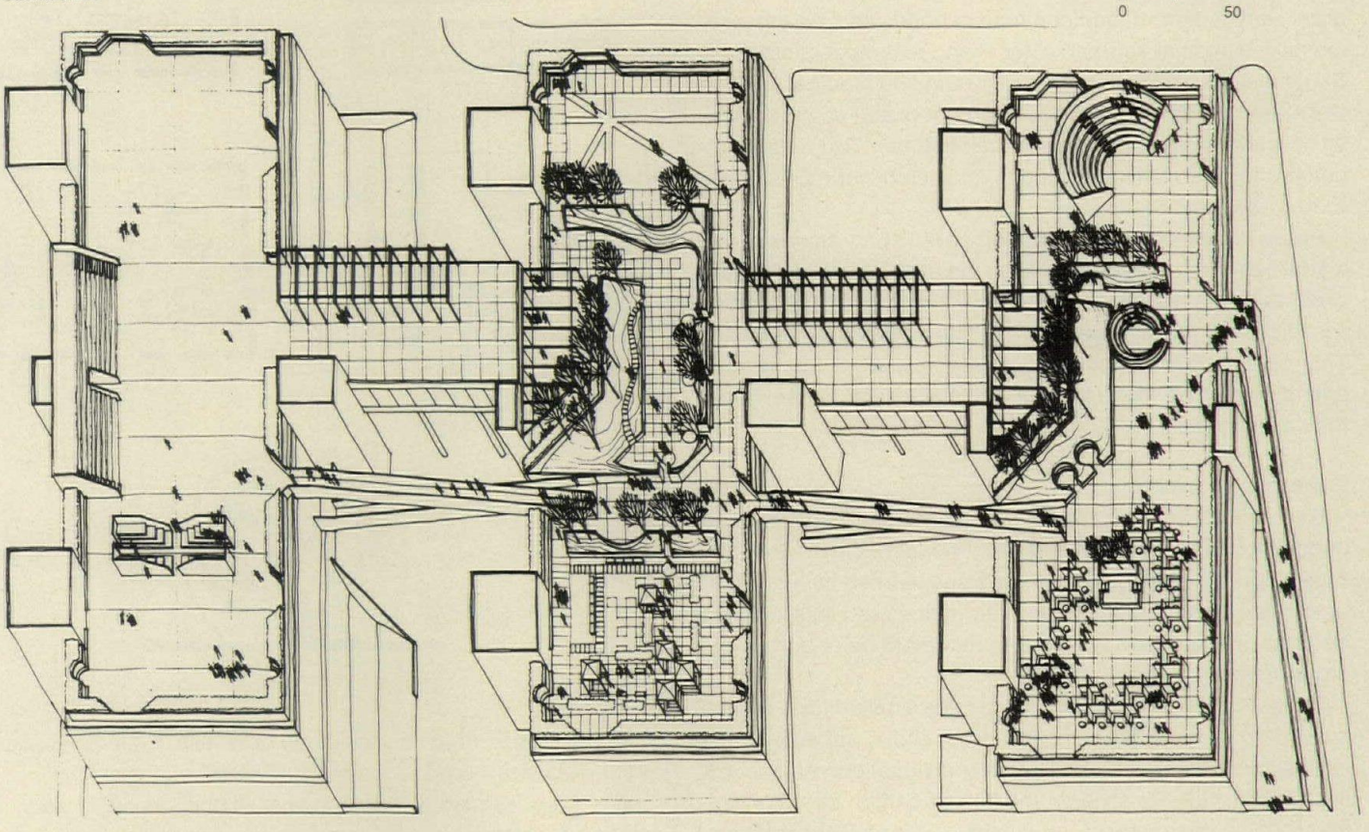

STREET

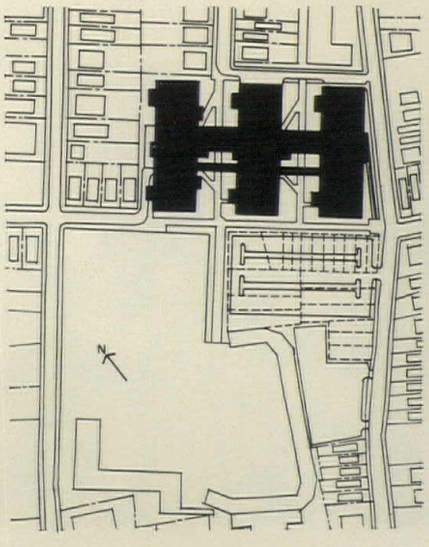




SECTION AA

0 50





Credits

Architects: Uniplan; Jules Gregory FAIA, partner-in-charge; Landon Proffitt AIA, project manager; Robert Hanle, PE, partner-in-charge of engineering; Charles M. Decker and John Ruble, designers; Larry Goldblatt, director of EOSDC.
Landscape architect: A.E. Bye and Associates.
Client: East Orange (N.J.) Board of Education, Russell A. Jackson, Jr., Superintendent; N.R. Young, Principal of the intermediate school; Maxine Koelling, coordinator for the administration.
Educational consultant: Dr. Cyril Sargent.
Professional aides from the community: Stephanie Wilson and Larry Goldstone.

come at the design center, and showed up in large numbers. Architectural suicide? Only if you don't like people "interfering" with the design process. Jules Gregory feels that any price paid for involvement was justified by the results.

With all the complexity implied by its participatory aspects, the process is difficult to condense into outline form. It can, however, be broken into several phases which, except for all of those inputs, are similar to traditional design methods. The first phase was the introductory and evaluative phase, both for the architects and the community. This phase produced the impressions, the views and counterviews and, finally, the credibility needed to go on. Phase two was a period for the expression of abstract thoughts about the needs (program), the goals (aspirations), the situation (constraints) and the implications (directions) of building functions. Pieces of the program were explored, and community hopes and ideals were measured against economic, legal and technical constraints. Since the gym, pool, library, auditorium and medical services were seen as joint-use facilities for school and community, more interest was generated in their solution. Students and community members made signs, built study models and generally expressed themselves.

Phases three and four produced seven study schemes, and a final scheme, respectively. As in the previous phases, ideas proposed by a housewife, a student, the cop on the beat or that nice little old lady were investigated while they looked on. This gave each the opportunity to see how architects work and to instantly understand the drawbacks and/or merits of their contribution.

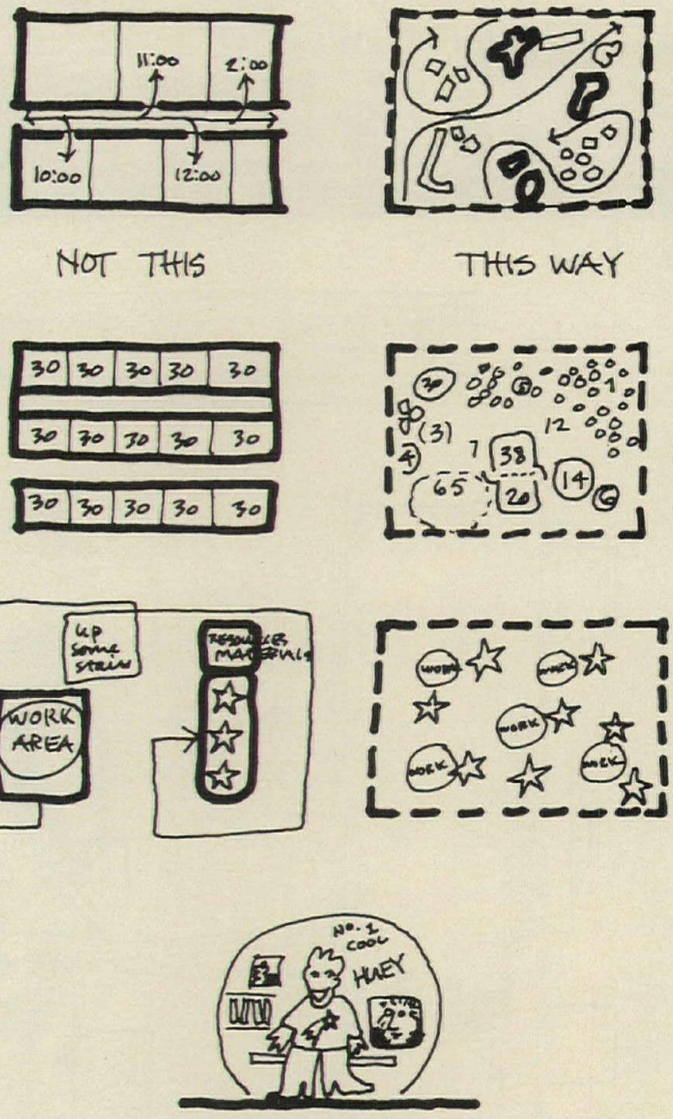
From the process

Sites in East Orange are not abundant. The site for the new middle school is a tract of less than four acres in an area of one- to four-family houses which is surrounded by high-rise apartment buildings. Some early schemes used less land, but became oppressive in scale when related to neighboring structures.

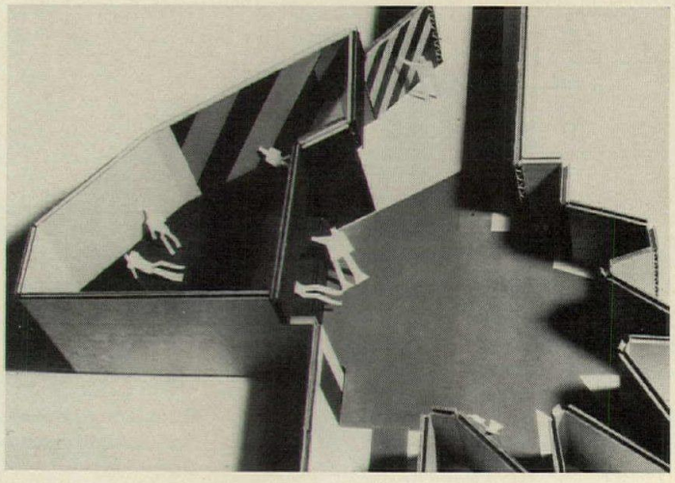
Educational specifications for the EOMS called for a capacity of 1800 pupils in grades six through eight, and emphasized educational principles which allow individual growth according to ability and life style. At the design center, direction was gained from the desire of the community for a close relationship between learning areas and the outdoors. If the entire site was covered with building, this would be difficult. It also became evident that students would converge on the school from all directions, and a ceremonial "main entrance" would be of use to only one approach. Gymnasium, pool and central library must also serve the entire community.

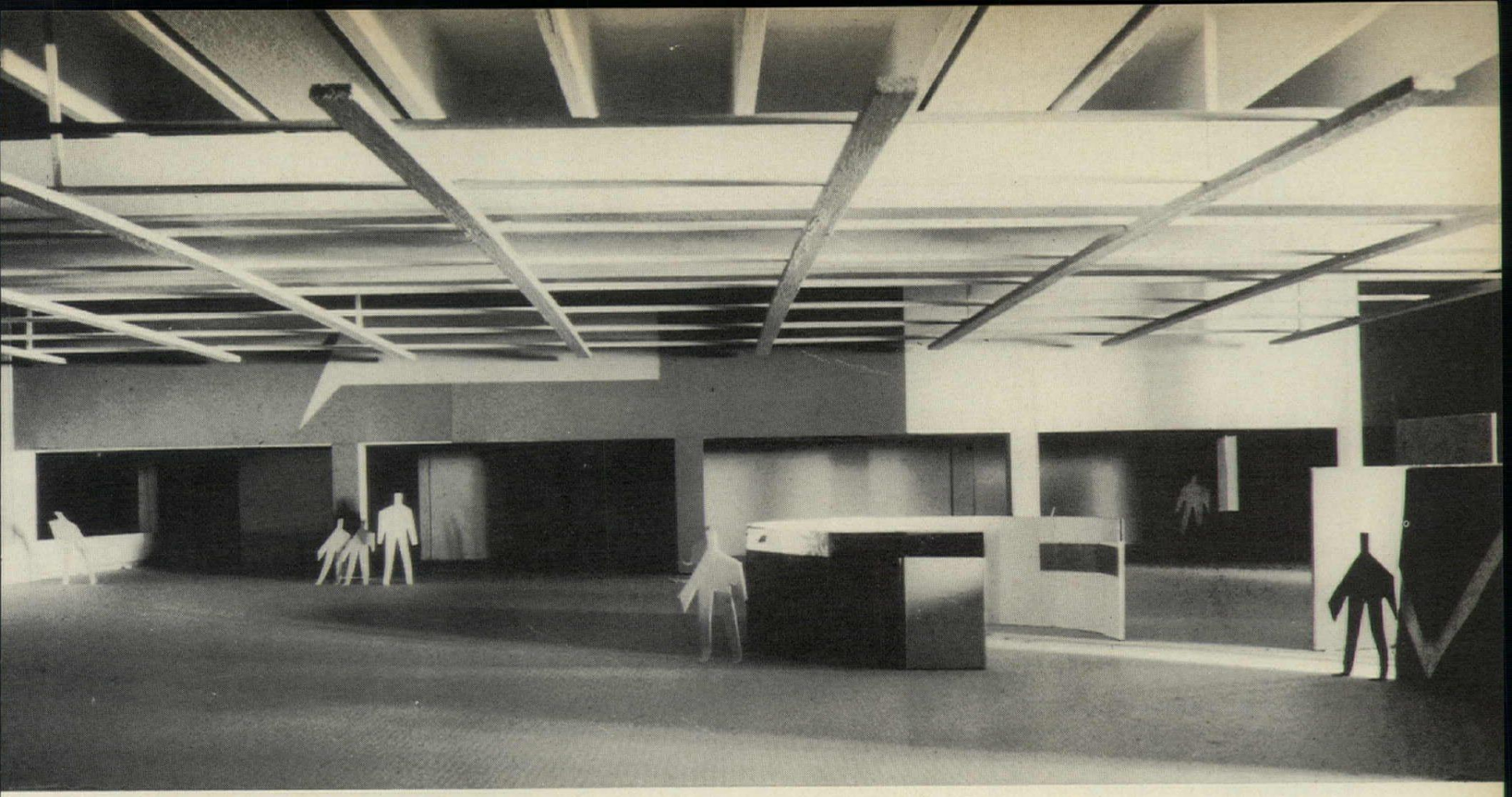
The restriction of site size posed two problems. It would have been practically impossible to accommodate the necessary playground area, and just as difficult to provide parking for 150 cars. Schemes for underground parking proved too expensive and had to be abandoned, with recommendations that additional land be found for automobile storage. After considering scale and ground coverage, the architects proposed that the entire roof be used for play space.

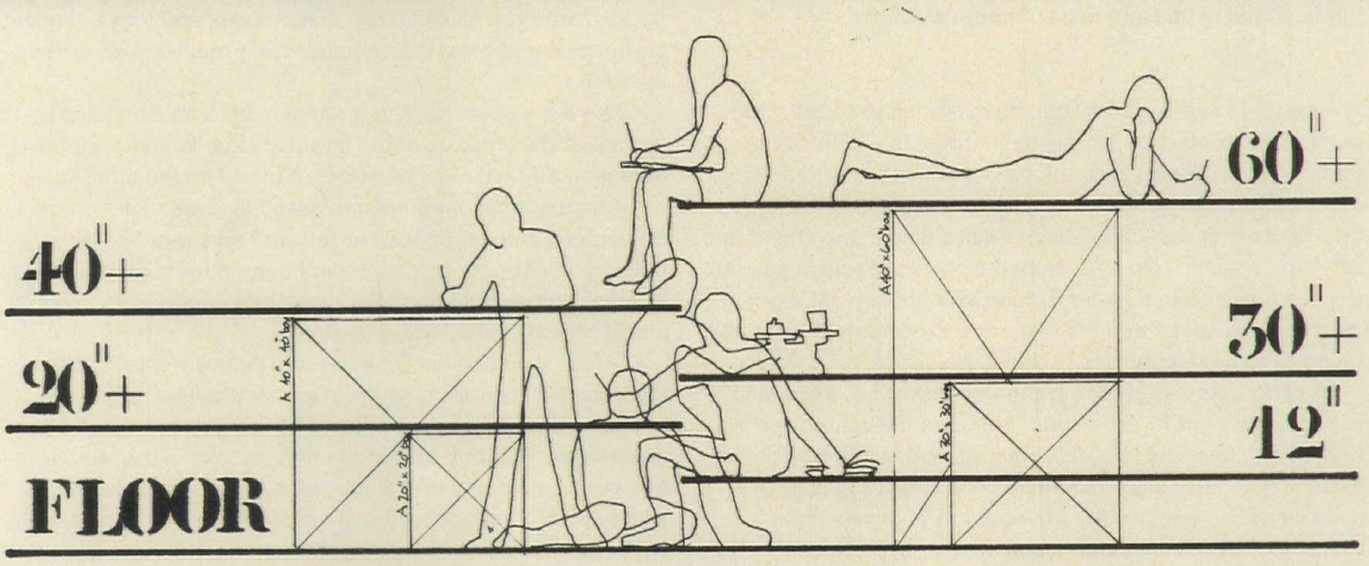
Academically, students have been grouped into 300-pupil family units, with these units paired to form a house. Each family unit operates almost as an independent school, but



Conceived as an on-going design process, use of interior spaces is to emphasize individual learning. "Events" punctuate the lower level street (below), and loft spaces (top, opposite). Also continuing (above, opposite) is an interior-furnishings study.







shares certain facilities within the house such as performing arts, homemaking, industrial and fine arts. For four years the intermediate school in East Orange has been operating on an individualized education program, emphasizing the learning ability and life pattern of each child. Continuing these concepts at EOMS, teachers will prepare individual learning packets for students to follow at their own rates. Formal classes will be replaced by weekly requirements, and students will be free to achieve those goals as their learning patterns dictate.

The physical plan of the final scheme is composed of three blocks, each containing a house. The upper levels of each house are identical, with high ceiling loft classroom areas of 10,000 sq ft for each family. A central block in each wing contains all shared (house) facilities. Wings are separated at the upper level by dining areas that open out to the adjacent roof space. At the lowest level, houses are connected by a "street" with a variety of configurations and spatial events along the way. All levels of the roof are designed for use as play areas for students and as a park for the community, with connections to the ground via ramps and stairs.

Uniplan, with an EFL grant, is also undertaking a study of furnishings, with emphasis on the design of objects which might have multiple uses and might be built by students or other interested community members. Since the loft spaces are meant to be manipulated by the students to correspond to their activities, the objects in the space will take on new importance. Work is continuing on this phase.

For all of the normal architectural descriptions, the success of EOMS and EOSDC must be measured in such intangible terms as "credibility," "community understanding," and other process-oriented words. The result will be less the traditional architectural monument, and more an architectural/community solution. In giving EOMS an award for the New Jersey AIA, Max Urbahn expressed jury concern that the elevations had not quite reached their architectural potential. Jules Gregory, allowed a reply, said that the elevations did not make the architecture, but that the kids and the activities of EOMS were counted on to complete the design. Few elevation changes have ensued, and the final design process will begin when the building is opened. [JM]

Building security: Part I

John L. Kmetzo, PE

Centralized monitoring and control of building environmental conditions were discussed by this author in the October 1970 issue of P/A. The concept of centralization is now applied to building security applications in this and in next month's column

The centralization concept can be extended to security functions which protect buildings, their contents and the occupants. The necessary technology is common to both environmental and security applications, with the exception of the final sensors or detecting devices discussed at the end of this column. In addition to detection, the other aspects of a building security system that merit close examination are the means of indication and the response to be made. These will be covered next month.

The effectiveness of, or even the necessity for, a building security system is highly dependent upon the manpower, operating and threat-versus-risk environment within which it is to be used. These aspects should be examined closely at an early stage, before they are obscured by involved considerations of the many features and options associated with security equipment now on the market.

Building owners and managers are traditionally fond of looking at things from a "dollars and cents" point of view. Aside from the obligation to fulfill local code requirements and potential reductions in insurance rates, any significant investment in a security system usually cannot be justified by simple demonstrations that "in X number of years we will have recovered our investment by reduced operating costs."

The overall purposes of a security system are to prevent damage to the building or disruption of its operations, losses to owner and/or tenant property, and physical harm to the occupants. For a building security system to be necessary, then, there must be a credible threat to those things which it is to protect.

The type of building, tenants and contents should first be defined, as well as their degree of exposure to visitors and the general public. Then an estimate should be made of their vulnerability to different types of threat: burglary and theft, arson and vandalism, assault and robbery, civil disturbances, industrial and commercial espionage, etc. In existing buildings, of course, estimates may not be necessary if the addition of a security system is dictated by an unfortunate history.

Building owners and managers must analyze their needs for a security system and this is often done in conjunction with a security consultant who may or may not be an engineer. He can offer advice based upon interviews with owner/tenant personnel, on-site surveys and experiences of his other clients.

At this point if the consultant is not an engineer, the engineer begins to enter into the consultations with information enabling the parties to balance technology-oriented security against other methods such as increased guard staffing or simply closing off and locking sections of the building at night. His services at this point would consist of surveys of equipment available on the market and development of alternate budget prices. Once a configuration is decided upon the engineer follows through with equipment specifications and contract drawings, evaluation of technical proposals submitted by equipment manufacturers and coordination of the installation of security equipment with overall planning.

Ideally, the owner/tenant should be represented in his relations with the other parties by a single employee who has been assigned overall responsibility for security in the completed building. When necessary, the architect should be prepared to enforce discipline so that this representative, the security consultant and the engineer can proceed in an orderly manner.

When the studies have determined vulnerable building locations and the nature of the threat at each location, suitable detection devices must be selected based on the most easily detected physical phenomenon associated with each threat. Selection is also influenced by intruder time requirements, building construction and ambient conditions such as weather and audible and electrical noise capable of interfering with the detector's operation.

There is a wide variety of detectors on the market and the following list is far from comprehensive. Devices requiring manual activation include fire pull boxes and combined fire, emergency reporting and watchman stations incorporating two-way voice communication capability. Automatically activated devices include heat and smoke detectors, door alarms, perimeter and area intrusion and motion detection alarms and disturbance alarms on selected objects. Closed circuit television usually requires participation by a remote observer.

Finally, it should not be forgotten that one of the best methods of detection is the properly motivated and instructed building employee or tenant alert to suspicious behavior.

Author: John L. Kmetzo, PE, is a Senior Engineer with Syska & Hennessy, Inc., Consulting Engineers, New York City.

You can build a better school on Bigelow carpet.

If you include Bigelow at the drawing board stage, more architectural innovations are possible. Bigelow carpet keeps rooms warmer when it's cold, cooler when it's hot; and reduces glare. That means you can be more innovative when it comes to things like windows and lighting.

And because Bigelow carpet absorbs noise, you can keep soundproofing at a minimum, make walls lighter. In some areas you can eliminate walls altogether in favor of open spaces. You save over the cost of maintenance of hard-surface floors, too.

Specify Bigelow, and a staff of top field specialists, engineers and designers is at your command. You choose from carpet manufactured under 57 trend-setting patents, in an almost endless variety of grades, patterns, colors, and fibers such as Bigelow Approved olefin by Herculon.* We'll even custom-make carpet to your specifications.

In the drawing board stage? Now's the time to specify Bigelow carpet. For more information, send in the coupon.

*Registered Trademark of Hercules, Inc. for its olefin fiber.

PEOPLE WHO KNOW BUY Bigelow RUGS & CARPETS SINCE 1825 ®

PA-2

Bigelow-Sanford, Inc. Dept. A
140 Madison Avenue New York, N.Y. 10016

Please send me your booklet on how to build a better school on Bigelow Carpet.

NAME _____

TITLE _____

FIRM _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

On Reader Service Card, circle no. 345

Canadian Building Digests

Harold J. Rosen, PE, FCSI

Descriptions of the many varied areas of building research to be found in the Canadian Building Digests are presented in this article, covering information that is basic and useful to the specifier in the appraisal and selection of materials for construction

The Canadian Building Digests are an excellent source of information related to building technology. These monthly publications are issued by the Division of Building Research, National Research Council of Canada, Ottawa 7. The Division of Building Research is a governmental body somewhat analogous to the National Bureau of Standards.

The publications were begun in January 1960 and each monthly digest is restricted to one aspect of building research. Over 140 digests on various topics have been issued since the series began and copies are available from the Publications Section of the Division of Building Research.

Each digest generally concerns itself with the fundamental considerations of the topic under discussion. It sets forth basic principles, highlighting the areas of concern, pinpointing the problem areas and generally providing the reader with the kind of information that permits him to understand the problem more fundamentally so that he can cope with it more intelligently. The following compilation has been organized on the Uniform System:

Division 2—sitework: The subjects covered include soil types, soil properties, soil permeability, soil compaction, frost action, settlement, swelling and shrinking and soil testing. With this kind of information, the specifier is better able to understand soil mechanics and can prepare specifications for earthwork on a more technical basis. About nine digests are available on the subject of soils and fills.

Division 3—concrete: Under this heading there are several digests devoted to materials and properties of concrete, durability, curing, floor finishes and admixtures. In addition, several articles are devoted to precast concrete wall panels that deal primarily with the design of exterior walls.

Division 4—masonry: On the subject of masonry there are digests covering cavity wall design, efflorescence, rain penetration, insulation, cold weather construction and thermal performance of masonry walls in fires.

Division 5—wood: In this category, digests have been published dealing with basic characteristics of wood, wood properties, uses of wood in construction, decay of wood, and the design of wood roofs to prevent decay.

Division 7—moisture protection: In this broad based division, the digests deal with roofing materials and roof design, waterproofing materials and constructions, caulking, sealants and insulation. For roofs, the digests are also concerned with snow loads, suction, ventilation and wind pressures so that these considerations may be taken into account when roof systems are designed. In addition, the problem of water vapor and its control is the subject of several digests that are concerned with condensation, diffusion, air leakage and humidity control.

Division 8—doors and windows: Under this category which includes metal curtain walls and glazing there are numerous digests that cover the design of exterior walls using the rain screen principle or the pressure equalization approach; glazing with reflective type glass; the durability of insulating glass units; glass thicknesses based on wind loads; solar heat gain through glass walls; air leakage through windows; thermal breaks in windows.

Division 9—finishes: Most of the digests under this heading are concerned primarily with paints and special coatings dealing with fundamental properties of these materials and their application.

In addition to an exposition of building materials that may be grouped under the Uniform System, the Canadian Building Digests also discuss a number of subjects that are concerned with other technical areas: acoustics, building codes, fire safety, thermal performance, durability of materials.

Under the heading of acoustics are reports on noise transmission that deal with sound transmission through floor and wall construction in apartment buildings and office buildings; airborne noise and vibration problems in industrial plants; the physical properties of sound.

Under building codes are discussions related to design for fire, flame spread, provisions for the handicapped, snow loads and wind loads.

Under fire safety, the digests deal with compartmentation of buildings, using fire resistive materials to contain fires; smoke shafts to ventilate smoke from buildings; exits and escape routes; fire protection systems to insure fire safe buildings.

Under thermal performance, the digests discuss the design of insulation to regulate heat flow; the provision for water vapor barriers; the control of humidity.

Under durability of materials are several digests that deal with the weathering of materials due to external forces of water, sun, snow and ice; the chemical interaction of materials; the performance of organic building materials; and tests to determine the durability of organic materials used in building construction.

The Canadian Building Digests are informative, well written and documented treatises that provide basic and useful information for the specifier in the appraisal and selection of materials. They provide fundamental knowledge in all areas of building design and construction that offer a better insight into the behavior of materials and systems.

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

ARCHITECTS
Harrison, Abramovitz & Abbe

GENERAL CONTRACTOR
Turner Construction Company

MECHANICAL ENGINEERS
Jaros, Baum & Bolles

PLUMBING WHOLESALER
Amstan Supply Company

PLUMBING CONTRACTOR
Sauer, Inc.

FIXTURE MANUFACTURER
American Standard

Towering over Steel City...

"A Building for the 21st Century!"

A pace setting structure, extolled as "a building for the 21st Century," the new 64 story Pittsburgh, Pa. home of the United States Steel Corporation opens new vistas in architecture and engineering.

Rising 841 feet above its plaza, overlooking Pittsburgh's Golden Triangle, with office space of nearly two million square feet, this is truly a structure of innovation, a monument to the steel industry and to the Steel City itself.

Here, raw steel serves to provide a fireproof structure and its own protective finish. Sheathed in U. S. Steel's ULTIMET steel curtain walls and supported by water-filled outer columns of famous COR-TEN Steel, the building is not only self-protected, but weathers to a permanent coating of a beautiful russet brown.

Naturally, such novel and imaginative design is fully complemented by choice of only the finest components throughout. Thus the highest performance standards and new beauty of Sloan Flush Valves made their selection a matter of course. Dramatically restyled, with totally new contours, the new regal appearance of Sloan Flush Valves reflects the traditional quality that has sustained their leadership for over sixty years.

To be sure your building has the best in quality, with beauty unsurpassed, specify Sloan Flush Valves—most people do.

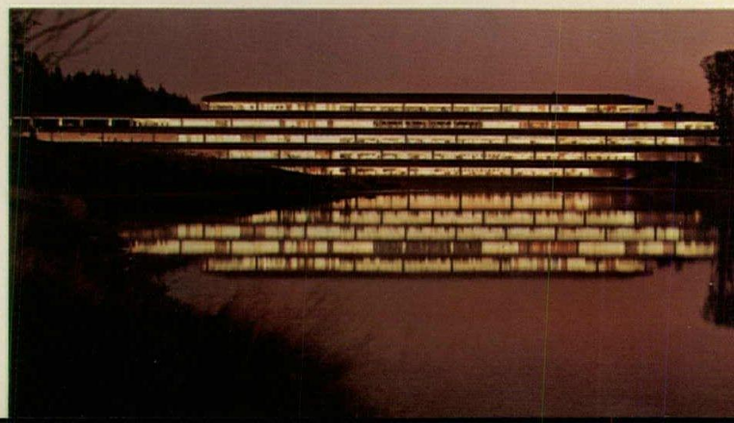
SLOAN VALVE COMPANY
10500 Seymour Ave. · Franklin Park, Ill. 60131

The Weyerhaeuser Building, Tacoma, Washington
Owner: Weyerhaeuser Company
Architects: Skidmore-Owings & Merrill, San Francisco
Glazing Contractor: Cobbledick-Kibbe Glass Company, San Francisco
General Contractor: Swinerton & Walberg, San Francisco

Clear, heavy-duty glass gives the new

Architects Skidmore-Owings & Merrill took a not-so-new product—clear glass—and gave it a new twist in the Weyerhaeuser Corporate Headquarters building. Result: long, uninterrupted expanses of glass that afford a magnificent view of the surrounding countryside.

Heavy-duty Parallel-O-Plate® is available in sizes



Weyerhaeuser Building a non-stop view.

up to 10′ x 25′. So we had no problem supplying the 12′ x 7′ lights called for here—in ½″ thickness.

With glass that thick, the architects were able to butt the vertical edges, seal them with ¼″ of silicone and eliminate mullions.

If you're planning a building, we're sure we can solve some problems for you, too. For openers, let us send you glass strength information so that you can design buildings with non-stop views. Simply contact your L-O-F Architectural Representative or Architectural Department, Libbey-Owens-Ford Company, Toledo, Ohio 43695.

Libbey-Owens-Ford

On Reader Service Card, circle no. 397

Talk of the towns

Planned Urban Environments: Sweden, Finland, Israel, The Netherlands, France
by Ann Louise Strong. Baltimore: Johns Hopkins Press, 1971. 406 pp. $20.

Reviewed by Dan Dimancescu, director of Cities, Inc. and coordinator of a comparative study of Tokyo, New York, London and Moscow.

My first pilgrimage to a "planned urban environment" was a number of years ago when I drove out of Washington, D.C. and found my way via highways and interchanges to Reston, Va. What I found was a pleasant little urban place, clean and optimistic. Yet even then as a neophyte cityphile charged with enthusiasm, the whole project seemed strangely out of context. It only scratched the surface.

But Reston has fueled many imaginations and in more recent years Columbia, Md., is stroking the fires of urban planning enthusiasts who see private enterprise moving ahead to rebuild America's sadly worn urban stock. It is no coincidence that in the wake of Reston and Columbia, the "new town" concept of planned urban development has caught fire nationally. If we can start in open fields, if we can get private enterprise into the act and if government can take the initiative to finance what private investors cannot afford, everyone will gain. This, at least, is part of the rationale that went into the recommendations of the Committee for a National Urban Growth Policy. In 1969, it proposed that America (Congress) move to build 110 new towns—100 with more than 100,000 population each and 10 with at least 1 million people each.

Ambitious, yes. Unsettling, yes. America which has never planned for urban development; America whose cities are decaying as fast as they are growing; America which has never had a national comprehensive urban policy, is being told that it is somehow ready to launch the biggest, most expensive, and most complex social and physical program in the history of the nation. The absence of humility in the recommendations of the Committee is astounding. It should have taken a harder, longer and more perceptive look at the experience of a number of other nations which have for several decades implemented urban strategies. The Committee might also have considered a less ambitious goal in favor of a more modest and perhaps more feasible alternative.

An insight into the experience of other nations and into feasible alternatives which have been implemented, is provided by a new book entitled *Planned Urban Environments: Sweden, Finland, Israel, The Netherlands, France.* It sells for a costly $20. Its author, Ann Louise Strong, a lawyer and professor of city planning at the University of Pennsylvania, believes that the climate for national planning is improving in the United States and that one can learn from the experience of a few European countries. "After studying planning in a number of European countries, as well as Israel, my conclusion is that there is a broad range of experience . . . transferable to the United States."

This idea is appealing. To achieve it in this book the author has chosen a descriptive technique. The text, divided into five parts for emphasis on each nation's experience, provides extensive documentation of planning laws, overall post-war programs for development, abundant numerical data (although not always useful for comparative purposes) and ample charts, maps and photographs. But the pattern of unraveling this mass of information varies with each country. Thus in the case of Finland, Mrs. Strong spends most of her enthusiasm and editoralizing on Tapiola, a privately developed town for 17,000 people which has already received wide publicity throughout the planning world. Tapiola, says the author, "is thought by many to be the most beautiful and most humane" of all new towns. Her analysis of how the idea germinated, evolved, was financed and planned is a sound and purposeful discussion which draws many threads of the process together. The discussion reaches no conclusion, however, of what in the Tapiola experience might be transferable to the United States.

In the case of France, the method of describing the mechanisms for planning varies from the Finnish example. Here Mrs. Strong completes a broad overview of French national planning, economic development and political frustrations. She then moves in for a closer look at a vast planning effort to create two resort complexes, one on the Atlantic coastline in the Languedoc region, the other on the Mediterranean coast between Marseille and Perpignan. The projects, billed as the largest resort complex ever constructed in the world (a point which might be contested by Rumanian and Bulgarian seacoast resort developments along the Black Sea) is a showcase for national government planning. Yet the author's choice of these projects offers little information to American planners of future urban environments and is almost totally out of context with what one might assume to be more appropriate French national priorities.

Earlier in her discussion of France, the author writes that the housing situation
[continued on page 112]

NEW I.B.E.W. OFFICE BUILDING located in Atlanta adjacent to the city's Sports Stadium.
Building owner: International Brotherhood Electrical Workers.
Architects-Engineers : Stevens & Wilkinson, Atlanta
General Contractor: H. W. Ivey Construction Company, Atlanta
Window-wall Fabricator: Southern GF Company, Atlanta

Another concrete example of

AllianceWall®

porcelain-on-steel compatibility

Striking color accent was achieved for Atlanta's new I.B.E.W. Building with AllianceWall porcelain-on-steel insulated panels. Specifically selected were AllianceWall earthen tone, matte finish, Terra Cal colors which combined perfectly with the pre-cast concrete to create a structure of unusual beauty and durability.

Today AllianceWall porcelain-on-steel panels are available in virtually any color giving imaginative architects a valuable new dimension in design. These remarkable panels require practically no maintenance. Their smooth, non-porous surface will not retain dirt, grease or stains. Colors stay bright and new looking without fading or appearing to age.

For complete information including specifications, check Sweet's File or write to: AllianceWall Corporation, P. O. Box 247, Alliance, Ohio 44601.
Now also manufactured in Europe - Alliance Europe N. V., P. O. Box 19, 3600 Genk, Belgium.

Details from the industry©

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.

Special service section

They ordered the elevator when they started to dig the hole

And Otis Elevator Company delivered it before the excavation was finished. That's because the elevator is an Otis pre-engineered model. Designed to fit standard shaftway sizes. You save time and money but still get the time-tested Otis quality.

We have 7 different standard hydraulic models for apartments, motels, shopping centers, suburban office buildings, hospitals . . . any type of building with up to five floors. Whether you're using custom designed, pre-cut or modular construction, there's an Otis pre-engineered model ready to deliver.

And you save time on installation, too. Because our installation crews are regular Otis employees who have learned a lot of time-saving short cuts. Your elevators get installed quicker and with fewer headaches.

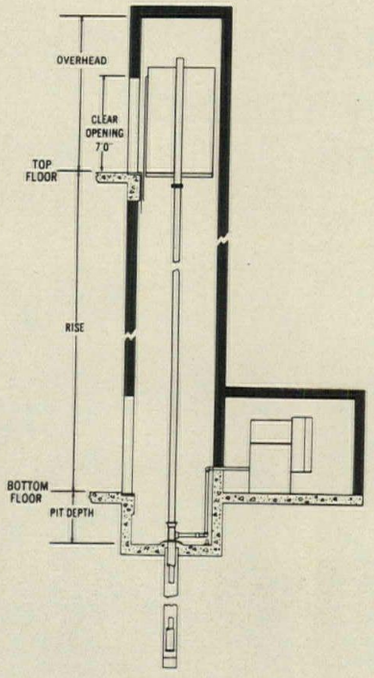
So if you want to cut design and construction time, without cutting quality, call us . . . we'll get you out of the hole quicker.

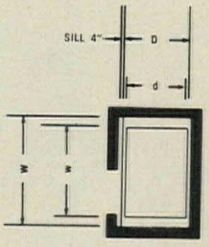
Otis®
HAS A SYSTEM

Otis Pre-Engineered Passenger Elevators

hydraulic

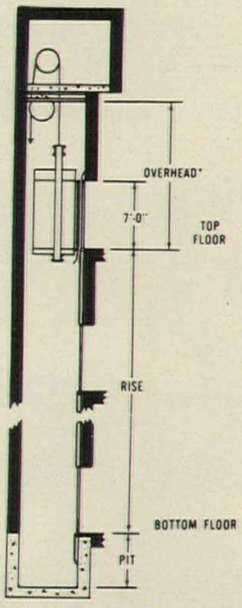
HPA-1500 HP-2500 HP-3500
HPA-2000 HP-3000 HP-4000

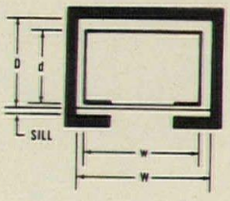




geared

GTU-2520
GTU-2535





model	passengers	platform w (width)	platform d (depth)	clear hoistway W (width)	clear hoistway D (depth)	doors clear opening	pit	overhead	max. rise	max. stops
HYDRAULIC										
HPA-1500	10	5′-4″	4′-6″	6′-8″	4′-11″	2′-8″	4′-0″	10′-9″	29′-0″	3
HPA-2000	13	6′-4″	4′-5″	7′-8″	4′-10″	3′-0″	4′-0″	11′-0″	41′-0″	5
HP-2500	16	7′-0″	5′-0″	8′-4″	5′-5″	3′-6″	4′-0″	11′-3″	42′-0″	5
HP-3000	20	7′-0″	5′-6″	8′-4″	5′-11″	3′-6″	4′-0″	11′-3″	42′-0″	5
HP-3500	23	7′-0″	6′-2″	8′-4″	6′-7″	3′-6″	4′-0″	11′-3″	42′-0″	5
HP-4000	26	8′-0″	6′-2″	9′-4″	6′-7″	4′-0″	4′-0″	11′-3″	42′-0″	5
GEARED										
GTU-2520	16	7′-0″	5′-0″	8′-4″	6′-2½″	3′-6″	5′-0″	14′-8″	160′	16
GTU-2535	16	7′-0″	5′-0″	8′-4″	6′-2½″	3′-6″	5′-0″	15′-2″	300′	30

This is general data. Your local Otis representative will be happy to work with you in the preparation of working drawings.
Dimensions do not apply to the machine room, which varies with type of installations and building conditions.

Otis
ELEVATOR COMPANY

Clearances

MAGEE'S GLEN EAGLE

(Fold here)

CREATING WITH CARPET IS AS EASY AS FOLDING THIS HALF OF THE PAGE UNDER THE REMAINING HALF.

MAGEE'S EMPIRE STRIPE

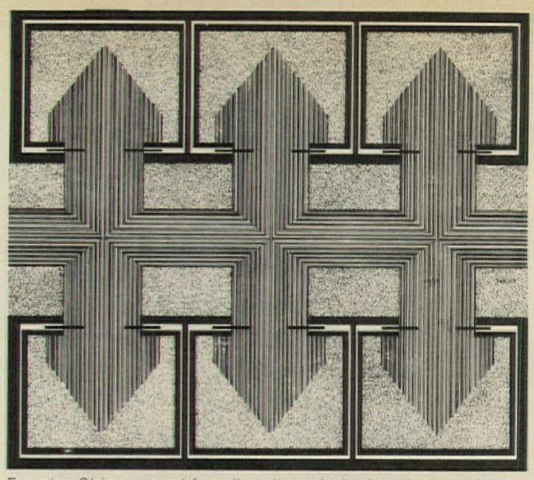
YOU'VE JUST CREATED WITH MAGEE'S NEW 100% WOOL CARPET EMPIRE STRIPE AND ITS COMPANION GLEN EAGLE. FOR MORE ABOUT CREATIVE COMPANION CARPETING, FLIP THE PAGE.

Yesterday it was big business.
Today it's empire building.
Yesterday it was the plain carpet.
Today it can't do the job alone.
What with:
Moveable walls, no walls, open landscaping, modular components, and immense floor space.
That's why Magee designed a stripe carpet.
Empire Stripe, made of 100% wool, to help the plain carpet.
Not just any plain carpet . . . but the one it was designed to work with . . .
Glen Eagle.
Companion carpets, matching quality in 9 colors.
Companion carpets that are stock items.
Companion carpets where the stripe in Empire Stripe comes in random widths repeated every 36," finally making it possible to get natural matches in a stripe.
Companion carpets that carry the wool mark.
Companion carpets that let you design on the floor as you would on paper.
If your business is empire building and you would like to know more about creative companion carpets, write:
The Magee Carpet Company,
919 Third Avenue,
New York, N.Y. 10022,
and we'll talk about empires . . .
yours and ours.

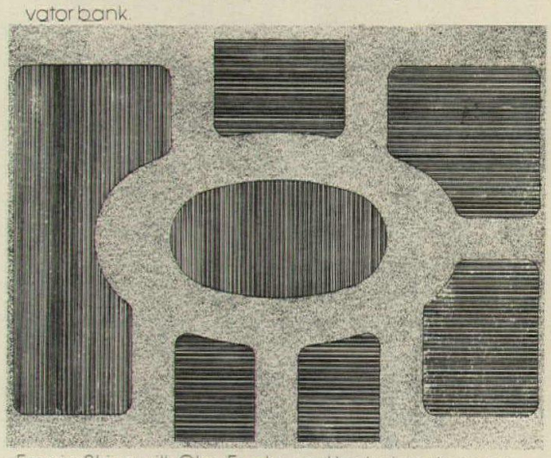
CARPET BY
Magee

A carpet company that gives you all the credit for being creative.

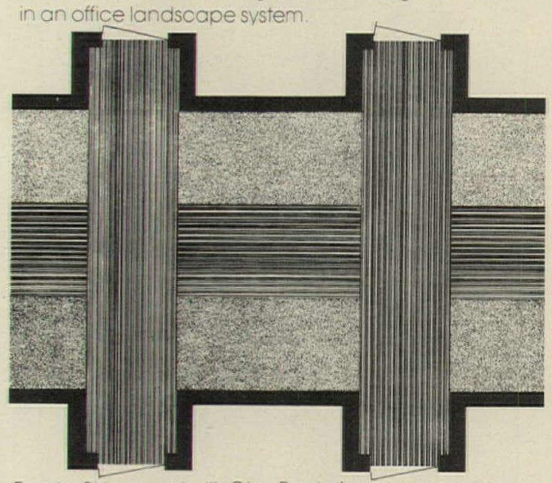
PURE WOOL PILE
The wool mark is your assurance of quality tested carpets made of pure wool pile.



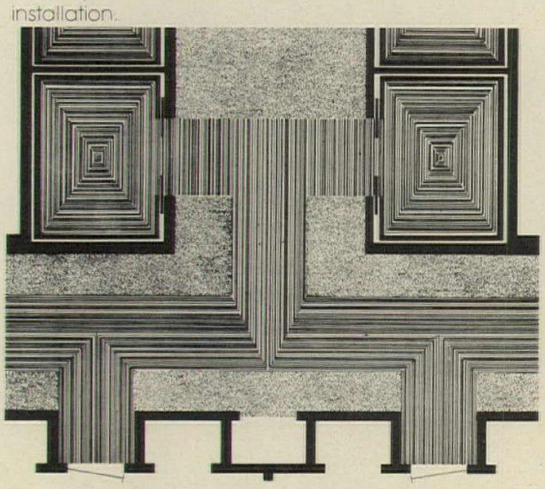
Empire Stripe used for directional design in an elevator bank.



Empire Stripe with Glen Eagle used to designate areas in an office landscape system.



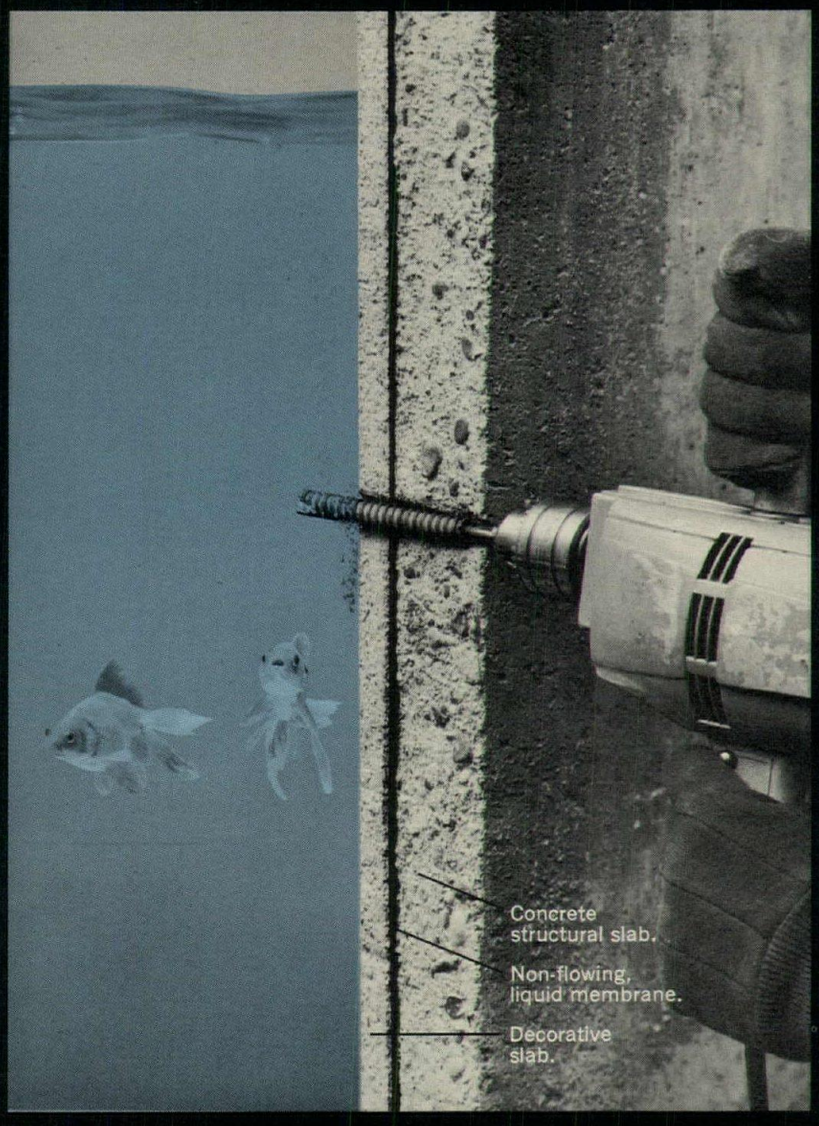
Empire Stripe used with Glen Eagle for a cross corridor installation.

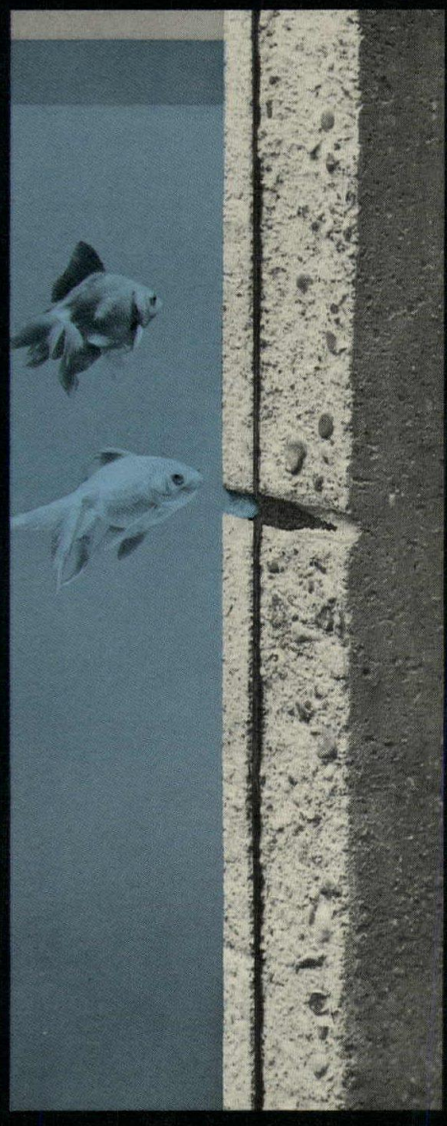


Empire Stripe and Glen Eagle used for corridor directions and office pattern.

You can drill through our liquid membrane.

But you can't put a hole through it.





Concrete fish tanks probably aren't in your line of design, but it shows exactly how positively waterproof our liquid membrane is.

The Uniroyal liquid membrane is a hot-applied, rubberized asphalt compound that bonds securely and continuously to any sound, horizontal or vertical surface. Water can't get through or under it.

The waterproof membrane remains flexible indefinitely and self-heals if mechanically damaged. It bridges moving cracks up to 1/16 inch without reinforcement. Yet *it's non-flowing* once applied, making it the ideal waterproofing for vertical applications.

Expansion joints are effectively sealed with liquid membrane and rubber reinforcing sheets.

Uniroyal liquid membrane is quickly applied in temperatures down to 0°F. It spreads and flows freely to conform to all surface irregularities.

As for actual applications, the sky's the limit. Uniroyal liquid membrane has been used to waterproof everything from underground garages to high-rise buildings.

If you've got a job coming up that requires reliable between slab waterproofing, we'll help you make your design watertight. Just fill in and mail the coupon.

Uniroyal, Inc.
Engineered Systems Dept.
312 North Hill Street
Mishawaka, Indiana 46544

Name

Firm

Address

City

State Zip

ASP NO. 1430 PA-2

UNIROYAL

On Reader Service Card, circle no. 334

Books continued from page 102

"grew markedly worse between 1954 and 1962, particularly in Paris. There, 52 percent of all households were crowded or extremely crowded in 1962, while the comparable 1954 figure was only 28 percent. Looking at two vast resort projects does not answer a planner's curiosity about French attempts to meet its national housing needs. And what can an American, who sees not one but two Disneyland resorts at home and slums as bad as Parisian bidonvilles, learn from France's experience? Not much. And where something might have been learned, e.g., the industrial decentralization law, the new town projects around Paris such as Cergy-Pontoise or Evry, the failure of the 1965 Master Plan for the Paris region or even the success in getting the Aeroport Paris-Nord underway, the author has little to say.

Descriptive outlines are used in the sections on Israel, The Netherlands and Sweden. Together with the other two country studies, these descriptions are useful as a unique collection of a mass of information on the overview of the planning process in four small nations (Sweden, for example, has a total population equivalent to the sum of people in New York City's five boroughs). Working with this material, Mrs. Strong gives a practical view into the relationship between political institutions, the laws they promulgate and the results they finally implement as a result of these laws. Yet while these are commendable achievements, no attempt is made to analyze the social success of these projects by asking a very simple question: Does it all work for those people who must live in these planned urban environments? And no attempt is made to venture emphatic and persuasive opinions about the merits of what the author has seen and studied in these five countries.

If the author's intent was to provide an American audience with a book which, as she said in her introduction, was to help transfer the experience of a number of European nations to the United States, her text and discussions fall far short of the goal. If, on the other hand, the book is perceived as an attempt to catalog the planning strategies of five nations and to detail several ambitious projects in each of these countries such as Tapiola in Finland, the Delta-Yssel land reclamation in The Netherlands, the Languedoc-Rousillon resorts in France, or the Ashdod new port in Israel, then many students and planners of urban environments will find this a useful volume.

Detroit Architecture: AIA Guide. *Edited by Katharine Mattingly Meyer. Detroit: Wayne State University Press, 1971. 202 pp. $2.95.*

Another in the series of guidebooks to American cities prepared under the sponsorship of an AIA chapter, 11 geographical walking or driving tours with maps act as a guide to representative historical and contemporary examples of Detroit's architecture. This includes the work of some of the world's most celebrated designers—Albert Kahn and Eliel Saarinen are well represented—as well as that of many talented local architectural firms. The material in the guide was drawn largely from *The Buildings of Detroit: A History* by V. Hawkins Ferry, who acted as advisor in the selection of recently constructed buildings and who wrote the introduction.

[continued on page 114]

On Reader Service Card, circle no. 365 →


Wellington
8000 Series
by
jofco
JASPER, INDIANA 47546

Books continued from page 112

This is a small, paperbound, inexpensive volume and the Detroit chapter has succeeded in organizing an excellent view of its city's buildings, as they exist in the central city and environs. Although the separation of the book into geographical areas makes for convenient sightseeing, something of the remarkable historical development of the city's architecture is lost in this format. Considering that Detroit grew from a fur trading center in the 18th Century, to a lumber, iron and steel center in the 19th and the automobile industry center in the 20th Century—although defined in the introduction—one wishes this might somehow have been communicated in greater depth. However, the book succeeds in being what it set out to be—a guide to a tour of Detroit—good for anyone planning a visit there.

Noise and Vibration Control. *Edited by Leo L. Beranek. New York: McGraw-Hill Book Co., 1971. 650 pp. $29.50.*

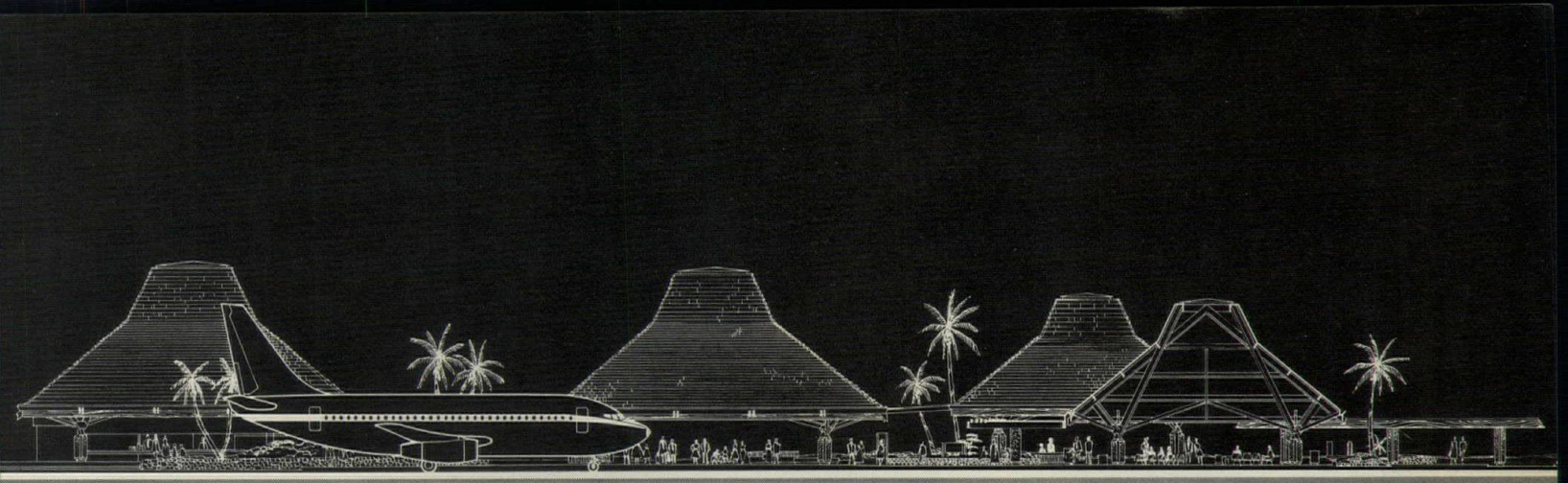
This volume provides guidance for those without special training in acoustics but who are concerned with the "engineering of quiet" into buildings, transportation, products, factories, power plants, air-conditioning systems, and other noise producers. The emphasis is on practical design and regulatory information; formulas, choice of materials and structures, city codes and hearing protection.

Among the areas covered are the fundamentals of sound in free space, outdoors and in small enclosures or rooms; an understanding of decibels; methods for measuring and analyzing noise and vibration; for selecting design criteria and for choosing materials, structures, mufflers and vibration isolators.

Bureaucrats in Collision: Case Studies in Area Transportation Planning *by Melvin R. Levin and Norman A. Abend. Cambridge: The M.I.T. Press, 1971. 295 pp. $10.*

In this book the authors comment upon the problems of planners, engineers and public administrators who were faced with the issues involved in the massive regional transportation studies of the early 1960s. Using the case study approach, the planning experiences of five metropolitan areas are studied—Boston, Philadelphia, Buffalo, Manchester, N. H. and Portland, Me. The book examines the difficulties encountered in meshing federal, state and regional bu-

[continued on page 124]



Ke-ahole Airport, Ke-ahole (Kona Coast) Hawaii. Certi-Split Handsplit/Resawn shakes, 24" x ¾" to 1¼". Architects: Aotani & Oka, Inc.

Red cedar shakes: striking departure for an airport.

Hawaii's Ke-ahole Airport doesn't look much like an airport, it looks like Hawaii. That's a remarkable achievement considering the functional demands of the facility.

The terminal consists of 15 high beam-ceiling bungalows. A thatched-roof effect is attained by extensive use of red cedar handsplit shakes.

The richly textured shakes serve to unify, creating a harmonious cluster of indigenous architectural forms. They remain maintenance-free for decades. And they withstand hurricane winds.

Put the beauty and durability of red cedar to work for you. But insist on the real thing: Certi-Split handsplit shakes or Certigrade shingles. They're worth it.

For details and money-saving application tips, write: 5510 White Building, Seattle, Washington 98101. (In Canada: 1055 West Hastings Street, Vancouver 1, B.C.)

THE CROWNING TOUCH OF QUALITY · RED CEDAR SHINGLES & HANDSPLIT SHAKES ·

Red Cedar Shingle & Handsplit Shake Bureau

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

On Reader Service Card, circle no. 385

INNOVATION IN DESIGN. One of a series created for DAP Architectural Sealants. Design and rendering by Richard P. Howard Associates, Architectural Illustrators, Sylvania, Ohio. Harold R. Roe, A.I.A.

DAP Flexiseal®: superior sealant performance to better serve design

Every solution to a building program must provide for waterproof, weatherproof joints that won't quit. DAP Flexiseal® polysulfide polymer sealants deliver that performance plus the flexibility and adhesion capabilities that free the architect of restrictive joint design limitations. Yet they deliver 20-year service without loss of sealant integrity. Two Flexiseal formulations are available: a two-part system and a one-part system. Each has its place. Each carries the Thiokol* Seal of Security. For catalog on the complete line of DAP architectural sealants, please write: DAP Inc., General Offices: Dayton, Ohio 45401/Subsidiary of Plough, Inc.

On Reader Service Card, circle no. 354

DESIGN CONCEPT. This high rise resort hotel contains apartments for permanent residents, all house services and facilities and necessary parking space. The upper towers are devoted specifically to resort living and each unit provides a separate dramatic view for its residents.

DAP® ARCHITECTURAL SEALANTS

Also available in Canada

*Trademark of Thiokol Chemical Corporation

Thiokol LP POLYSULFIDE POLYMER

Katzenbach and Warren wall coverings include everything from roller-printed wallpaper to exquisite woven textures from the Orient. It is the only authorized maker of Williamsburg® Wallpaper Reproductions—each representing in color and design a faithful reproduction of original antique documents in the Williamsburg Collection. **Contact** Bernard Salembier, New York (212) 759-5410

Moreddi offers imported and domestic avant-garde furniture. Particularly noteworthy is the exciting Artemide collection of Italian fiberglass chairs, tables and lamps—a line that can add distinctive contemporary elegance wherever it's used. **Contact** Ed Frank, Ridgefield, N. J. (201) 941-0220

Bloomcraft markets an extensive line of beautifully styled fabrics, bedspreads, decorative pillows, draperies, casements and imported sheers of fine quality at surprisingly modest prices. An excellent source for those special touches that can set your overall scheme apart. **Contact** Lewis Bloom, New York (212) 683-8900

Selig is a major manufacturer of classic contemporary upholstered furniture and a leading importer of contemporary metal and glass furniture. Newly added are important lines of chrome and glass Italian imports, including chairs, tables, étagères and SleepAway convertible sofas. **Contact** Bob Wexler, Leominster, Mass. (617) 537-9111

Raymor/Richards, Morgenthau brings together for your selection the largest collection of decorative accessories available anywhere: specialty furniture, all types of contemporary accessories, lamps, wall decoration, sculpture, clocks, art; and craft-related products of wood, metal, ceramics and crystal. **Contact** Everett Winters, Ridgefield, N. J. (201) 941-0220

Living Room Division features sofas and chairs which emphasize simplicity of design and excellence of workmanship, in the highest standards of traditional and transitional styling. Many with exclusive Beautyrest Comfortorc construction. **Contact** Todd Colvin, LaGrange, Illinois (312) 352-9110

IT'S ALL AT

Here's one source for everything you need to furnish with extraordinary flair and authority. An enormous range of products and stylings. All within easy reach.

Financing may be arranged through American Acceptance Corporation, a Simmons partner company. Our International Division can help coordinate selection and delivery for installation anywhere.

Go Simmons all the way.

Simmons Contract is a world leader in furnishings for the health care, innkeeping and educational fields. In addition to its own lines of institutional furnishings—beds, bedding, chairs, Hide-A-Bed sofas, office furniture, case goods and carpeting—Simmons Contract offers the products of all other Simmons partner companies for a fully coordinated design and furnishings capability. **Contact** Bob Costello, Chicago (312) 644-4060

Hausted offers the health care field a full line of specialized patient handling and transporting equipment, including the Tractionaid unit and Inval-Aid chair, and continues to lead the world in the development of coronary and intensive care units. **Contact** Art Murphey, Medina, Ohio (216) 722-1515

Thonet occupies a unique position in wood and metal furniture for public use. Its chairs, tables and sofas are featured in schools, colleges, health care institutions, offices and restaurants. From its traditional bentwood to classic and contemporary metal, wood and upholstered seating, to case goods, to the custom designing of built-ins, Thonet offers a superb balance of beautiful styling and durable design. **Contact** Joe Quarles, New York (212) 725-1100

Greeff offers prestige lines with fashion authority. A leading supplier of imported and domestic fabrics—in both traditional and contemporary designs—for draperies and upholstery. Other important lines include coordinated wall coverings, carpeting, area rugs and exclusive Beautyrest Masterpiece bedding. The E.C. Carter Division distributes an exquisite collection of curtains, sheers and casements. **Contact** Ted Greeff, Port Chester, N.Y. (914) 939-6200.

SIMMONS.

SIMMONS COMPANY Domestic Divisions and Affiliates: Living Room • Contract • Juvenile Products • Hausted • Thonet • Greeff • Bloomcraft • Katzenbach & Warren • Raymor/Richards, Morgenthau • Moreddi • Selig • American Acceptance • York-Hoover • Elgin Metal Casket □ International Operations: Simmons Limited, Canada • Simmons de Argentina, S.A.I.C. • Simmons Bedding Co., Pty. Ltd. and V. S. Wright & Sons, Pty. Ltd., Australia • Sleepeezee Limited and Warner & Sons Limited, England • Cie. Continentale Simmons, S.A., France • Cia. Italiana Simmons • Simmons Japan Limited • Compania Simmons, S.A. de C.V., Mexico • Simmons, Inc., Puerto Rico • Simmons de Venezuela C.A., Venezuela.

Books continued from page 114

reaucracies in which most decisions and virtually all accomplishments involve functioning agreements by a network of wary agencies and touchy personalities. Comprehensive planning is shown to be highly sensitive to conflicting agency goals, outmoded practices and clashing interests.

Documents

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

Zinc: Its Corrosion Resistance. *The Zinc Institute, Inc., 292 Madison Ave., New York, N.Y. 10017. 200 pp. $2.*

This manual describes and evaluates the various types of zinc coatings and products available commercially in relation to their corrosion resistance. It is divided into four sections, each concerned with major applications for the corrosion protection by zinc: in the atmosphere, in aqueous, underground and chemical environments. The chapter on atmospheric exposure covers the influence of relative humidity, rainfall, industrial and marine pollutants and other atmospheric variables.

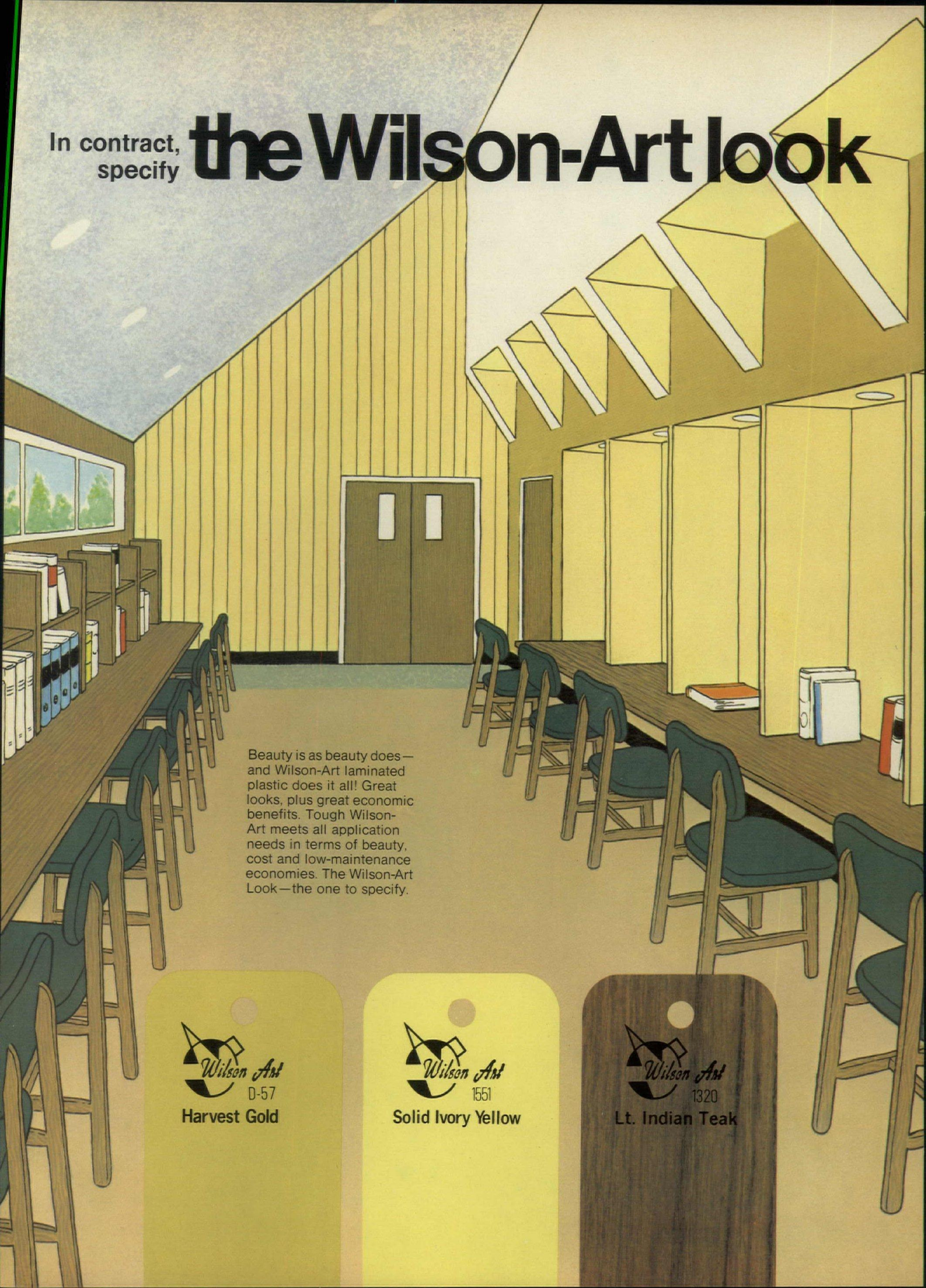
Reliable Standby Power and Emergency Lighting. Monograph 17, *National Electrical Contractors Association, 1730 Rhode Island Ave., N.W., Washington, D.C. 20036. On request.*

This guideline to the design of standby power and emergency lighting systems offered by the Electrical Design Library series published by NECA, gives particular attention to upgrading power reliability in existing buildings, not only to meet code requirements, but to provide sufficient energy for essential requirements under today's conditions.

Management Contracts: A five-chapter guide to project management. *LCN Closers of Canada Ltd., Box 100, Port Credit, Ontario. 16 pp. $1.*

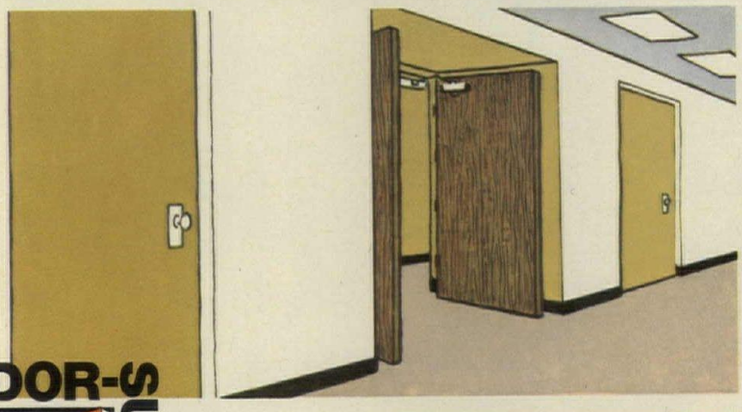
A comprehensive guide to project management that comprises five articles originally published separately and includes "What managed contracts really mean to architects," "What qualifications does a management contractor need? "Ways in which to organize total project management," "Putting the focus on overriding principles," and "A warning: the construction industry will need to change."

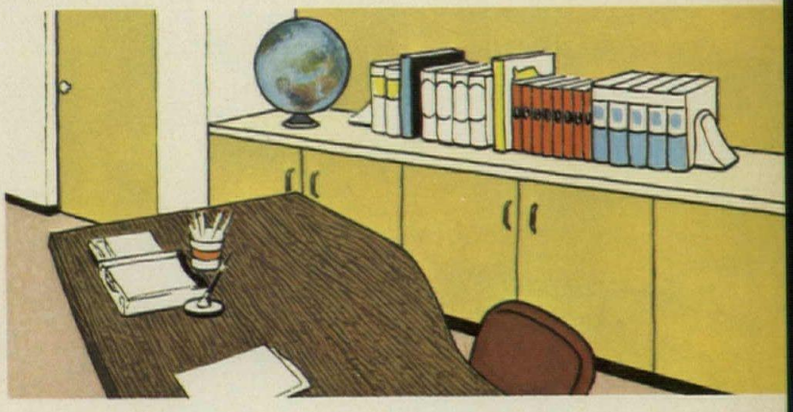

LCN


In contract, specify the Wilson-Art look
Beauty is as beauty does—and Wilson-Art laminated plastic does it all! Great looks, plus great economic benefits. Tough Wilson-Art meets all application needs in terms of beauty, cost and low-maintenance economies. The Wilson-Art Look—the one to specify.
Wilson Art
D-57
Harvest Gold
Wilson Art
1551
Solid Ivory Yellow
Wilson Art
1320
Lt. Indian Teak

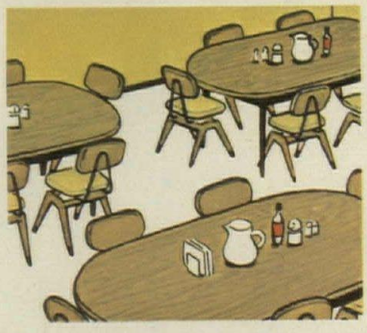
there's more than meets the eye!

Clinical, clean and functional, Wilson-Art laminated plastic Danish Walnut, Olivine and Apple Green combine to make this school lab more productive—and more appealing! Add pluses for pleasing light reflective qualities and years of extra durability—you've got the right choice for functional work surfaces, anywhere.





DOR-SURF



DOR-SURF—a tough new face, from Wilson-Art! Doors covered with 1/8" thick Wilson-Art DOR-SURF are exceptionally tough and never need refinishing. Wilson-Art DOR-SURF is available in a wide variety of solid colors and woodgrains and two functional finishes. When high-traffic needs call for a highly durable door surface, it's time to specify Wilson-Art DOR-SURF. An added feature: Wilson-Art DOR-SURF is so impact-resistant that design integrity is maintained because no kick- or push-plates are ever needed!

Wilson-Art laminated plastics look better and last longer on fixtures, furniture, cabinets and counter tops. And Wilson Wall Systems install quickly and economically for permanent beauty. When it comes to the hard knocks of classroom wear, nothing beats Wilson-Art.

Illustrated: Antique White counter tops with Honey cabinets and a desk with Flat Cut Oak surfacing. Flexibility. Versatility. Design freedom with a flair for function.

When the chips are down, you can depend on Wilson-Art.

In contract, contact the helpful ones—Wilson-Art Architectural Design Representatives!

Atlanta
404 373-2223

Chicago
312 437-1500

Los Angeles
213 941-1219

Miami
305 822-5140

New Jersey
215 923-5542

New York
914 268-6892

San Francisco
415 782-6055

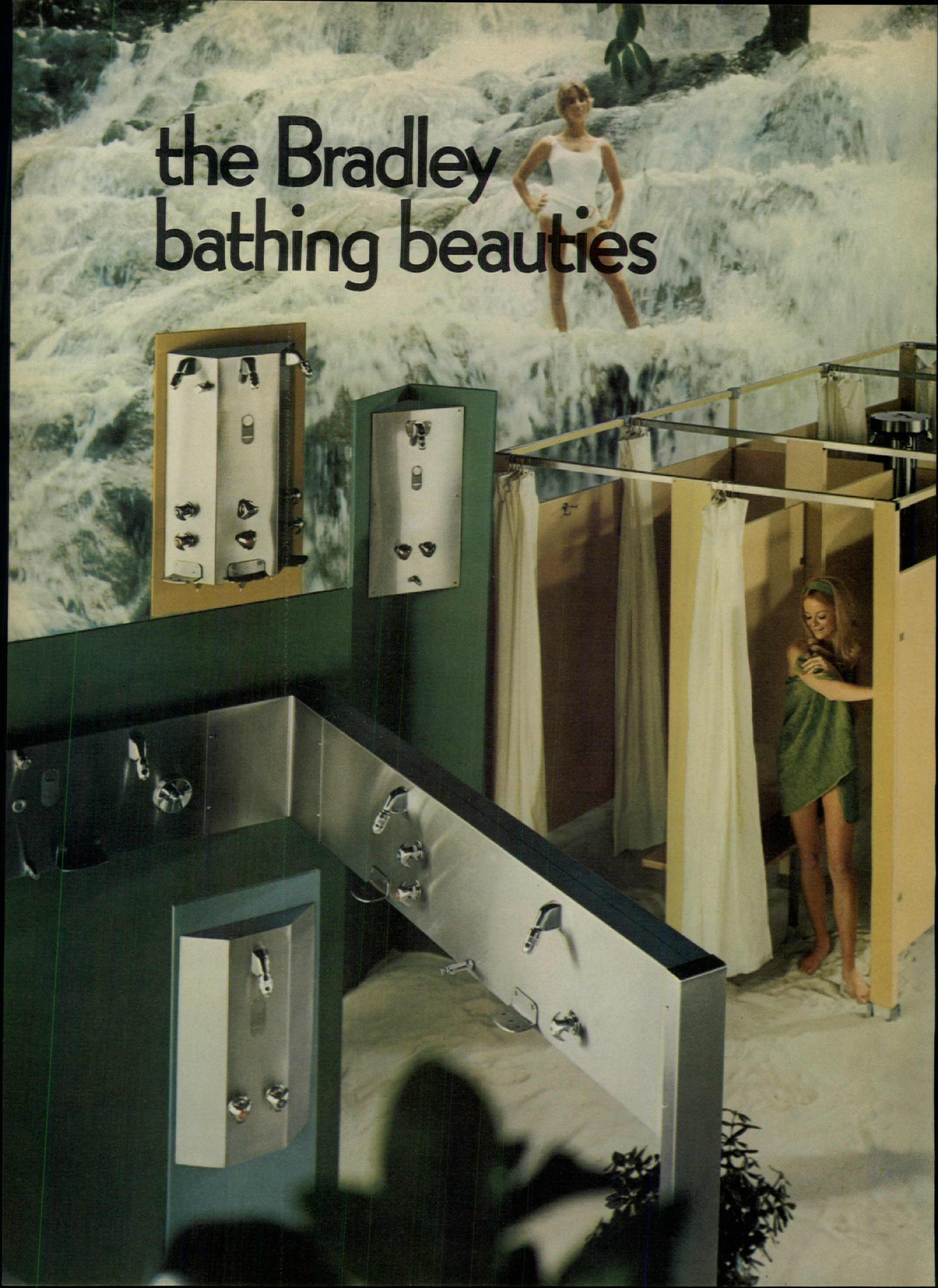
Seattle
206 228-1300

Temple, Texas
817 778-2711

Wilson Art®
LAMINATED PLASTICS

RALPH WILSON PLASTICS COMPANY . . . TEMPLE, TEXAS
ARCHITECTURAL PRODUCTS DIVISION DART INDUSTRIES INC

On Reader Service Card, circle no. 336


the Bradley
bathing beauties

Column showers that serve up to 6 people with one set of plumbing connections. Multi-Stall units for privacy at low cost. Modesty-Module® showers with dressing rooms. Econo-Wall, Panelon® and single person wall and corner showers. Bradley offers you the widest choice of models for maximum flexibility.

Bradley showers cut installation costs and time. Save space and money after installation because they serve more people in less space than ordinary showers. Vandal-proof and built for years of rough use.

Bradley showers . . . they're beauties when it comes to serving crowds of people the fast and easy way.

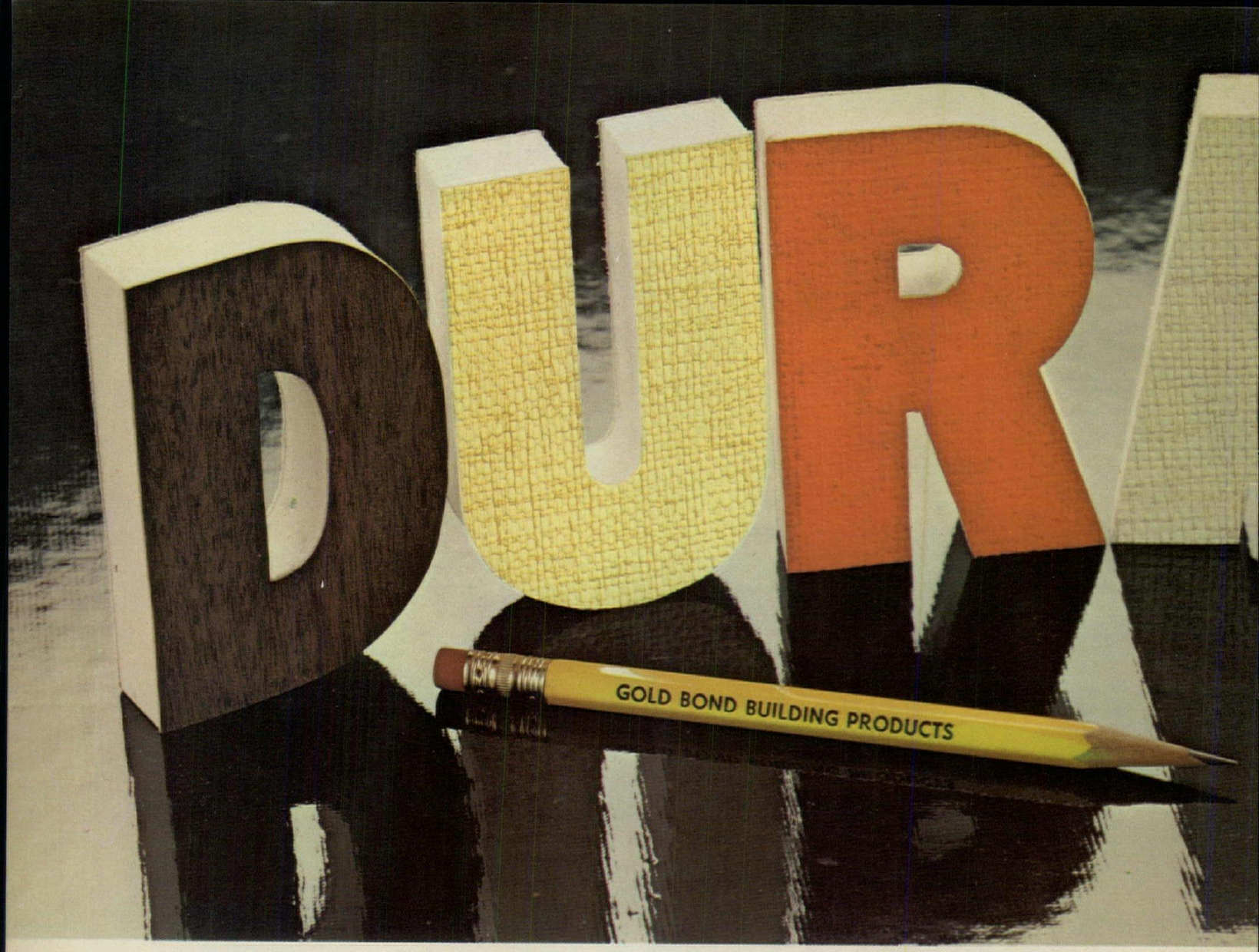
See your Bradley washroom systems specialist. And write for latest literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

more bright ideas from Bradley

BRADLEY

Leader in Washroom Fixtures and Accessories.

On Reader Service Card, circle no. 346



Durasan is gypsum drywall with a factory-applied vinyl surface.

It is low-first-cost, low-maintenance-cost, has a quality contemporary look and meets all the important fire codes.

And it gives you plenty of elbow room for design.

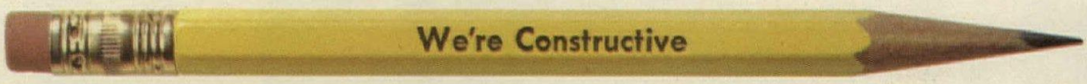
You can swing a little with Durasan®. Color progressions here. Contrasts there. It comes bright, muted and in-between. In woodgrains, burlaps, stipples, grass cloth and classic patterns and textures.

Once up, you've got a wall that resists abrasions, fading and stains. A damp sponge makes it look new for years.

And it's noncombustible. Durasan meets all requirements of the American Insurance Association.
Fire ratings are comparable to regular gypsum wallboard in our recommended systems.

All this at a cost less than building a wall and applying a comparable grade of vinyl. And you have your choice . . . 4-foot wide panels with prefinished edges or . . . panels with loose vinyl flaps for monolithic applications.
Then it's easy-up with matching mouldings and color pins . . . or adhesive. All part of the Durasan system.

Durasan could solve a lot of problems for you — aesthetic problems, functional problems, budget problems.
Durasan, like so many of our products, is a constructive suggestion because it solves a number of your problems at once. For details, write Gold Bond Building Products, Division of National Gypsum Company, Dept. PA-22G, Buffalo, New York 14225.



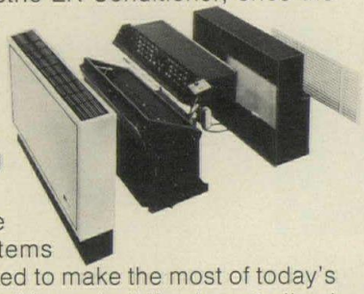
Gold Bond®
BUILDING PRODUCTS

Just about everybody would rather have our Incremental Comfort Conditioners than central air conditioning.

Everybody has a different reason for preferring our Incremental* Comfort Conditioning. But all the reasons come down to the fact that in most buildings it's the easiest way to get year-round comfort at an economical cost.

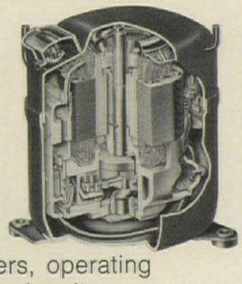
Contractors who have installed our new EK Conditioner will tell you that the labor involved is very low compared to a conventional hydronic or ducted system. (Our K Conditioner is for wet heat so its installation obviously involves piping.) Both systems consist of a wall box, outside air louver, heater section with controls, cooling chassis and room cabinet. Both are for through-wall installation where the outdoor air opening is at or near the floor.

With the all-electric EK Conditioner, once the wall box and wiring are in, everything else slides into position. Press a button and you get fully automatic heating and cooling then and there.



Architects like these incremental systems because they're designed to make the most of today's buildings. The EK Conditioner is fully decentralized and all-electric, so there are no pipes or ductwork to contend with. With an all-electric system the only part that affects building construction is the air opening for each conditioner. All that shows from the outside is a flush-stamped aluminum grille. All that shows inside is a trim, attractive cabinet.

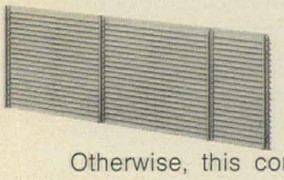
Building owners like Incremental Comfort Conditioning because the first cost is less than for other systems.



They also like the fact that it uses virtually no rentable floor space. In large buildings the gain is often as much as an entire floor.

Even with all-electric conditioners, operating costs are low. Because each conditioner has its own thermostat, it cycles on and off as needed, so there's never any waste of heating or cooling capacity.

And compared to a large central system, Incremental Comfort Conditioning costs next to nothing to maintain. There's no need to have maintenance personnel on the premises; the only routine job involves changing filters and oiling the blower motors.



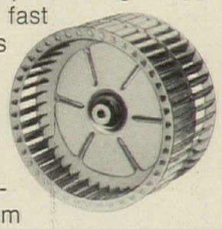
Otherwise, this conditioner is designed and built to operate for decades with no attention whatsoever. Some examples:

The heavy gauge steel wall box is zinc-coated and phosphatized, then enrobed in epichlorhydrin bisphenol. That's as corrosion-proof as steel can get. The wall box is in one piece which eliminates telescoping joints and leakage.

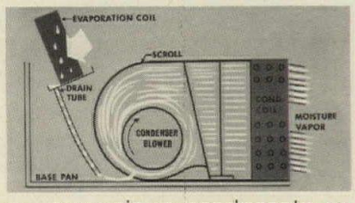
The hermetically sealed compressor runs in oil, yet never needs oiling. It is internally spring-mounted and welded, with full overload protection. It's also protected by our exclusive patented No-Frost, Full Capacity Control that prevents dangerous icing-up when the conditioner is cooling and the ambient temperature is low, assuring full cooling capacity. We warrant the entire hermetic circuit for five years, including the compressor. We expect it to last several times that.

The compressor is sealed outside by a positive single plane picture frame gasket surrounding a weather-proof steel bulkhead. It's absolutely weather-tight to keep noise and drafts out.

For all-electric systems, the EK Conditioner's heat source is a set of low-temperature grid type elements having low mass and fast response. Our K Conditioner has a heat source of serpentine copper coil with mechanically bonded aluminum fins. Both use the same cooling chassis.



The two centrifugal aluminum blowers that circulate room air and cool the condenser are dynamically and statically balanced. The little noise they do make barely deserves the name of whisper. Careful engineering makes these the quietest conditioners of their type. They're actually quieter than a good many central systems.



There's no danger of condensate stains on the outside of the building—our unique condensate removal system atomizes moisture in the condenser air stream where it evaporates completely. So no external drainpipes are required.

We designed these conditioners to be trouble-free and easy to service. All conditioners in a system operate independently, of course, so there's little chance that more than one will ever go down at one time. If one does, the heating section or cooling chassis can be removed and replaced within minutes.

Tenants are the final judge of any climate control system. They like ours because they get their own controls. If they're uncomfortable, they can do something about it immediately. If they want heating when everybody else wants cooling, or vice versa, they can have it. For fresh air, there's a control that gives positive pressure ventilation year-round. If the system has a central night setback control, they can start any conditioner during off hours by pressing a button.

Tenants also like the fact that the room cabinet is 18-gauge furniture steel with 4-way adjustable tamper-proof discharge grilles. Not to mention that, though mist grey enamel finish is standard, color and color-accent panels to complement their decor can be specially requested.

The more people know about our brand of comfort the more they like it. That's why we'd like to send you some more specific information. To get it, just write and ask for our product bulletin 968R115. The Singer Company, 62 Columbus Street, Auburn, New York 13021. * A Trademark of THE SINGER COMPANY

Sturdy, dependable heating & air conditioning by SINGER

Notices

Appointments

Robert H. Hartman has joined Daniel, Mann, Johnson & Mendenhall of Los Angeles as projects director, medical facilities.

Jere Hamilton has become general manager of Heckman-Hamilton, Inc., Denver, Colo.

Charles W. Stanton AIA, has been appointed senior vice president of Welton Becket and Associates, New York City.

George E. Godwin and **Joseph M. Harris** have been made associates of Odell Associates, Inc. of Charlotte and Greensboro, N.C.

Charles F. Jacobs AIA, has joined Robert Charles Associates, Inc., Boston, Mass., as vice president.

Allen D. Moses has succeeded Stephen Richardson as senior partner and director of The Richardson Associates, Seattle, Wash. Mr. Richardson will continue as consultant and serve on special assignments.

Charles D. Morrissey has been made executive vice president of Madigan-Praeger, Inc., New York City. **Frank Muller** has been appointed a vice president.

Motilal P. Patel, PE, has been made an associate of Carcaterra and Associates, Consulting Engineers, Silver Spring, Md.

Ireneus Harasymiak has been elected vice president—environmental design of Omniform Incorporated, Hartford, Conn.

Richard B. Russell has been named vice president of Environmental Design Group/Planning, Inc., Orlando, Fla. **T.W. Storage** has been made head of the parks and recreational planning department.

Morton Gerard has been appointed an executive vice president of Environmental Research & Development, Inc., New York City.

Perry Gujral has been named chief mechanical and electrical engineer for the Portland, Ore. office of Skidmore, Owings & Merrill.

New addresses

Syska & Hennessy, Inc., 110 West 50 St., New York City.

A. Epstein and Sons, Inc., engineers and architects, has opened new offices at 625 Shelter Creek Lane, San Bruno, Calif.

Morris Ketchum, Jr. and Associates, 919 Third Ave., New York 10022.

Beyer, Blinder & Belle, 80 Fifth Ave., New York 10011.

[continued on page 136]

A Thonet Revival, the contemporary expression of that Lorenz Bauhaus classic. Polished chrome-plated steel with lean upholstery. Available in vinyls and soft fabrics. Tables of like configuration also available. And, like all Thonet furniture ...built to endure. See all the new excitement in contract furniture at a Thonet Center of Design. New York, Chicago, Los Angeles, San Francisco, Dallas and Miami. Write Thonet Industries, Inc., One Park Ave., New York 10016. Phone (212) 725-1100.

THONET
CENTER OF DESIGN

On Reader Service Card, circle no. 331

Notices continued from page 134

Eddy, Paynter, Renfro & Associates, Suite 200, Stockdale Professional Building, 5405 Stockdale Highway, Stockdale, Calif. 93309.

Robert Perron, landscape architect, 123 NW Second Ave., New York.

Colburn, Sheldon, Kaji, architects, 123 NW Second Ave., New York.

Shrock & Edelman, space planning, 123 NW Second Ave., New York.

Mergers

Oliver and Smith of Norfolk, Va. and Oliver, Smith and Cooke of Virginia Beach, Va. have announced their merger under the name of **Oliver, Smith and Cooke, Architects and Planners.**

The firm of John Corey, AIA, of Pasadena, Calif., has merged with the Los Angeles, Irvine, and Honolulu based firm of **Bodrell Joer'dan Smith, AIA, and Associates.**

New firms

Richard Reece, Architect, 2 Independence Court, Concord, Mass. 07142.

International Planning Company, P.O. Box 653, Galatasaray, Istanbul, Turkey.

Samuel J. Leff, AIA, 5995 Sunset Drive, South Miami, Fla.

A. Gordon McGaw Associates-Architects/Planners, 171 East Livingston Ave., Columbus, Ohio 43215.

James K. Robinson, AIA, and Henry Parker Thompson, Jr., civil and structural engineer, have formed **Robinson-Thompson Associates,** 17875 Sky Park Circle, Irvine, Calif.

Dick W. Ebeling, PE, and Raymond T. Miller, PE, have formed the firm of **Dick W. Ebeling, Inc., Consulting Engineers,** Dekum Building, Portland, Ore.

Melander and Melander, Architects, 800 Lonsdale-Alworth Building, Duluth, Minn.

Isoaesthetik, Inc., land planning, 2800 South Main St., Santa Ana, Calif.

Name changes

The firm of Eddy & Paynter is now known as **Eddy, Paynter, Renfro & Associates,** Stockdale, Calif.

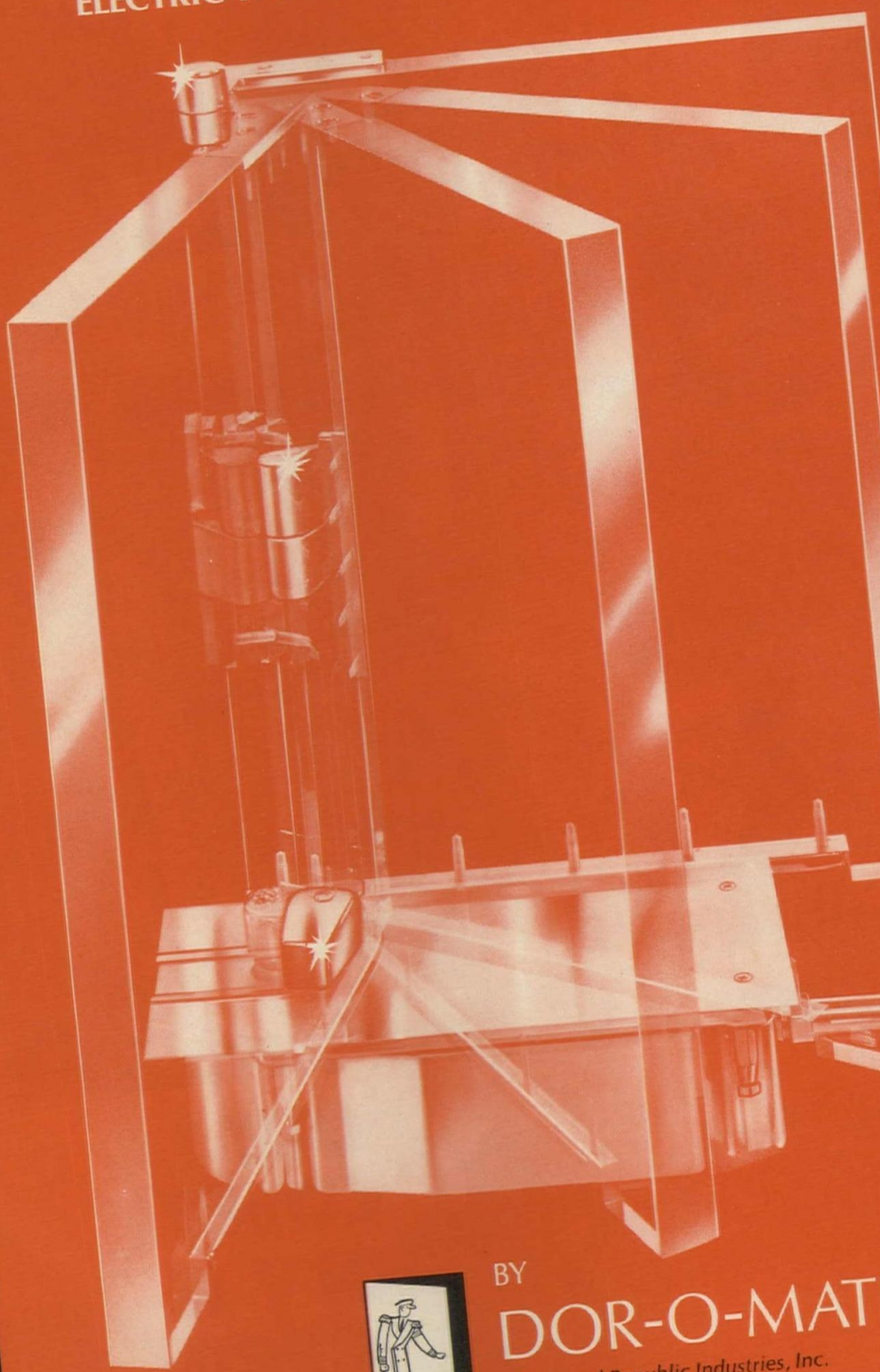
McClintock & Craig, Inc., engineers and architects of Springfield, Mass., is now known as **McClintock Craig & Wardlaw, Inc.**

Richard B. Myrick and Associates, Inc., landscape architects and planners of Dallas, Tex., has changed its firm name to **Myrick-Newman-Dahlberg, Inc.**

Sherry Associates, Buffalo, N.Y., has become a professional corporation and is now known as **Walter H. Sherry, PE, PC, Consulting Engineers.**

FAILSAFE... FIRE EYE®

ELECTRIC HOLD OPEN AND AUTOMATIC RELEASE DOOR CONTROL



Aesthetic FIRE-EYE protects life —beautifully. This new smoke door control is fully concealed in the floor for total design freedom. No wall, ceiling or floor latches. FIRE-EYE obsoletes fusible and electromagnetic systems. It's windproof, childproof, foolproof! **Smoke, Heat and Ionization** detectors, presence sensors and adjacent or remote switches can actuate FIRE-EYE. Now guards, nurses, patients, executives and speakers in schools, hospitals, offices and auditoriums can command privacy or control crowds with this **Life Safety** system. **Fire-Door-Approved** and 1½-hour rated, the basic control unit is on file with the U.S. Government and Veterans Administration. FIRE-EYE assures positive hold-open, positive closing of center, offset pivoted and hinged doors. Reliable solenoid holds door open *in any position* from 0° to 105° —closes when circuit is interrupted. Doors also can be shut manually without damage to mechanism. Ideal for new or existing doors, FIRE-EYE fits Hydra-Cushion cement cases, and is competitively priced. Call your **Dor-O-Matic** distributor, or write for free FIRE-EYE Bulletin now.

UL LISTED

BY

DOR-O-MATIC

Division of Republic Industries, Inc.

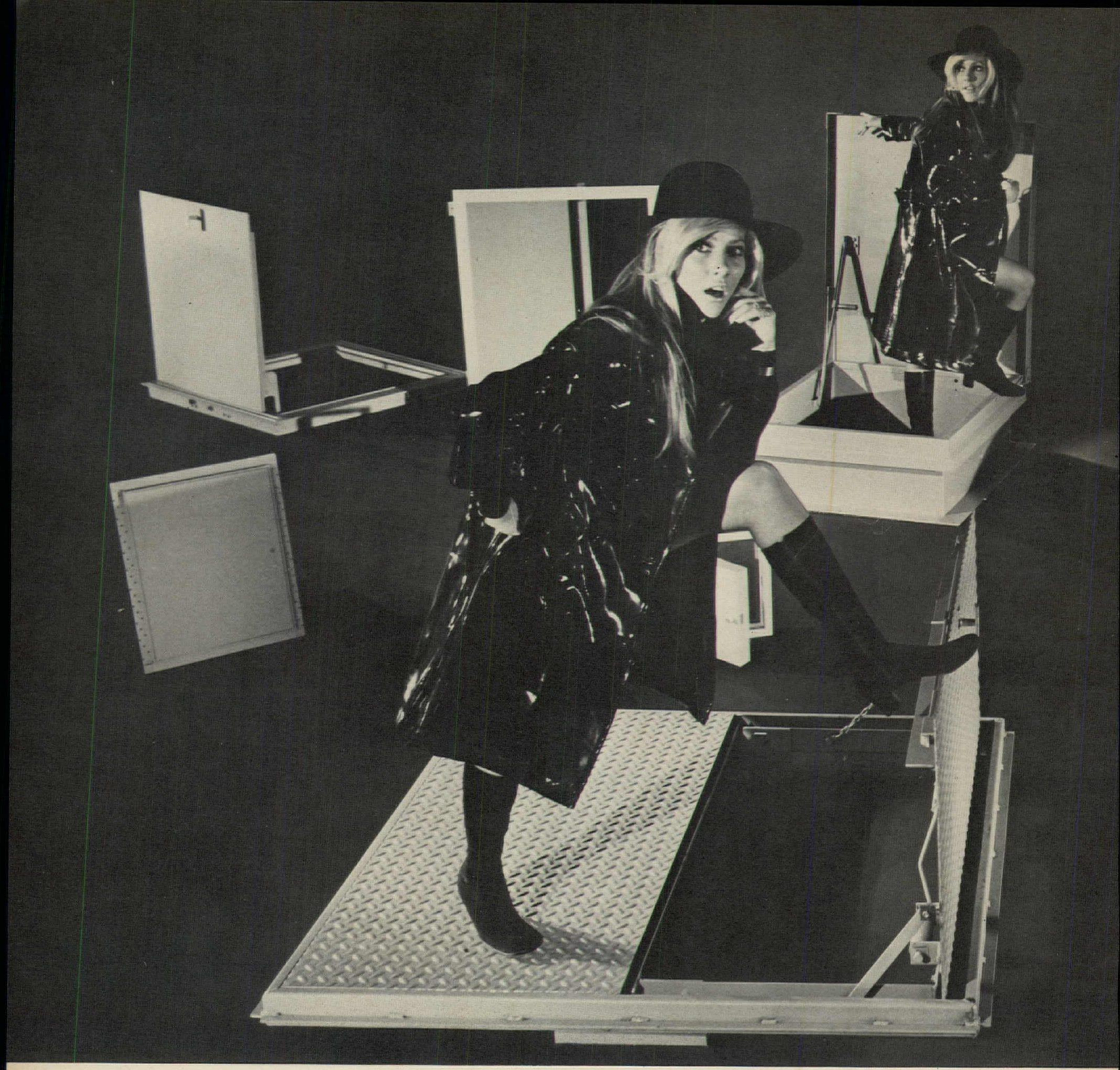
7350 West Wilson Avenue, Chicago, Illinois 60656 (312) 867-7400

England: Dor-O-Matic G.B. Ltd., Ramsey Rd., Sydenham Industrial Estate, Leamington Spa.
Canada: Dor-O-Matic of Canada, Toronto.

Patent applied for.

5665

On Reader Service Card, circle no. 392



our cover story is even better this year...

Nothing mysterious about it, really. Now you have a choice of 222 standard Milcor access doors, roof hatches, skylights, heat & smoke vents, floor doors and sidewalk doors—up 23 from our last report.

We've made improvements, too. Added automatic closers on our fire rated access doors. Increased the light penetration area of our skylights. Moved the springs on our popular 3′ x 2′6″ roof hatch so the opening is completely clear. And according to intelligence dispatches, other new developments are in the works.

Milcor standard units come in such a wide range of sizes that they'll cover almost any rectangular opening you might have. Most are readily available from a stocking point near you. (On the off chance that none of the 222 meet your needs, our long experience in designing special units may accomplish your mission.)

For a dossier on Milcor access doors, see Sweet's 8.12/InL or write for Catalog 33-1. Milcor roof hatches and floor doors are in Sweet's 7.7/In, or Catalog 34-1. Your contact is: Milcor Division, Inland-Ryerson Construction Products Co., 4069 West Burnham St., Milwaukee, Wis. 53201.

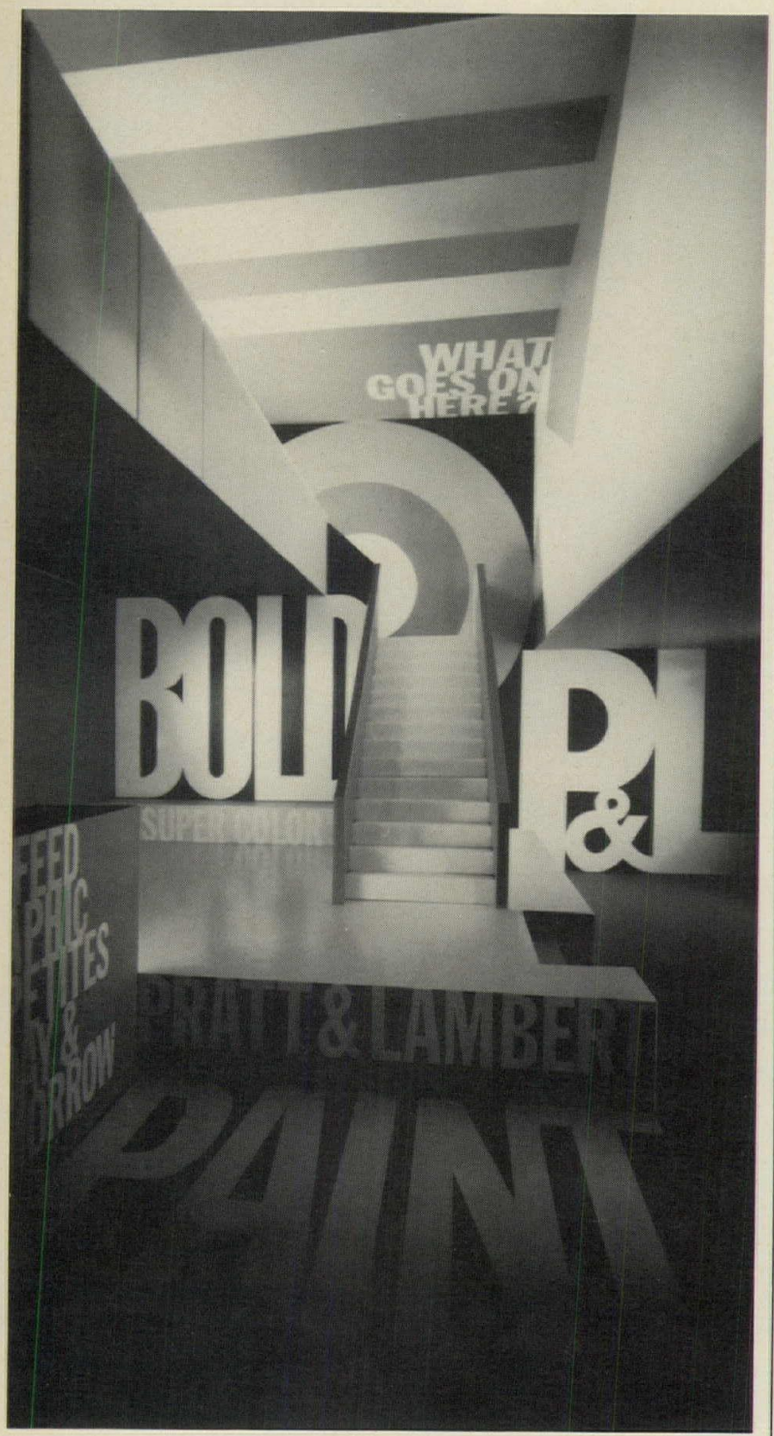
INLAND RYERSON

General Offices: Chicago, Illinois

A member of the INLAND steel family

On Reader Service Card, circle no. 364

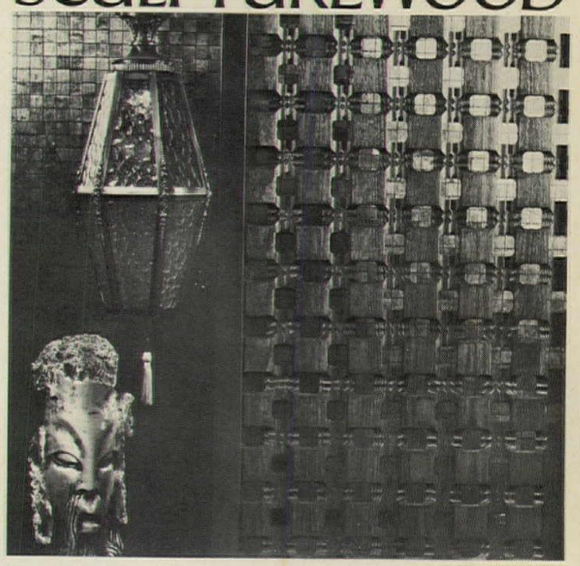
What goes on here?



PRATT & LAMBERT / BOX TWENTY-TWO / BUFFALO, N.Y. 14240

On Reader Service Card, circle no. 383

SCULPTUREWOOD



Scene Stealers—Sculpted hardwood screens play many supporting roles as walls, dividers, backdrops to create drama in the settings of business or homes. A wide repertoire of 20 patterns and an unlimited cast of woods—walnut, birch, ash, oak, poplar and other species. You may direct us on size, framing and finishing. The response will be lots of applause. Write for free color playbill.

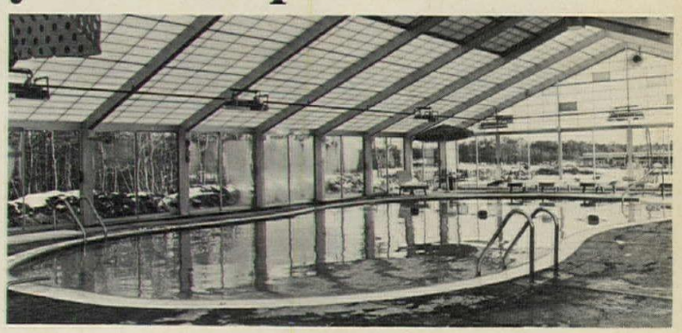
Penberthy
ARCHITECTURAL PRODUCTS

5800 So. Boyle Ave., Los Angeles, Calif. 90058 (213) 583-4511

REPRESENTATIVES IN PRINCIPAL CITIES. COVERED BY PATENT NO. 2859781

On Reader Service Card, circle no. 382

When the project calls for a year-round pool enclosure...



Here's one that is bright, light, cheerful — and easy to heat.

Design your permanent Pool Enclosure with this exclusive modular system.

Construction is the patented Kalwall sandwich panels which consist of two translucent fiberglass faces, overall thickness of 2¾", structural supports are aluminum box beams.

Advantages:
- insulated panels equal 16" thick concrete
- lower initial construction costs
- strong; yet lightweight
- glare-free, diffused light
- wide range of design possibilities
- optional motorized roof
- self-cleaning, virtually no maintenance

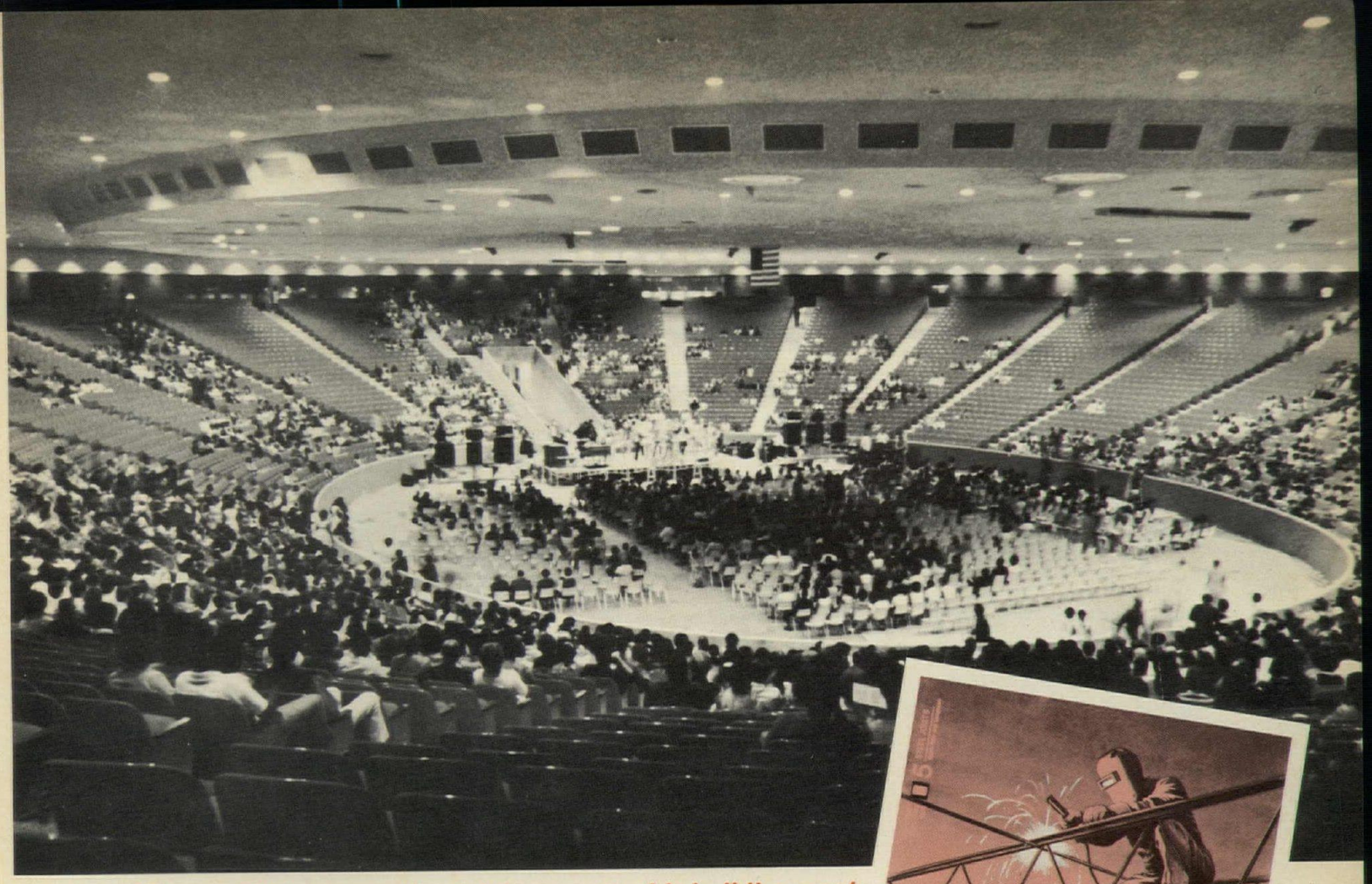
Individually engineered, factory prefabricated and installed . . . based on 30 years engineering experience.

Write or phone Robert Keller, Jr., General Manager for full color brochure.

Structures Unlimited, Inc.

37 Union St., Manchester, New Hampshire 03103 Tel. 603-627-7889

On Reader Service Card, circle no. 367



Why steel joists were the right answer to this building need

NO INTERIOR SUPPORTS. NOT A CRANED NECK IN THE HOUSE!

Sit anywhere in Hofheinz Pavilion at the University of Houston, and you get a clear view of the action. There are no interior columns in this multi-purpose structure, thanks to the space-spanning, open web steel joists used for roof support.

Whenever you must span large areas, you can do it with greater speed, ease and economy with lightweight, high-strength open web steel joists. In fact, these structural members are so versatile, they can be used effectively in *any* type of building—low-rise, high-rise or otherwise. They go in fast, and are available in a wide selection of lengths, depths and load-carrying capacities.

Complete technical information on open web steel joists is contained in our Specifications and Load Tables for Open Web Steel Joists and Longspan Steel Joists.

Send coupon now for your free copy.

STEEL JOIST INSTITUTE
Suite 707-B, 2001 Jefferson Davis Hwy.
Arlington, Va. 22202

Mail to: STEEL JOIST INSTITUTE
Suite 707-B, 2001 Jefferson Davis Hwy.
Arlington, Va. 22202

Please send me a copy of your Specifications and Load Tables.

NAME_____

TITLE_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____ ZIP CODE_____

71-004

On Reader Service Card, circle no. 325

Job mart

Situations open

Architects: Immediate openings for career-minded professionals in our major architectural office in Dallas. License, registration and a minimum of eight years' experience in commercial design of retailing, warehousing, and shopping center facilities required, along with a degree and U. S. citizenship. Progressive office staffed with professionals who are master-planning and providing comprehensive design services for new construction and remodeling of our facilities worldwide. Also, opportunity for future transfer to one of our regional management centers in the U. S. A. or to our European or Far East offices. Starting salary $15,866. Outstanding fringe benefits and opportunity for work on challenging projects are part of the package. MOBILITY is a requirement. You must be willing to relocate and accept occasional transfers, for we need mobile professionals. Your reply will be acknowledged within a few days. Those applicants whose backgrounds and qualifications most closely match our requirements will be interviewed within the next few weeks. TO APPLY, RUSH YOUR RESUME, which must include your salary history, to: Personnel Division, Dept. EA-1, Army Air Force Exchange Service, 3911 Walton Walker Blvd., Dallas, Texas, 75222. An equal opportunity employer.

Architect or senior draftsman: Position open with established firm. Applicant must be experienced. Salary commensurate with ability. Office located in university community in West Virginia. All types of summer and winter sports available. An equal opportunity employer. Submit resume and desired salary to Box #1361-317, *Progressive Architecture.*

Architect: Project manager for medium size quality office with housing, medical, educational and planning work. Field experience and references required. Baltimore. Send resume to Tatar & Kelly Inc, 800 North Charles at Madison, Baltimore, MD 21201

Senior interior designer: With thorough knowledge of non-residential trade resources for Balto/Wash design firm. Experience in corporate design development, project management as well as space design and interior architectural detailing essential. Submit written resume with representative photos to Mr. John F. Walsh, The H. Chambers Company, 1010 N. Charles St., Baltimore, Md. 21201.

Situations wanted

Architect: Age 36, N. Y. registration, NCARB certificate, must relocate Miami-Ft. Lauderdale area. Extensive experience in project administration and construction co-ordination as well as all other phases of practice; seeking responsible position with architectural office or corporation. Will travel. Resume with salary history on request. Reply to Box #1361-318, *Progressive Architecture.*

Architect-manager: NCARB, CSI, 25 years experience including specification work. Licensed Florida, Georgia, California. Presently with internationally known Los Angeles A. & E. firm. Desires to relocate southeast United States, prefer North Carolina. Seeking responsible position best utilizing abilities. Married, family grown. Resume upon request. Reply to Box #1361-320, *Progressive Architecture.*

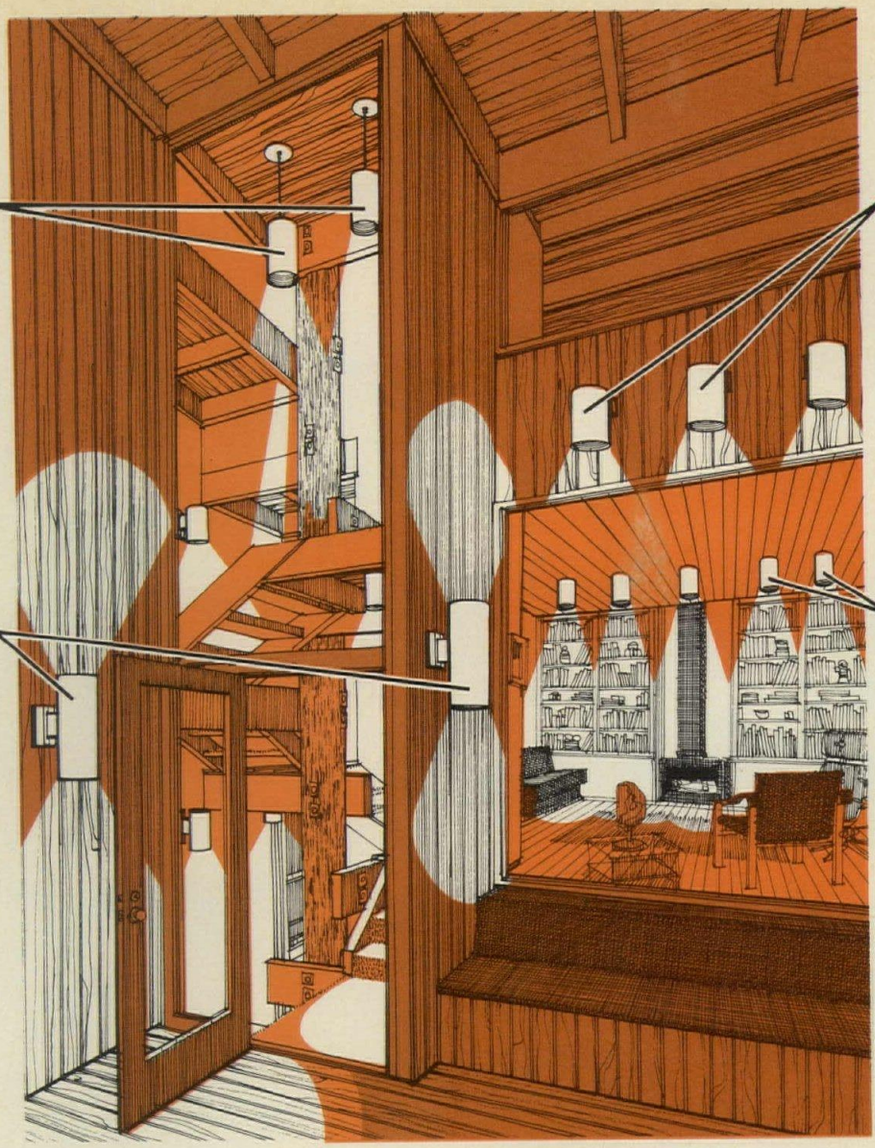
Graduate architect: 27, single, M. Arch plus two years of experience in Design, Rendering and working drawings. Desire full time position. Willing to relocate. Write to U. C. Mistry, 4534 Baltimore Avenue, Philadelphia, Pa. 19143.

Architect/urban planner: Degrees and AIA, AIP, age 32, married. Desire to relocate to Philadelphia metro area. Registration includes

continued on page 145

Pendant Cylinders — Ideal for the most contemporary decors . . . indoors or out! Seamless aluminum cylinders in matte black, white, bronze or satin aluminum. A selection of trims is also available.

Up-Down Lights — For higher-than-average walls, stairwells and balconies in open-plan and commercial interiors. Matte black or white . . . seamless aluminum. New invisible mounting device for easier installation.



Wall-Mounted Cylinders — With Sterling's new 'invisible' mounting feature. Seamless, one-piece, aluminum wall brackets afford a sleek, clean look for any lighting situation. Available in matte-black, matte-white, satin aluminum or bronze finish. Choice of trim.

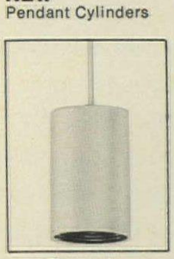
Surface-Mounted Cylinders — Particularly helpful where no recessing depth is available. Offered in matte black, satin aluminum or bronze finish, with a wide choice of trims.

New from Sterling...

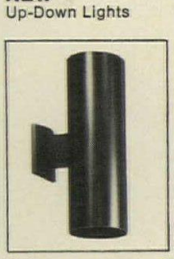
Functional lighting in contemporary designs.

Here are handsome new solutions from Sterling, designed to help solve your customers' lighting problems . . . dramatically. Tastefully styled new Pendant Cylinders, Up-Down Lights, Surface-Mounted and Wall-Mounted Cylinders are shown above, in suggested uses. In addition, there are new Step, Walk and Corridor Lights, stamped from heavy aluminum for durability, and available with GCO.

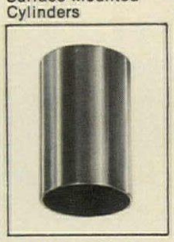
NEW Pendant Cylinders



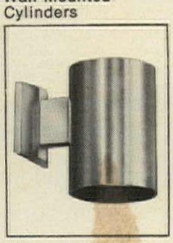
NEW Up-Down Lights



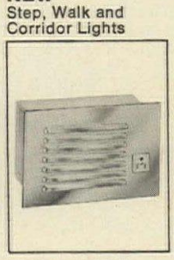
NEW Surface-Mounted Cylinders



NEW Wall-Mounted Cylinders



NEW Step, Walk and Corridor Lights



See them all in our new Catalog 98, Supplement 1. For your copy, contact your NuTone/Sterling representative, or write Dept. PA-ST2.

Sterling Lighting

NuTone Division

Scovill

5691 Rising Sun Avenue, Philadelphia, Pennsylvania 19120

HOPE'S WEATHERSTRIPPED STEEL WINDOWS

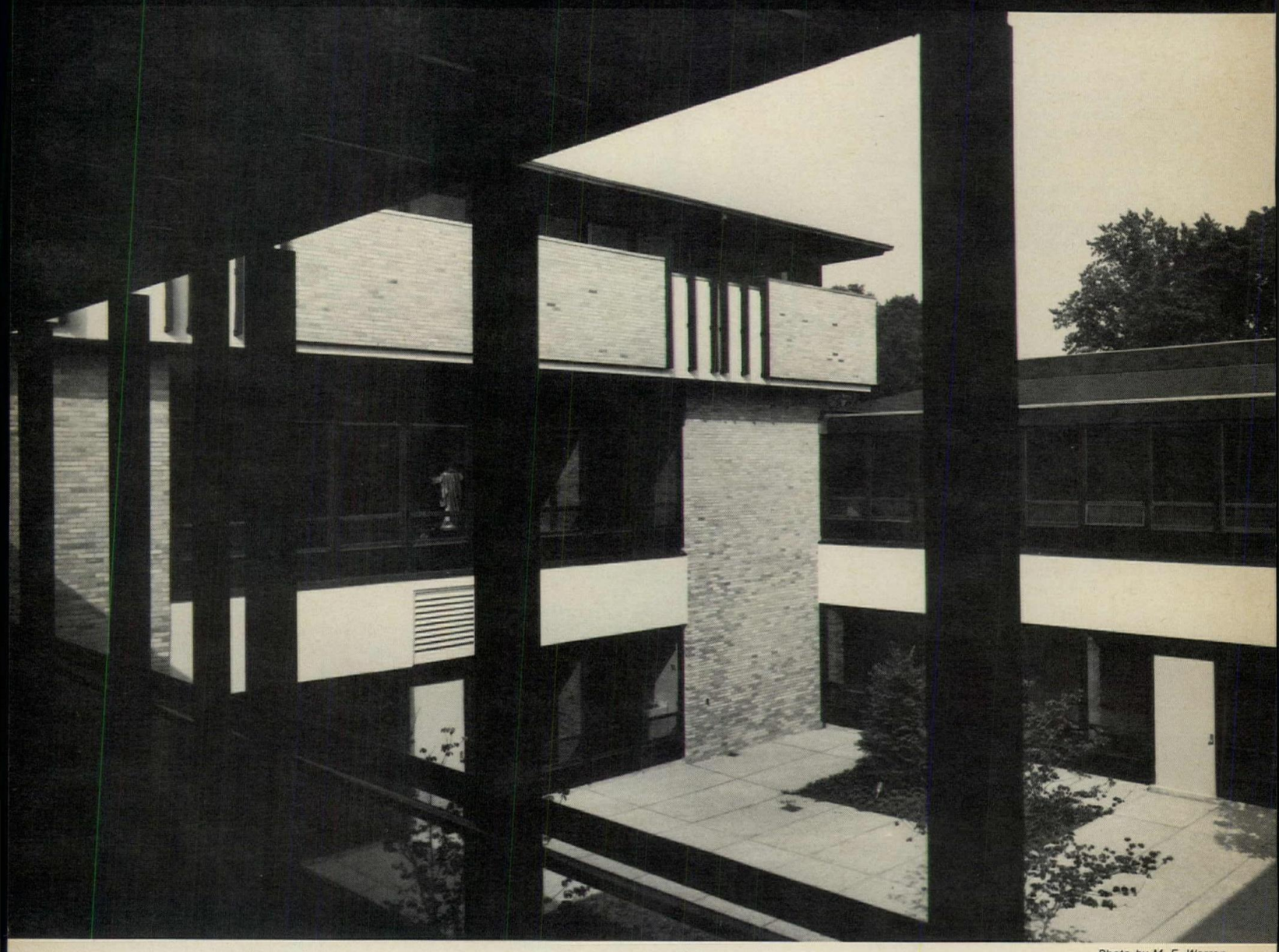


Photo by M. E. Warren

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

HOPE'S WINDOWS

Jamestown, New York 14701

A DIVISION OF ROBLIN HOPE'S INDUSTRIES, INC.

Job mart

continued from 142

Penn. and N. J. 11 years experience in: Design, planning, client-contact, project development, construction detailing, large scale project management, economic development studies, land finance, computers and financial participation analysis. For resume reply to Box #1361-322, *Progressive Architecture.*

Professional engineer: 38, proficient in heating, ventilating, air condititoning, plumbing, and drainage systems. Will affiliate or represent contractor, engineer or architect. Geographical area no barrier. Reply to Box #1361-314, *Progressive Architecture.*

Registered architect/planner: 33, seeking challenging responsible position with firms in the industrialized building components field; seven years of diversified experience with quality architectural and engineering firms. New York City or lower Conn. location preferred. Reply to Box 1361-323, *Progressive Architecture.*

Architectural services

Helen Hutchins Personnel Agency—Specialist: Architecture, Industrial Design-Interior Design and Home Furnishing. Interviews by appointment. 767 Lexington Avenue, New York, N.Y. 10021, TE 8-3070.

Career Builders Inc., Agency: Complete range of Architectural and Interior Design placement under the direction of Ruth Hirsch. Apprentices to Senior Designers and Project Architects. Professional screening and personalized service. References checked. 501 Madison Ave., New York, N. Y. 10022, PL 2-7640.

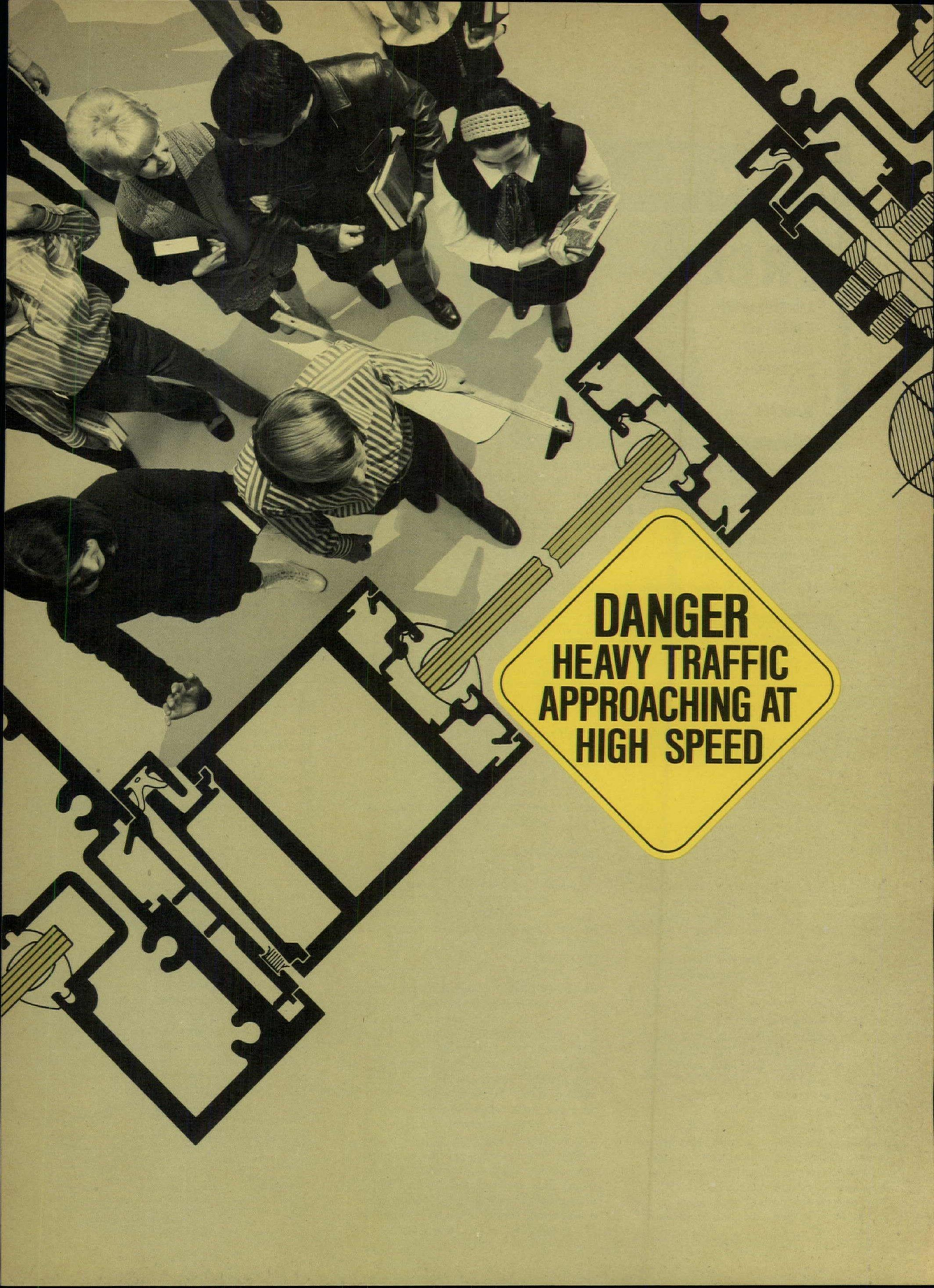
Edwards & Shepard Agency: We are a design and architectural placement service uniquely equipped to locate and appraise the qualifications, experience and effectiveness of architectural and interior designers, urban planners, systems and space planners, construction specialists, exhibit, lighting and environmental designers. We know (1) what positions are available (2) who the best prospects are (3) the right approach (4) how to break negotiating gaps (5) how to save money, time and effort (6) how to simplify procedures and appointments (7) the day to day state of the market. Contact Bill Shepard at (212) 725-1280. Interviews by appointment in our "dome on the roof" at 1170 Broadway, N. Y. C., N. Y. 10001.

Public relations/marketing: Is your architectural practice growing? Are you well known and highly regarded in your market? Is the best of your work published on a continuing basis? Excluding staff and clients, are at least 200 people currently familiar with your office and its work? Does your brochure represent you as well as your most successful project? If you answer "no" to any of these questions, professional public relations/marketing service may be of immense value to you. We would be pleased to discuss your growth plans. David S. Wachsman Associates, Inc., 51 East 42nd St., New York, N.Y. 10017 (212) 687-1196.

Ritasue Siegel Agency: Comprehensive, confidential, international placement and executive search for architectural, urban, interior designers and planners by Miss Woody Gibson. Industrial, environmental and graphic design by Mrs. Siegel, (former Pratt Institute placement Director and ID graduate.) All positions fee paid. By appointment, please. (212) 684-3537, 1170 Broadway, N.Y.C. 10001.

Advertising Rates

Standard charge for each unit is Fifteen Dollars, with a maximum of 50 words. In counting words your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for thirty dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Job Mart c/o Progressive Architecture, 600 Summer Street, Stamford, Conn. 06904. Insertions will be accepted not later than the 1st of the month preceding month of publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.


DANGER
HEAVY TRAFFIC
APPROACHING AT
HIGH SPEED

ENTARA-XD

Educational Entrance System

engineered for extra strength, extra security, and extra dependability

ENTARA-XD is a new aluminum entrance system engineered and built by Kawneer specifically to withstand massive traffic abuse . . . and to defy forced entry and vandalism. ENTARA-XD provides educational buildings with a dependable, low-upkeep, all-weather entrance system . . . durable entrances in which the design of door, frame and hardware have been truly integrated.

SECURITY . . . door and frame interlock at both stiles to provide anti-pry security and to prevent removal of locked door even if hinges are cut a way.

STRENGTH . . . extra heavy-duty door and frame structure, reinforced welded corners, and direct attachment of high-stress hardware are among the many features that insure exceptional strength and rigidity.

WEATHERABILITY . . . baffle interlock feature, double weatherstripping and pressure equalized threshold design assure all-season weather resistance.

Kawneer's extensive experience in problem-solving technology offers the ENTARA-XD Entrance System as a timely, thoroughly dependable solution to one of the most compelling (and costly) security and maintenance problems in the educational field. Find out what ENTARA-XD can do for your buildings. Call your Kawneer representative or write for brochure with complete ENTARA-XD description and specifications.

KAWNEER
ARCHITECTURAL PRODUCTS
AMAX ALUMINUM

1105 North Front Street, Dept. C
Niles, Michigan 49120

On Reader Service Card, circle no. 368

Advertisers

Advertising Sales Offices

Stamford, Connecticut 06904:
600 Summer Street *203-348-7531*

William F. Bondlow, Jr.
Advertising Sales Manager

Michael J. Hanley, Donald C. Stanley
District Managers

Philadelphia, Pennsylvania 19107:
12 So. 12th Street *215-922-0346*
John A. Teefy, *District Manager*

Pittsburgh, Pennsylvania 15219:
Porter Bldg.—Room 242 *412-281-9421*
Albert E. McClimans, *District Manager*

Chicago, Illinois 60603
10 So. LaSalle Street *312-726-1282*
James J. Hoverman, *District Manager*

Cleveland, Ohio 44114:
1717 E. 9th Street *216-771-4011-12-13*
John F. Kelly, *District Manager*

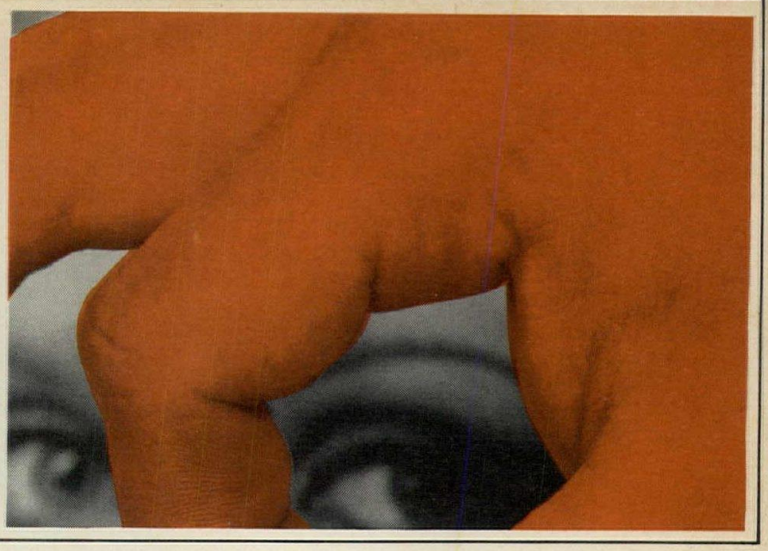
San Francisco, California 94104:
Jobson, Jordan, Harrison & Schulz, Inc.
57 Post Street *415-392-6794*
Charles S. Harrison, Cyril B. Jobson
Representatives

Los Angeles, California 90057:
Jobson, Jordan, Harrison & Schulz, Inc.
1901 W. 8th Street *213-483-8530*
Kenneth E. Jordan, Peter Schulz
Representatives

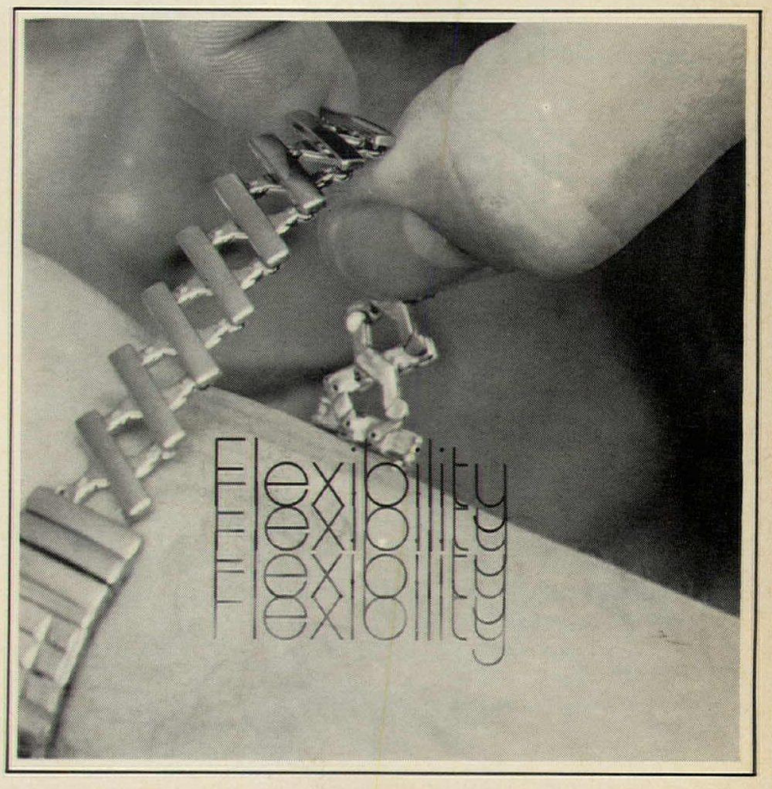
Atlanta, Georgia 30308:
H. Proctor Co.
505-805 Peachtree Bldg. *404-874-6427*
Harmon L. Proctor, *Representative*

Tokyo, Japan:
International Media Representatives, Ltd.
1, Shiba-Kotohiracho, Minatoku
Sumio Oka, *Representative*

FLEXIBILITY



Another exclusive: The No. 5 Series friction-type door holder and stop, with low-cost, durable steel channel and arm.



Checkmate

A Division of RIXSON Inc.
910 0 W. Belmont Ave., Franklin Park, Ill. 60131
In Canada: Rixson of Canada, Ltd.
On Reader Service Card, circle no. 349

5 Series, Holder and Stop (Steel)

For medium traffic doors, particularly on patient rooms . . . surface mounted for single acting . . . concealed for single or double acting doors . . . hold-open, stop or friction holding function . . . silent operation. Request details on the No. 5, or the 1, 3, 7, 8 and 9 Series Holders.